Cardno
Engineering the Future

NORTHEAST BUSINESS PARK

Construction Environmental Management Plan

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Northeast Business Park Pty Ltd

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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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EXECUTIVE SUMMARY

Northeast Business Park Pty Ltd proposes to develop the Northeast Business Park (NEBP); a multi-use business park and marina concept that will integrate industry, marina facilities, commercial, residential, heritage and recreational greenspace precincts. The NEBP will be situated on the southern bank of the Caboolture River, approximately 7.5km inland (4.5km direct line of sight) from the coast on 769 hectares of land described as:

- Lot 2 on RP902075;
- Lot 10 on RP902079;
- Lot 24 on SP158298;
- Lot 7 on RP845326;
- Lot 15 on RP902073;
- Lot 12 on RP145197; and
- Lot 17 on RP902072.

An Environmental Impact Statement (EIS) is required by the Queensland Coordinator General for the proposed NEBP and as such, will form a basis for the Local, State and Federal approval decision making process. Detailed technical studies and consultations with the community, as well as government agencies have been undertaken to ensure the NEBP is developed in a manner that achieves balanced environmental, social and economic benefits.

This Construction Environmental Management Plan (CEMP) has been prepared as part of the EIS to detail the environmental management measures which will be adopted during the construction of the NEBP. The CEMP incorporates the mitigation measures that have been recommended in the EIS technical reports. In particular, the CEMP provides mechanisms in which the environmental performance of the NEBP construction works can be measured and, if required, provides procedures for identifying and implementing corrective actions.

The CEMP addresses the following key components:

- **Rationale:** identification of the element to be managed and the potential for environmental impact of activities associated with each element.
- **Objectives:** identification of the environmental objectives and targets to be achieved in line with the rationale and in compliance with applicable legislation.
- **Performance Indicators:** measurable indicators and standards set to assess the efficiency of management measures and determine compliance with associated plans (e.g. waste management plan, rehabilitation plan).
- **Tasks/Actions:** monitoring and management measures to be implemented in order to achieve the stated objectives and targets to ensure impact mitigation.
- **Monitoring:** monitoring requirements to measure compliance with the performance indicators and frequency of monitoring.
- **Corrective Action:** measures to be undertaken should monitoring indicate non-compliance with performance indicators.
- **Timing:** a schedule for completion for the relevant actions.

- **Responsibility:** the party responsible for completing the actions in accordance with the rationale, objectives and timing of the specific action.

The objectives of the CEMP are to ensure that:

- commitments and recommendations made in the EIS to protect environmental values are incorporated into the design, construction and operation of the proposed development;
- best practice environmental management is achieved at all stages of the development;
- conditions of the COG report and other permits and approvals are satisfied; and
- environmental responsibilities, and monitoring, reporting and auditing procedures are established and demonstrate due diligence.

It is concluded that any environmental impacts associated with the construction of the NEBP can be adequately controlled by the implementation of the mitigation and management procedures described in this CEMP.

1. INTRODUCTION

Cardno (Qld) Pty Ltd (Cardno) has been commissioned by Northeast Business Park Pty Ltd to prepare a Construction Environmental Management Plan (CEMP) for the proposed Northeast Business Park (NEBP) development located within Caboolture Shire in Queensland.

This CEMP has been prepared as part of the Environmental Impact Statement (EIS) required by the Queensland Coordinator General (COG) for the proposed NEBP and as such will form a basis for Local, State and Federal approval decision making.

In summary, development of NEBP in accordance with the approvals issued by Local, State and Federal Government will involve the establishment of a purpose-designed marina complex with mixed residential and commercial land uses across approximately 50% of the project area which demonstrates significant net environmental, social and economic benefit.

This CEMP is a management tool used to assist in minimising the impact to the environment during construction.

Environment is defined under section 8 of the *Environmental Protection Act 1994* as including:

a) ecosystems and their constituent parts, including people and communities; and
b) all natural and physical resources; and
c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and
d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).

As such the role of the CEMP is to ensure that:

- commitments and recommendations made in the EIS to protect environmental values are incorporated into the design, construction and operation of the proposed development;
- best practice environmental management is achieved at all stages of the development;
- conditions of the COG report and other permits and approvals are satisfied; and
- environmental responsibilities, and monitoring, reporting and auditing procedures are established and demonstrate due diligence.

This CEMP includes management plans for various issues relating to the development proposal which is listed below.

- Community Awareness.
- Earthworks Management.
- Erosion and Sediment Control.
- Water Quality and Quantity.
- Acid Sulfate Soil Management.
- Land Contamination.
- Flora and Fauna.
- Weed Management.
- Mosquito and Biting Midge Management.
- Air quality.
- Noise and Vibration.

- Waste Management.
- Dangerous and Hazardous Materials.
- Cultural Heritage Management.
- Visual Amenity.
- Traffic.

Each element of this CEMP provides performance criteria that are to be met with controls, such that impacts from proposed works on the environment are mitigated in accordance with the principles of ecologically sustainable development. In particular, this CEMP provides mechanisms whereby the environmental performance associated with the works can be measured and if required, provides procedures where agreed corrective actions are implemented.

Activities covered by this CEMP include the following.

- Site establishment;
- Bulk earthworks including marina construction;
- Major road, entry and interchange works;
- Sub-division works;
- Golf course construction; and
- Bridge construction.

This CEMP is a dynamic document and will be continually reviewed to ensure compliance with any relevant conditions imposed by the approval process.

A Marina Construction Environmental Management Plan (Marina CEMP) has been prepared by the Jetty Specialists (2007) to provide expert direction on the selection and implementation of appropriate control techniques and practices for fit out of the marina including the following works.

- Site establishment.
- Installation of marine piles for pontoon restraint.
- Installation of floating marina pontoon system.
- Site decommissioning.

This Marina CEMP is attached as Appendix A.

2. SITE DESCRIPTION

Situated on the southern bank of the Caboolture River approximately 7.5km inland from the coastline, adjacent to the Bruce Highway and 43km north of Brisbane CBD, the NEBP site encompasses 769 hectares of property which includes the following seven land parcels ("the project area").

- Lot 2 on RP902075;
- Lot 10 on RP902079;
- Lot 24 on SP158298;
- Lot 7 on RP845326;
- Lot 15 on RP902073;
- Lot 12 on RP145197; and
- Lot 17 on RP902072.

Figure 1 provides a locality plan defining the project area.

The NEBP project area is vacant privately owned land that is bound:

- to the north by Caboolture River, with land on the opposite side of the river being primarily rural and used for forestry activity;
- to the west by the Bruce Highway, with land on the opposite side of Bruce Highway developed with residential and open space areas; and
- to the south and east by privately owned rural residential properties with lot sizes ranging from 1-20 ha, bushland, open grassland areas and limited agricultural and recreational land uses.

The project area is relatively flat ranging in elevation from 2m AHD at the northern boundary to a knoll at 16.5m AHD towards the southern area of the site. Tidal levels of the Caboolture River, adjacent to the site are approximately 1.34m AHD for Highest Astronomical Tide (HAT) and 0.81m AHD for Mean High Water Springs (MHWS).

The project area has been classified as having various terrain units (geology, landforms and soils) that below 5m AHD may include acid sulfate soils. Geotechnical investigations have described terrain units that have the potential to generate acidic leachate during civil works and which require responsible management for erosion.

The project area is surrounded by areas of conservation significance as follows.

- The Deception Bay Declared Fish Habitat area, which extends along the entire length of the northern boundary, within the bounds of the Caboolture River. This area is protected by the *Fisheries Act 1995* due to the estuarine habitats that support commercial and recreational fisheries in close proximity to developing communities.
- The Habitat Protection Zone of the Moreton Bay Marine Park which is located within the Caboolture River and begins at the northern boundary of the site then extends eastward along the Caboolture River. This area is protected by the *Marine Parks Act 2004* in order to:

  (a) conserve significant habitats, cultural heritage and amenity values of the marine park;

  (b) maintain the productivity and diversity of the ecological communities that occur within the marine park; and

  (c) provide for reasonable public use and enjoyment of the zone consistent with the conservation of the marine park.

- The Moreton Bay RAMSAR wetland which traverses the same area within the Caboolture River as the Moreton Bay Marine Park. The Moreton Bay RAMSAR wetlands are protected pursuant to international conventions as they are one of only three extensive intertidal areas of seagrass, mangroves and saltmarsh on the eastern coast of Australia that provide habitat for water birds.
- South East Queensland Wader Bird Sites are mapped approximately 500m to the east of the site. This area is protected via the Japan-Australia Migratory Bird Agreement (JAMBA) and China-Australia Migratory Bird Agreement (CAMBA) convention to protect habitats of Migratory Birds.

3. DEVELOPMENT PROPOSAL

Northeast Business Park Pty Ltd is a multi-use marina and business park concept that will integrate marina facilities, appropriate business, industry, commercial, residential, heritage and recreational greenspace precincts providing a place to live, to work and to play in a master planned riverside precinct on the Caboolture River. Figure 2 provides an illustration of the development proposal.

Major landform adjustments that will occur to establish the NEBP will involve excavation of the marina basin to 1.0 metres below AHD. This excavation will be undertaken using dry excavation techniques followed by inundation of the marina area. Fill obtained from the excavation of the marina basin and additional cuts within the property bounds will be used to raise ground levels within residential precincts to protect against flooding and storm surge as a large proportion of the site is below the Q100 flood level. Following excavation of the marina basin, a lock will be established to connect the marina basin to the Caboolture River.

Overall the development will be designed, constructed and operated with a net benefit to the environment and community through the implementation of sustainable development principles and practices.

Dredging of the Caboolture River in the lower reaches will be required to provide sufficient draft for super yachts to access the marina, with dredging occurring within the defined navigation channel using cutter suction dredging methodology and piping material to the project area.

4. PREAMBLE TO THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

4.1 Terminology

The term **Principal** refers to Northeast Business Park Pty Ltd

The term **Council** refers to the Caboolture Shire Council.

The term **Contractor** refers to the party or company performing construction works relating to the proposed development and includes all employees of the Contractor and sub-contractors.

The term **Consultant** refers to the civil and/or environmental engineering consultant employed by the Principal.

The term **Environmental Management Officer** (EMO) refers to the Environmental Scientist/Engineer employed by the Contractor or equivalent who is responsible for undertaking the responsibilities of environmental management and supervision in support of the Contractors work activities.

The term **Cultural Heritage Officer** (CHO) refers to the employee appointed by NEBP to facilitate and implement the responsibilities of the Cultural Heritage Management Plan (CHMP), as outlined in section 7.2 of the CHMP.

The term **Site Officer** (SO) refers to the employee appointed by NEBP to facilitate and implement the responsibility of the CHMP, as outlined in section 7.7 of the CHMP.

The term **Works** refers to all matters associated with the construction of the proposed development.

The term **Approval** relates to the decision notices and schedule of conditions relevant to the site description and development proposal.

The term **EPA** refers to the Queensland Environmental Protection Agency.

The term **DPI&F** refers to the Queensland Department of Primary Industries and Fisheries.

The term **NRW** refers to the Department of Natural Resources and Water.

The term **DMR** refers to the Department of Main Roads.

The term **MSQ** refers to Maritime Safety of Queensland, a division of Queensland Transport.

The term **CEMP** refers to this Construction Environmental Management Plan.

4.2 Legislation

The primary environmental legislation relevant to this CEMP is the *Environmental Protection Act 1994* (*EP Act*). The *EP Act* protects environmental values through development and implementation of environmental protection policies and regulates environmentally relevant activities prescribed in the *Environmental Protection Regulation 1998.*

The *Environmental Protection (Water) Policy 1997* (*EPP Water*) ensures protection of environmental values from activities that may result in the release of contaminants to waters.

The *Environmental Protection (Air) Policy 1997* (*EPP Air*) ensures protection of ambient air quality and specifies indicators and air quality goals for control of the release of airborne contaminants.

The *Environmental Protection (Noise) Policy 1997* (*EPP Noise*) specifies an acoustic quality objective for protection of the well-being and amenity of individuals and the community in residential areas.

The *Environmental Protection (Waste Management) Policy 2000* (*EPP Waste*) promotes the efficient use of non-renewable resources and the use of waste as a resource. The hierarchy of waste management is outlined and lists waste management practices in the preferred order of adoption.

The following legislation is also applicable to proposed construction works at the site.

- The *Land Protection (Pest and Stock Route Management) Act 2002* – for the management of pest plants and animals and application of controls and restrictions on 'declared pests'.
- The *Plant Protection Regulation 2002* – for management of 'notifiable pests' under the *Plant Protection Act 1989.*
- The *Aboriginal Cultural Heritage Act 2003* is to ensure that all reasonable and practical measures are taken to prevent damage to places and objects of cultural, historical or archaeological significance.
- The *Fisheries Act 1994* (Qld) is an 'Act for the management, use, development and protection of fisheries resources and fish habitats and the management of aquaculture activities, and for related purposes' (long title). The main object of the Act is to provide for the 'use, conservation and enhancement' of fisheries resources and fish habitats through the application of the principles of ecologically sustainable development. The Act provides for the appropriate powers of the Chief Executive such that this object may be attained. These powers include those necessary for the management of commercial, recreational and indigenous fishing.
- The *Coastal Management and Protection Act 1995* (Coastal Act) is to :
  - provide for the protection, conservation, rehabilitation and management of the coast including its resources and biological diversity;
  - have regard to the goal, core objectives and guiding principles of the national strategy for ecologically sustainable development in the use of the coastal zone;
  - provide with other legislation a co-ordinated and integrated management and administrative framework for the ecologically sustainable development of the coastal zone; and

- encourage the enhancement of knowledge of coastal resources and the effect of human activities on the coastal zone.

The objectives of the Coastal Act are implemented at a regional level by the Southeast Queensland Regional Coastal Management Plan (March 2006) which has the effect of a State Planning Policy.

- The *Nature Conservation Act 1993* ("*NC Act*") and associated *Nature Conservation (Wildlife) Regulation 1994* provide a framework for the conservation of nature. One of the primary mechanisms by which this objective is to be achieved is through the declaration and management of protected areas and the protection of native wildlife and its habitat. This legislation specifies management principles and intents for areas and species of conservation significance.

- The *Marine Parks Act 2004* provides for the conservation of the marine environment through:

  The *Marine Parks Act 2004* provides for marine parks and the conservation of the marine environment amongst other purposes. The Act and regulations enable the declaration of Marine Parks and regulate activities contained within those areas.

- The *State Planning Policies* (SPPs) provides a basis for state agencies to provide agency advice on whether state interests have been satisfactorily addressed and to assist in ensuring that a planning scheme does not adversely affect the agency's state interests.

  The applicable SPPs to the NEBP development include:

  - *SPP 2/02 Planning and Managing Development Involving Acid Sulfate soils;*
  - *SPP 1/03 Mitigating the Adverse Impacts of Flood, Fire and Landslide;* and
  - *SPP 1/92 Development and the Conservation of Agricultural Land*

4.3 Program and Contractual Obligations

This CEMP covers the construction phase of the works associated dry excavation of the marina and construction of golf course and buildings associated with the development including land levelling, installation of infrastructure and stormwater drainage. The construction phase is defined as the period from the commencement of works to the substantial completion of the works.

The Civil Construction Resources, Timeframes and Staging are provided as Appendix B of this CEMP.

The Contractor is generally responsible for ensuring that the provisions of the CEMP are met, with the exception of certain planning or design issues, which are explicitly noted throughout the CEMP as being the responsibility of the Principal and/or the Consultant.

4.3.1 Individual Duties

The Contractor shall ensure that all persons who are to be employed or sub-contracted for the works shall be trained as to their individual responsibilities as set out in this CEMP and as provided by the Acts, including the following.

General Environmental Duty – whereby a person in the performance of their duties shall not do so in a manner which will cause, or is likely to cause, environmental harm unless the person takes all reasonable and practical measures to prevent or minimise the harm.

Duty to Notify Environmental Harm – whereby if a person in the performance of their duties becomes aware that serious or material environmental harm is caused or threatened then the person must contact the Contractor whereupon the Contractor must immediately notify the Principal and/or the EPA.

Compliance with the CEMP – whereby a person in the performance of their duties shall comply with the provisions of this CEMP.

4.3.2 Approved Plans and documents

This CEMP has been written to ensure that construction complies with the documents listed below and the information contained within the EIS. All additional approval requirements will also be incorporated into this CEMP as required prior to commencement of construction.

Standards

- AS 3962-2001 Guidelines for design of marinas.
- AS4997-2005 Guidelines for the design of maritime structures.
- AS1289-2000 Methods for testing soils for engineering purposes – General requirements and list of methods.
- AS2870-1996 Residential Slabs and Footings.
- AS 2436 Guide to Noise Control on Construction, Maintenance and Demolition Sites.
- AS 3798-2007 Guidelines on earthworks for commercial and residential developments.

Guidelines

- Institute of Engineers Australia Soil Erosion and Sediment Control Guidelines.
- Queensland Department of Natural resources and Water Aboriginal Cultural Heritage Guidelines.
- Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (EPA, 1998).

Policies

- SPP 2/02 Planning and Managing development involving acid sulfate soils (Queensland Government, 2002).
- SPP 1/03 Mitigating the adverse impacts of flood, fire and landslide (Queensland Government, 2003).
- South-east Queensland Regional Coastal Management Plan (Queensland Government, 2006). (Note: This plan has the effect of a State Planning Policy).

Reports

- Cardno (2007) Acid Sulfate Soils Management Plan.
- Cardno (2007) Dredging Site Based Management Plan.
- PB (2007) Stormwater Management Plan.
- Jetty Specialists (2007) Marina Construction Environmental Management Plan.

4.4 Non-Compliance and Corrective Action Requirements

The Contractor shall assume responsibility for implementation of this CEMP. Where the Contractor becomes aware of a site or operational condition that does not comply a Corrective Action Request (CAR) form is to be completed and reported to the Principal.

An example CAR form provided in Appendix C of this CEMP.

The Contractor is also required to maintain a register of CARs, which shall demonstrate that appropriate actions have been completed within a suitable timeframe.

Any CAR registered in accordance with this CEMP shall be provided to the Principal, any State or Commonwealth Government Department, any statutory authority or other person, consensually or as lawfully required.

In some instances, further investigation or monitoring may be required to establish whether the Contractor has failed to adequately implement the CEMP, or has failed to comply with relevant legislation, guidelines and statutes. In these instances, an independent party such as an Environmental Auditor shall carry out the investigation or monitoring. If it is established that the cause for non-compliance with the stated performance indicator(s) has arisen from the Principal Contractor's actions or omissions, then the costs of the monitoring shall be deducted from payments to the Principal Contractor and paid to the Consultant, otherwise the costs of the monitoring shall be obtained from the Developer and paid to the Environmental Auditor.

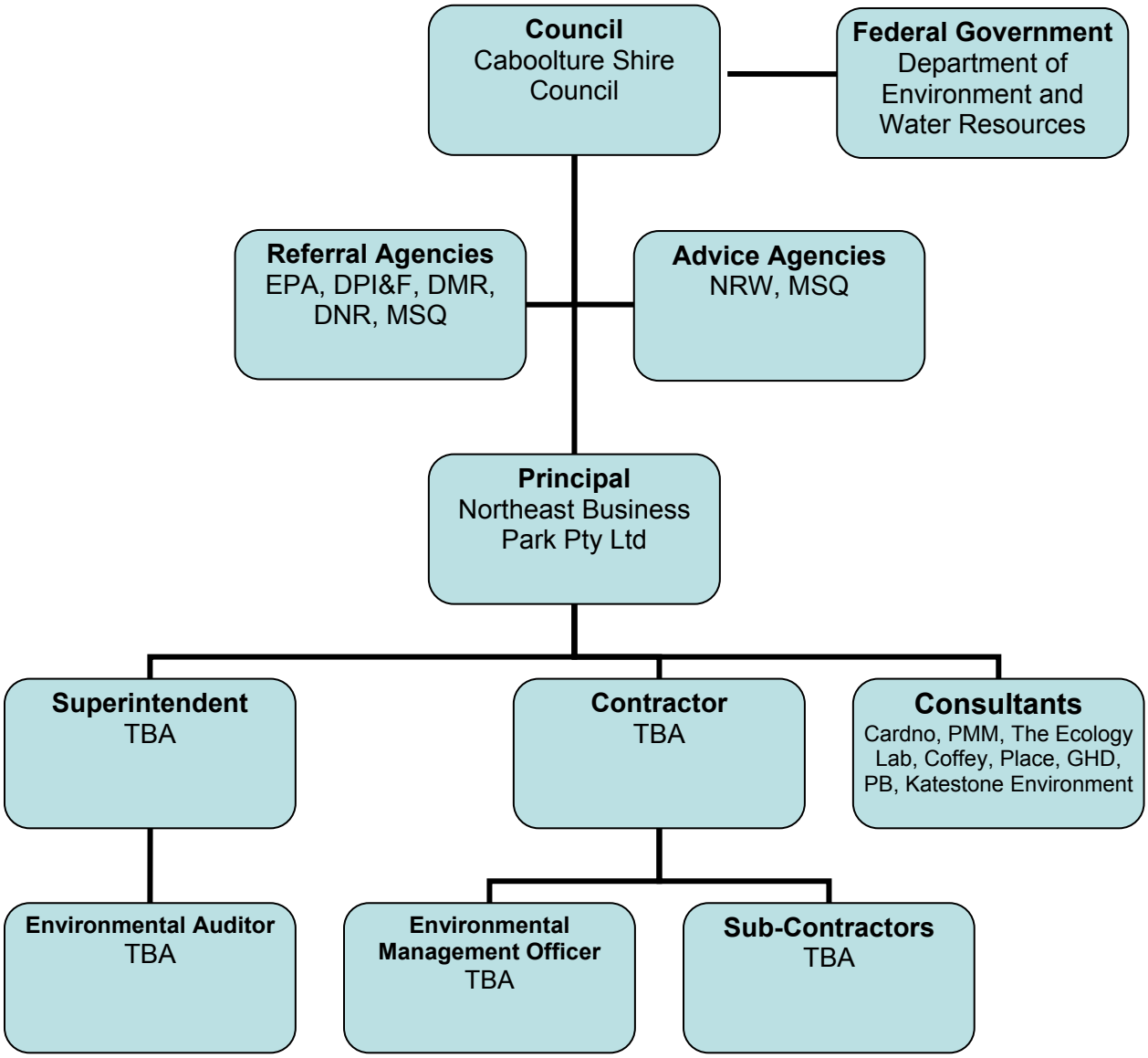
The Contractor/Environmental Manager shall notify the Principal of the non-compliance within 24 hours of receiving confirmation of the non-compliance (including validation monitoring) and the relevant administering authorities.

The notification of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to not be in accordance with the conditions of the relevant development approval(s), must include, but not limited to the following information.

- The name of the holder of the development approval.
- The location of the emergency or incident.
- The number of the relevant development approval.
- The name and telephone number of the designated contact person.
- The time of the release.
- The time the operator became aware of the release.
- The suspected cause of the release.
- The environmental harm caused, threatened, or suspected to be caused by the release.
- Actions taken to prevent further any release and mitigate any environmental harm caused by the release.

4.5 Roles and Responsibilities

The flow diagram provided below illustrates the reporting relationships of the various parties that will be involved in the construction phase of the development and implementation of this CEMP.



4.5.1 Council

The roles and responsibilities of the Council are to:

a. take reasonable and relevant steps to ensure that any applications for development permits and supporting documentation, including this CEMP, satisfy the relevant conditions of subsequent development approval(s);

b. liaise with the Principal and its representatives to ensure that the development is carried out in accordance with all relevant conditions of subsequent development approval(s);

c. attend pre-start meetings to be held at the site prior to the commencement of physical development works to confirm that all appropriate environmental management controls are being implemented;

d. promptly respond to any request from the Principal for advice concerning appropriate responses to any environmental incidents with the potential to cause environmental harm;

e. promptly assess any proposed changes to this CEMP and its implementation that may be requested by the Principal;

f. convey to the Principal any inquiries received, from adjoining residents and local community groups, that concern the development; and

g. assess CEMP implementation and performance at the completion of on-site works and following the maintenance and establishment periods.

4.5.2 Principal

The roles and responsibilities of the Principal are to:

a. assume ultimate responsibility for compliance with development approval conditions and implementation of this CEMP;

b. nominate the Superintendent who will represent the Principal in issuing instructions to and reviewing the performance of the Principal Contractor and relevant consultants; and

c. promptly notify Council of any proposed changes to this CEMP and its implementation, reporting or monitoring, and any breach of development approval conditions and proposed corrective action.

d. be the primary entity for receiving enquiries concerning construction activities;

e. appoint consultants to assist (or represent the Principal) in overseeing works and monitoring compliance with conditions of relevant approvals and contract specifications;

f. receive and maintain a register of any inquiries received, from adjoining residents and local community groups, that concern the development;

g. assess inquiries received, using the services of appropriately qualified consultants when required, and the need for and nature of any corrective actions required in respect thereof;

h. notify the Contractor of any inquires received from adjoining residents and local community groups and the nature and timing of any measures that are required in response to such an inquiry;

i. advise Council and the relevant adjoining resident or local community group of the nature and timing of any measures that are to be implemented in response to their inquiry;

j. arrange for pre-start meetings prior to the commencement of construction activities associated with each stage of the development;

k. ensure that the Contractor complies with the requirements of the CEMP and any environmental management or corrective action directions issued; and

l. report to the Council on CEMP implementation and performance, including any non-compliance, at monthly intervals and at the completion of on-site works and following the maintenance and establishment periods.

4.5.3 Contractor

The roles and responsibilities of the Contractor are to:

a. satisfactorily demonstrate to the Principal and Council that appropriate measures have been implemented on-site during the execution of the contract to comply with the requirements of this CEMP;
b. appoint an Environmental Management Officer, or equivalent to oversee the implementation of the CEMP and to provide environmental management advice as the need arises;
c. ensure that an appropriate Environmental Management Induction Process is implemented during the construction phase of the development;
d. comply with workplace health and safety legislation and standards and to promptly advise the Principal of any conflict between the requirements of this CEMP and workplace health and safety legislation and standards;
e. maintain records of any complaints received and responses, advise the Principal of complaints and responses, investigate and (where appropriate) implement control measures within the timeframes specified by the Principal;
f. attend pre-start meetings and periodic site inspections during construction or as triggered by any environmental events (eg. major rain events causing run-off/erosion) and incidents from the commencement of the contract until the completion of the contract works;
g. notify the Principal regarding CEMP performance and monitoring, non-compliance and actions taken, and seek advice when required;
h. notify the Principal regarding environmental incidents with potential to cause environmental harm or nuisance and provide written details within 24 hours of occurrence including details of corrective actions taken;
i. report on CEMP implementation and performance to the Principal at monthly intervals and at the completion of on-site works and following the maintenance and establishment periods; and
j. follow directions of the Principal, or a nominated representative, with respect to environmental performance.

4.5.4 Environmental Management Officer

The roles and responsibilities of the Environmental Management Officer are to:

a. liaise with the Contractor and Superintendent to facilitate compliance with legislation, Council policies and development approval conditions, and community expectations during the project;
b. attend a pre-start meeting with the Principal, Superintendent, Principal Contractor and Council prior to the commencement of any vegetation clearing and earthworks;
c. conduct fortnightly site inspections during earthworks, clearing and landscaping stages, or as requested by the Principal, and as triggered by environmental events and incidents;
d. ensure the site is compliant to all aspects including the waste storage, and Dangerous Goods and hazardous substances storage areas as outlined in this CEMP on a day to day basis. The frequency of monitoring will need to increase during wet weather events with the focus on the elements detailed in this CEMP. All issues are to be documented and corrective measures outlined.

e. advise the Principal on compliance and effectiveness of the CEMP, including any corrective action instructions to be issued to the Principal Contractor;

f. issue written corrective action instructions to the Principal Contractor, via the Principal, within 24 hours of the identification of a need for corrective actions to be taken;

g. issue a written corrective actions compliance note to the Contractor, via the Principal, within 48 hours of the nominated timeframe given in the written notice for completion of the corrective action;

h. shall engage a qualified Fauna Spotter/Catcher prior to the commencement of, and during, any vegetation clearing works;

i. shall implement the requirements of the Cultural Heritage Management Plan (CHMP) including, commissioning a qualified Archaeologist in the event of an archaeological or historically significant site being discovered during construction works and, maintaining liaisons with Cultural Heritage Officers as deemed necessary by the CHMP;

j. review and advise the Principal of any proposed alterations to the CEMP that may be required in response to issues that arise during the conduct of works; and

k. report on CEMP implementation and performance to the Principal at monthly intervals and at the completion of on-site works and following the maintenance and establishment periods.

4.5.5 Superintendent

The roles and responsibilities of the Superintendent are to:

a. oversee the documentation and implementation of project specifications that are compliant with the requirements of the approved plan of development, Council Policies and this CEMP;

b. on behalf of the Principal and in consultation with the Environmental Management Officer, review tenders received from potential Principal Contractors to determine whether adequate provisions have been made for environmental management compliance;

c. on behalf of the Principal, administer the contract(s) for construction phase works; and

d. on behalf of the Principal, assess the performance of the Principal Contractor against the project specifications and contract requirements.

4.5.6 Consultants

The roles and responsibilities of Consultants are to:

a. provide the Principal with specifications for and certifications of specific works;

b. prepare plans and specifications that comply with relevant conditions of development approval and the requirements of this CEMP;

c. develop specifications and plans that adequately address environmental issues;

d. liaise with the Principal Contractor and Superintendent to facilitate compliance with development permits, Council policies and contract specifications; and

e. report to the Principal any areas of non-compliance with the specifications that may require corrective actions or modifications to the CEMP.

4.6 Environmental Induction

All employees including contractors and subcontractors working on site shall undergo general environmental awareness induction concerning their responsibilities under this CEMP. This shall include:

- a general site induction;
- familiarisation with the requirements of this CEMP; and
- environmental emergency/incident reporting.

All staff engaged on the project shall be instructed by the Contractor as to their obligations under this CEMP before work commences so that they are made aware of relevant environmental issues and correct compliance and reporting procedures.

During the development works to which the CEMP applies, a copy of this CEMP shall be kept on site by the Contractor and will be easily obtainable by relevant persons entering the site. Copies of this CEMP will also be retained by the Principal, Superintendent, Consultants and Environmental Management Officer.

4.7 Monitoring and Review

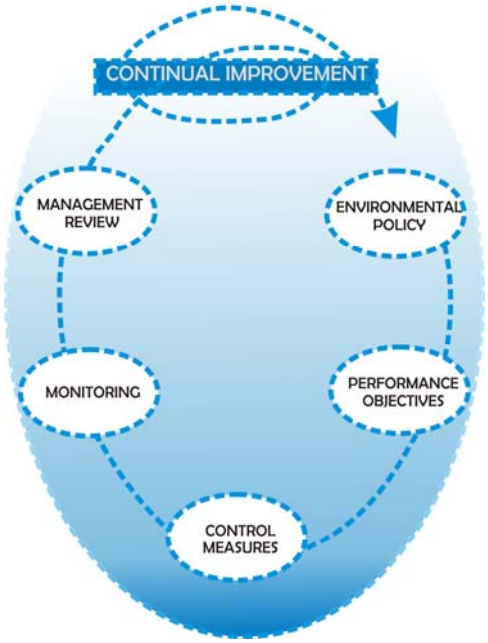
This CEMP is a living document. As such, to ensure the environmental management at the site is continually improved, a review of this document by the Principal, in consultation with relevant agencies shall occur:

- to incorporate any relevant condition requirements issued subsequent development approval(s);
- following significant environmental incidents;
- at the completion of environmental audits; and
- in the instance whereby the objectives of any element of this CEMP are not being met.

The suitability, adequacy and effectiveness of this CEMP shall be reviewed annually following a continual improvement procedure as illustrated below. The review should consider the following matters.

- Suitability of the objectives.
- The extent to which the objectives have been met.
- Monitoring results.
- Audit findings.
- Technical reviews.
- Changes to organisational structure, plant and equipment, or procedures and practices.

The CEMP must not be implemented or amended in a way that contravenes any condition of a relevant development approval(s).



4.8 Environmental Auditing

Environmental Auditing shall be undertaken as part of civil and development works. The Proponent shall engage an appropriately qualified Environmental Auditor, independent of contractual arrangements for the design and construction of the project, for the duration of the works.

The Environmental Auditor shall audit the construction works against the CEMP and any subsequent revisions three monthly until completion of works and/or when a significant incident occurs including:

- after a cyclone or when another major storm event (i.e. 1:25 ARI) occurs;
- when an uncontrolled release occurs; and
- when direct or indirect impacts from the works have been identified on the nearby areas of conservation significance.

The Environmental Auditor at the completion of the works must finalise audits and prepare a summary of the results.

A copy of each Audit Report shall be provided to the administering authorities within 10 business days of a written request being made.

4.9 Training

Under section 493 of the *EP Act* the corporation is liable for breaches of the *EP Act* unless due diligence has been exercised. One way that an organisation conducting works can demonstrate due diligence is by training staff in related environmental matters.

The Proponent or equivalent shall provide site induction and training for attendance by all contractors and staff to inform on general responsibilities, site-specific values such as ecological values and features to be preserved, environmental management requirements, contractual obligations and penalties.

Environmental training shall be undertaken at the time of an employee induction and when changes to plant and equipment, or procedures and practices occur.

Components of environmental training will include, but not limited to the following.

- Legal Requirements.
- Due Diligence.
- Management and General Staff Responsibilities.
- Environmental Activities, Aspects and Impacts.
- SBMP.
- Documentation.
- Contractors.
- Emergency Response.
- Annual Review

Records of individual environmental training should be kept at the site office.

A complete Training Program shall be prepared and implemented prior to works commencing.

4.10 Complaints

Should a complaint be received the following procedure must be followed.

1. Identification of the source(s) of the complaint.
2. Respond to the complainant outlining the procedure for corrective action and proposed timeframe for implementation of corrective actions.
3. Implementation of appropriate mitigation measures as determined by the Environmental Management Officer.
4. Undertake relevant validation monitoring as required by regulatory authorities or development approval conditions.
5. Notify complainant of corrective actions when completed.
6. The complaint must be recorded in a dedicated Complaint and Enquiry Register. The register must be made available to the EPA upon request.

The complaint register must have recorded the following information:

- time, date and nature of complaint and/or enquiry;
- type of communication (telephone, letter, personal etc.);
- contact details including name, address and telephone number of complainant and/or enquirer;

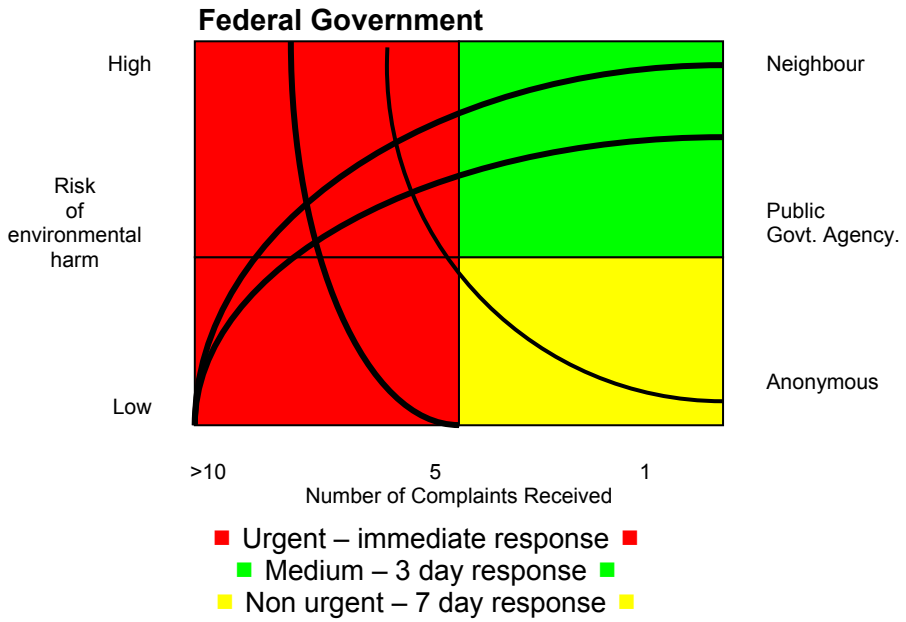
- response and investigation undertaken as a result of the complaint and/or enquiry; and
- action taken in response to the complaint and/or enquiry and signature of person responsible.

All complaints will be risk managed using complaint indicators presented below in Tables 1 and 2.

Table 1 Complaint Indicators

Urgency • Urgent (health driven including nuisance) • Non-urgent (primarily nuisance driven)	**No. of Complaints Received** • 10 or more (extreme) • 5 – 10 (high) • <5 (medium) • 1 (low)
Risk of environmental harm • High • Medium • Low	**Complainant** • Neighbour • Public • Agency/ government authority • Anonymous

Table 2 Risk Assessment Matrix



The purpose of this procedure is to ensure that all complaints are:

- investigated within a timely fashion;
- mitigation and corrective measures are implemented, where appropriate;
- information regarding the investigation and resolution of the complaint is provided to the complainant(s) during the process and at conclusion; and
- documented and registered.

4.11 Emergency Contact

Prior to the commencement of any works associated with the construction phase of development, a sign detailing the project team must be placed in a prominent position, at each entrance to the development site. The sign must detail the relevant project coordinator for the works being undertaken on the site, and the following parties (where relevant).

- Principal.
- Contractor.

The sign must provide a telephone number for the Principal and Contractor to which any inquiries concerning the conduct of development works on this site should be directed.

4.12 Emergency and Contingency Plans

The site shall be managed to avoid detrimental impact on the receiving environment external to the site as a result of the following emergency events associated with construction activities.

Heavy or Prolonged Rainfall

Construction phase stormwater treatment and conveyance measures employed at the site are adequate to contain and treat a minimum of a 1 in 5 year 24 hour stormwater event. In the event that heavy or prolonged rainfall occurs beyond this event magnitude at the site during the works, the following actions shall be implemented.

- The Contractor shall cease construction activity and remove all earthmoving equipment from the development area.
- The Contractor shall take actions to ensure that erosion and sediment control measures in place over the site are performing adequately and that stormwater discharges from the site meet the release criteria specified in the Water Quality Element of this CEMP. Actions shall also be taken to ensure that all materials being stored at the site including fuels and lime are secure and there is no risk of accidental release or stormwater contamination.
- The Contractor shall only recommence works at the site only after the site has been assessed and it has been determined that the risk of erosion and sedimentation has returned to pre “Heavy or Prolonged Rainfall” conditions and all erosion and sediment control measures have been assessed and repaired / replaced as required.
- All captured water in the diversion drains, stormwater/treatment basins from a heavy or prolonged rainfall event is to be assessed and managed prior to release by the Contractor as outlined in the Water Quality Element of this CEMP.

Accidental Release of Material

In the event that accidental release of material occurs at the site during the works, the following actions shall be implemented.

- The Contractor shall take appropriate steps to contain the released material. This shall include the use of accidental spill kits located adjacent to stored materials.
- The Contractor shall make an initial assessment of the severity of the accidental release and the nature of the material.

- The Contractor shall notify the EPA, the Principal and the Superintendent of any accidental release of material.
- The Contractor shall take steps in consultation with the EPA to treat, remove or otherwise manage the released material.
- The EPA and the Superintendent shall make an assessment of the area to confirm the success of the remediation works and whether additional works are required.
- The Contractor shall assess the work procedures or cause of the failure and implement any changes deemed to be appropriate to prevent reoccurrence of a similar incident in the future.
- Following completion of remedial actions the Contractor shall provide an incident report or CAR to the Principal detailing the nature of the incident and the corrective actions implemented.

Construction is Halted Due to Unforseen Circumstances

In the event that construction works are halted due to unforseen circumstances, to ensure that environmental deterioration does not occur over time the Contractor shall ensure that all erosion and sediment control devices are intact and operational.

Prior to vacating the site, the Contractor shall ensure that all stockpiles are adequately stabilised and the total disturbed area is minimised. In addition, any site conditions that could conceivably degrade over time and may result in environmental harm shall be attended to.

The Contractor shall monitor and maintain the erosion and sediment control devices on a continual basis until work re-commences at the site.

5. ELEMENT 1: PREPARATION OF A WORKS PLAN/CONSTRUCTION METHODOLOGY

Rationale
A Works Plan/Construction Methodology allows the Contractor to manage the construction phase of the development. This allows the Principal to ensure compliance with relevant legislation and approvals, as well as maintain the environmental integrity of the development.

Objective
To comply with the additional elements of this CEMP and provide site specific and detailed actions for management to prevent environmental harm.

Performance Indicator
Impacts to the environment and the community are minimised during construction.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
The Contractor is to prepare a Works Plan/Construction Methodology for each element identified in this CEMP. The works plan shall include, but is not limited to: • Community Awareness; • Earthworks Management; • Erosion and Sediment Control; • Water Quality and Quantity; • Acid Sulfate Soil Management; • Land Contamination; • Flora and Fauna; • Weed Management; • Mosquito and Biting Midge Management • Air quality; • Noise and Vibration; • Waste Management; • Dangerous and Hazardous Materials; • Cultural Heritage Management. • Visual Amenity; and • Traffic.	The Principal is responsible for ensuring that a draft works plan is provided by the Contractor prior to commencement of the construction works. In the event a Draft Works Plan is not provided, the Principal shall undertake corrective action to ensure a Draft Works Plan is provided by the Contractor. The Drafts Works Plan must be consistent with EIS commitments.	Prior to commencement of construction works	Contractor
Obtain a written “Permit to Enter” from all property owners for works in private premises.	Evidence of written permission obtained and documented.	Prior to commencement of construction	Contractor

Works shall be undertaken as per bulk earthworks, civil construction development indicative phases and staging plans.	Significant changes to scheduling of works shall be incorporated into phase and staging plans and circulated to relevant stakeholders, principally Council and the Principal.	As necessary	Contractor
A construction compound shall be established at a designated area in accordance with the draft Works Plan.	Construction Compounds shall not be sited within the project area that is inconsistent with planning approvals. In this event, the construction compound shall be decommissioned or relocated promptly.	Prior to commencement of construction	Contractor

6. ELEMENT 2: COMMUNITY AWARENESS

Rationale
Construction activities are likely to have short term impacts on public amenity due to noise emissions, dust emissions, road closure, traffic diversions and disruption to property access. It is therefore necessary to advise the local community on the potential impacts of the construction works.

Objective
All reasonable measures have been undertaken to notify the local community of the nature, duration and program of construction works.

Performance Indicator
Nil community complaints received during construction works.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Advise surrounding land users who will may be affected by the construction works and associated activities. Residents and landowners must be advised in advance of construction works which may impact upon them. These include: • Caboolture Shire Council; • adjacent residential areas and land owners;	Record and investigate on the CAR form any complaint(s) received from the community and regulatory authorities, such as the Council and EPA. Corrective actions to be implemented as required within the agreed time frame noted on the CAR. All complaints to be investigated in accordance with section 4.10 of this CEMP.	Two weeks prior to the commencement of construction works.	Contractor
Provide a point of contact for complaints. The contact details shall be clearly identified on signage at the site entrance. Contact details shall include a 24 hour contact telephone number.	The signage at the site entrance shall be checked weekly to ensure the details are visible. Corrective actions shall be undertaken as appropriate to ensure the task is achieved.	Ongoing	Contractor
The construction working hours (limited to 6.30am to 6.30pm Monday to Saturday) shall be notified to community members and shall be clearly identified on signage at the site entrance.	The signage at the site entrance shall be checked weekly to ensure the details are visible. Corrective actions shall be undertaken as appropriate to ensure the task is achieved.	Ongoing	Contractor

7. ELEMENT 3: EARTHWORKS MANAGEMENT

Rationale
Construction of the proposed development will involve excavation of soils and the alteration of landform at the site.

Objective
Minimise the environmental impact associated with the construction works on the receiving environment, in particular the detrimental impact on water quality through the management of Acid Sulfate Soils (ASS) during excavation and associated construction works. Further detail relating to the control of erosion and sedimentation is provided in Element 4 'Erosion and Sediment Control'.

Performance Indicators
Maintenance of baseline acidity in receiving waters.
No mortality to fauna species at and adjacent to the site during the works.
No movement of material that is deemed to be contaminated.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Civil works are to be undertaken in accordance with the engineered plans or the latest revision thereof attached to this document.	This task shall be monitored by the Superintendent during construction including approved tidal works. Corrective Action Requests shall be issued by the Site Supervisor accordingly.	Ongoing	Contractor/ Principal
Marian excavation works shall be carried out using conventional dry excavation methods, mainly by dozer/scraper and by excavator/truck. A clay cut off trench must be constructed between the Caboolture River and the marina to prevent leakage into the marina during construction. The cut0off will extend to the underlying clay stratum at a depth of about 6m. The lock structure will be constructed also in dry conditions, with a bund to remain between the structure and the River.	This task shall be monitored by the Superintendent during construction including approved tidal works. Corrective Action Requests shall be issued by the Site Supervisor accordingly.	Marina Excavation	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Excavated material from the marina basin will be placed, treatment and compacted to required standards in the fill areas of the marina precinct to raise the site to the design level to protect against flooding and storm surge. Placement and treatment of the excavated material shall be carried out in accordance with the requirements of the ASSMP.	As per relevant Australian Standards. As per the ASSMP Monitoring and Corrective Action requirements.	Marina Excavation	Contractor
Revetment wall construction will be completed under dry conditions in accordance with relevant standards and manufacturer's instructions. . Revetments on the sides of the marina remote from the River will comprise of segmental walling (Hanson Vertica or similar) with geogrid soil reinforcement and free-draining backfill. Revetment foundations will be prepared in accordance with design requirements.	Compliance with relevant Australian Standards. The design of the revetment foundations and revetment structures are certified in accordance with legislated requirements. The foundations and revetment structures are inspected and certified by a geotechnical engineer.	Marina Construction	Contractor/ Principal
The final stage of the marina basin construction shall be the excavation of the marina entrance. The marina entrance shall be dredged using a cutter suction dredge and spoil shall be placed, dried, treated and used as fill material in the marina precinct. The foundation for the lock and weir structure will be prepared in accordance with design requirements, as verified by geotechnical inspection.	Environmental control measures including silt curtains must be used to contain entrance works from resulting in potentially adverse impacts within the Caboolture River. The Dredging SBMP prepared for Capital Works shall be referred to for further dredge related environmental controls. The design and construction of the lock and weir foundations and the structure itself are certified in accordance with legislated requirements.	Marina Entrance Excavation	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
No fill to be imported and used on site unless it has been certified that the fill does not contain potential acid sulfate soils (PASS) or any hazardous contaminant as defined in the Queensland *Environmental Protection Act 1994*.	Receipts of NATA certification shall be retained throughout the construction and proving phase for all fill imported to the site. Receipts shall be made available to government authorities as requested. CAR forms shall be issued as required	Ongoing	Contractor
Fill material will be compacted to a minimum density ratio of 98% in commercial areas and 95% in residential areas to meet the requirements of AS 3798-2007 and geotechnical advice during construction.	As per AS 3798-2007, geotechnical advice and engineered drawings.	Ongoing	Contractor
Stockpiles are to be constructed to a maximum height of 4 metres.	Environmental Management Officer to audit stockpiles and stockpile locations weekly.	Ongoing	Contractor
Adequate settlement and stability of fill platforms is required in accordance with design specifications to prevent settlement creep.	Monitor settlement beneath structure during construction to ensure compliance with design specifications, particularly in areas identified as having underlying weak alluvial material present within the profile.	Ongoing	Contractor
Preloading shall remain so the future settlement after preload removal does not exceed *AS2870-1996 Residential slabs and footings*.	Settlement plate monitoring to be conducted.	Ongoing	EMO
Installation of infrastructure in road reserve corridors of main roads shall be undertaken in accordance with the DMR published guidelines for “Installation of Underground Conduits within the Boundaries of the State-Controlled Road”. A works program must be prepared prior to commencement of road upgrades in consultation with DMR.	Environmental Management Officer to audit installation activities within main roads corridors to assess compliance with the DMR guideline (Appendix E).	During road upgrades	Contractor EMO

8. ELEMENT 4: EROSION AND SEDIMENTATION CONTROL

Rationale
Construction of the proposed development will involve alteration of landform at the site. Stormwater coming in contact with this material has the potential to transport sediment and/or other contaminants to natural drainage lines and receiving waters adjacent to the site.

Excavated areas and stockpiles are to be protected from erosion and at the completion of the works the ground surface is to be rendered stable to ensure erosion and sedimentation of receiving waters does not occur as a result of the construction

Objective
Implement erosion and sediment control devices identified in approved engineered drawings and in accordance with the requirements of the *Soil Erosion and Sediment Control Guidelines*, Institute of Engineers Australia.

Performance Indicators
Control devices are installed and operational prior to commencement of site preparation and construction activities.
No failure of erosion and sedimentation control devices is detected during construction works.
Sediment concentrations in water discharged from the site are in accordance with water quality criteria stated in Element 5.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Schedule construction works with due consideration of the seasonal timing of activities such as: • vegetation clearing; • site establishment; • soil stockpiling; • dredging.	Site Supervisor in consultation with the Principal and Consultant to schedule works taking into account climatic factors reported in the EIS.	Prior to commencement of construction.	Contractor Principal Consultant
Install drainage, erosion and sediment controls as per the relevant engineered drawing.	Environmental Management Officer to audit erosion control devices are installed as per issued plans. All stormwater collected in the stormwater collection system shall be monitored, and treated if necessary, prior to release.	Prior to commencement of construction.	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Maintain the erosion and sediment control devices so that they remain effective throughout the construction period.	Failures in erosion and sediment control devices shall be immediately reported on a CAR form. Environmental Management Officer to audit erosion control devises are installed and maintained regularly and after each rain event.	Ongoing/ After every rain event	Contractor
Erosion and sediment controls shall be of sufficient size to capture a 1 in 5 year 24 hour rainfall event.	A freeboard of 0.5m is required.	Prior to commencement of construction.	Contractor
Develop an erosion and sediment control devices maintenance schedule.	Undertake repairs or maintenance on all sediment and erosion controls as required and in accordance with the sediment control devices maintenance schedule.	Prior to commencement of construction.	Contractor
A stabilised entry/exit point to the sites shall be established so that access for construction vehicles and equipment is limited to the site entrance point as per the relevant engineered drawing.	Undertake repairs or maintenance to ensure integrity of site access/egress points. Roads and pavements shall be swept, not hosed as required to prevent entry of soils to stormwater drains or gutters.	Prior to commencement of construction/ ongoing	Contractor
All construction vehicles and equipment shall enter or leave the site via a stabilised entry/exit point.	Entry point has signage erected is visible. No traffic entering the site from other locations. Failure of these measures to be reported on a CAR form.	Ongoing	Contractor
A vehicle shake down facility shall be established at the entry / exit point at Buchanan Road.	Environmental officer to inspect the shake down facility functions adequately during construction.	Prior to commencement of construction / Ongoing	Contractor
All construction vehicles shall utilise the shake down facility to remove all sediment prior to exiting from the site.	Environmental Management Officer to facilitate with site inductions and appropriate signage to entry and exit points.	Ongoing	Contractor

9. ELEMENT 5: WATER QUALITY

Rationale
The works will involve excavation, reformation and importation of fill to the site. Unless appropriate management is followed, the works have potential to cause detrimental impacts on the aquatic environment and its water quality.

Objective
Minimise the risk of any release of contaminants originating from the site entering surface and ground waters in the locality of the site and to ensure that the existing qualities of the receiving surface and ground waters are not adversely affected.

Performance Indicator
All waters released from the project area shall comply with the release criteria outlined in Tables 3 and 4 for surface and groundwater respectively below or demonstrate that there is no worsening of existing conditions.

Table 3 Surface Water Quality Release Criteria (Mid Estuary)

Water Quality Parameter	Release Criteria
Suspended Solids	<50 mg/L
pH	7.0 – 8.4
Dissolved Oxygen (% saturation)	80-105
Oil and Grease	No visible sheen
Litter	No visible litter
Total Nitrogen	0.3 mg/L
Total Phosphorous	0.025 mg/L
Iron	300µg/L
Iron Floc and Scum	None visible
Floating matter	None visible

Table 4 Groundwater Criteria

Water Quality Parameter	Release Criteria
Total Dissolved Solids	No greater than 10% above or below background levels
pH	6.5 – 8.5

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Install water quality improvement devices as per the sediment and erosion control plan in the relevant engineered drawing.	Environmental Management Officer to audit areas, not less than monthly.	Prior to commencement of construction	Contractor/EMO
Complete baseline sampling at strategic locations within the property and release points prior to commencement of any activities on the site (refer to The Ecology Lab Reporting, 2007). Baseline sampling points shall include upstream and downstream of the project area of the Caboolture River.	Samples to be submitted to a NATA approved laboratory for testing.	Prior to commencement of construction	Contractor
Water quality to be monitored for the parameters and at the frequency outlined in Tables 5 for surface- and ground- water respectively. Samples for surface water are to be taken at all release points. Samples for groundwater are to be taken at standing water level.	Samples to be taken as outlined Table 5 of this Element. CAR forms shall be issued and actioned in the event the Performance indicators are not achieved.	As outlined in Table 5	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
All water generated from activities shall not be released from the control system to the receiving environment (Caboolture River and tributaries) until the release criteria specified in Table 3 have been achieved.	Water quality is monitored for Suspended solids, pH and Dissolved Oxygen and Iron prior to water release from project area. Water can not be released until the limits outlined in Table 3 are reached for these parameters. Water quality levels exceeding the values stated in Table 3 shall be investigated to identify the source of the increase and strategies shall be proposed using a CAR to achieve acceptable limits. All results and treatment methods must be recorded in a discharge register. The Contractor/Environmental Management Officer must notify the Principal in event of non-compliance in accordance with section 4.4 of this CEMP.	Prior to all discharges	Contractor
In the event of a rainfall event greater than a 1 in 5 year 24 hour event, all work is to cease immediately and equipment moved to an area where it will be unaffected by overland flow and stormwater control system monitored for its effectiveness.	A CAR should be completed in the event of a discharge from the site that did not comply with the Water Quality Release Criteria outlined in Table 3.	Ongoing	Contractor
Minimise the amount of stormwater leaving the site through onsite storage and reuse in construction requirements, dust suppression and revegetation.	No import of water to the site unless no onsite water is available.	Ongoing	Contractor
All machinery used on site should be maintained such that resultant contaminates are not released to the receiving environment.	Leaks from plant and equipment must be repaired immediately using a mobile service provider.	Ongoing	Contractor
Fill sourced externally should be from an uncontaminated source, or where previously contaminated, have the necessary approval by the relevant authority.	Any fill from an uncontaminated site should have appropriate documentation to confirm the uncontaminated nature of fill.	Ongoing	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Notices must be prominently displayed on areas undergoing effluent irrigation (for landscape watering, golf course establishment and/or dust suppressant) warning construction workers that the area is irrigated with effluent and not to use or drink the effluent. These notices must be maintained in a visible and legible condition.	Irrigation of effluent shall be undertaken in accordance with a third party agreement with Council.	Ongoing	Contractor
The irrigation of effluent must be carried out in a manner such that: • vegetation is not damaged; • soil erosion and soil structure damage is avoided; • there is no surface ponding of effluent; • percolation of effluent beyond the plant root zone is minimised; • the capacity of the land to assimilate nitrogen, phosphorus, salts, organic matter as measured by oxygen demand and water is not exceeded; and • the quality of ground water is not adversely affected.	The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates. The daily volume of contaminants released to land must not exceed 30% of the final demand for recycled water at 2.3ML/day.	Ongoing	Contractor

Table 5 Water Quality Monitoring Frequency

Location	Frequency	Type	Parameter
Site discharge points and in the Caboolture River up current of the site discharge point(s).	Monthly and during rain events of > 25mm / 24 hours when a release occurs	Field Analysis	pH Dissolved Oxygen
Site discharge point(s) and in the Caboolture River up current of the site discharge point	Monthly and during rain events of > 25mm / 24 hours when a release occurs	Laboratory analysis	pH Suspended Solids Dissolved Oxygen Total Nitrogen Total Phosphorous Iron
All control structures	Daily	Visual inspection	Inspection of structures to ensure measures are in place and operating effectively
Temporary sedimentation basins	Weekly	Field Analysis	pH
Temporary sedimentation basins	Weekly	Visual inspection	Leachate staining Algal blooms Signs of erosion
Groundwater Monitoring Bores	Monthly	Field Analysis	Water Level pH
Groundwater Monitoring Bores	Monthly	Laboratory analysis	Total Dissolved Solids

10. ELEMENT 6: ACID SULFATE SOIL MANAGEMENT

Rationale

Excavated material should be assumed to be Actual Acid Sulfate Soil (AASS). To avoid detrimental impacts on the aquatic environment and its water quality, appropriate management practices shall be employed to ensure that this does not occur.

Objective

All AASS is neutralised during construction and prevention of leachate discharge from the site.

Performance Indicator

Remediation of acid waters if discovered, and provision of control structures to prevent leachate discharge off-site which does not meet specific water quality criteria.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Bulk earthworks to be undertaken in stages as per relevant engineered drawings, staging plans and Works Plan.	Construction to follow the excavation techniques and methodology.	Ongoing	Contractor
All works shall be undertaken in accordance with the Acid Sulfate Soil Management Plan (ASSMP).	Refer to ASSMP for non-conformance with this plan.	Bulk Earthworks, Trenching	Contractor
All excavation and treatment areas shall be isolated from external areas by perimeter drains and/or bunds. All waters collected on the site are to be directed to the treatment (or retention) basin(s) where the water will undergo monitoring and treatment prior to release or reuse on site.	All water to be treated as outlined in Element 5 – Water Quality Table 3 and sampled as frequently as required by Table 5.	Ongoing	Contractor
All soils removed during marina excavation where the field ASS assessment identifies PASS must be monitored and tested by a NATA accredited laboratory before treatment of soils in accordance with section 8 of the ASSMP.	Excavated soils subjected to analysis shall be sampled and tested at the rate specified in the ASSMP.	Ongoing	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
All soils indicated to exceed the oxidisable sulphur criteria shall be treated with fine agricultural lime after excavation and dewatering. If Acid Neutralising Capacity (ANC) is included in calculations for liming rates, a fineness factor of at least 1.5 must be applied to account for likely lower acid neutralising capacity in the field.	Lime to be mixed with the effected soils by the spreading of soil in layers of not more than 300 mm, and use of an agricultural spreader and disc plough, rotary hoe or similar. Care shall be taken to ensure that mixing occurs throughout the depth of the layer prior to placement of new material. The rate of lime application shall be determined in accordance with the *Acid Sulfate Soils Laboratory Methods Guidelines* (Queensland Government).	Ongoing	Contractor
Reporting of non-conformance	The Contractor shall submit monthly reports to the Consultant and the Council regarding any non-conformances with this Element and the ASSMP.	Ongoing	Contactor

11. ELEMENT 7: CONTAMINATED LAND

Rationale

The proposal project area has previously been used for rural purposes including dairying, cotton and sugar cane growing, cattle grazing and pine plantation. An underground storage tank (UST) and aboveground storage tank (AST) for fuel, as well as a cattle dip were previously located on Lot 10 on RP902079, with the UST still present. Lot 10 is recorded on the Environmental Management Register.

Objective

To manage contamination whilst it remains on site and potential disturbance of contaminated material during bulk earthworks in a manner that protects human health and the receiving environment.

To ensure the site is environmentally sound for the proposed redevelopment for residential use.

Performance Indicator

Monitoring results confirm that surface waters, ground waters and soils are not contaminated and do not pose a threat to the ecological values of the site or the health of onsite personnel and surrounding communities.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
During site induction, ensure site personnel are educated on the existing contaminated areas and the management strategies to be adhered to during the construction phase.	Ensure site personnel do not enter the contamination areas without the prior consent from the EMO and knowledge of the management procedures to be employed.	Ongoing	Contractor EMO
Isolate existing contaminated areas to prohibit access and install signage.	Repair or improve isolation techniques e.g. fencing, signage.	Ongoing	Contractor EMO

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Undertake soil testing of the known contaminated areas to determine the background levels of heavy metals, petroleum hydrocarbons and pesticides and the extent of contaminated soil. The sampling and analysis of soil material from excavations in contaminated areas must be undertaken by a suitably qualified and experienced person in accordance with section 381 of the *EP Act.*	Should soil results exceed the health-based soil thresholds defined in the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (May 1998)* implement approved treatment and/or removal methods specified in the Remediation Action Plan (RAP) prepared by Douglas Partners (2004) attached as Appendix F. If contaminated soil is excavated and disposed of site, a disposal permit must be obtained in accordance with section 424 of the *EP Act.*	Prior to bulk earthworks	EMO
Implement the RAP which involves the excavation of the underground fuel storage tanks, bowser and vent pipe and disposal off-site prior to construction works.	Non-compliance with the RAP must be investigated and expert advice sought. Prior to changes to the RAP, the Contractor must seek the advice of the EPA.	Prior to bulk earthworks	Contractor
Clean stormwater runoff must be restricted from flowing through known contaminated areas during bulk earthworks unless treatment via capping has been undertaken as a result of soil testing confirming elevated levels of contaminants.	Where the drainage design fails to isolate the contaminated areas, re-evaluate and remedy the design to effectively isolate the contaminated areas. Implement further controls such as culverts, barrier mounds and collection ponds.	Upon commencement of the construction phase	Contractor
Undertake soil testing of areas surrounding the known contaminated areas following approved treatment and/or removal methods specified in the RAP to ensure that mitigation measures employed achieve the objective of the RAP.	Validation sampling must be undertaken in accordance with the existing RAP.	Ongoing	EMO
If during site earthworks, soils not previously considered to be contaminated are thought to be affected (based on other physical characteristics such as odour and soil colour), cease works in the area immediately and undertake selective sampling to confirm presence of contaminants.	The EMO is to contact the administering authority in writing within two business days of the detection and advise the proposed remedial action to be employed.	Ongoing	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Records of all inspections, soil excavation in contaminated areas, disposal permits and site management plan compliance are to be regularly maintained.	Update records at the completion of any works within the known contaminated areas.	Ongoing	EMO
Any plant of equipment that has handled known contaminated materials will be inspected prior to leaving the site, and where necessary, cleaned in a bunded area.	The Contractor will ensure that wash down materials or wastes are collected and disposed appropriately to protect the condition of uncontaminated soils and waters in and surrounding the project area.	Ongoing	Contractor EMO

12. ELEMENT 8: FLORA AND FAUNA MANAGEMENT

Rationale

The NEBP development encompasses areas of significant flora and fauna habitat that have been specifically identified for retention and enhancement, including:

- areas of tidal wetland and fisheries habitat adjacent to the Caboolture River;
- areas of freshwater wetlands and riparian vegetation associated with Raff Creek; and
- terrestrial riparian vegetation extending along the banks of the Caboolture River.

Construction of the NEBP development will involve the use of heavy machinery and the selective clearance of native flora and fauna habitats. These activities, in the absence of appropriate controls have the potential to result in unauthorised and undesirable impacts upon native flora and fauna.

The NEBP development site also supports a number of non-native flora and fauna species that are currently having an adverse impact on the ecology of the site and adjoining areas. The suppression of existing populations of these pest species and the management of construction activities such that they do not result in the introduction of new pest species or the spread of existing pest species, also forms part of management requirements for the construction phase of the NEBP development.

Objectives

To ensure:

- areas of native flora and fauna habitat that are to be retained are appropriately protected during the construction phase of development;
- that authorised flora and fauna habitat disturbance is carried out in accordance with best practice and the terms and conditions of relevant permits authorising such disturbance (e.g. Marine Plant Permit);
- existing infestations of pest flora or fauna species are controlled and no new pest species are introduced to or spread within the site; and
- avenues for the movement of native fauna within and across the site are maintained.

Performance Indicators

No unauthorised disturbance occurs to native flora and fauna habitats identified for retention.
No injury or mortality of native vertebrate fauna occurs.

The abundance and distribution of existing populations of pest flora and fauna are reduced.
No new pest flora or fauna species are introduced to the site as a consequence of the construction phase activities.

Tasks	Corrective Action /Monitoring	Timing	Responsibility
Identify all areas of native flora and fauna habitat to be retained and protected. Physically mark areas of native flora and fauna habitat to be protected using a fauna friendly form of fencing comprised of star pickets and highly visible fencing to prevent access and accidental clearance.	Environmental Management Officer (EMO) to audit all relevant development approvals to ensure that all areas of native flora and fauna habitat to be protected have been identified and physically marked.	Prior to the commencement of any vegetation clearance works	EMO
The Contractor is to engage the services of an appropriately licensed and experienced "fauna spotter and catcher" to supervise all flora and fauna habitat clearance works.	Details of the qualifications, experience and license of the appointed fauna spotter catcher are to be provided to the Principal and Environmental Auditor.	Prior to the commencement of any vegetation clearance works	EMO
A native flora and fauna clearance plan shall be prepared for each work area. Where relevant (e.g. Precinct 1(3)) clearance works will be carried out in a sequential manner to direct native fauna towards areas of retained habitat.	Vegetation clearance plan is to be provided to Environmental Auditor for review.	Prior to the commencement of any vegetation clearance works	EMO
A pre-start meeting is to be attended by the EMO, the appointed fauna spotter catcher, the Environmental Auditor, to verify the extent of approved clearance works and the nature of controls to be implemented.		Prior to the commencement of any vegetation clearance works	EMO
All native flora and fauna clearance works are to be carried out under the supervision and direction of the appointed fauna spotter and catcher and in accordance with terms and conditions of relevant approvals/permits.	A record of the date, location and extent clearance works were carried out is to be maintained by the Contractor.	For the duration of any vegetation clearance works	EMO
Any observations of sick or injured native animals within or adjacent to the work area(s) will be recorded and reported to the Queensland Parks and Wildlife Service (QPWS) to receive advice concerning specific measures to be taken.	A record of sick or injured fauna observations, advice received from QPWS and actions take associated is to be maintained by the Contractor and provided to the Environmental Auditor.	For the duration of construction works.	EMO

Tasks	Corrective Action /Monitoring	Timing	Responsibility
The foliage and branches of cleared native vegetation is to be mulched and appropriately stockpiled for subsequent re-use on site where possible. Non-native vegetation shall not be mulched for re-use on site, to minimise the risk of spread of non-native species. The Contractor shall remove cleared non-native vegetation from the site for lawful disposal at a suitable facility such as a landfill.	EMO to supervise and maintain a record of cleared vegetation reuse and disposal activities.	For the duration of construction works.	Contractor EMO

13. ELEMENT 9: WEED CONTROL

Rationale

The NEBP site supports infestations of a number of significant weed species that are declared under the provisions of the *Land Protection (Pest and Stock Route Management) Act 2002 ("LP Act")*. These include the following.

a. Class 2 species that are major pests in Queensland, with the potential to spread over much larger areas of the State, and in respect of which the stated aim of the LP Act is to reduce the rate at which these species invade new areas and to suppress existing infestations. Class 2 species recorded on the site include:

- Groundsel bush (*Baccharis halimifolia*), infestations of this species are scattered throughout the majority of the site;
- Prickly pear (*Opuntia sp*.), this species was recorded within disturbed cleared areas and within the Cypress pine woodland;
- Water hyacinth (*Eichhornia crassipes*), this weed occurs within the paperbark forest in the south-eastern extent of the site;
- Mother-of-millions (*Bryophyllum sp*.) – infestations of this species are scattered throughout site; and
- Salvinia (*Salvinia molesta*), a small constructed waterbody associated with the old homestead/heritage area supports a dense infestation of this species

b. Class 3 species that are significant weeds that have spread over most of their potential range but need to be controlled in environmentally significant areas. Class 3 species recorded on the site include:

- Camphor laurel (*Cinnamomum camphora*), the highest densities of this species were recorded within areas of cultivated vegetation and the northern extents of riparian vegetation associated with Caboolture River;
- Lantana (*Lantana camara*), this species is scattered in its distribution across the site;
- Asparagus fern (*Asparagus africanus*), this weed occurs this species is scattered in its distribution across the site;
- Chinese elm (*Celtis sinensis*), this weed occurs mostly within areas of disturbed riparian vegetation;
- Broad-leaved pepper tree (*Schinus terebinthifolius*) is scattered in its distribution across the site, with the highest densities occurring within areas of disturbed riparian vegetation.

In some circumstances there is the need to stage the removal of existing infestations of weed species to ensure that unintended adverse environmental impacts do not result (e.g. riverbank de-stabilisation).

The NEBP development has the potential to result in the introduction of new weed species to the site during both the construction and post-construction phases of development. In this respect, appropriate management of earthworks and landscaping in particular must be implemented to minimise the potential for the establishment of new weed species on the site and/or the off-site transportation of weeds to external areas.

Objective

To reduce the extents of existing weed infestations in an environmentally responsible and sustainable manner.
To prevent the introduction and establishment of additional weed species into the site.

Performance Indicators
The extent of the existing weed infestations is reduced in a manner that does not cause environmental degradation.
No new weed species establish on the site.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Area specific weed management programs are to be developed and implemented as part of the process of obtaining Operational Works approval for development activities. These weed management plans should include provision implementation of the various tasks specified below.	Council is to assess the weed management plans submitted in support of each Operational Works application.	Ongoing	Principal Council
Weed management strategies for each identified weed species in a particular area are to be based on current best practice as specified on the pest fact sheets produced by the DNRW.	Current pest act sheets are to be included as an appendix to each Operational Works weed management plan.	Ongoing	Principal
All areas of significant weed infested vegetation are to be clearly marked on construction plans and in the field prior to the commencement of vegetation clearance and bulk earthworks.	Principal is to ensure that the location and extent of weed infestations are mapped and shown on development plans. The Contractor is to ensure weed infestations are physically identified in the field.	Prior to the start of construction works	Principal Contractor
Clearing of weed infested areas and correct disposal of the weed material.	The contractor shall separate native and non-native vegetation into different stockpiles as far as practicable. The contractor shall remove cleared non native vegetation from the property for disposal at a suitable facility as soon as possible.	Ongoing	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
	All trucks transporting weed infested materials for disposal shall be securely covered, to reduce the risk of seed and vegetative dispersal during transportation. To minimise the risk of weed spread, non-native vegetation shall not be mulched for re-use on and within site. Non native vegetation stockpiles should be covered to prevent wind dispersal of seeds. Stockpiling should not occur within 30m of a water course.		
Limit the movement of construction traffic through identified areas of weed infestation.	The contractor shall control the flow and direction of vehicles within the site.	Ongoing	Contractor
Equipment, boots, vehicles and machinery are to be cleaned when leaving known weed-infested areas to minimise the potential for the spread of weeds.	The Contractor shall ensure that all equipment, boots and vehicles used in a weed infested area are cleaned thoroughly before being moved into weed-free areas of the site.	Ongoing	Contractor
Landscaping of the NEBP development is to be achieved using plant species that are either native to the site locality or non-native species that are known to have no weed potential.	The Principal is to prepare a Landscaping Master Plan for the NEBP development.	Ongoing	Principal
Should there be non-compliance with the stated performance indicators, appropriate corrective actions are to be implemented.	Identification of the cause of the non-compliance. Implementation of appropriate mitigation measures as determined by the Superintendent in consultation with the Contractor. The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR. Relevant validation monitoring to confirm that the nominated corrective actions have been effective.	Ongoing	Contractor

14. ELEMENT 10: MOSQUITO AND BITING MIDGE MANAGEMENT

Rationale

Mosquito and biting midge occur on all continents except Antarctica and are commonly encountered along the entire length of the Australian coastline. The site and the balance of Caboolture Shire are no exceptions to this rule and owing to the their close relationship with the Caboolture River and surrounding wetlands, the area is host to a number of mosquito and biting midge species that have the potential to adversely affect residential amenity and human health.

The freshwater and saline wetlands and waterbodies within the site locality presently provide a range of different habitat types for a variety of mosquito species known to be serious pests and vectors of communicable human viruses within the Caboolture Shire. These habitats include the following.

a. Slightly brackish and freshwater pools in Paperbark wetlands and mangroves provide habitat for *Verrallina funerea* and *Ochlerotatus vigilax*, which are known vectors of Ross River Virus and Barmah Forest fever. Both species are most frequently experienced at pest levels in areas situated within 5 km of breeding grounds.

b. Freshwater pools, that provide habitat for *Culex annulirostris, Oclherotatus notoscriptus, Coquillettidia linealis* and *Culex quinquefasciatus*, which are known vectors of viruses such as Ross River Virus, Barmah Forest Virus, Australian Encephalitis, Japanese Encephailits, Murray Valley Encephalitis and Kunjin.

c. Intertidal and brackish pools provide habitat for *Culex sitiens* and *Aedes alterans*, both known to be vectors of Ross River Virus.

Biting midge species are not known to transmit disease amongst humans and as such, do not possess the same public health management significance as mosquitoes. Nevertheless, biting midge may, during periods of high abundance, cause discomfort to people residing in close proximity to midge breeding/larval habitats. The Caboolture Shire provides habitat for several pestiferous species of biting midge species, including Culicoides *subimmaculatus, C. molestus,* C*. marmoratus, C. longior, Styloconops australiensis* and *S. moolooabaensis*. Mud and sand substrates associated with the mangroves and tidal flats in the site locality, provide suitable breeding habitat for biting midge species. There are no environmentally sustainable and effective means of reducing the productivity of biting midge habitats due to their close association with significant coastal wetlands and fisheries habitats.

The productivity of mosquito and biting midge breeding areas in the Caboolture Shire and adjacent local government areas is the subject of active management by Council using a combination of aerial and land based applications of environmentally friendly control agents that target the development of mosquito larvae. Treatment of breeding areas typically occurs within 5 days of a high tide event and/or periods of heavy rainfall in the period from September to May each year.

Notwithstanding Council control efforts, the elimination of mosquito and biting midge habitats in the site locality is not possible due to the recognised environmental values of the wetland ecosystems that they are associated with and the constraints that are imposed by a combination of local, State and Commonwealth government regulations.

Objective

To establish the NEBP development in a manner that does not:

- increase the prevalence of mosquito and biting midge in the site locality; or
- interfere with the effectiveness of Council's existing mosquito and biting midge control programs.

Performance Indicators

No additional mosquito or biting midge breeding habitats are created as a consequence of the NEBP development.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Mosquito and/or biting midge breeding sites that are located in environmentally sensitive areas are to be identified and protected from disturbance.	Areas of significant coastal wetlands and fisheries habitats, that also provide mosquito and biting midge breeding habitat, have been identified for retention and protection.	Completed	Principal
	The location of environmentally sensitive areas identified for retention is to be clearly marked on construction plans and in the field.	Prior to construction.	Principal and Contractor
	Unauthorised access into protected areas by construction personnel is to be prohibited.	Ongoing	EMO
Any existing minor depressions that act as breeding sites for mosquitoes and which do not support marine plants, or other vegetation that is specifically identified for retention, are to be filled as part of the construction phase of development.	The Contractor's EMO is to identify and treat any minor breeding habitats located outside of the protected areas.	Ongoing	EMO

Tasks	Corrective Action / Monitoring	Timing	Responsibility
All stormwater run-off structures (i.e. swales, detention and settlement basins) will be designed and constructed in a manner that prevents the extended ponding of water which can subsequently provide breeding habitat for mosquito.	Detailed design plans for the NEBP's stormwater drainage systems are to be submitted in support of requisite Operational Works applications. The NEBP's stormwater drainage systems are to be constructed and maintained in accordance with the approved Operational Works plans.	Prior to construction Ongoing	Principal Contractor
All existing artificial mosquito breeding sites (e.g. objects with the potential to contain ponded water including old car bodies, cans, tyres, etc) are to be removed from the site.	The Contractor's EMO is to identify and have removed any artificial breeding sites that currently exist on the site. The Contractor's EMO is to ensure that no additional artificial breeding sites are established on the site as a result of construction activities.	Ongoing	EMO
Earthworks are to be carried out in a manner that ensures any long term hollows during the construction phase (i.e wheel ruts), that can potentially providing mosquito breeding habitats following rainfall are subsequently levelled to ensure no long term ponding.	The Contractor's EMO is to identify and have filled or drained any temporary hollows that can provide mosquito breeding sites.	Ongoing	EMO
Existing mosquito and biting midge education programs that are undertaken by Council and Qld Health are to be promoted as part of the NEBP development.	The Contractor is to advise workers attending the NEBP site that mosquito and biting midge occur in the locality and appropriate personal protection measures (i.e. insect repellent, long sleeved clothing etc) may be required to manage exposure on some days and in some locations. The Principal and Council are to develop and implement a mosquito and biting midge community awareness program for the benefit of future occupants of the NEBP development.	Ongoing Post construction	Contractor Principal Council

15. ELEMENT 11: AIR QUALITY

Rationale

Construction of the proposed development will involve the use of powered mechanical equipment for movement of earthen material to achieve the required landform for the proposed development. The bulk handling of this material has the potential to create dust nuisances by release of dust as suspended then deposited particulate matter.

Objective
To minimise the emission of air impurities associated with construction works.
Employ appropriate methods to minimise dust nuisance to Council's satisfaction.

Performance Indicators
No odour or dust complaints received from adjoining operations, nearby residents or from statutory authorities.
When requested by regulatory authorities to undertake monitoring, results shall indicate compliance with the air quality criteria specified in Table 6.

Table 6 Air Quality Criteria

Parameter	Maximum Acceptable Concentration
24 hour average dust concentration as PM_{10}	150µg/m^3 at a dust sensitive place downwind of the site
Average dust deposition rate	120mg/m^2/day
Odour	No detectable odour at the nearest sensitive place

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Dust and particulate matter shall not exceed the air quality limits specified in Table 6 when measured at any nuisance sensitive or commercial place in response to a complaint and at the request of the administering authority.	When requested by the administering authority, dust and particulate monitoring shall be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter from dredging spoil management, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring shall be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and must include: a) for a complaint alleging dust nuisance, dust deposition; and b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere over a 24hr averaging time.	Ongoing	Contractor/EMO
A water truck shall be used during earth moving and vegetation clearing works to provide dust suppression when required (although this may be unlikely given the moisture content of earthen material). The water trucks shall be used to provide dust suppression at times where dust is visibly leaving the construction area boundary.	Any dust generating activities, such as earthworks, shall cease during windy conditions. Water trucks are to be deployed when dust is visible for longer than 15 minutes.	Ongoing	Contractor
The water truck shall be filled with water that: a) has undergone treatment to meet the water quality criteria; or b) has been captured by the stormwater control system; and/or c) is recycled water to Class A+ standards.	No potable water to be used for dust suppression activities. If no water is available from the treatment and/or stormwater control system, recycled water can be obtained from distribution points advised by the Caboolture Shire Council.	Ongoing	Contractor

Haul vehicles carrying loose materials shall be covered prior to exiting the site. Machinery and vehicle tyres will be regularly cleaned to prevent track-out of dust to public roads.	Any spillage of wastes, contaminants or other materials from the haul vehicles shall be cleaned up as quickly as practicable.	Ongoing	Contractor
Stockpiles of cleared vegetation to be mulched and re-use as landscaping material.	The location of stockpiles will be determined with overland flow paths and minimal disturbance/impact on neighbouring residences in mind.	Ongoing	Contractor
Long-term earthen stockpiles shall be compacted and revegetated as soon as practicable. The size of stockpiles shall be minimised.	Stockpiles shall be regularly monitored to ensure no material loss to surrounding areas and the atmosphere. Where material loss is occurring from long term stockpiles, install windbreaks and/or sediment fences. During windy conditions, stockpiles shall be watered using Class A+ recycled water, if and where necessary. The location of stockpiles will be determined with overland flow paths and minimal disturbance/impact on neighbouring residences in mind.	Ongoing	Contractor
Burning or incineration of cleared vegetation or other materials shall be prohibited.	Green waste shall be transported offsite by a licensed contractor for appropriate disposal.	Ongoing	Contractor
A maximum speed limit of 40km/h shall be maintained within the site, with a limit of 10km/hr required in some areas as required. All employees, contractors and visitors shall be advised of the speed limits in the site induction.	Site induction carried out prior to any work commencing on site. Signs showing the speed limits will be erected.	Ongoing	Contractor
Temporary sediment basins including treatment ponds shall be occasionally mixed to prevent captured water becoming stagnant and malodorous.	Odour monitoring shall be undertaken in accordance with EPA Ecoaccess guideline “Odour Impact Assessment from developments”.	Ongoing	Contractor

16. ELEMENT 12: GREENHOUSE GAS ABATEMENT

Rationale

Greenhouse gas emissions from construction activities are from the direct and indirect sources, such as fuel use for construction vehicles and equipment.

Objective

To minimise the greenhouse gas emissions from construction activities.

Performance Indicators

To become a member of the Greenhouse Challenge Plus programme.
To monitor fuel and energy consumption.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
A certain proportion of the energy supplies sourced for the construction of the development will consist of renewable energy.	Monitor percentage of renewable energy provided by electricity provider.	Prior to commencing construction	Principal
A percentage of the fuel used for construction vehicles and equipment will be from renewable sources, such as biodiesel or ethanol based fuels.	Monitor percentage of renewable fuel provided by electricity provider.	Ongoing	Contractor
The construction program and traffic movements will be designed to minimise the distance travelled by construction vehicles.	Fuel consumption to be monitored on a regular basis.	Ongoing	Contractor
When vehicles, equipment and power are not in use they will be turned off.	Provide training in the induction program to all contractors outlining the importance of energy efficiency and greenhouse gas abatement.	Ongoing	Contractor

Site offices and amenities buildings to be positioned to minimise the need for lighting, air-conditioning and heating. When the site office and amenities building is not in use the lights and air conditioner should be turned off.	Provide training in the induction program to all contractors outlining the importance of energy efficiency and greenhouse gas abatement.	Ongoing	Contractor
Ongoing monitoring of energy and fuel consumption will be undertaken. Any detected excessive energy consumption shall be treated with appropriate measures to reduce energy consumption. Such measures may include an energy audit to determine the devices of highest energy consumption followed by replacement or servicing of the device.	Environmental Management Officer to monitor energy and fuel consumption, not less than annually.	Annually	EMO
Construction workers will be encouraged to use alternative transport methods, such as public transport and car pooling when travelling to and from the development site.	Ensure alternative transport methods are easily accessible for construction workers. Facilitate car pooling between construction workers.	Ongoing	Contractor

17. ELEMENT 13: NOISE AND VIBRATION

Rationale

Construction of the proposed development will involve the use of powered mechanical equipment and increased vehicle movements. In addition, demolition and construction works may generate ground vibration. Appropriate management measures are required to ensure that noise and vibration produced during construction works does not result in disturbance at noise sensitive places.

Objective

To control noise and vibration generated by construction activities and to minimise the impact to ensure acceptable levels of amenity at the closest sensitive receptors.

Performance Indicator

No complaints of noise or vibration impacts are received.
The works shall be carried out by such practicable means necessary to prevent the emission of noise that constitutes *"unreasonable"* or *"intrusive"* noise as defined by the *Environmental Protection (Noise) Policy*.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Noise sources shall be confirmed prior to construction and mitigation measures shall be consistent with those in the EIS.	Environmental Management Officer to audit noise sources monthly and determine whether mitigation measures are appropriate and effective. Community consultation or notification to potentially affected residents of noisy construction periods must be ongoing, particularly if dredging and/or piling will be occurring over 24 hours for a long period of time.	Prior to commencement of works and ongoing.	Contractor
Temporary barricades/screens shall be used to remove line of sight to noisy plant/equipment from noise sensitive places.	Environmental Management Officer to audit the effectiveness of such barricades and screens not less than monthly in the event of complaints.	Prior to commencement of works.	Contractor

Tasks	Corrective Action / Monitoring	Timing	Responsibility
All noise generating mobile and stationary plant and equipment, and processes shall be controlled to minimise noise emission in accordance with AS 2436: *Guide to Noise Control on Construction, Maintenance and Demolition Sites*.	The Contractor shall maintain a record of all complaints received in relation to noise emissions including complainant details, nature of complaint and corrective actions undertaken. Complaints shall be investigated in accordance with section 4.10 of this CEMP.	Ongoing	Contractor
All powered mechanical equipment shall be fitted with effective exhaust mufflers and shut down during the intervening periods between works when machines used intermittently are not in use.	Environmental Management Officer to audit noise and vibration levels not less than monthly.	Ongoing	Contractor
Working hours at the site shall be limited to between 6.30 am and 6.30 pm Monday to Saturday. There are to be no works conducted at the site on Sunday or during public holidays which causes audible noise at sensitive places surrounding the project area.	In the event of the adjusted noise level for a single noise source or activity exceeding the background noise level by more than 5 dB(A) at a noise sensitive place, negotiations shall be encouraged by the Proponent with the complainant to determine a negotiated solution.	Ongoing	Contractor
Vibration emitted from the works must not cause an environmental nuisance at any nuisance sensitive place or commercial place. A Vibration Management Plan shall be prepared as part of the Works Plan to aid in achieving this task.	When requested by the administering authority, vibration monitoring and recording must be undertaken to investigate any complaint of vibration nuisance, and the results notified within 14 days to the administering authority. Monitoring must include: • peak particle velocity (mm/s); location of the blast/s within the site (including which bench level); • atmospheric conditions including temperature, relative humidity and wind speed and direction; • the level and frequency of occurrence of impulsive or tonal noise; • atmospheric conditions including wind speed and direction; • effects due to extraneous factors; and • location, date and time of recording.	Ongoing	Contractor

18. ELEMENT 14: WASTE MANAGEMENT

Rationale

Waste management at the works site is to focus on appropriate methods to avoid, reuse, recycle and dispose of waste materials generated as a result of the works.

Objective

To ensure that no waste material is released from the site in an uncontrolled manner causing environmental harm.

Performance Indicators

No waste of any type is released from the works site in an uncontrolled manner.
Evidence of waste spillage or dispersal shall indicate non-compliance with the objectives and the tasks/actions outlined in this element.
Evidence of stormwater blockage by wastes or pollution shall indicate non-compliance with the objectives and the tasks/actions outlined in this CEMP.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
The Contractor shall maintain a regular waste removal schedule and document all waste disposal activities. A Waste Management Plan (WMP) has been prepared for the development and is appended to the EIS.	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not less than monthly.	Monthly	EMO
Waste management training shall be provided in the site induction program to personnel commencing work in the development area. The induction shall include procedures for separation of waste streams and appropriate disposal options.	In the event of a waste spill, contractors shall follow the procedures provided during the induction and record the corrective actions in accordance with 4.4 of this CEMP.	Prior to contractors starting work	Contractor
Provide separate on-site storage bins for reuse of waste materials. Waste materials that cannot be reused on site shall be separated into designated holding containers for collection.	There shall be no waste of any type released from the works site in an uncontrolled manner.	Ongoing	Contractor
Separate facilities shall be provided for disposal of construction and domestic wastes. These facilities	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not	Monthly	EMO

shall be adequately signed and instructions provided during site induction training for appropriate separation of wastes. Provide separate waste holding bins and recycling bins within construction working spaces. Recyclable materials will be kept separate and recycled where possible.	less than monthly. There shall be no waste of any type released from the works site in an uncontrolled manner.	Ongoing	Contractor
Recycle waste materials within the construction site including materials salvage and reuse where possible, purchasing recyclable or recycled materials where available.	There shall be no waste of any type released from the works site in an uncontrolled manner. The Environmental Management Officer to audit waste receptacles to monitor for cross contamination of wastes and check for disposal of recyclable wastes.	Ongoing Periodically	Contractor EMO
Locate waste disposal skip(s) in a designated area(s) suitable for collection by waste disposal vehicles.	No waste or waste receptacles to be placed outside the construction zones. There shall be no waste of any type released from the works site in an uncontrolled manner.	Ongoing	Contractor
Wastes shall be collected by a licensed waste disposal contractor for disposal on a regular (at least weekly) basis, and additional services shall be arranged if required. Ensure all regulated waste as defined by the *Environmental Protection Regulation 1998* is removed by a regulated waste transporter licensed by the Environmental Protection Agency. Undertake waste-tracking to provide details of waste classification and volume, date of removal, transporter details and proposed destination.	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not less than monthly.	Weekly	Licensed waste contractor.
Excavated materials shall be re-used for on site filling where appropriate. Clean excavated materials requiring removal from the site shall be removed by a licensed contractor.	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not less than monthly.	Ongoing	Contractor

Contaminated fill will require removal by a licensed waste transporter in accordance with the conditions of a Disposal Permit (refer to Element 7 Contaminated Land for more detail).			
Waste from cleaning out of litter baskets / traps on stormwater quality improvement devices to be emptied into dedicated waste receptacles and collected for disposal by a licensed waste contractor.	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not less than monthly.	Ongoing	Contractor
The Contractor shall mulch foliage and branches of cleared native vegetation for re-use on site. Non-native vegetation shall not be mulched for re-use on site, to minimise the risk of propagation. The Contractor shall remove cleared non-native vegetation from the site for disposal at a suitable facility such as a landfill.	Environmental Management Officer to audit waste schedule, disposal records and waste storage areas, not less than monthly.	Ongoing	Contractor

19. ELEMENT 15: DANGEROUS AND HAZARDOUS MATERIALS

Rationale

Construction of the site may involve the use of dangerous or hazardous materials such as fuel, paints, solvents, adhesives and sealants. While these are not expected to be stored or used on the site in large quantities, the site is required to be managed to prevent impacts on human health and the receiving environment as a result of accidental release or spillage of dangerous or hazardous materials associated with the works.

Objective

To effectively manage the safe storage, handling and disposal of dangerous or hazardous materials within the construction site.

Performance Indicators

No adverse human health or environmental impacts associated with hazardous materials is experienced on the site at any time during the works.
No spill or handling incidents that may potentially cause impact to humans or environmental degradation.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Provide secure storage facilities for oils, greases and solvents and industrial waste containers. Prepare a map of the storage areas of dangerous and hazard materials and include this as part of the manifest at the site entrance. Display Material Safety Data Sheets (MSDS) with each dangerous or hazardous substance stored on site.	Environmental Management Officer to audit dangerous and hazardous materials storage areas, not less than 6 monthly.	Ongoing	Contractor
All areas designated for the storage of fuels, oils, chemicals or other hazardous liquids should have a compacted base and be surrounded by a bund to contain any spillage in accordance with Australian Standard 1940-2004 '*Storage and handling of flammable and combustible materials*'.	Environmental Management Officer to audit dangerous and hazardous materials storage areas, not less than 6 monthly.	6 monthly	EMO

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Areas designed for the storage of hazardous materials are to be clearly designated and storage of such materials outside these areas is strictly prohibited.	Site Supervisor to daily monitor to site to ensure all materials are stored appropriately.	Daily	Contractor
A manifest detailing the nature, quantity and location of all hazardous materials is to be maintained, regularly updated and located in the Site office at site entrance.	Site Manager to audit manifest 6 monthly.		
Design enclosures to ensure the containment of spillages in accordance with the nature of stored materials and in accordance with the MSDS and manufacturers' instructions.	Environmental Management Officer to audit chemical; containment spillage areas, prior to commencement of works.	Prior to commencement of construction	Contractor
Establish a spill response procedure and provide appropriate cleanup materials on site. Spill kits shall be used at all times for clean up of hazardous materials, including fuels and oils. Spilt materials shall be disposed of lawfully and transported by an approved regulated waste removalist.	Environmental Management Officer to audit chemical storage areas, not less than monthly. A copy of the approved regulated waste removalist's Registration Certificate should be kept on file.	Ongoing	Contractor
Any supply of agricultural lime ($CaCO_3$) for treatment of acid sulfate soils (ASS) shall be stored in a covered and bunded area as per Element 6 and the ASSMP.	Environmental Management Officer to audit lime storage areas, not less than 6 monthly.	Ongoing	Contractor

20. ELEMENT 16: CULTURAL HERITAGE MANAGEMENT

Rationale

Ensure that construction activities are undertaken in accordance with CHMP, in the effort to prevent damage to any cultural heritage places or items located within the construction work area and access points.

Objective and Performance Indicator
No destruction or damage of significant archaeological sites, or objects of cultural value to occur at any time during construction work.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Nominate an NEBP staff member to be the Cultural Heritage Coordinator for the Project.	The Principal shall ensure that the nominated Cultural Heritage Coordinator possesses the necessary skills and experience to facilitate the requirements of the CHMP.	Pre-construction	Principal
Nominate an NEBP employee to be the Site Officer for the Project.	The Principal shall ensure that the nominated Site Officer possesses the necessary skills and experience to facilitate the requirements of the CHMP.	Pre-construction	Principal
Contact the Indigenous Parties to ascertain the name of the person who will act as Indigenous Coordinator and alternative Indigenous Coordinator for the Project.	The CHO shall ensure that the nominated Indigenous Coordinator fulfils their responsibilities as outlined in section 7.4 of the CHMP.	Pre-construction	CHO
Provide the Work Schedule for the Project to the Indigenous Coordinator.	In the event of any amendments made to the Work Schedule, provide a copy of the updated Schedule to the Indigenous Coordinator.	Following appointment of Indigenous Coordinator.	CHO
Arrange for the Indigenous Representative to present a Cultural Heritage Induction to all construction personnel.	In the event of commissioning new employees after the induction has been presented, provide all available relevant information to the new personnel, in consultation with, and in accordance with the recommendations of the Indigenous Representative.	Pre-construction; Ongoing	CHO
Provide site safety induction to Cultural Heritage Monitors to ensure they meet all necessary	In the event of commissioning new Cultural Heritage Monitors, ensure persons have completed site safety induction before	Pre-construction;	CHO

Work Place Health and Safety requirements in accordance with the *Workplace Health and Safety Act 1989.*	commencing onsite monitoring works.	Ongoing	
Implement all successive cultural heritage reports that have been written by the Archaeologist into the CHMP.	Ensure the CHMP is up-to-date with current information as it comes to pass.	Ongoing	CHO
Arrange suitable access to the Project area prior to the commencement of onsite cultural heritage works.	Ensure all onsite personnel are aware of the locations and times in which cultural heritage works are being undertaken on site.	Ongoing	Principal
Finalise Monitoring Roster and provide suitable notice to the Cultural Heritage Monitors on the start dates/times for clearing/earthworks activities.	Advise the Indigenous Coordinator in the event that a rostered Monitor does not arrive at the Project Area at the appointed date/time.	Construction	CHO
In the event of an archaeological or historic significant site being discovered (including human remains) all construction activities are to cease immediately in the vicinity of the find and the area fenced off to restrict access.	The CHO or SO shall arrange an inspection of the material by a suitably qualified archaeologist and if Indigenous, shall notify the Principal and Department of Natural Resources and Water (Cultural Heritage Co-ordination Unit). The CHO or SO shall isolate the area to restrict access until the find is documented, assessed and salvaged. If the find is of human bones the CHO shall immediately notify the police, the Cultural Heritage Co-ordination Unit and the Gubbi Gubbi Indigenous Officer. The CHO shall isolate the area to restrict access.	Ongoing	CHO
If the find is of archaeological material, works may recommence 100 metres from the find. The archaeological Consultant shall record the location and nature of the find of all archaeological material.	Determine corrective action for removal or on-site management of archaeological material within the legal requirements of the *Aboriginal Cultural Heritage Act 2003* and in consultation with the Cultural Heritage Coordination Unit.	Ongoing	EMO
Works are not to recommence until notification has been given by the DNR&W that suitable arrangements have been made for removal or	The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.	Ongoing	Contractor

conservation.			
Management of historical cultural heritage material	Existing or new finds of non indigenous cultural heritage material should be dealt with according to the above principles of Indigenous cultural heritage management and in accordance with the principles of the Burra Charter (and excluding the necessity to notify DNR&W).	Ongoing	EMO
Potential health and safety issues with cultural heritage material	The principles of occupational health and safety will apply to cultural heritage material, such as the potential for undiscovered historical wells. The heritage value of wells must be balanced with the potential threats they may pose to people and/or the environment. If discovered, the site must be fenced and signposted, in an appropriate manner that protects both humans and the cultural heritage.	Ongoing	Contractor
Maintain written records of all cultural heritage works undertaken under the CHMP.	Update written records upon completion of relevant onsite cultural heritage works. Update CHMP if/where necessary.	Ongoing	Principal CHO

21. ELEMENT 17: TRAFFIC

Rationale

Impacts from the road works program and heavy vehicles accessing the site may be experienced at sensitive places and on Buchanan Road which should be avoided where practicable.

Objective

Prevent the disturbance from road works and heavy vehicles accessing the site from such road and the likelihood of accidents occurring.

Performance Indicator

Impacts to the environment and the community are minimised during construction.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
A road traffic speed limit must be established on site. Vehicle movements are limited to the hours of 6.30am to 6.30pm, Monday to Saturday.	Establish procedures to coordinate and facilitate responses to traffic incidents including rapid response strategies as part of construction methodology. In the event of a complaint, reconsider current traffic speed limits and operating timeframes. Any alterations shall consider health and safety requirements. In the event of a complaint, implement the strategies defined in section 4.10 of this CEMP.	Ongoing	Contractor
Barge operations for dredging works shall be undertaken in accordance with the requirements of the Regional Harbour Master. Barge operating times are limited to the hours of 6.30am to 6.30pm Monday to Saturday.	Establish procedures to coordinate and facilitate responses to traffic incidents including rapid response strategies as part of construction methodology. In the event of a complaint, reconsider barge speed limits and operating timeframes. Any alterations shall consider health and safety requirements.	Ongoing	Contractor

	In the event of a complaint, implement the strategies defined in section 4.10 of this CEMP and seek approval from Harbour Master.		
All traffic control, signage and pavement markings to be carried out in accordance with the "Manual of Uniform Traffic Control Devices, Part 3 – Traffic Control for Works on Roads" (AS 1742.3-1995).	Determine corrective action in accordance with the Department of Main Roads.	Prior to commencement of road re-alignment	Contractor
Maintain two-way traffic flows on all roads where possible.	If closures are required, they are to be carried out during non-peak periods as may be necessary and with approval of the Superintendent. Where necessary, arrangements are to be made for car parking for property owners directly affected by the road works.	Ongoing	Contractor
Provide advice to emergency services regarding changes to traffic arrangements and site access during construction works.	EMO to ensure this task has been actioned by Contractor within 3 months of commencing works.	Within 3 months of commencing works.	Contractor EMO

22. ELEMENT 18: VISUAL AMENITY

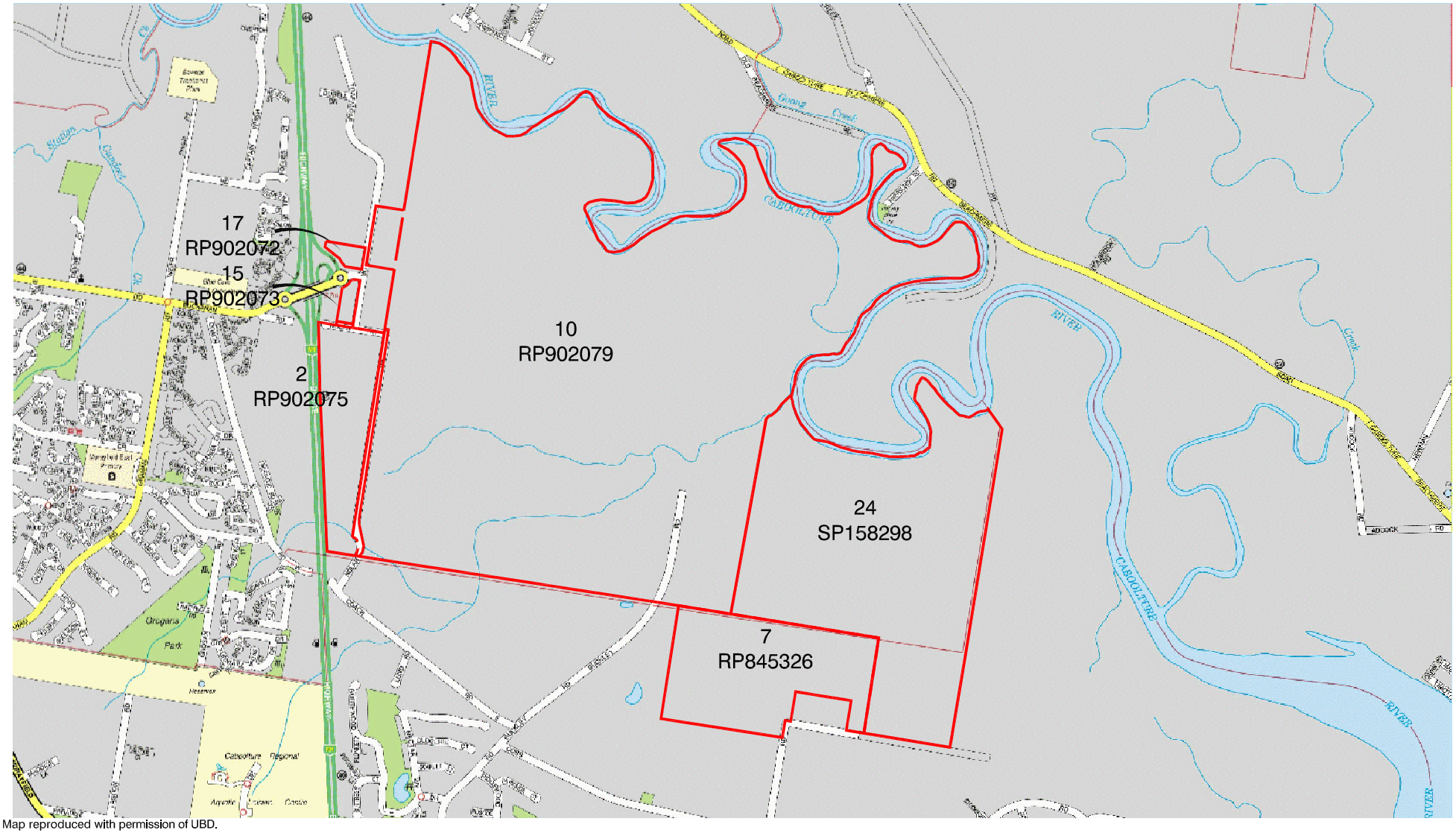
Rationale
Construction activities may appear untidy and have the potential to obstruct any appealing views for surrounding landowners and visitors to the area. In addition, construction activities can contribute to the release of unfavourable noise and dust emissions. These impacts may collectively have an adverse effect on the landscape character and aesthetic appeal of the surrounding environment.

Objective
Construction and associated building works to be undertaken in a manner that maximises the aesthetic appeal of the surrounding environment and is sympathetic to the residential and business needs of the Caboolture Shire townships and local tourist population.

Performance Indicator
Impacts on visual amenity and the community are minimised during construction works.
Nil complaints received from affected and interested stakeholders in relation to the construction works.

Tasks	Corrective Action / Monitoring	Timing	Responsibility
Maintain a neat and tidy site.	Areas for stockpiling, storage and maintenance activities to be designated. Sufficient waste facilities are to be provided. Construction site to be tidied on an as-needed basis to remove wind-blown litter and the like.	Ongoing	Contractor
Minimise exposure of the construction site by using temporary barricades/screens.	The Contractor shall maintain a record of all complaints received in relation to visual amenity including complainant details, nature of complaint and corrective actions undertaken. Complaints shall be investigated in accordance with section 4.9 of this CEMP. Repair or upgrade barriers/screens to prevent visual amenity complaints by residents and tourist population.	Ongoing	Contractor
The site shall be landscaped as soon as practicable upon completing staged works.	The Environmental Management Officer shall audit progressive rehabilitation works on a 6-monthly basis. Repair any areas where revegetation is unsuccessful.	Ongoing	Contractor

FIGURES



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Scale 1:30,000 (A4)

FIGURE 1
LOCALITY PLAN

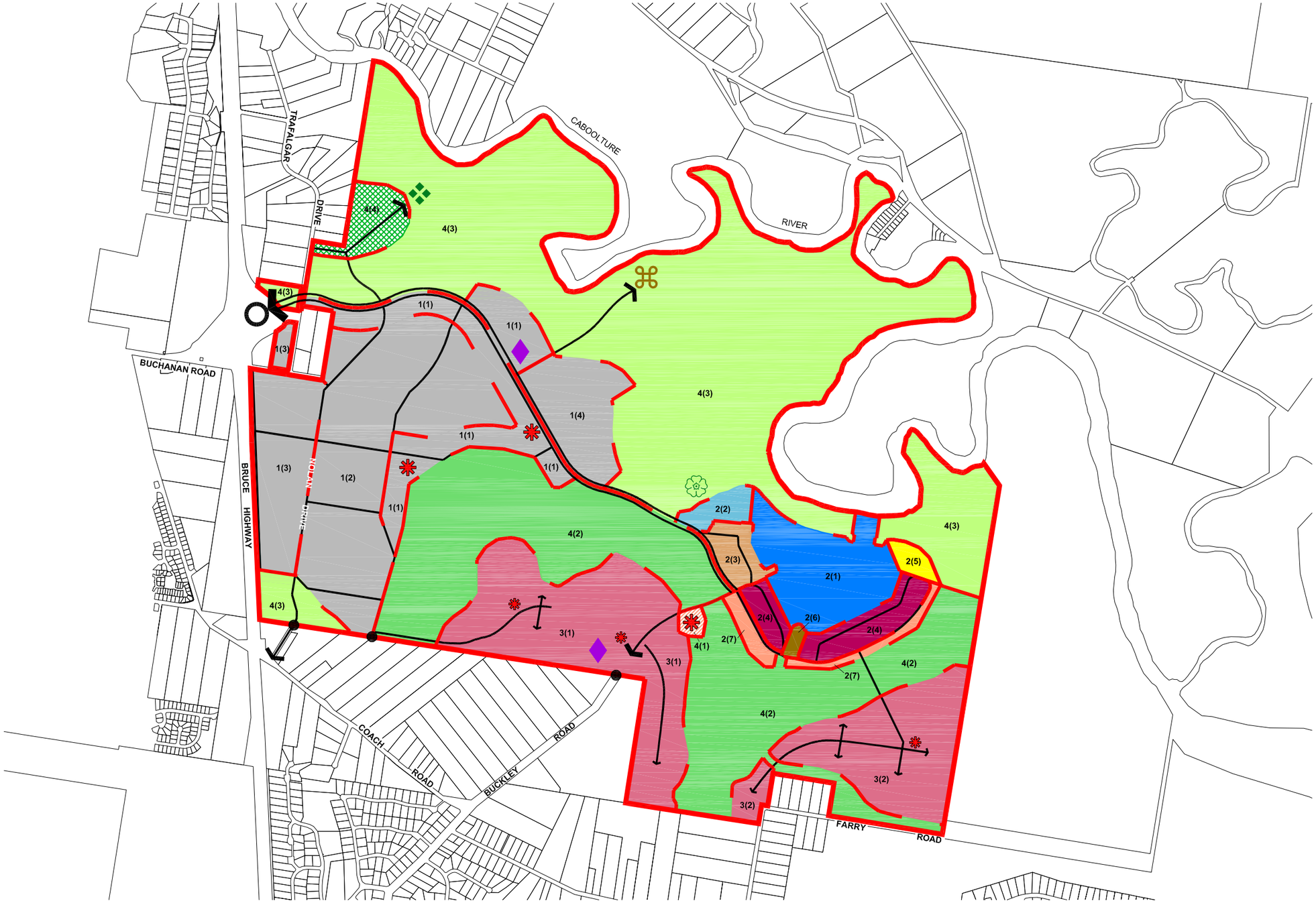
Rev: Orig. Date: 12 November 2007

Project No.: 7800/40

Northeast Business Park Pty Ltd

CAD FILE: I:\7800-40\ACAD\CEMP\Figure 1 - Locality Plan.dwg
XREF's: Caboolture_mga94

PRINT DATE: 19 November, 2007 - 10:35am



Plan sourced from PMM Brisbane Pty Ltd, Dwg name 20430STRUCTURE,
Plan Ref 20430-10F, 25 September 2007.

200 0 200 400 600 800 1000m
1:20,000

Scale 1:20,000 (A3)

FIGURE 2
DEVELOPMENT LAYOUT

Rev: Orig. Date: 12 November 2007

Project No.: 7800/40

Northeast Business Park Pty Ltd

CAD FILE: I:\7800-40\ACAD\CEMP\Figure 2 - Development Layout.dwg
XREF's:

PRINT DATE: 19 November, 2007 - 10:35am

DRAWINGS

DRAWINGS ARE LOCATED AS PART OF THE EIS DRAWING REGISTER

Drawing No.	Description
7900/33/05-100	Cover Sheet
GENERAL	
7900/33/05-101	Locality Plan, Notes and Schedule of Drawings
7900/33/05-102	Master Layout Plan
BULK EARTHWORKS	
7900/33/05-103	Cut and Fill Volumes Layout Plan
7900/33/05-104	Keyplan for Site Sections
7900/33/05-105	Industrial Area Site Sections – Sheet 1 of 5
7900/33/05-106	Industrial Area Site Sections – Sheet 2 of 5
7900/33/05-107	Industrial Area Site Sections – Sheet 3 of 5
7900/33/05-108	Industrial Area Site Sections – Sheet 4 of 5
7900/33/05-109	Industrial Area Site Sections – Sheet 5 of 5
ROAD SECTION	
7900/33/05-200	Road Layout Plan
7900/33/05-201	Typical Road Cross Sections – Arterial and Sub Arterial
7900/33/05-202	Typical Road Cross Sections – Industrial Collector and Access
7900/33/05-203	Typical Road Cross Sections – Residential Collector and Access
7900/33/05-204	Typical Road Cross Sections – Main Street
BRIDGE SECTION	
7900/33/05-300	Bridge Layout Plan
7900/33/05-301	Bridge 1 Industrial Precinct to Marina Sheet 1 of 3
7900/33/05-302	Bridge 2 Residential Area 1 Precinct to Marina – Sheet 2 of 3
7900/33/05-303	Bridge 2 Residential Area 2 Precinct to Marina – Sheet 3 of 3
7900/33/05-304	Typical Longitudinal and Cross Section Bridge 1 (over Raff Creek)
7900/33/05-305	Typical Longitudinal and Cross Section Bridge 2 (over Golf Course)
MARINA SECTION	
7900/33/05-400	Layout Plan
7900/33/05-401	Section Views
7900/33/05-402	Typical Retaining Wall Detail
7900/33/05-403	Typical Section at Wall

7900/33/05-404	Proposed Lock Layout Plan and Details
7900/33/05-405	Rising Main Layout Plan
7900/33/05-406	Rising Main Details
CONSTRUCTION	
7900/33/05-500	Bulk Earthworks Phasing Plan
7900/33/05-501	Dredge Spoil Transfer Route
7900/33/05-502	Phase 1
7900/33/05-503	Phase 2
7900/33/05-504	Phase 3
7900/33/05-505	Marina Excavation, Treatment and Fill
7900/33/05-506	Dredge Spoil Transfer, Treatment and Fill

APPENDIX A

The Jetty Specialists Marina Fit Out Construction Environmental Management Plan

Job name: **North Harbour Marina**

Construction Environmental Management Plan

20th November, 2007

Prepared by: The Marina Specialist Pty Ltd trading as The Jetty Specialist

Prepared for: North East Business Park Pty Ltd

MAKE SURE A COPY OF THE EMP IS ALWAYS READILY AVAILABLE ON SITE

Document Status				
Rev No.	**Author**	**Reviewer**	**Approved for Issue**	
			Signature	**Date**
Draft	Leith Morris			
Final	Leith Morris	Neil Morris		

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FIGURES

TABLES

APPENDICES

Emergency Response Procedures

All incidents are to be reported to the Principal,
North East Business Park Pty Ltd (referred to NEBP)

ENVIRONMENTAL INCIDENT

- Notify NEBP Environmental Management Coordinator as soon as possible.
- Complete the Environmental Incident Form (**Appendix C**) as soon as practicable and forward a copy to the Principal and Auditor

COMPLAINTS

Complete the Complaint register form (**Appendix C**).

- Notify the Principal and Auditor.
- Investigate the complaint and determine corrective strategies in consultation with the Principal and Auditor.
- Notify the complainant within 24 hours of the investigation and corrective action being undertaken.
- The response by the Construction Manager must satisfy the Auditor and Principal.

FUEL OR OIL SPILL

- Contain spill within bunded area.
- Use absorbent materials stored on site to clean-up spill.
- Dispose of contaminated fuel/absorbent material waste, contaminated soil to an approved disposal container/facility.
- Implement the Environmental Incident procedure above should the spill breach the bunding and flow towards the waterway (i.e. if there is a possibility of environmental harm being caused).

DISCOVERY OF CULTURAL HERITAGE ITEMS

- Immediately suspend work in that area.
- Fence area off to prevent further disturbance.
- Report the find to Cultural Heritage Coordination Unit, Regional Services, Department of Natural Resources and Mines Phone: (07) 3238 3838.
- Undertake action as advised by the Department of Natural Resources and Mines.

DISCOVERY OF FIRE ANTS

- Report any suspicions to site supervisor, then call QDPI Ph 3310 2862. Also notify Caboolture Shire Council.
- Report any incidents (eg. stings etc) to site supervisor and Council.
- Fence area off to prevent further disturbance.
- Report any sighting or suspicion of RIFA to QDPI within 24 hours on 3310 2862

Reminder: The movement of restricted items or the carrying out of high-risk activities in contravention of the *Plant Protection Act 1989* pose significant opportunities for RIFA to be spread from their current infestation areas.

Soil Signs

ACID SULFATE SOILS

- presence of Jarosite in soil (a mottled yellow colour);
- presence of rust-coloured iron-staining on soils and infrastructure, and also in water;
- presence of a rotten egg smell (hydrogen sulphide) on disturbance to soils;
- a pH of soil less than 4 indicates acidic soils; and
- presence of dark grey mud's to grey sands or peats.

If ASS is indicated, **cease work immediately**. Contact Council. *Notifications may apply.*

CONTAMINATED SOILS

- disturbed, discoloured or stained soil;
- bare soil patches;
- odorous liquids;
- disturbed or distressed vegetation;
- unpleasant odours;
- poor quality of surface water; and
- presence of fill.

If contaminated soils are indicated, **cease work immediately**. Contact Council. Contaminated land testing may be required. *Permits may apply*.

DISPERSIVE SOILS

- If dispersive soils are indicated, minimise disturbance and place emphasis on erosion and **drainage** controls. Suspended fine clays are difficult and expensive to trap once mobilised. In some instances chemical treatment may be necessary to settle particles. Erosion control matting is useful for preventing erosion. Sediment weirs with geofabric lining upstream side may assist with sedimentation. For disturbances greater than 1 ha, a Type D[1] sediment basin is required.

- Typically clays and fine silts. Recognisable by:
- The opaque cloud that appears when the soil aggregates break down in water; and
- Bare sandy patches in exposed areas.

HIGHLY ERODABLE SOILS

- If highly erodable soils are indicated, emphasis should be placed on the retention of vegetative cover and prevention of erosion in the first instance. . Although sediment control devices are useful in the capture of lost sediments, they are not as effective in protecting the receiving environment as maintaining high standards of erosion control. If the soils are dispersive, see notes above.

- Recognisable by rills or gullies and/or sedimentation down stream
- Non-cohesive soils, such as silt, fine sands and low to medium plastic clays.

1.0 Introduction

This Environmental Management Plan (EMP) has been developed by Leith Morris on behalf of The Jetty Specialist. The EMP has been specifically prepared for Northeast Business Park Pty Ltd in relation to construction of new marina including, berthing pontoons and piles.

This EMP has been prepared to assist the 'Construction Manager' with the environmental management of works. The EMP provides clear direction on the selection and implementation of appropriate control techniques and practices to achieve 'Environmental Best Management Practices' during the Construction Phase of the project.

The proposed works include the following:

- *Site establishment;*
- *Installation of marine piles for pontoon restraint;*
- *Installation of floating marina pontoon system;*
- *Site decommissioning.*

The structure of this EMP is as follows:

- Introduction;
- Project Responsibilities;
- State Government Approvals;
- Site Establishment (**Table 3)** and
- General Environmental Issues During Construction and Site Decommissioning (**Table 4**).

Tables 1 and **2** identify the roles and responsibilities of the principle, construction manager and auditor for the project and stakeholder groups to be notified prior to the commencement of works. **Tables 3** and **4** identify the key environmental management issues associated with the project and assign targets, management procedures and corrective actions for their mitigation.

Emergency Response Procedures are detailed at the front of this report. A small section on **Soil Signs** is also located at the front of this report and provides information on identifying and responding to different hazardous soil conditions that may be uncovered during the works. All workers on site shall be educated in environmental issues relevant to the site, including emergency response procedures (refer **Section 2**).

Project draft drawings are contained in **Appendix A**. Notification Reporting Forms are attached in **Appendix B.** Additional information on Erosion and Sediment Control Techniques is contained in **Appendix C** and further information on Fire Ant management procedures for suburbs outside restricted areas is located in **Appendix D**.

Environmental risks associated with the project include potential impacts from:

- erosion and sediment releases into the Caboolture River from ground disturbances;
- foreign objects being released into the waterway;
- fuel or oil spills;
- the generation of noise;
- the generation of dust;
- the generation of construction and general wastes; and
- storage and handling of machinery and hazardous materials.

The strategies contained in the EMP provide general advice and guidance on environmental management options and possible solutions available to the 'The Jetty Specialist' for reducing or eliminating the potential environmental impacts during construction. By implementing the recommendations of this EMP, the construction manager can demonstrate compliance with the due diligence provisions and general environmental duty obligations of the *Environmental Protection Act 1994* and the specific conditions of *the Environmental Protection (Water) Policy 1997*.

2.0. RESPONSIBILITES

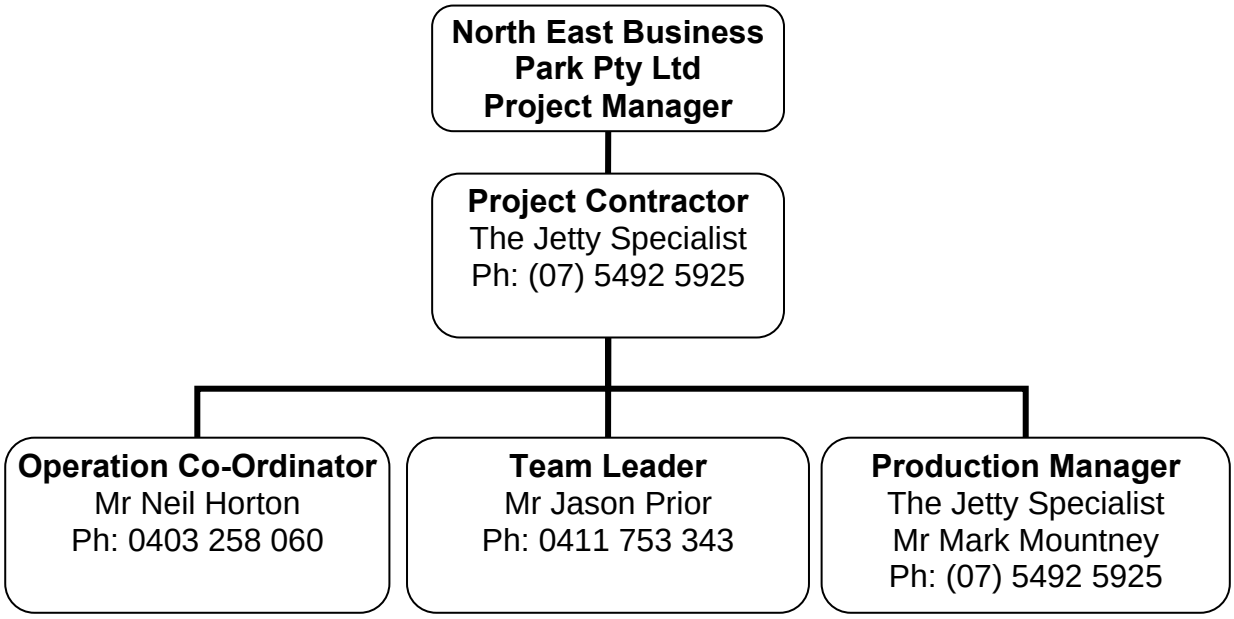
This Section defines the roles, responsibilities and general specification of requirements for the environmental management of the project. All parties involved in the project are required to undertake their work in accordance with the relevant legislation and policies. In particular, the parties are referred to the *Environmental Protection Act 1994,* which states that individuals and organisations must take all reasonable and practicable measures to prevent or minimise environmental harm.

The parties responsible for the environmental management of the site are defined below in Table 1 - Roles and Responsibilities for Implementation of the EMP:

Table 1 - Roles and Responsibilities for Implementation of the EMP

Role	***Party***	***Responsibilities***
'Principal'	North East Business Park Pty Ltd	• Oversee the Construction Manager and Auditor to facilitate compliance with the EMP and Approvals.
'Construction Contractor'	The Marina Specialist Pty Ltd. T/A The Jetty Specialist	• Implement the EMP; and • Ensure compliance with any State Government approvals:
'Environmental Auditor'	The Marina Specialist Pty Ltd Operations Co-ordinator	• Assist the Construction Manager in interpreting the EMP; • Conduct regular audits and report to the Construction Manager and Principal with respect to implementation of the EMP fortnightly or more frequently; and • Assist with the resolution of any issues that arise (eg. State government non-compliance, environmental incidents, complaints, and failure of measures on site).

Figure 1 – Reporting Structure



2.1 Staff Induction

All employees, contractors and sub-contactors must undertake an environmental awareness induction prior to their commencement of works on site. The awareness induction shall cover:

- aims and purpose of the project;
- environmental risks from the project;
- contents of the EMP;
- general "Duty of Care" obligations under the *Environmental Protection Act 1994*;
- Red Imported Fire Ant procedures (refer **Appendix D**); and
- the location of the EMP during the works;

The Environmental Induction Register included in **Appendix B** must be completed to demonstrate environmental awareness on site.

2.2 Notifications

Table 2 - Stakeholder Notification Details

ISSUE	ORGANISATION	PHONE/ADDRESS
Prior to Commencement of Works	Neighbouring Businesses Regional Harbour Master	 3860 3536
Environmental Incident	North East Business Park P/L EPA Caboolture Shire Council	3252 0999 1300 130 372 (Provide written advice within 14 days
Discovery of Cultural Heritage	Dept Natural Resources & Water Caboolture Shire Council	3238 3838 5420 0100
Fire Ants	DPI&F Caboolture Shire Council	3310 2862 5420 0100
Upon Completion of Works	Relevant Statutory bodies as per approvals	

3.0 State Government Approvals and Legislation

Environmental approvals that have been obtained for the proposed works are listed below. This EMP will incorporate the prescribed conditions for each of the environmental approvals.

In addition, the provisions of *Sections 31 and 32* of the *Environmental Protection (Water) Policy (1997)* should be complied with at all times. *Section 31* prohibits materials such as rubbish, scrap metal, building waste, sawdust, solid or liquid waste and cement or concrete being placed where they can be reasonable expected to move or wash into a water body. *Section 32* prohibits the release of sand, silt or mud into a stormwater system or a water body.

3.1 Environmental Approval Notifications

Approval for works in tidal lands – State Coastal Protection and Management Act

Notify the Regional Harbour Master Brisbane at least fourteen (14) days prior to the commencement of the works (fax number 3860 3571),

Notify the Regional Harbour Master Brisbane of the completion of the works within fourteen (14) days of practical completion (fax number 3860 3571).

Within three (3) months of the practical completion of the works, a letter from a Registered Professional Engineer of Queensland certifying the works have been constructed in accordance with the approval. Certification will be provided on practical completion.

4.0 Site Establishment

Implementation of perimeter environmental controls such as stabilised entry and exit points, sediment fences and booms, vegetation protection measures will be established. "The Jetty Specialist" is responsible for determining the suite of management procedures and specific environmental controls required for each early works activity from **Table 3**.

Storage and set down area to be finalised upon further discussions between the Principal and the Construction Contractor

5.0 Environmental Issues during Construction

The construction activities during these works have little potential to:

- cause erosion of soils and the transport of sediment into the waterway,
- oxidise potential acid sulphate soils,
- cause disturbance to native flora and fauna,
- generate nuisance noise and air emissions, and
- generate waste materials.

Table 4 outlines the targets, management procedures and relevant corrective measures for the environmental management of construction activities.

TABLE 3 - Site Establishment			
Issues	**Target**	**Management Procedure**	**Corrective Action**
3.1 WATER QUALITY, SOIL EROSION AND SEDIMENT CONTROL The work being undertaken which has the potential to reduce the water quality are as follows: • Disturbance to ground when piling. • Fuel or oil spills	OBJECTIVE • To ensure the water quality is maintained during and after construction activities. PERFORMANCE CRITERIA • Erosion will be avoided or minimised by using either a air hydraulic hammer or a vibratory hammer to install piles. • Water quality will be maintained as the area does not flow into nearby river APPROVING AUTHORITY Caboolture Shire Council RESPONSIBILITY Site Supervisor, The Jetty Specialist KEY LEGISLATION Environmental Protection Act 1994, Environmental Protection (Water) Policy 1997	IMPLEMETATION STRATEGY • Current good practice erosion and sediment control measures will be provided during construction as outlined in the publication "Soil Erosion and Sediment Control – Engineering Guidelines for Queensland", Institution of Engineers 1994 • Temporary erosion and sediment control devices shall be installed**, if required,** prior to any piling commencing on site. This will be achieved by the installation of a small silt curtain if required. • Vehicle movement shall be restricted to designated areas. • Assessment of the integrity and effectiveness of sediment control measures will be undertaken at regular periods and continued until all works is established. • All sediment control devices will be maintained to ensure they are operating at maximum efficiency. • Oil / fuel spillage kits are kept on board barge and staff are trained in the use of same. MONITORING • Visual inspection of all sediment and erosion control devices on a daily basis (on work days only) and after any moderate rainfall events to determine the need for clearing and maintenance. AUDITING • Operations Co-Ordinator REPORTING • Records to be kept on the daily and weekly inspection checklists. • These records are to be available for UMD on request.	IDENTIFICATION OF INCIDENT OR FAILURE • Failure of sediment/erosion control devices. • Un-managed build-up of sedimentation on site. • Reduced water quality as a result of poor sediment control. CORRECTIVE ACTION • Choose one or a combination of the following measures: • Clean out or repair installed sediment and erosion control devices • If warranted to avoid future incidents, install additional sedimentation and erosion control devices. • Reduce rate of stripping and or filling. • Assess need for additional stabilisation.
Table 4 : General Environmental Issues and Site Decommissioning			

Issues	Target	Management Procedure	Corrective Action
4.1 WASTE MANAGEMENT The Environmental Protection Act 1994 provides the legislative and regulatory framework for management of waste. Waste generated during the construction phase will include: • general refuse	OBJECTIVE • To provide for effective waste management. PERFORMANCE CRITERIA • Minimise the generation of waste material. • Maximise reuse and recycling of waste material. • Appropriate disposal of waste material from site if unable or uneconomical to reuse or recycle. APPROVING AUTHORITY Environmental Protection Agency (Environmental Operations Section). RESPONSIBILITY Site Supervisor, The Jetty Specialist. KEY LEGISLATION Environmental Protection Act 1994.	IMPLEMENTATION STRATEGY • Transport, storage and disposal of wastes are to be conducted by a licenced contractor to licenced facilities where necessary. • All loads which are removed from site shall be covered. MONITORING • Visual inspection of works area on a weekly basis AUDITING • Environmental Management Co-Ordinator REPORTING • Records to be kept on daily inspection checklists (ref Appendix C) • A Waste disposal register shall be maintained which documents the date, quantity and type of waste removed as well as the name of the waste transporter and/or disposal operator that removed the waste. • The register shall be available for inspection by the Environmental Site Supervisor upon request.	IDENTIFICATION OF INCIDENT OR FAILURE • Build up of waste outside of designated storage, transfer and disposal areas. CORRECTIVE ACTION • Review waste handling and disposal procedures and identify necessary improvements.
Issues	**Target**	**Management Procedure**	**Corrective Action**

Issues	Target	Management Procedure	Corrective Action
4.2 Cultural Heritage Cultural heritage relates to those values derived from previous and/or ongoing occupation or association with the locality on which the development has a potential influence. It encompasses both indigenous and non-indigenous values and both physical evidence (structures/artefacts) and cultural associations. Collection or excavation of any material uncovered by the works must be carried out under the guidelines in the *Aboriginal Cultural Heritage Act 2003 (Qld)* and the *Torres Strait Islander Cultural Heritage Act 2003 (Qld)*.	**OBJECTIVE** • Avoid loss of cultural heritage and historic values. **PERFORMANCE CRITERIA** • Avoid the loss of cultural heritage and historic values. **APPROVING AUTHORITY** • Department of Natural Resources and Mines **CONTACT AUTHORITY** Cultural Heritage Coordination Unit Regional Services Department of Natural Resources and Mines Phone: (07) 3238 3838 **RESPONSIBILITY** • Site Supervisor The Jetty Specialist **KEY LEGISLATION** *Aboriginal Cultural Heritage Act 2003 (Qld)* and the *Torres Strait Islander Cultural Heritage Act 2003 (Qld)*	**IMPLEMENTATION STRATEGY** • All project personnel will be informed to immediately stop work and report (to the Site Supervisor) the presence of sites, items, or places of cultural significance found during the course of work. • The proponent shall ensure that at no time will any construction personnel dismiss cultural heritage requirements or cause harm to Aboriginal or historic cultural heritage. • The finding will be reported to the Department of Natural Resources and Mines and the Brisbane Water Construction Manager. • If human remains are believed to be found the local police station will be contacted. **MONITORING** • Visual inspection of the site for artefacts during construction process. **AUDITING** • Nil **REPORTING** • Nil	**IDENTIFICATION OF INCIDENT OR FAILURE** • Discovery of cultural sites, artefacts or remains. **CORRECTIVE ACTION** As required by Department of Natural Resources and Mines.

4.3 Noise Management There are no residential houses or commercial businesses close to the project.	OBJECTIVE • Minimise disturbance/nuisance to neighbouring businesses and residents. • Minimise impact on natural environment. **PERFORMANCE CRITERIA** • No noise complaints **APPROVING AUTHORITY** • Environmental Protection Agency **RESPONSIBILITY** • Site Supervisor, The Jetty Specialist **KEY LEGISLATION** *Environmental Protection Act 1994, Environmental Protection (Noise) Policy 1997.*	**IMPLEMENTATION STRATEGY** • Work will occur between the hours of 7.00 am and 7.00 pm Monday to Saturday. • Construction equipment will be maintained in good working order and appropriate silencing devices will be fitted. • Consultation with neighbouring businesses and residents to inform them of the scheduled works including the length of time they are likely to occur. **MONITORING** • Nil **AUDITING** • Nil **REPORTING** The Project Engineer will be notified if a complaint is received and complaints shall be recorded.	**IDENTIFICATION OF INCIDENT OR FAILURE** • Noise complaint **CORRECTIVE ACTION** • If appropriate background monitoring will be performed when noise generating equipment is not being used and again when noise generating equipment is being used, to assess the impact of the construction work. Implementation of noise barriers
Issues	**Target**	**Management Procedure**	**Corrective Action**

Issues	Target	Management Procedure	Corrective Action
4.4 Air Quality The Environmental Protection Act 1994 and the associated Environmental Protection (Air) Policy 1997 provide the legislative and regulatory controls for the management of emissions to the atmosphere. Dust levels are of little concern during construction of the marina. Only vehicles may cause some dust.	**OBJECTIVE** • Minimise dust generation due to construction activities. **PERFORMANCE CRITERIA** • Minimal dust produced. • No complaints from local residents or businesses regarding dust generation. **APPROVING AUTHORITIES** • Environmental Protection Agency **RESPONSIBILITY** • Site Supervisor, The Jetty Specialist **KEY LEGISLATION** *Environmental Protection Act 1994*	**IMPLEMENTATION STRATEGY** • Exposed soils, particularly on vehicle access tracks, will be watered as required by the principal • The speed of all construction vehicles will be restricted to 40km/h on unsealed construction tracks. This will limit the level of dust generation. **MONITORING** • Undertake regular visual inspection of working areas and roads. **AUDITING** • Environmental Management Co-Ordinator **REPORTING** • Watering of roads etc to reduce dust will be recorded in the principals site diary. Review of air quality issues will be recorded on Daily Checklist (weekly checklist)	**IDENTIFICATION OF INCIDENT OR FAILURE** • Dust nuisance complaint from public. • Excessive dust observed on site. **CORRECTIVE ACTION** Bring to the attention of the principal to increase watering.

Issues	Target	Management Procedure	Corrective Action
4.5 Fire Ant Management Although the work site is not a Restricted Fire Ant Area, it is important to have procedure in place to prevent the spread of Fire Ants in accordance with an approves DPI Management Plan.	**OBJECTIVE** • To prevent the transport of the red imported fire ant from site as the result of the construction works. **PERFORMANCE CRITERIA** • No spread of fire ants from or to the site as a result of construction works. **APPROVING AUTHORITY** • Department of Primary Industries **CONTACT AUTHORITIES** • Department of Primary Industries Ph: :13 25 23 • Brisbane City Council Fire Ant Co-Ordinator (Alan Barton) Ph: (07) 3403 4728 **RESPONSIBILITY** • Site Supervisor, The Jetty Specialist **KEY LEGISLATION** *The Plant Protection (Red Imported Fire Ant) Quarantine Notice 2001*	**IMPLEMENTATION STRATEGY** • A site survey will be conducted prior to works commencing by a person trained in Fire Ant Identification, in order to identify potential infestation. • There will be at least one person, who is trained to identify Fire Ants, on site at all times when works is occurring on site. • If any ants on site are suspected to be or are known to be Fire Ants then works will cease. The DPI and Project Engineer will be notified immediately. • Actions will then be as directed by the DPI inspector. • All tools and equipment will be cleaned to remove soil, by brushing and washing, before removal from the area. • A guarantee shall be obtained from all suppliers of products used on site that the product is Red Imported Fire Ant Free. **MONITORING** • On-going visual monitoring by trained staff. **AUDITING** • Environmental Management Co-Ordinator **REPORTING** • If Fire Ants are found the DPI and Project Engineer will be notified immediately. • Sightings on Council lands will be reported to the Manager of the land in question and the Council Interim Fire Ant Co-Ordinator.	**IDENTIFICATION OF INCIDENT OR FAILURE** • It is suspected or known that Fire Ants are on site. • Fire Ants are spread from site to site. **CORRECTIVE ACTION** As determined by DPI.

Issues	Target	Management Procedure	Corrective Action
4.6 Acid Sulphate Soils The proposed works is to be located in an area regarded as Low Risk in terms of the presence of Potential Acid Sulphate Soils. As a result an appropriate acid sulphate soils management plan needs to be developed.	**OBJECTIVE** • To minimise the exposure of potential acid sulphate soils. • To prevent potential acid leachate from leaving the site. **PERFORMANCE CRITERIA** • All PASS are appropriately identified and managed. • Action levels from field peroxide tests are as follows: • pH < 4 – Soils will be managed as PASS • pH > 1 – Soils will be managed as PASS **APPROVING AUTHORITY** • Nil **CONTACT AUTHORITY** • Qld Acid Sulphate Soils Investigation Team • Ph: (07) 3896 9819 **RESPONSIBILITY** • Implementation of Plan: Site Supervisor, The Jetty Specialist • Peroxide Testing: BCC Environmental Management Co-Ordinator **KEY LEGISLATION** *Environmental Protection Act 1994*	**IMPLEMENTATION STRATEGY** • All excess soil material should be reused on site (providing treatment for acid sulphate soils has been undertaken) wherever possible or disposed at a licenced waste disposal site. • If the field peroxide test is positive excess soil will be taken to a licenced waste disposal site (unless Fire Ants are found on site, refer Fire Ant Management) as a PASS. If the field test is negative the soil will be taken to another site as fill, used in other areas on site or disposed. • Soil removed as a result of trench excavation will be stockpiled according to soil type and depth. • Soils will be returned to the same depth that they were removed from in order to avoid exposure of PASS. • Soils will be compacted as much as possible to reduce the volume of air in voids in the PASS. • Soils will be stockpiled for less than 48 hours prior to returning to the trench. **MONITORING** • Ongoing inspections to ensure soils are returned to the trench in the appropriate order. **AUDITING** • Environmental Management Co-Ordinator **REPORTING** • Records of Field Peroxide Tests • When work is occurring through PASS records of inspections will be kept on weekly inspection checklists.	**IDENTIFICATION OF INCIDENT OR FAILURE** • Soils are stockpiled for longer than 48 hours. • Soils are returned to the trench in the incorrect order resulting in PASS being exposed to the surface. **CORRECTIVE ACTION** • If soils are to be stockpiled for longer than 48 hours a field peroxide test will be completed to determine if the soils are PASS. If they are PASS (refer performance criteria), the soil will be appropriately bunded and capped to prevent further oxidation while being stored. PASS exposed on the surface will be removed from site and replaced with non PASS soils.

4.7 Rehabilitation Upon completion of all services, the respective corridors will require rehabilitation to ensure stability and sustainability.	**Refer to Principal**	**Refer to Principal**	**Refer to Principal**
4.8 Community Liaison / Complaints	**OBJECTIVE** • To ensure effective communication with community. • To ensure all community complaints are properly addressed. **PERFORMANCE CRITERIA** • All community complaints are responded to within 24 hours of investigation. **APPROVING AUTHORITY** • Nil **CONTACT AUTHORITIES** • Refer to reporting Structure in Section 2 Figure 1 **RESPONSIBILITY** • Site Supervisor, The Jetty Specialist **KEY LEGISLATION** • *Environmental Protection Act 1994*	**IMPLEMENTATION STRATEGY** • Consultation with Caboolture Shire Council will occur prior to the commencement of works. • Complaints from community will be responded to within 24 hours of the investigation. The complainant will be advised of the investigation and its outcomes. **MONITORING** • A complaint register will be maintained on site detailing the details of the complaint, the person or group making the complaint and corrective actions undertaken in response to the complaint. **AUDITING** • Environmental Management Co-Ordinator **REPORTING** • All complaints will be reported to Principal and recorded	**IDENTIFICATION OF INCIDENT OR FAILURE** • Recurrent complaint from community. • Response to a complaint following investigation takes greater than 24 hours. **CORRECTIVE ACTION** • As required on a case by case basis.
Issues	**Target**	**Management Procedure**	**Corrective Action**

4.9 Emergency Response / Incident Reporting	**OBJECTIVE** • To respond to, report and escalate incidents appropriately. **PERFORMANCE CRITERIA** • All notifiable incidents are reported to the EPA as required. • Incident or emergency documented and reported to the EPA, Council and internally. **APPROVING AUTHORITY** • Caboolture Shire Council **CONTACT AUTHORITIES** • Environmental Protection Agency Ph: (07) 3224 5641 After Hours: 1300 130 372 • Refer to Reporting Structure in Section 2, Figure 1 **RESPONSIBILITY** • All site staff **KEY LEGISLATION** • *Environmental Protection Act 1994*	**IMPLEMENTATION STRATEGY** • Staff will be trained on incident reporting at the site induction to ensure awareness of incident response and reporting procedures. • Notify the Operation Co-Ordinator and Project Engineer as soon as possible. • If required notify the Environmental Protection Agency and Council • Complete the Incident Report Form (refer Appendix C Incident Report Form) • Incidents will be escalated according to the reporting structure in Section 2, Figure 1 **MONITORING** • As per Incident Report Form (refer Appendix C). **AUDITING** • Environmental Management Co-Ordinator **REPORTING** • The incident will be reported using the Incident Report Form (refer Appendix C) to the Caboolture Shire Council and EPA where necessary	**IDENTIFICATION OF INCIDENT OR FAILURE** • Failure to appropriately report an incident. **CORRECTIVE ACTION** • Re-train staff on the need to report incidents.

Appendix A

Project Drawings

Appendix B

Approval for Works in Tidal Lands
State Coastal Protection and Management Act

(This only refers to the works outside of the lock system)

Appendix C

Notification and Reporting Forms

Reporting form for INCIDENTS/EMERGENCIES

HEADING	DETAILS
PART A: INITIAL INCIDENT REPORT **This should be communicated to EPA as soon as practical after the incident/emergency that may have breached the Environmental Protection Act.**	
Name of operational area:	
Location of incident/emergency (address):*	
Contact details of operational area (Ph and fax):	
Name and contact number of person responsible for investigating and resolving the incident/emergency:	
Time and date of incident:	
Time site staff first became aware of the incident/emergency:	
Major cause of incident/emergency:	
What are the potential or actual environmental problems (i.e. environmental harm and/or nuisance)?	
Actions taken to date to rectify problems and prevent re-occurrence	

HEADING	DETAILS
PART B: DETAILED INCIDENT REPORT: To be completed and lodged on file with Part A	
Date of logging/recording:	
Incident/emergency type:	
Incident/emergency reported by (include contact details)	
Functional area of operation:	
Nature of incident/emergency:	
Location of incident/emergency	
Has a licence been infringed (if applicable)?	
Has the EP Act been breached?	
Has Natural Environment Branch been breached?	
Has Divisional Environmental Co-ordinator been notified?	
Response time[1]	
Priority of actions to be taken (high, medium or low)	
PART C: FINAL INCIDENT REPORT: This is to be lodged with EPA if required under environmental licence within 14 days of initial notification.	
Actions taken to rectify problems and prevent recurrence	
Success of clean-up measures undertaken	
Results of any environmental monitoring (if applicable)	
Recorded/logged by (name, title, date and signature).	

[1] Time elapse from the time of the incident to the time the first response was initiated (eg. to stop/contain a spill and notify supervisor)

Complaint Register/ Environmental Incident

Date:	Time:	Number:
Responsible Officer:		
Address:	E-mail:	Phone: / Fax:

Describe Issue:	Process		Product		Environment		Other	
	Service		Audit		Improvement		Innovation	

Details: (attachment if appropriate)

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Complainants Name, Address and Phone Number (Complainant may remain anonymous):

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Type of Communication Received: Phone❒ Fax ❒ E-mail ❒ Verbal❒ Letter ❒

Suggested Action:

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Action officer:			
Address:	E-mail:	Phone:	Fax:

Action Officer to Complete

Date Received:
Action Taken/Comments: …… …… …… …… ……
Date Action Complete:

Auditor to Complete

Date Received:
Action Satisfactory : Yes ❒ (Sign below) No ❒ (Return To AO) Comments: Sign: Date:

Environmental Induction Register

Date	Name	Signature	Work Area

Appendix D

Erosion and/or Sediment Control Techniques

Control Device Description	ESC Guideline

Note: These controls may be modified as required to reflect site specific issues. The use of these techniques does not preclude the use of alternative techniques not listed. Alternative techniques can be found in the IEAust Soil Erosion and Sediment Control Guidelines (1996).

Appendix E

Fire Ant Information

Fire Ants

The Red Imported Fire Ant (*Solenopsis invicta*) was discovered in Brisbane in February 2001. In accordance with the *Plant Protection Act 1989* and *the Plant Protection Regulation 1990*, a quarantine notice has been issued for the State of Queensland, to prevent the spread of the Red Imported Fire Ant (""ire Ant"" and to eradicate it from the State.

It is the legal obligation of any landowner or any consultant or contractor employed by a landowner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries. The movement of Fire Ants is also prohibited, unless under the conditions of a QDPI Inspectors Approval.

The ants will aggressively attack when their nest is disturbed and their bite induces a painful, fiery sensation, similar to a wasp or bee sting. In countries where the ant has been introduced it is considered to be a major agricultural pest.

The project site is considered to be outside a "Restricted" area. However, all precautions should be taken to ensure that works do not contribute to the spread of Fire Ants or pose a health risk to staff who may disturb previously undetected Fire Ant nests during construction.

Outside Restricted Area Procedures

1. Pre Start Site Survey

a. Site supervisor to check work site and if possible a surrounding 10 metre radius (buffer zone) for the presence of RIFA prior to commencement of high risk activities.

2. Incoming Materials

a. Prior to purchase or movement of restricted items from within the *Restricted Area*, check that the supplier has *a QDPI Approved Risk Management Plan* (*ARMP*) in place.

b. All incoming restricted items must be visually inspected prior to unloading, or as soon after as practicable.

c. All incoming restricted items found to contain RIFA shall be reported immediately to QDPI and Councils Special Project Officer Fire Ants (SPOFA). Council staff to comply with all directions issued by the authorised QDPI Inspector.

d. Records are to be kept of all purchased incoming restricted items, which detail the nature, quantity and source of materials imported to the site. All records will be made available to QDPI on request.

e. Random audits comprising visual inspections by site supervisor or other trained personnel shall be undertaken for incoming restricted items. The frequency and thoroughness of such inspections should be gauged on the basis of the type and quantity of restricted items being imported to the site.

f. All plant (trucks, excavators, backhoes etc) are not to be accepted onto a work site unless free of all soil deposits.

APPENDIX B

Civil Construction Staging Schedule

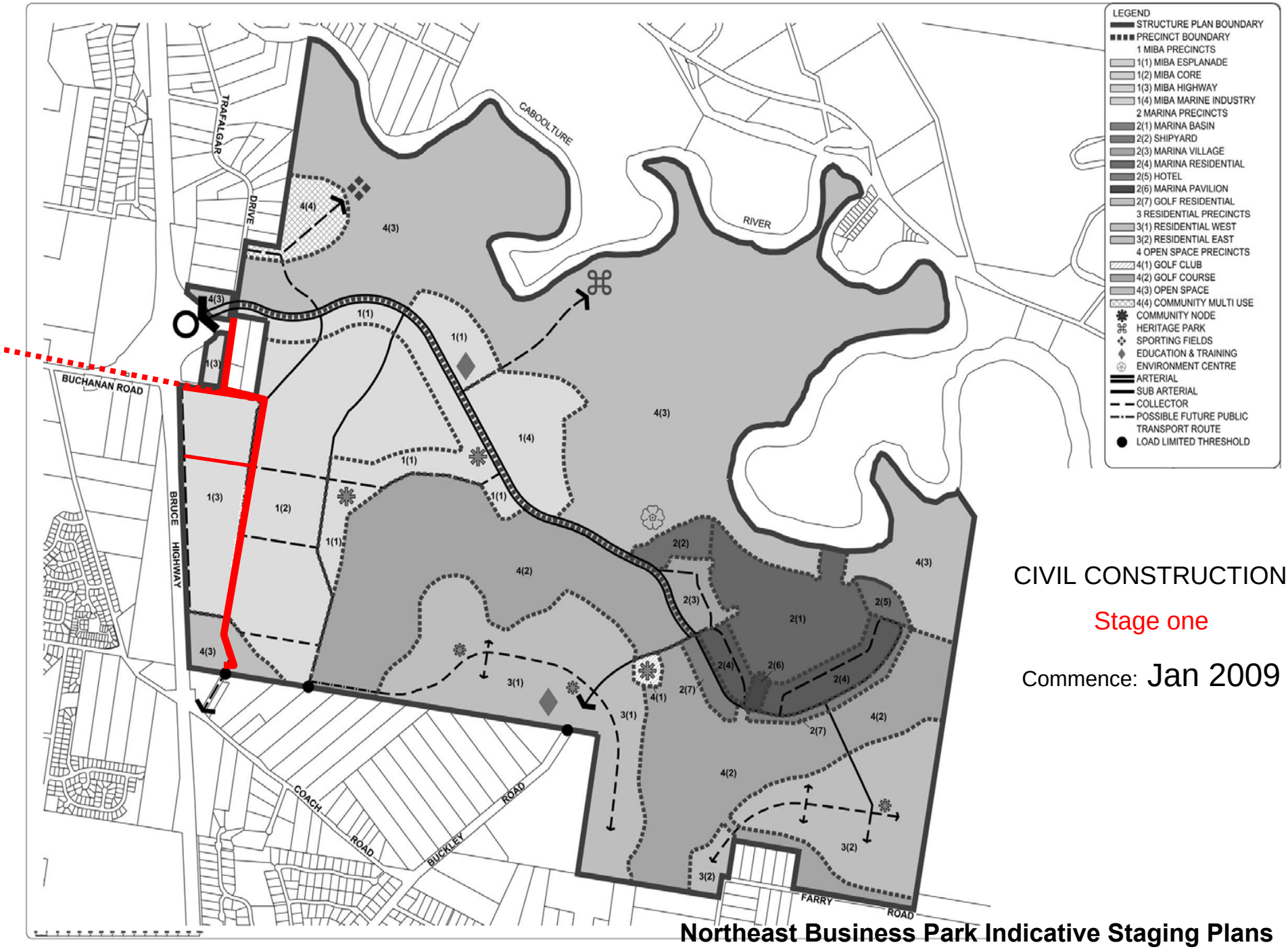
NORTHEAST BUSINESS PARK
NORTH HARBOUR

INDICATIVE CIVIL CONSTRUCTION STAGING

Stage Commence Date	Activities
Jun 08	Bulk Earthworks Phase One
ONE	Civil Construction
Jan 09	Recycled Water Mains from South CSC WRP
	Potable Water Mains Buchanan Rd Extension
	Sewer Mains from South CSC STP
	Power Establish 11KV sub off existing network
	Comms fibre back haul & backbone to NEBP
	Gas Mains to NEBP
	Nolan Road upgrade
	Trafalgar Drive South upgrade
	Subdivision Reticulation Stage 1 MIBA
Jun 09	Bulk Earthworks Phase Two
TWO	Civil Construction
Jun 09	Estate Entry
	Boulevard Road 2 lanes to Bridge
	Nolan Road Realignment
	Buchanan Road East & West roundabout interim upgrades
	Buchanan Rd realignment into Estate Entry
	Bruce Highway North & South off-ramps interim upgrade
Jan 10	Subdivision Reticulation Stage 2 MIBA
	Boulevard Bridge 2 lanes
	Marina Construction
Jun 10	Bulk Earthworks Phase Three
THREE	Civil Construction
Jun 10	Boulevard Rd 2 lanes behind Village
	Secondary Bridge to Residential West
	Subdivision Reticulation & Promenade - Marina Village
	Subdivision Reticulation Shipyard
	Golf Course 9 Holes championship standard
	Golf club site
	Recycled Water Mains from Burpengary East WRP
	Potable Water Mains Buckley Rd Extension
	Sewer Mains from Burpengary East STP
	Buckley Rd extension & upgrade
	Buchanan Rd East & West replace roundabouts with signals
	Buchanan Rd Overpass widening
	Bruce Highway North & South off-ramps ultimate upgrade
	Ulhmann Rd Upgrade

NORTHEAST BUSINESS PARK
NORTH HARBOUR

FOUR	Civil Construction
Jan 11	Subdivision Reticulation Stage 3 MIBA
	Subdivision Reticulation Stage 1 Residential West
	Community Purpose Precinct
	Heritage Park Precinct
	Marina Lock Finalisation
	Golf Course 9 Holes social standard
FIVE	Civil Construction
Jan 12	Subdivision Reticulation Stage 4 MIBA
	Subdivision Reticulation Stage 2 Residential West
	Subdivision Reticulation Marina Apartment & Villa West
	Marina Precinct Western Boardwalk
	Commission 33KV Zone Substation
SIX	Civil Construction
Jan 13	Boulevard Rd & Bridge additional 2 lanes
	Subdivision Reticulation Stage 3 Residential West
	Subdivision Reticulation Marina Pavilion
	Subdivision Reticulation Resort Site
SEVEN	Civil Construction
Jan 14	Subdivision Reticulation Stage 4 Residential West
	Golf Course second 9 Holes to Championship standard
	Marina Precinct Western Boardwalk
EIGHT	Civil Construction
Jan 15	Subdivision Reticulation Stage 1 Residential South West
	Subdivision Reticulation Marina Apartment & Villa East
	Subdivision Reticulation Golf Villas West
NINE	Civil Construction
Jan 16	Subdivision Reticulation Stage 2 Residential South West
	Subdivision Reticulation Golf Villas South
	Secondary Bridge to Residential East
TEN	Civil Construction
Jan 17	Subdivision Reticulation Stage 1 Residential East
	Subdivision Reticulation Golf Villas East
ELEVEN	Civil Construction
Jan 18	Subdivision Reticulation Stage 2 Residential East
TWELVE	Civil Construction
Jan 19	Subdivision Reticulation Stage 3 Residential East
THIRTEEN	Civil Construction
Jan 20	Subdivision Reticulation Stage 4 Residential East

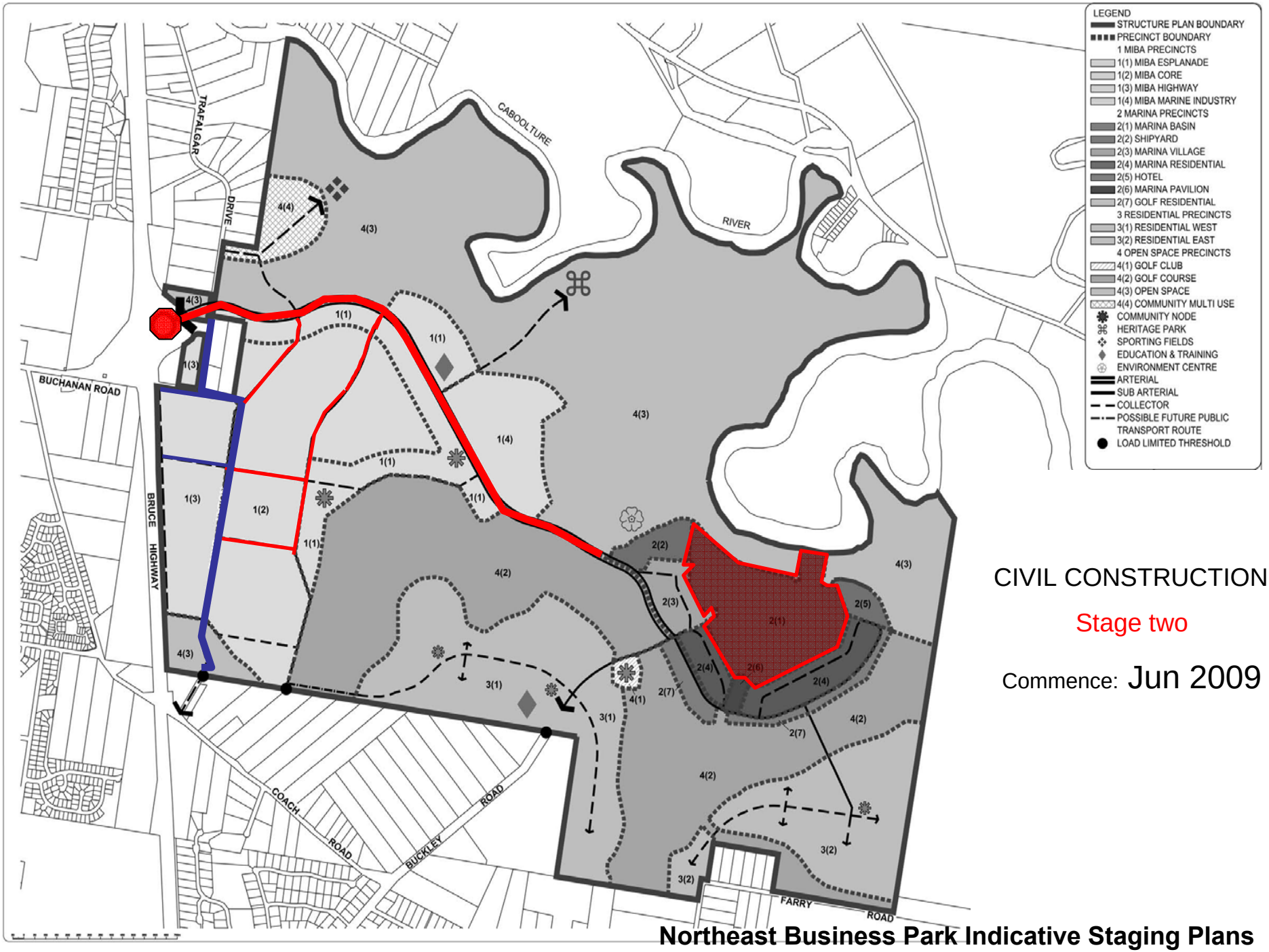


CIVIL CONSTRUCTION

Stage one

Commence: Jan 2009

Northeast Business Park Indicative Staging Plans



CIVIL CONSTRUCTION

Stage two

Commence: Jun 2009

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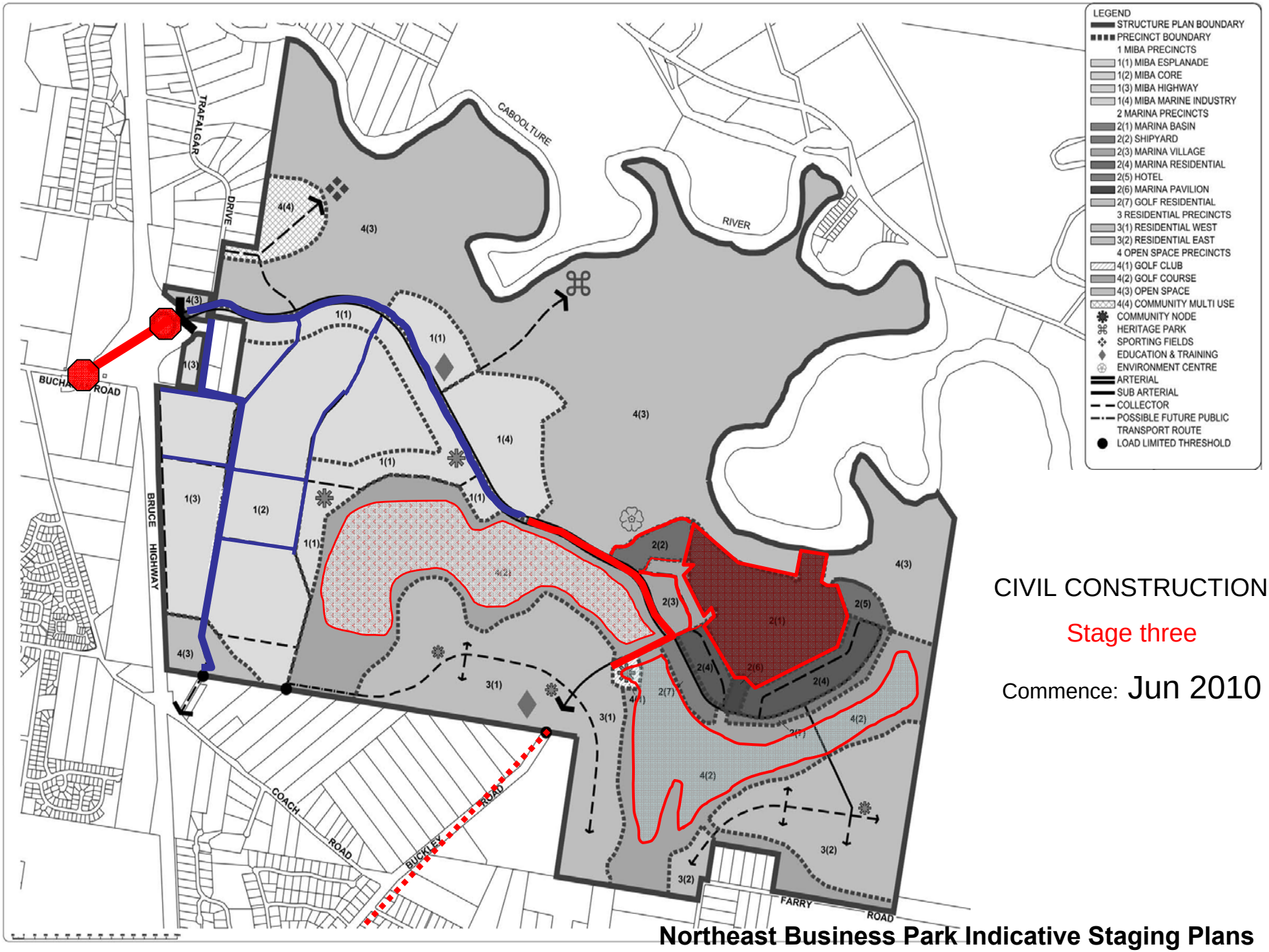

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Stage three

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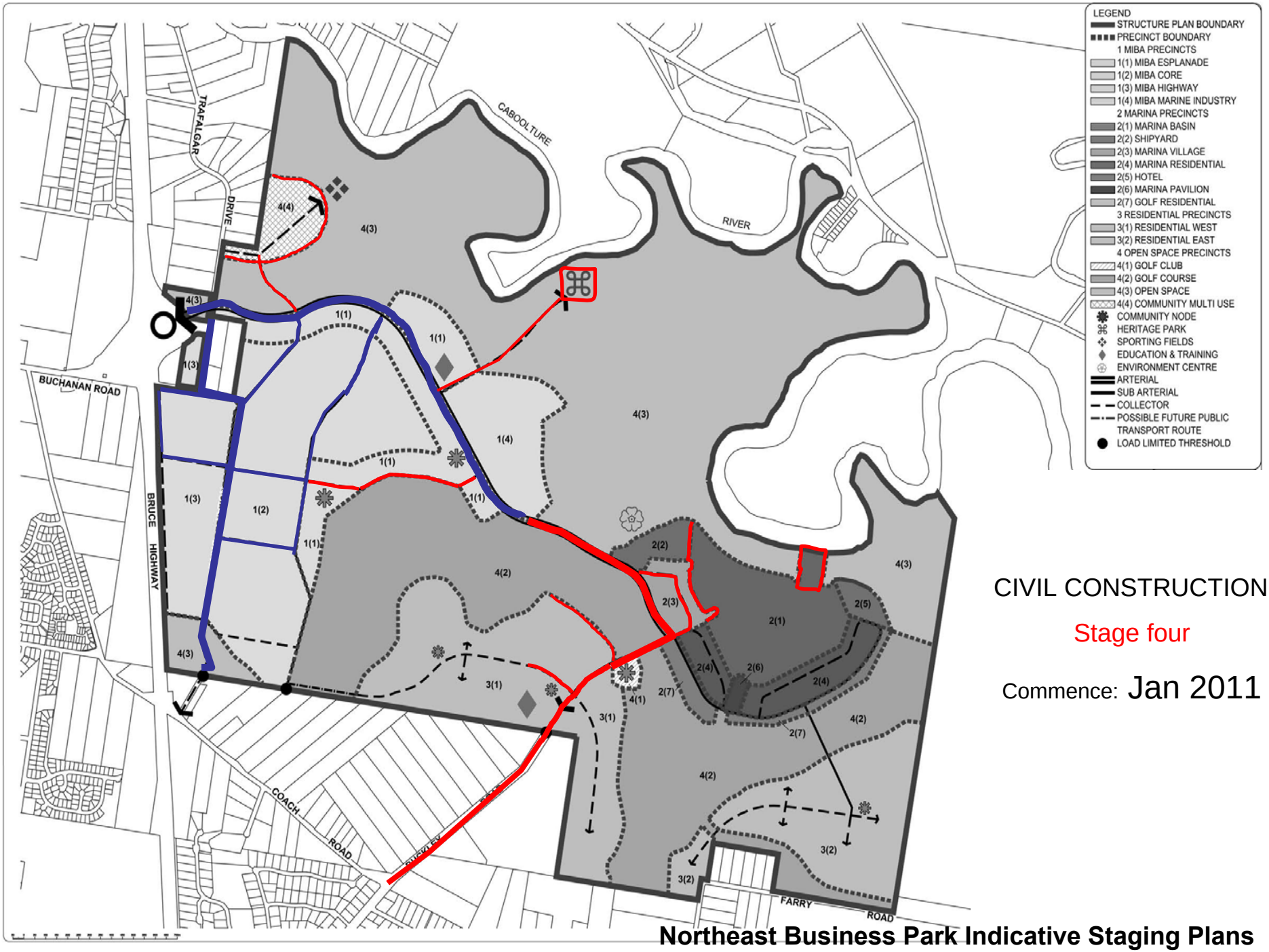

CIVIL CONSTRUCTION

Stage four

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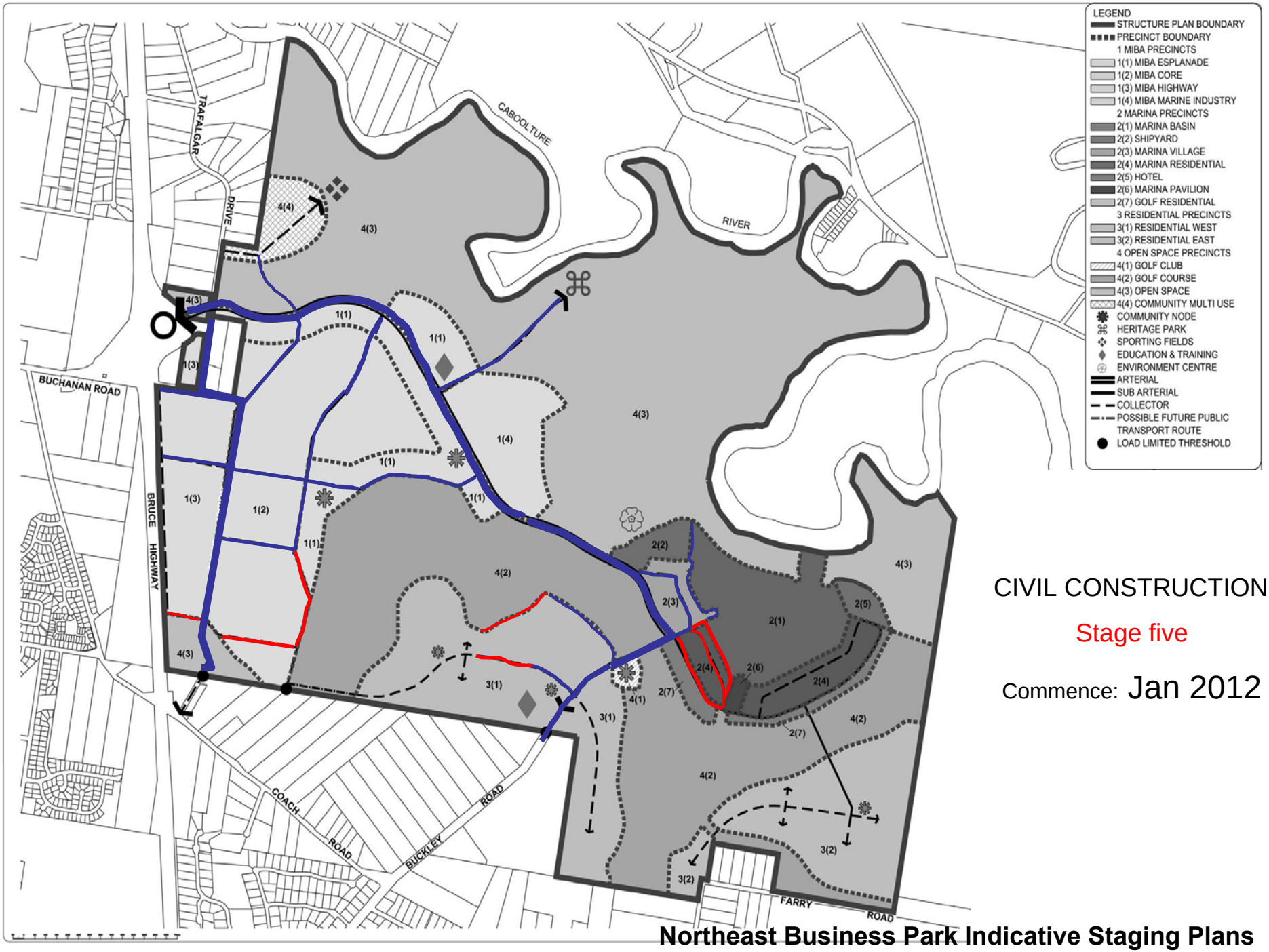

CIVIL CONSTRUCTION

Stage five

Commence: Jan 2012

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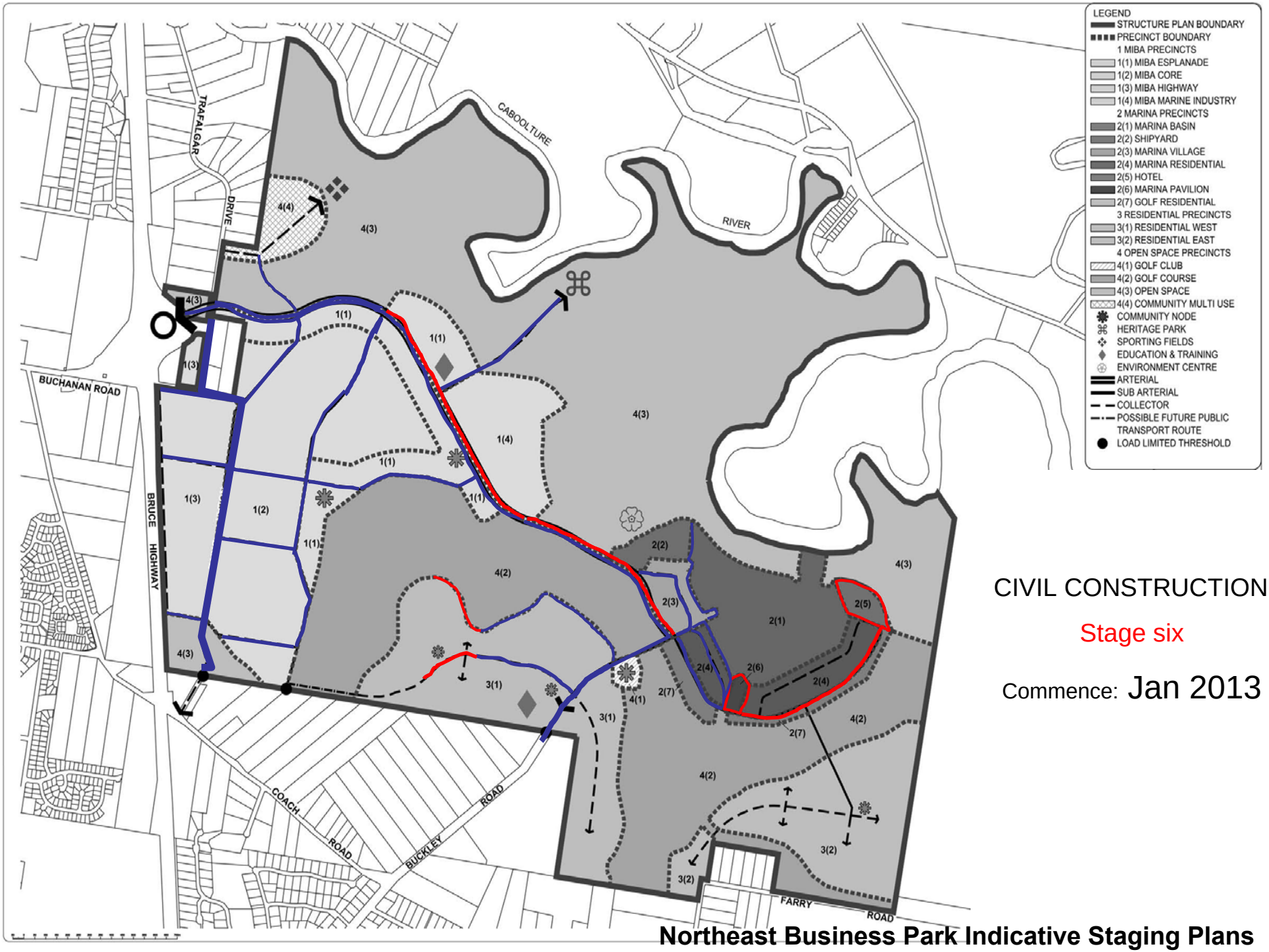
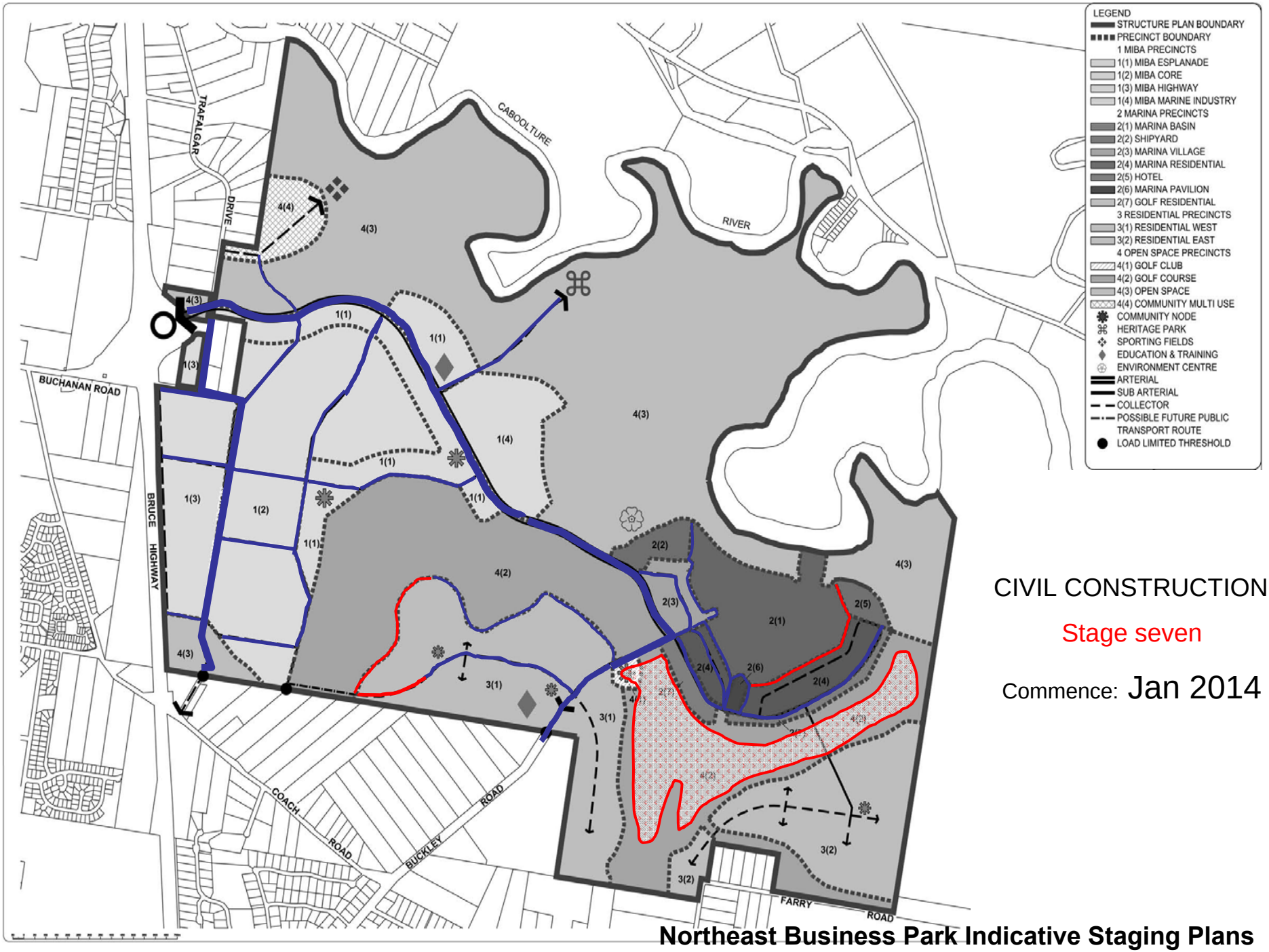


CIVIL CONSTRUCTION

Stage six

Commence: Jan 2013

Northeast Business Park Indicative Staging Plans

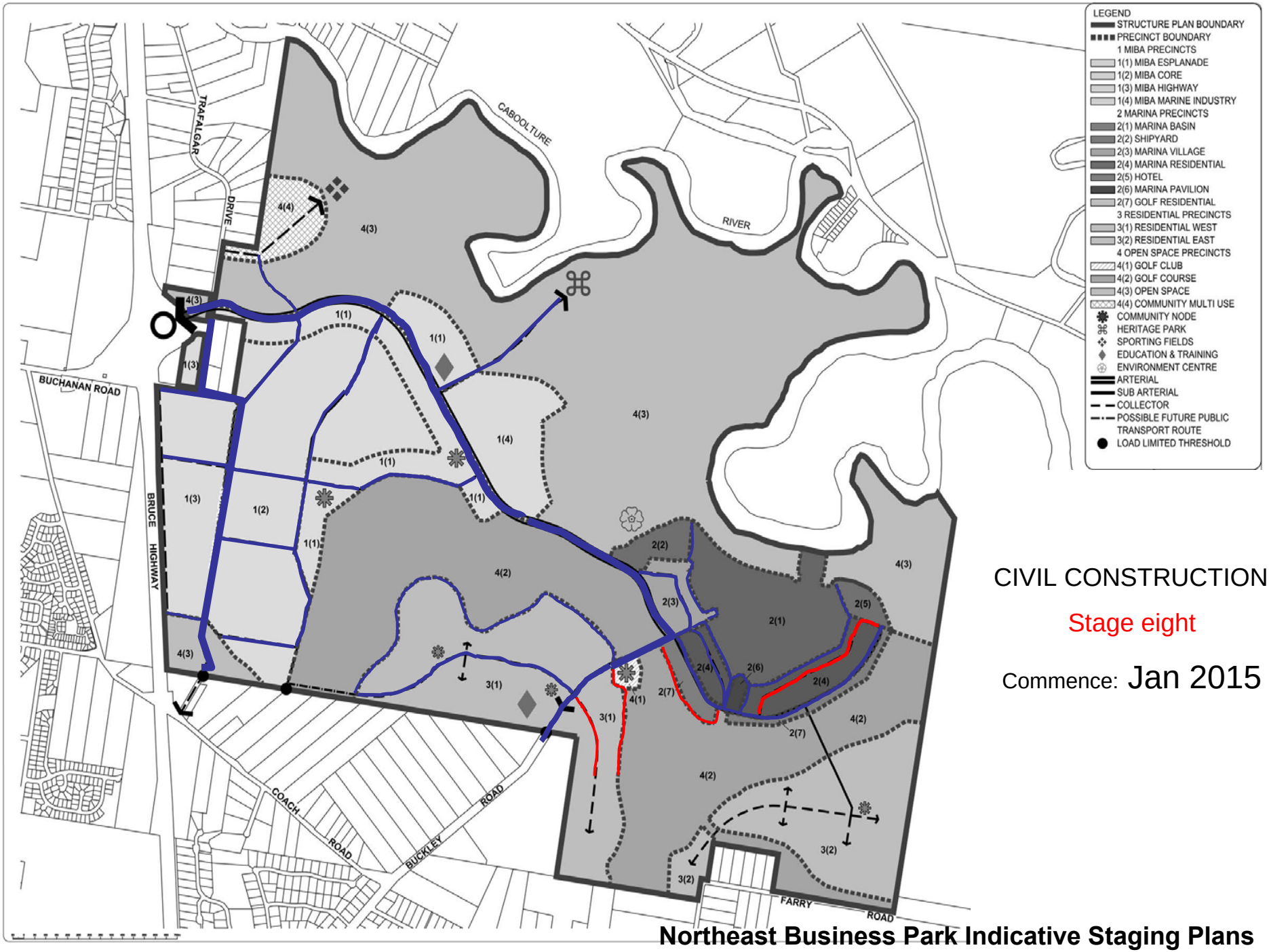


CIVIL CONSTRUCTION

Stage seven

Commence: Jan 2014

Northeast Business Park Indicative Staging Plans



CIVIL CONSTRUCTION

Stage eight

Commence: Jan 2015

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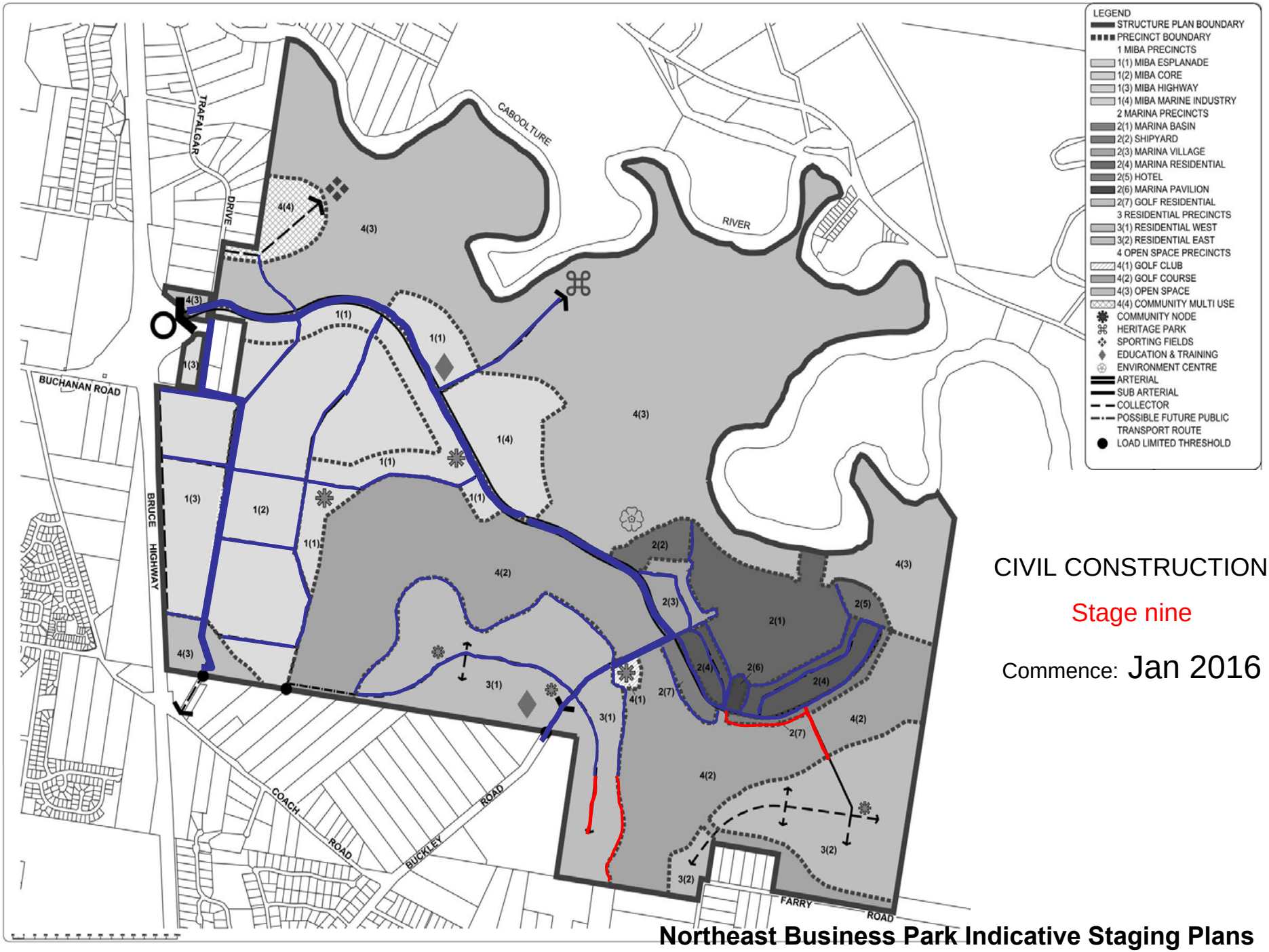
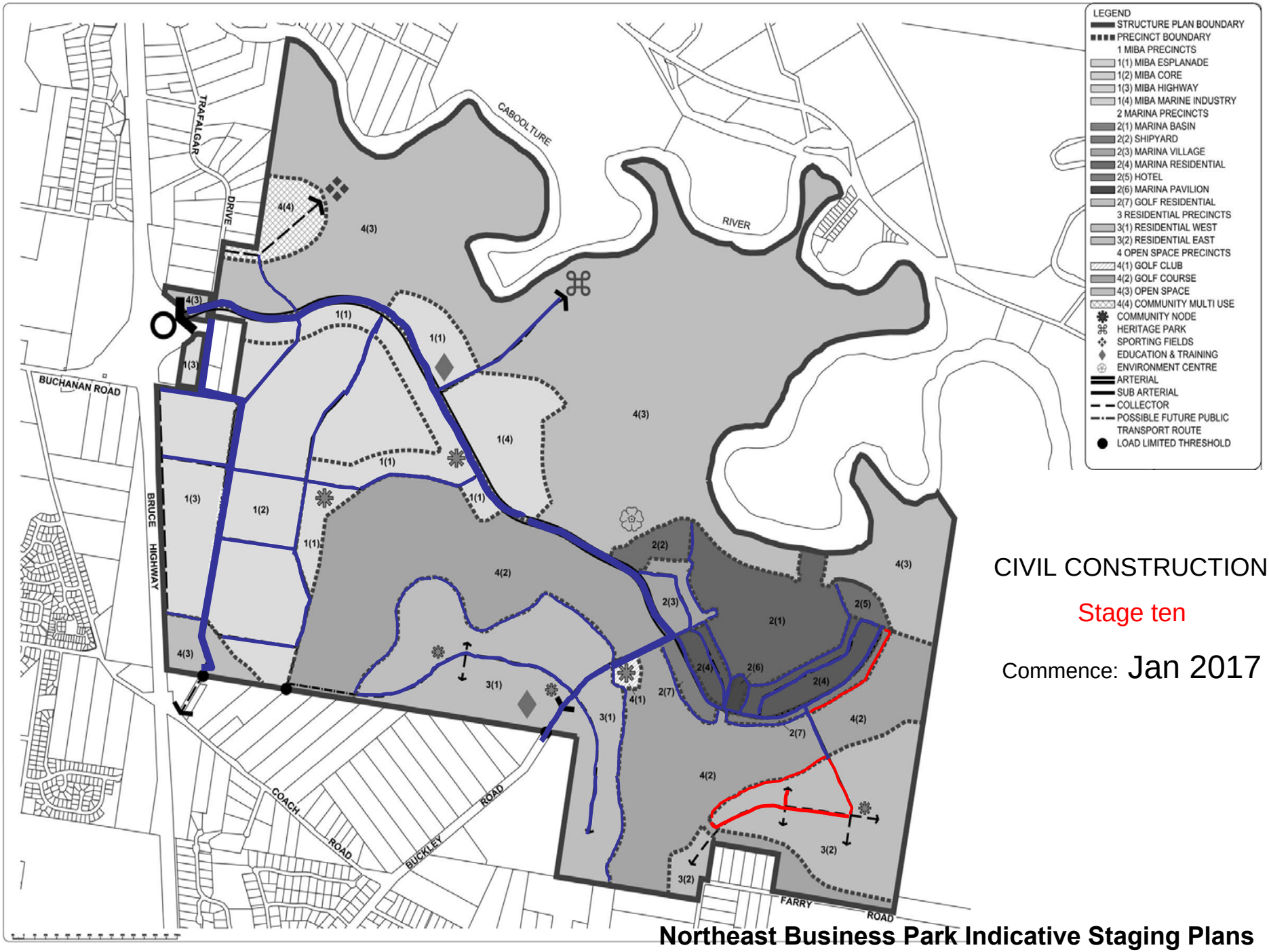


CIVIL CONSTRUCTION

Stage nine

Commence: Jan 2016

Northeast Business Park Indicative Staging Plans

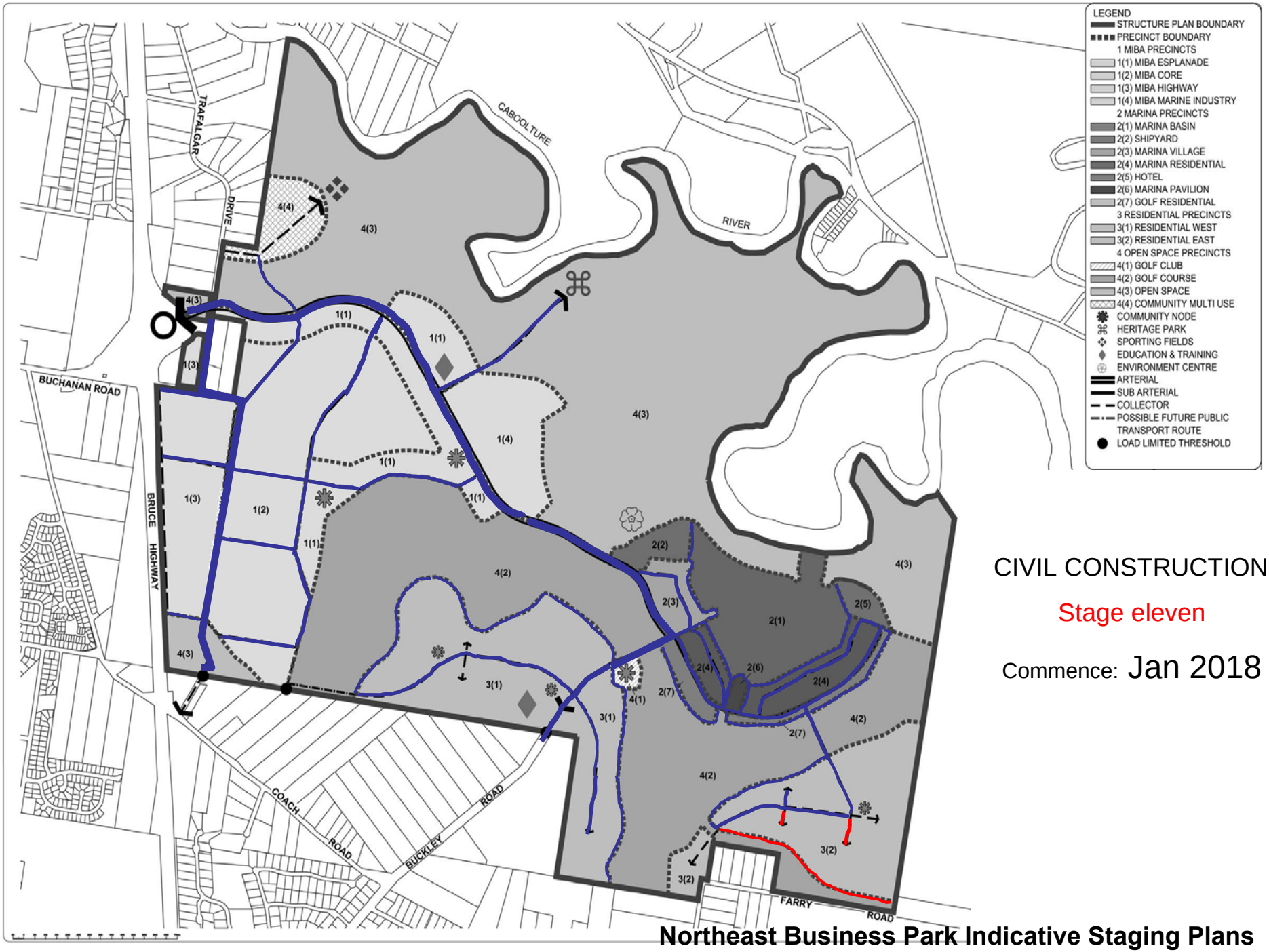


CIVIL CONSTRUCTION

Stage ten

Commence: Jan 2017

Northeast Business Park Indicative Staging Plans

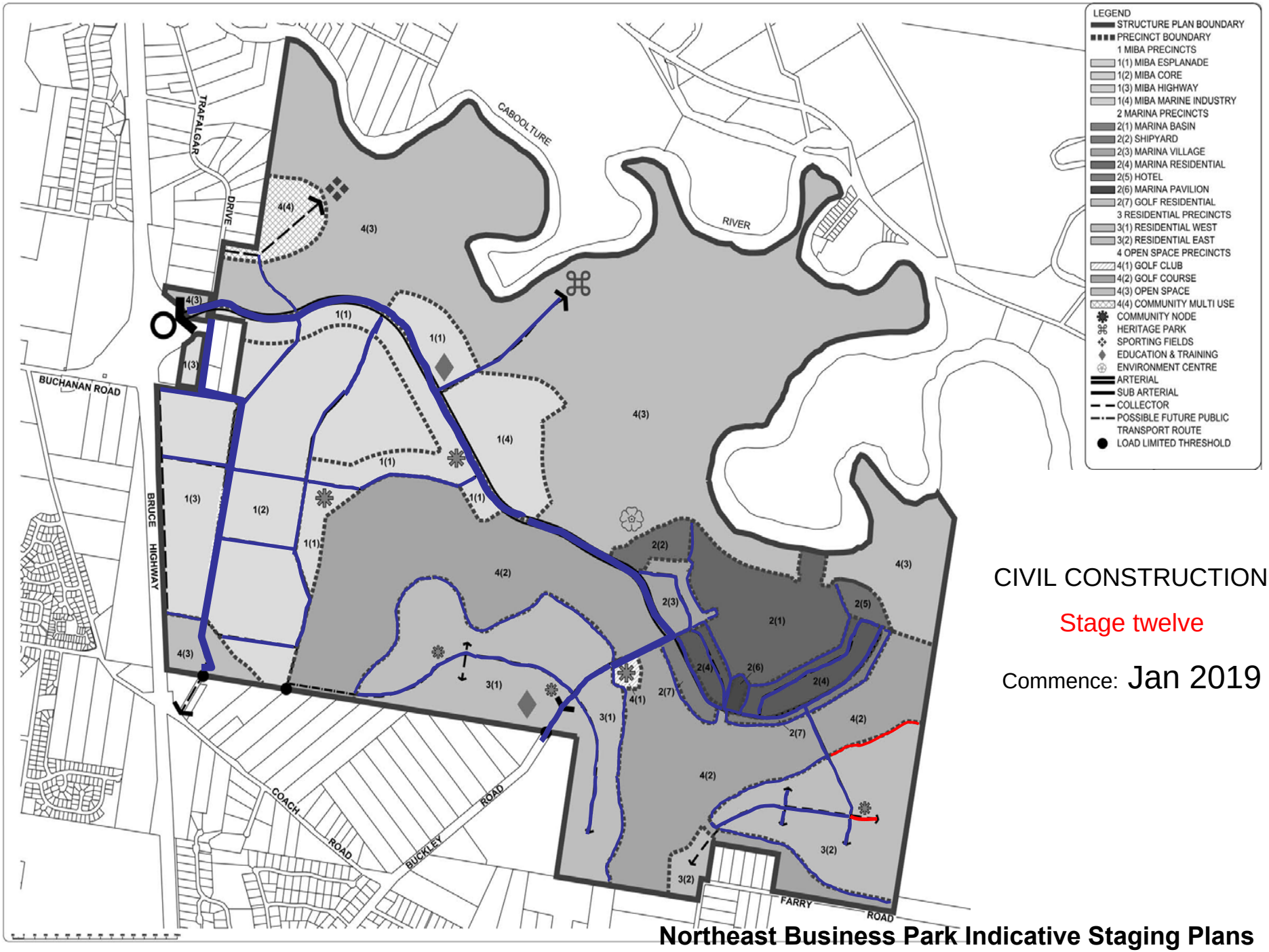


CIVIL CONSTRUCTION

Stage eleven

Commence: Jan 2018

Northeast Business Park Indicative Staging Plans

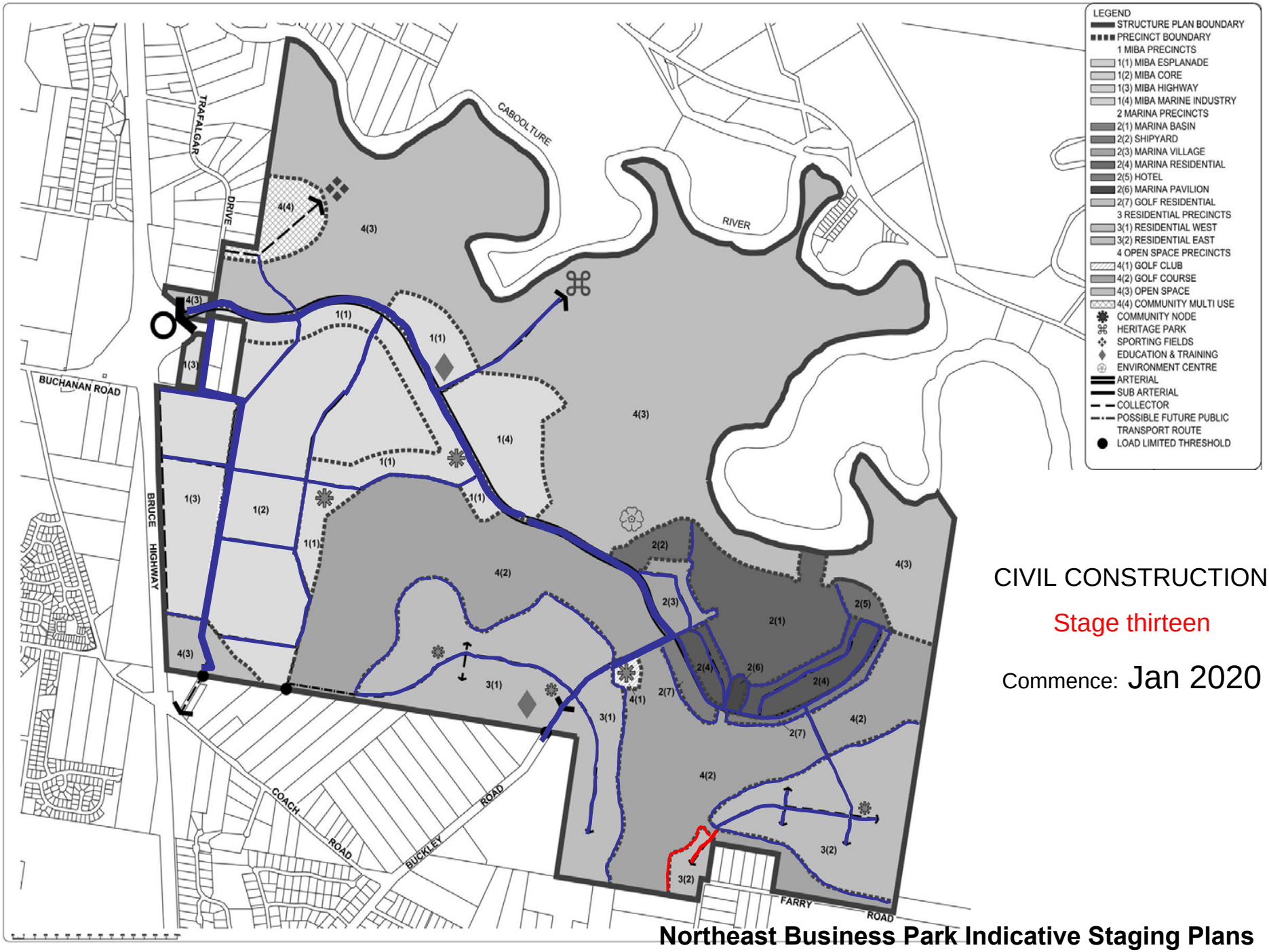


CIVIL CONSTRUCTION

Stage twelve

Commence: Jan 2019

Northeast Business Park Indicative Staging Plans



CIVIL CONSTRUCTION

Stage thirteen

Commence: Jan 2020

Northeast Business Park Indicative Staging Plans

APPENDIX C

Corrective Action Request Form

CORRECTIVE ACTION REQUEST

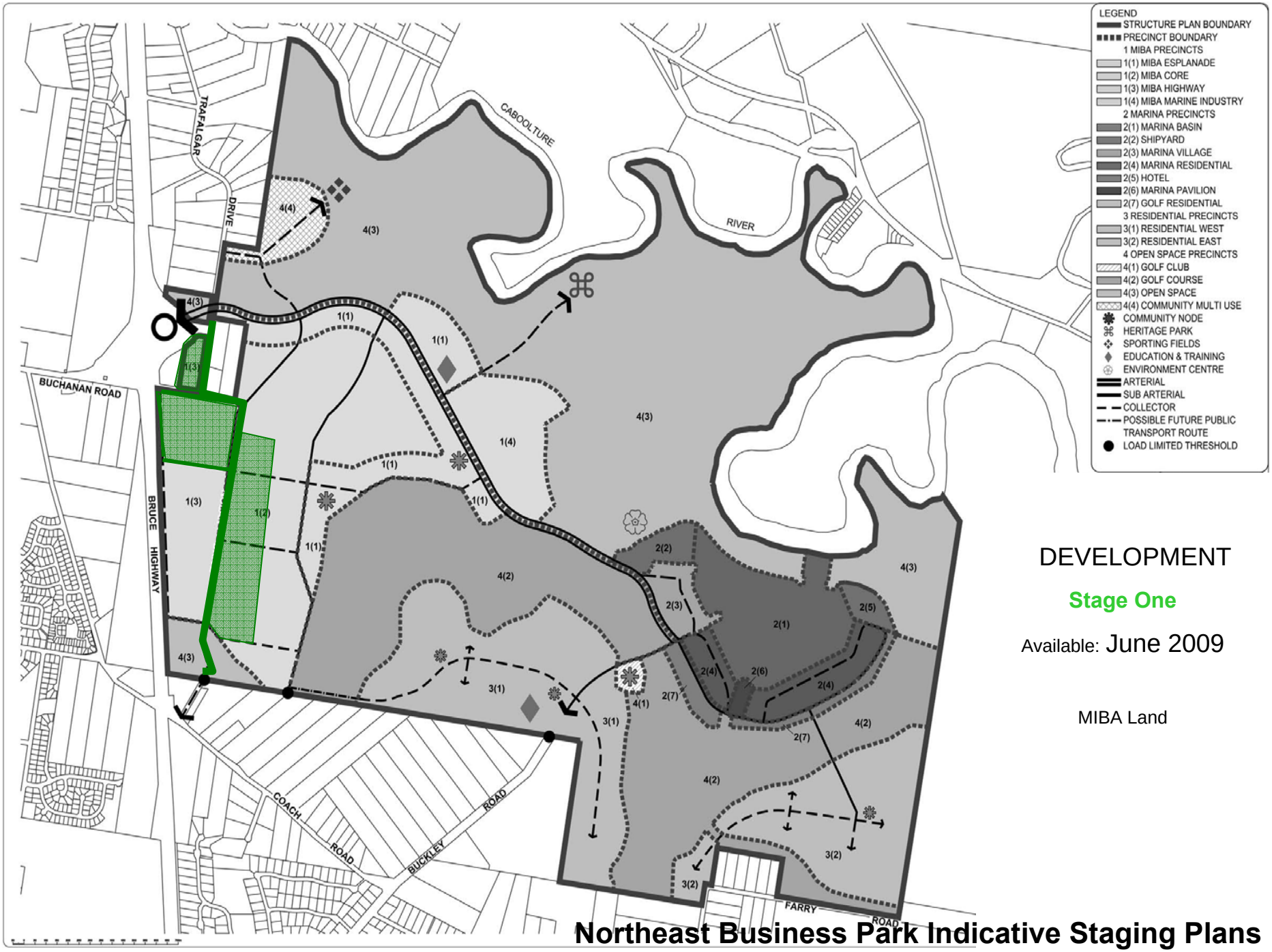
Report No: _____

Date: _____

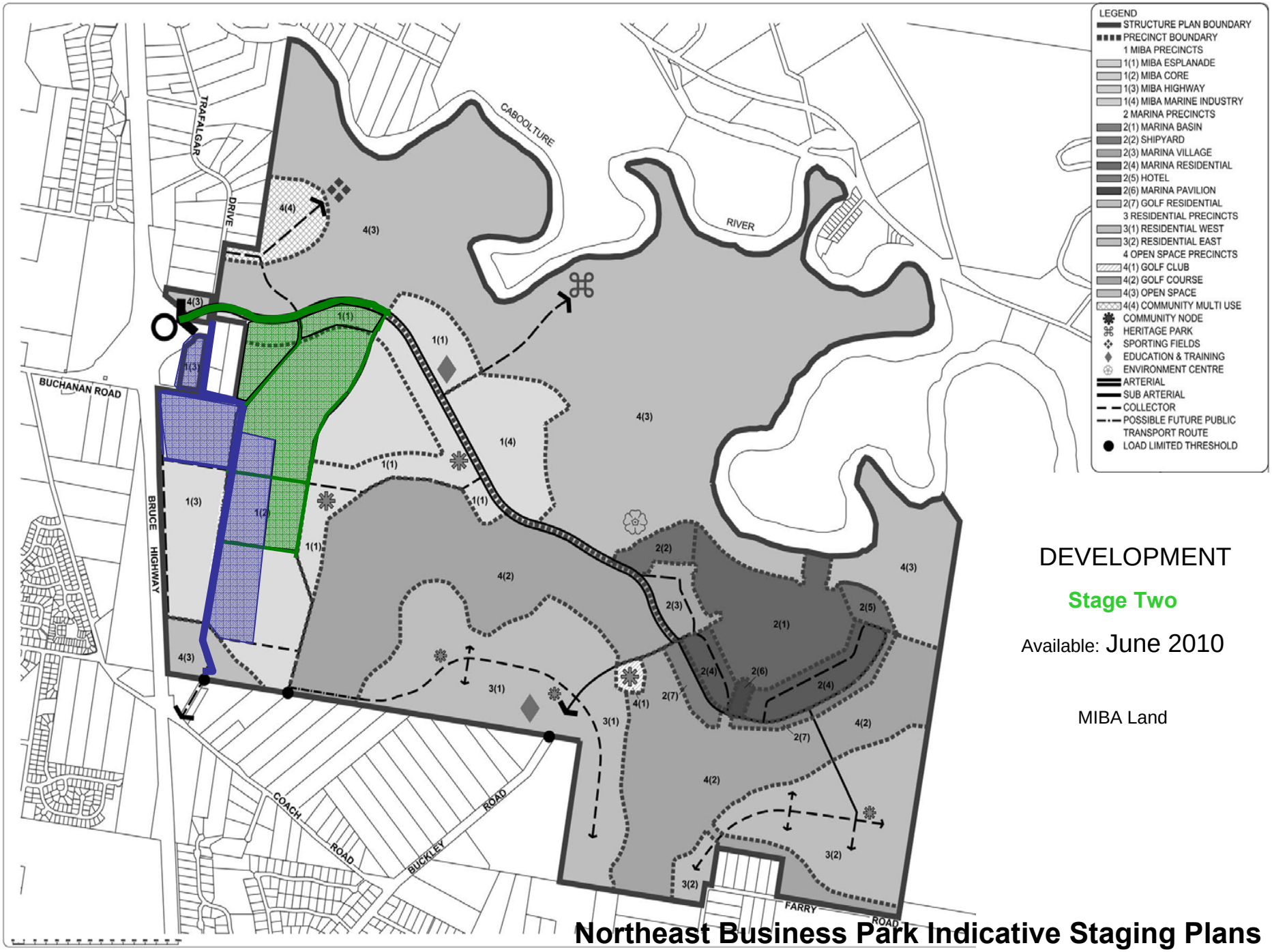
DETAILS OF NON-CONFORMANCE: Inspected by:
DETAILS OF PROPOSED ACTION Passed to Principal (as applicable):y/n Date: Reply required by:
CONSULTANT/ AUDITOR/PRINCIPAL ADVICE (as required): Date action required by (if applicable): Signed (by Principal or Principal's representative): Date:
AUTHORITY TO PROCEED Sign: Date:
ACTION CARRIED OUT Sign: Date:
ELEMENT RE-INSPECTED BY Sign: Date:
COPY ISSUED TO PRINCIPAL Date: Sign:

APPENDIX D

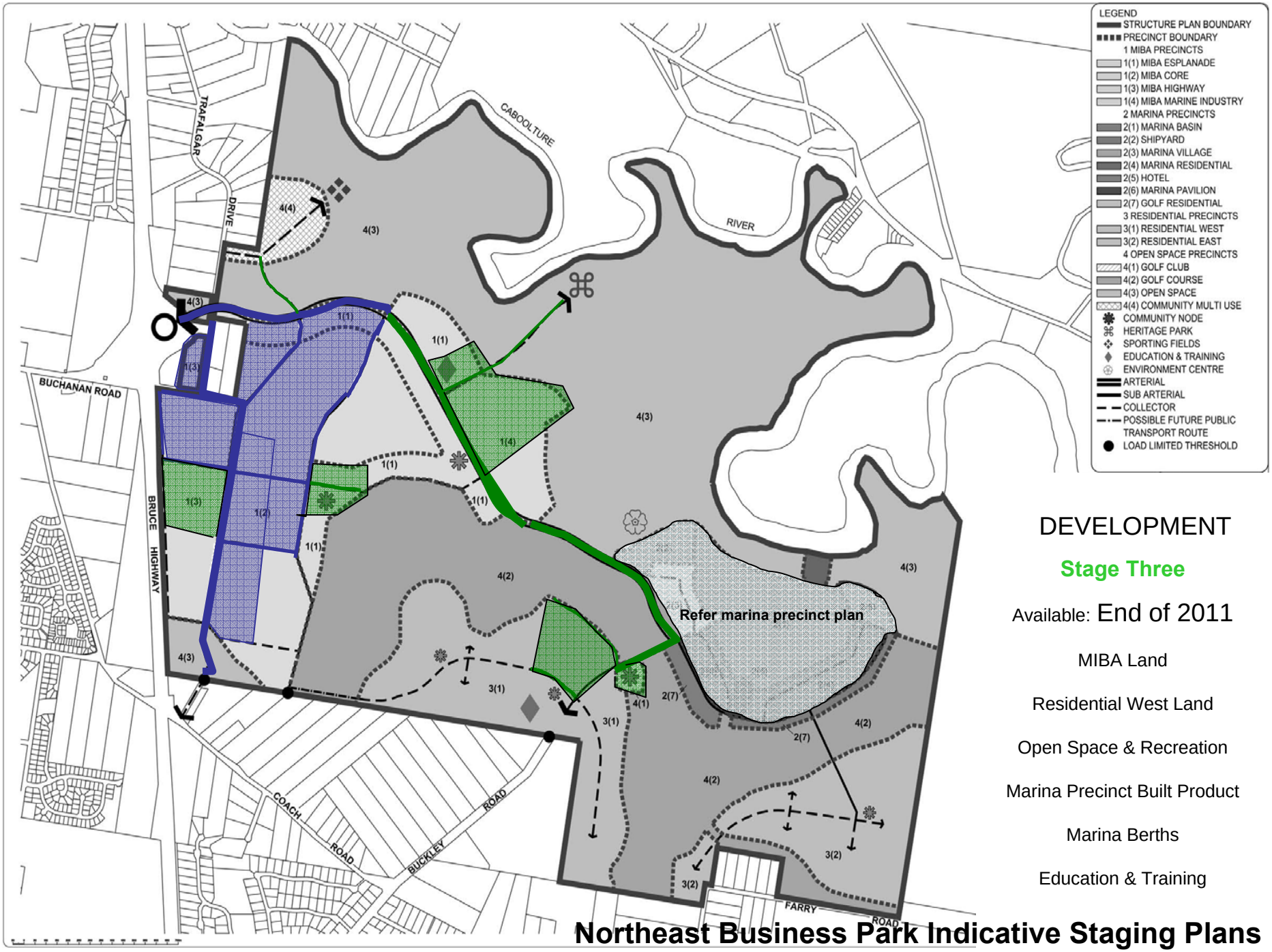
Indicative Development Staging Plans



Northeast Business Park Indicative Staging Plans



Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Three

Available: End of 2011

MIBA Land

Residential West Land

Open Space & Recreation

Marina Precinct Built Product

Marina Berths

Education & Training

Northeast Business Park Indicative Staging Plans

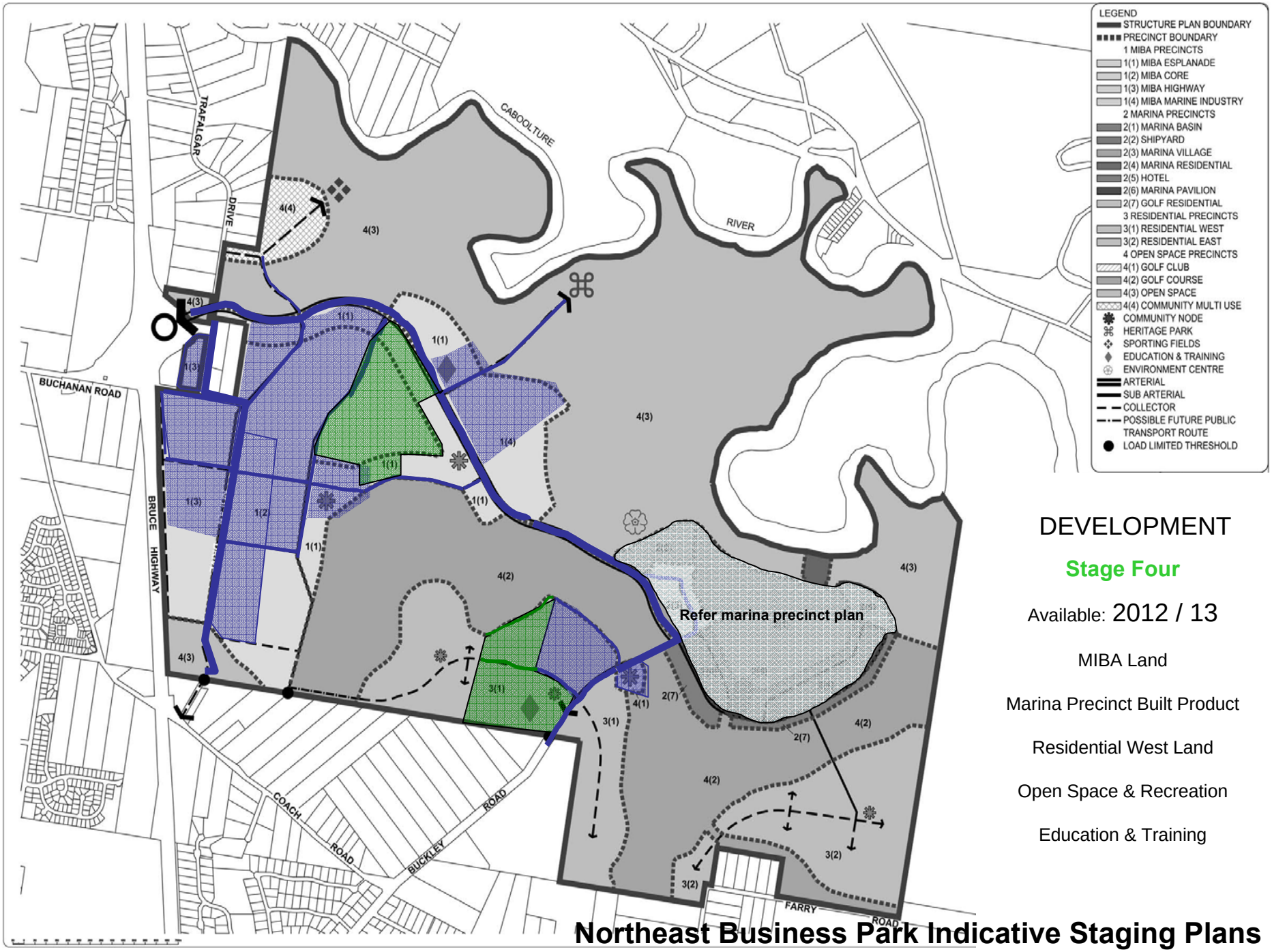
MARINA PRECINCT DEVELOPMENT

Stage Three

Available: End of 2011

Shipyard, Village Promenade, Plaza & Streets, Village Buildings, Village Apartments/ Mixed Use, Riverside Park, Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Four

Available: 2012 / 13

MIBA Land

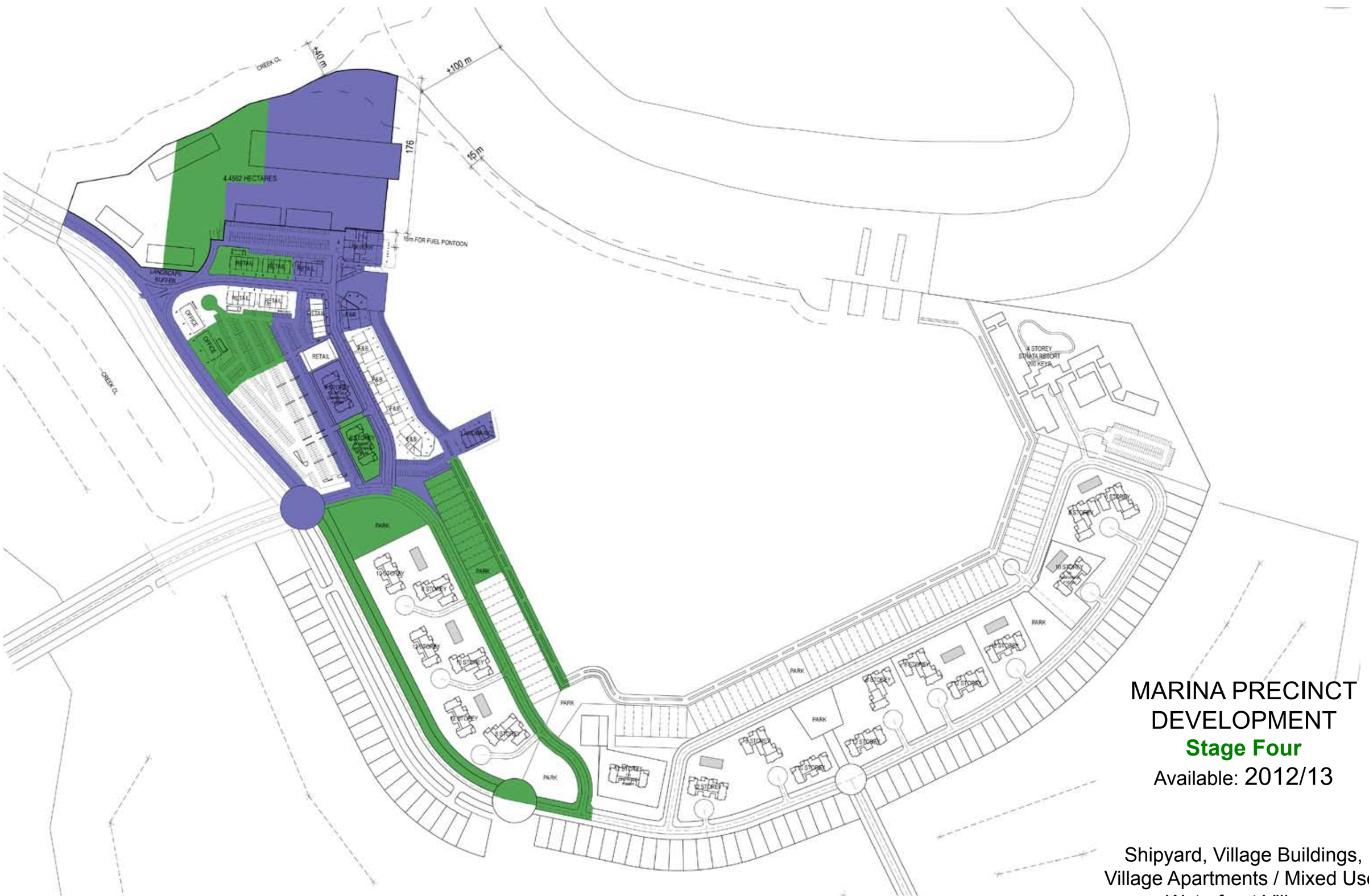
Marina Precinct Built Product

Residential West Land

Open Space & Recreation

Education & Training

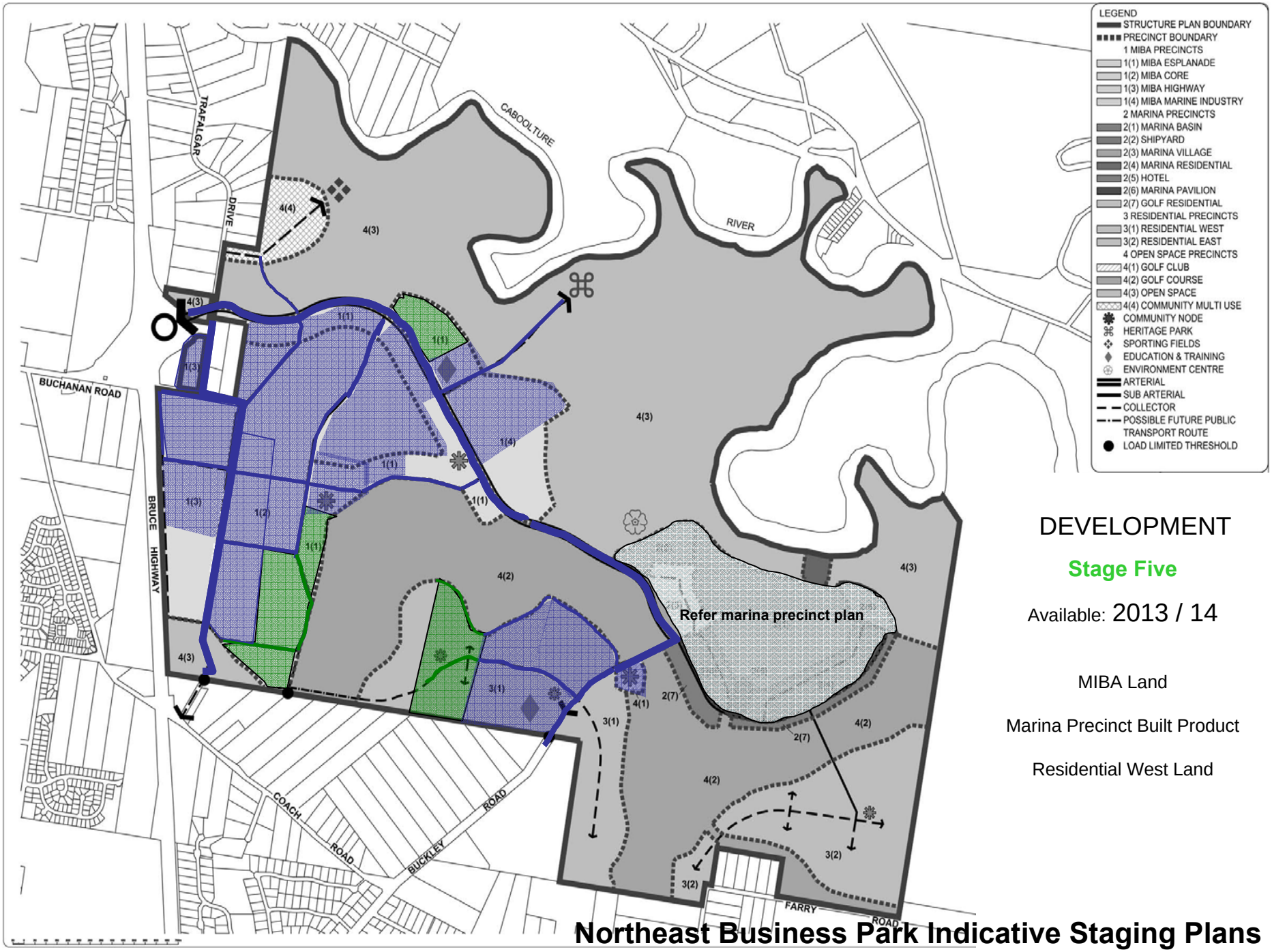
Northeast Business Park Indicative Staging Plans



MARINA PRECINCT
DEVELOPMENT
Stage Four
Available: 2012/13

Shipyard, Village Buildings,
Village Apartments / Mixed Use,
Waterfront Village

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Five

Available: 2013 / 14

MIBA Land

Marina Precinct Built Product

Residential West Land

Northeast Business Park Indicative Staging Plans

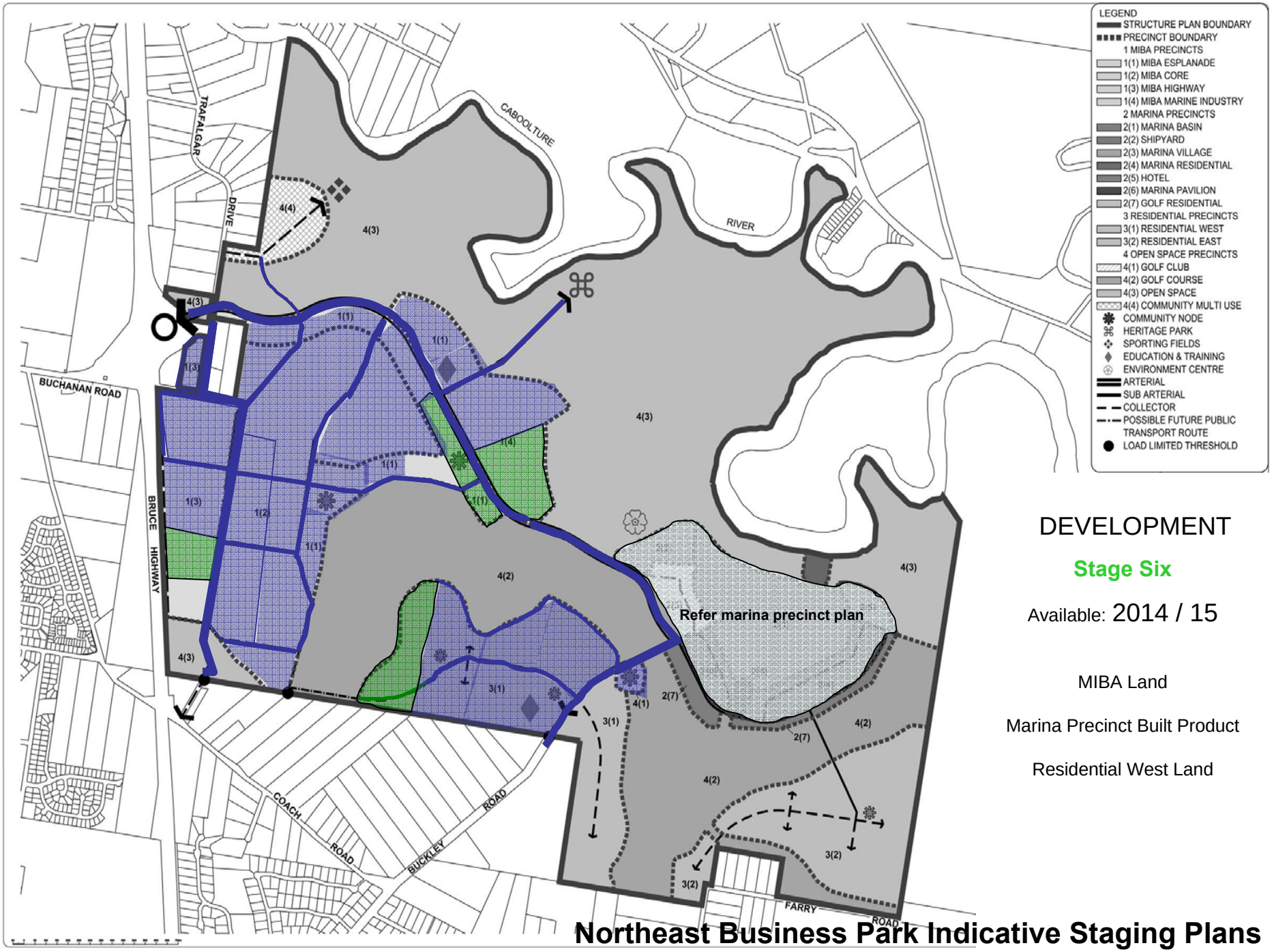
MARINA PRECINCT
DEVELOPMENT

Stage Five

Available: 2013/14

Shipyard, Village Buildings,
Apartments, Waterfront Villas,
Resort Hotel, Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Six

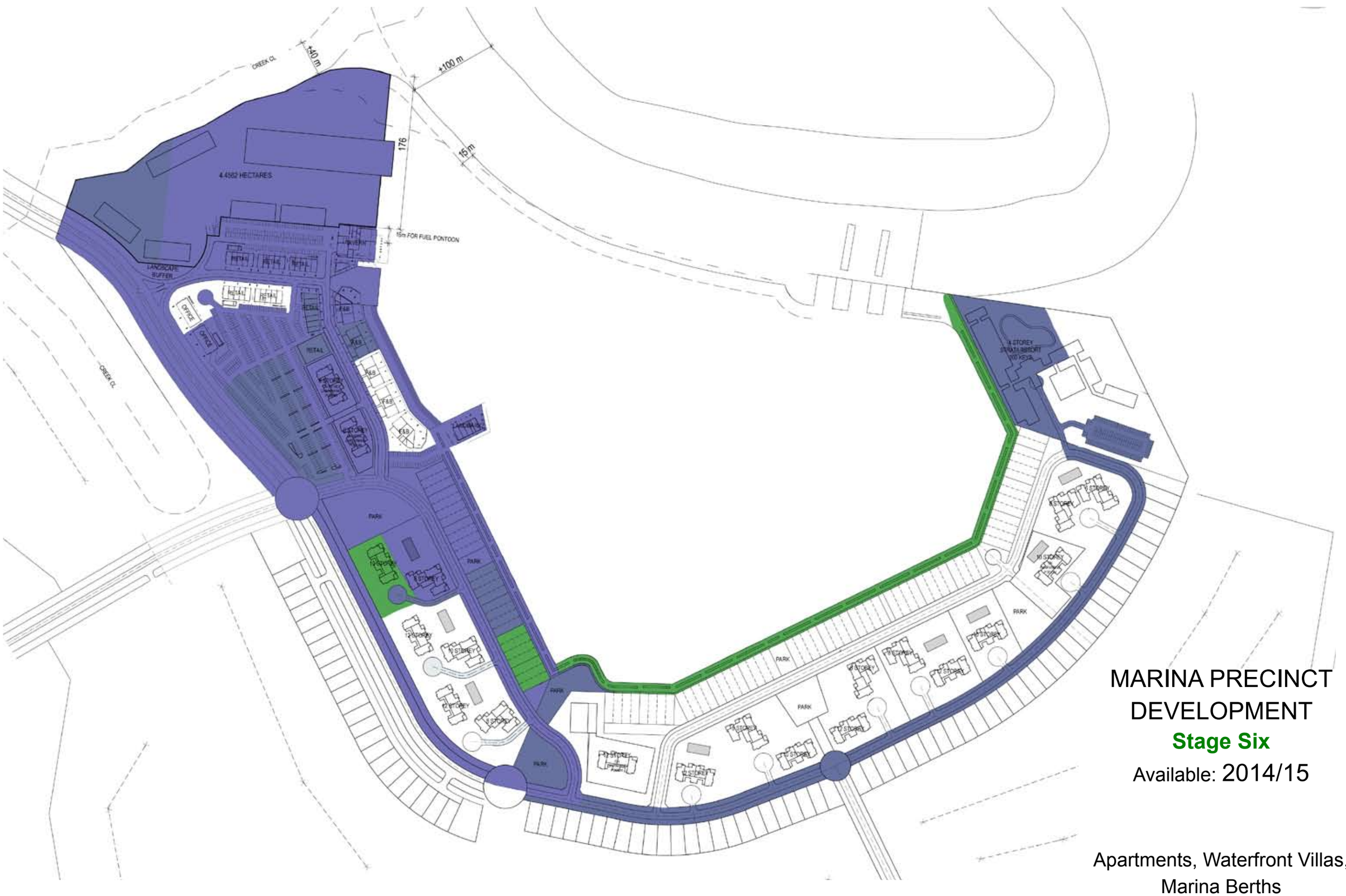
Available: 2014 / 15

MIBA Land

Marina Precinct Built Product

Residential West Land

Northeast Business Park Indicative Staging Plans



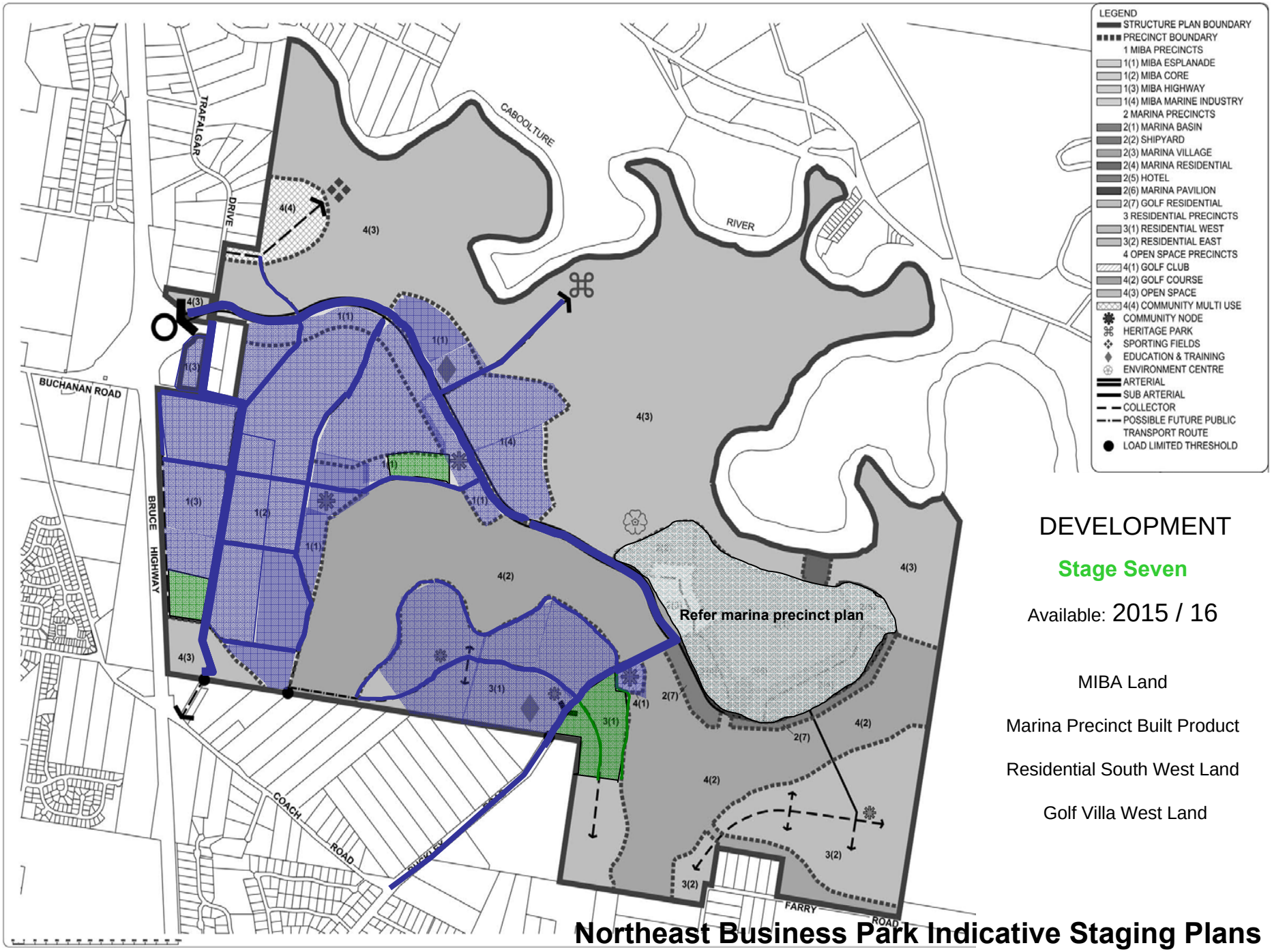
MARINA PRECINCT
DEVELOPMENT

Stage Six

Available: 2014/15

Apartments, Waterfront Villas,
Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Seven

Available: 2015 / 16

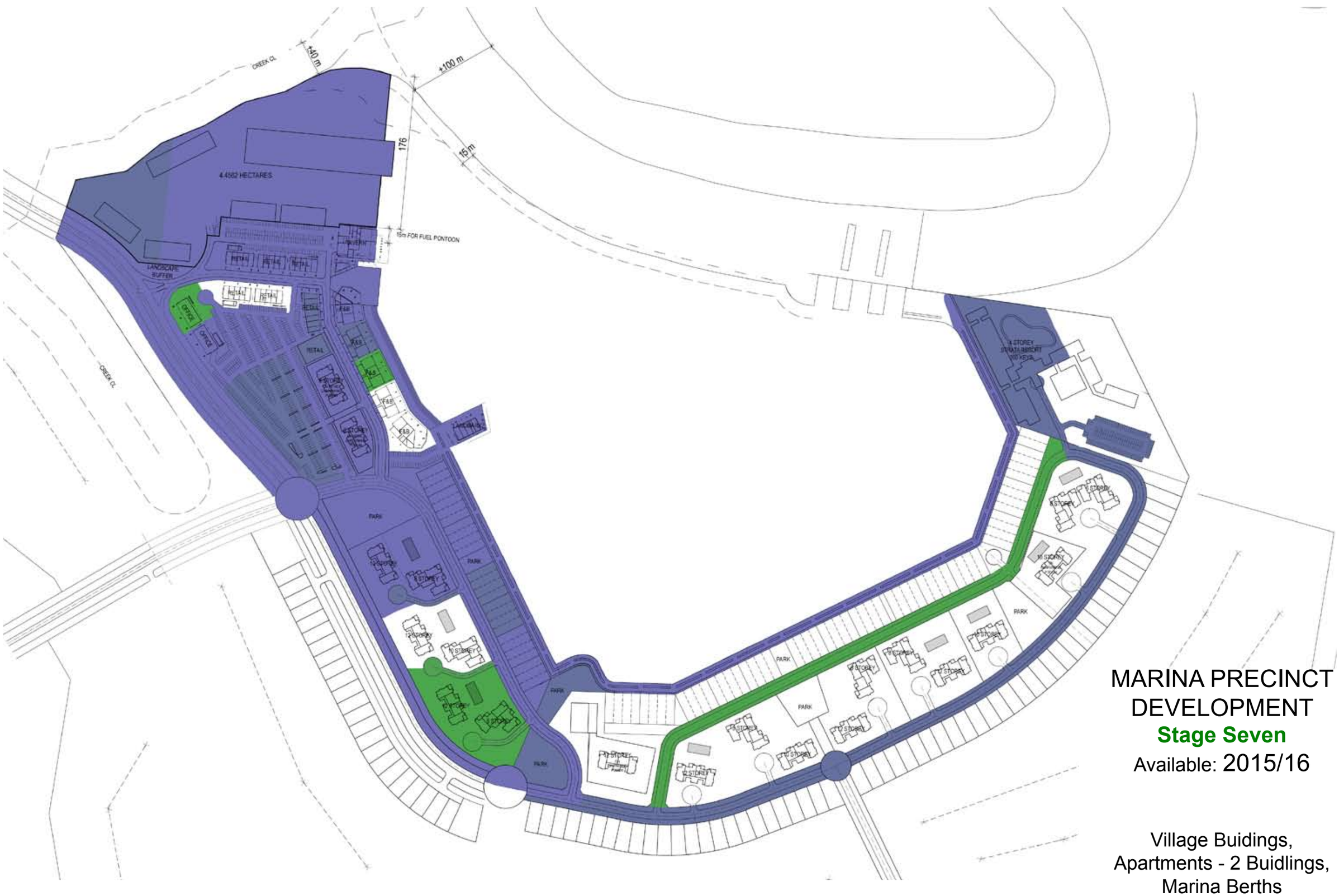
MIBA Land

Marina Precinct Built Product

Residential South West Land

Golf Villa West Land

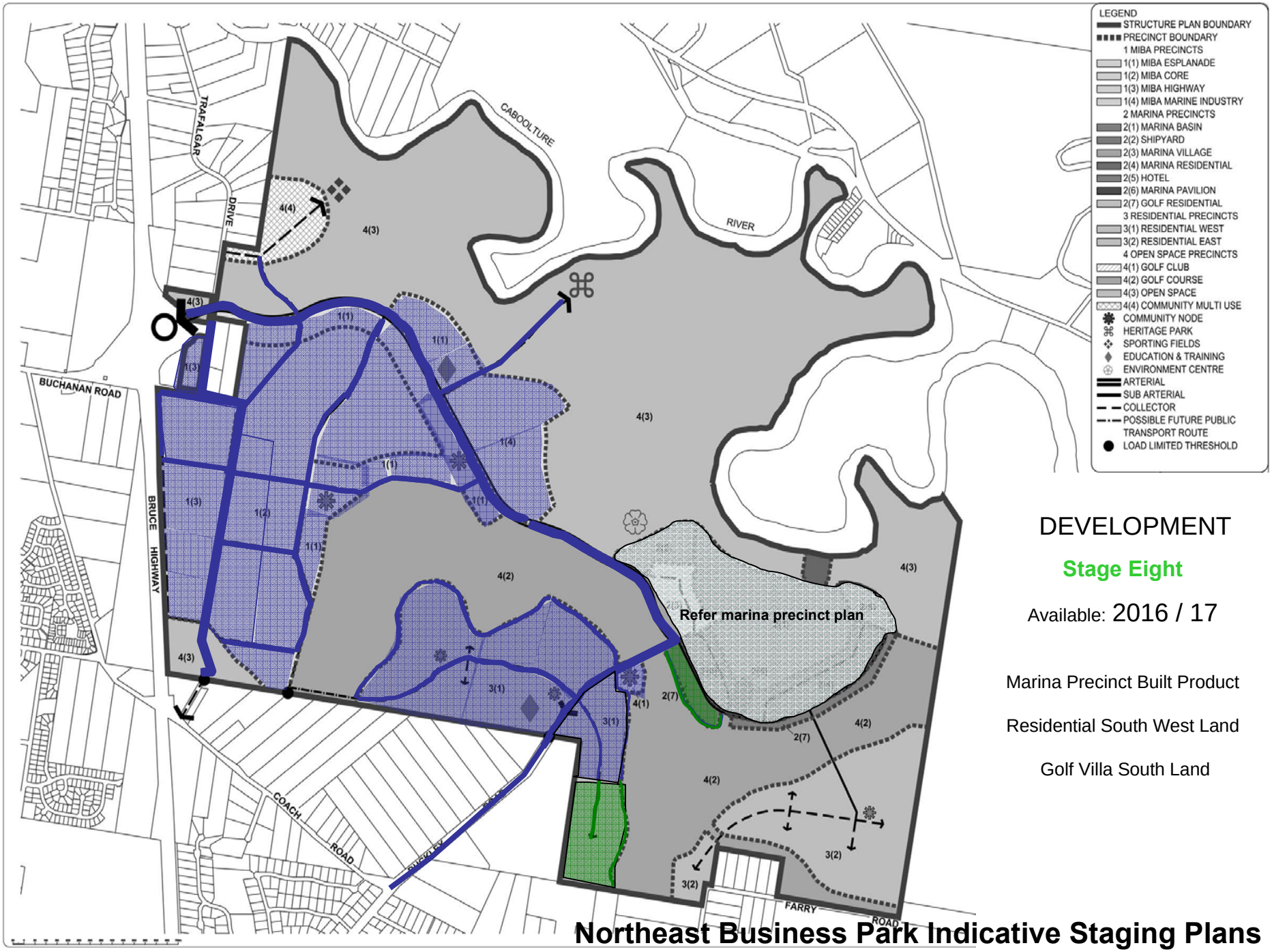
Northeast Business Park Indicative Staging Plans



MARINA PRECINCT
DEVELOPMENT
Stage Seven
Available: 2015/16

Village Buidings,
Apartments - 2 Buidlings,
Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Eight

Available: 2016 / 17

Marina Precinct Built Product

Residential South West Land

Golf Villa South Land

Northeast Business Park Indicative Staging Plans

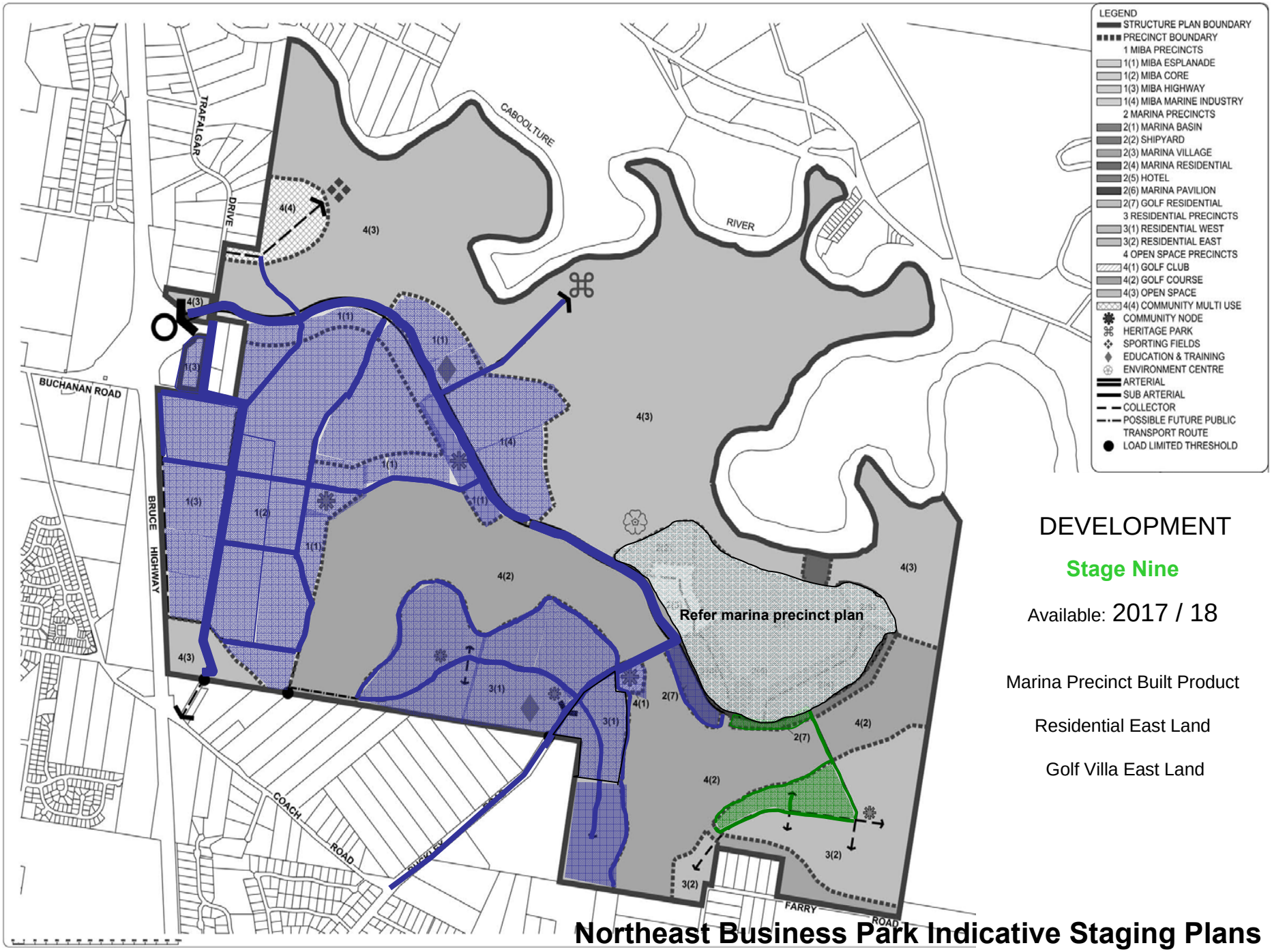
MARINA PRECINCT
DEVELOPMENT

Stage Eight

Available: 2016/17

Village Buidlings, Apartments,
Waterfront Villas,
Resort Hotel Expansion,
Residential Golf Villa Lots

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Nine

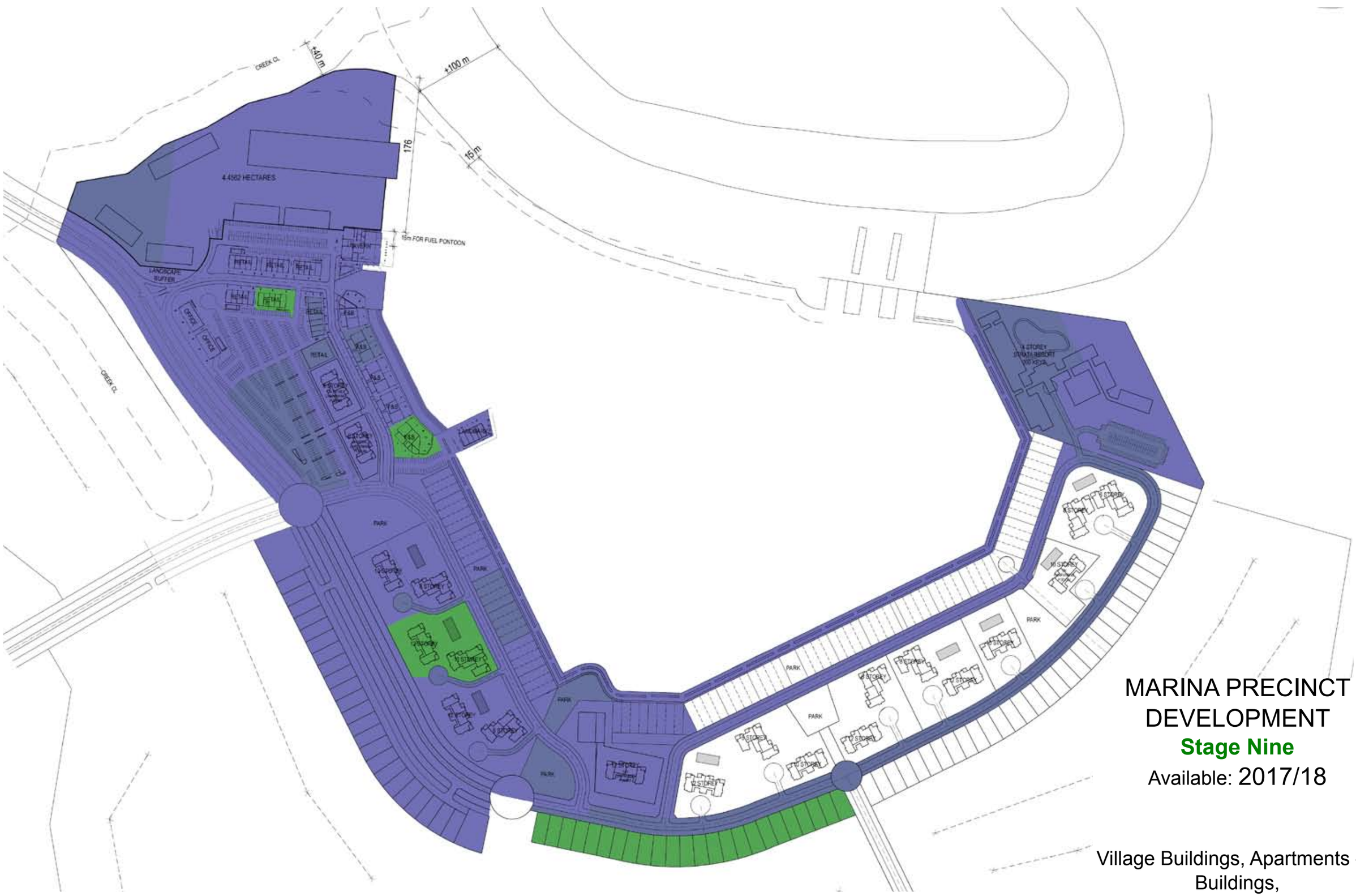
Available: 2017 / 18

Marina Precinct Built Product

Residential East Land

Golf Villa East Land

Northeast Business Park Indicative Staging Plans



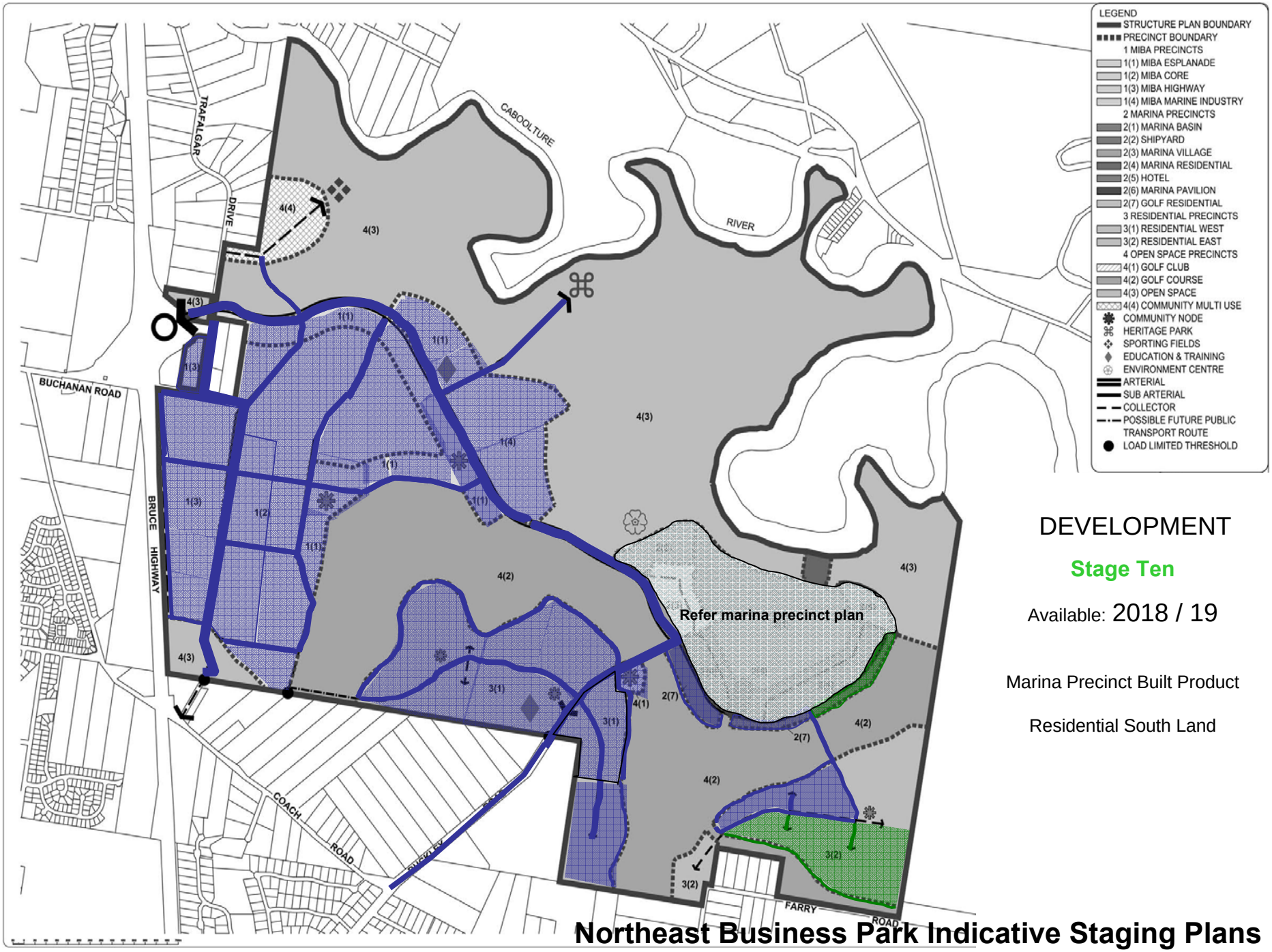
MARINA PRECINCT
DEVELOPMENT

Stage Nine

Available: 2017/18

Village Buildings, Apartments - 2 Buildings,
Residential Golf Villa Lots,
Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

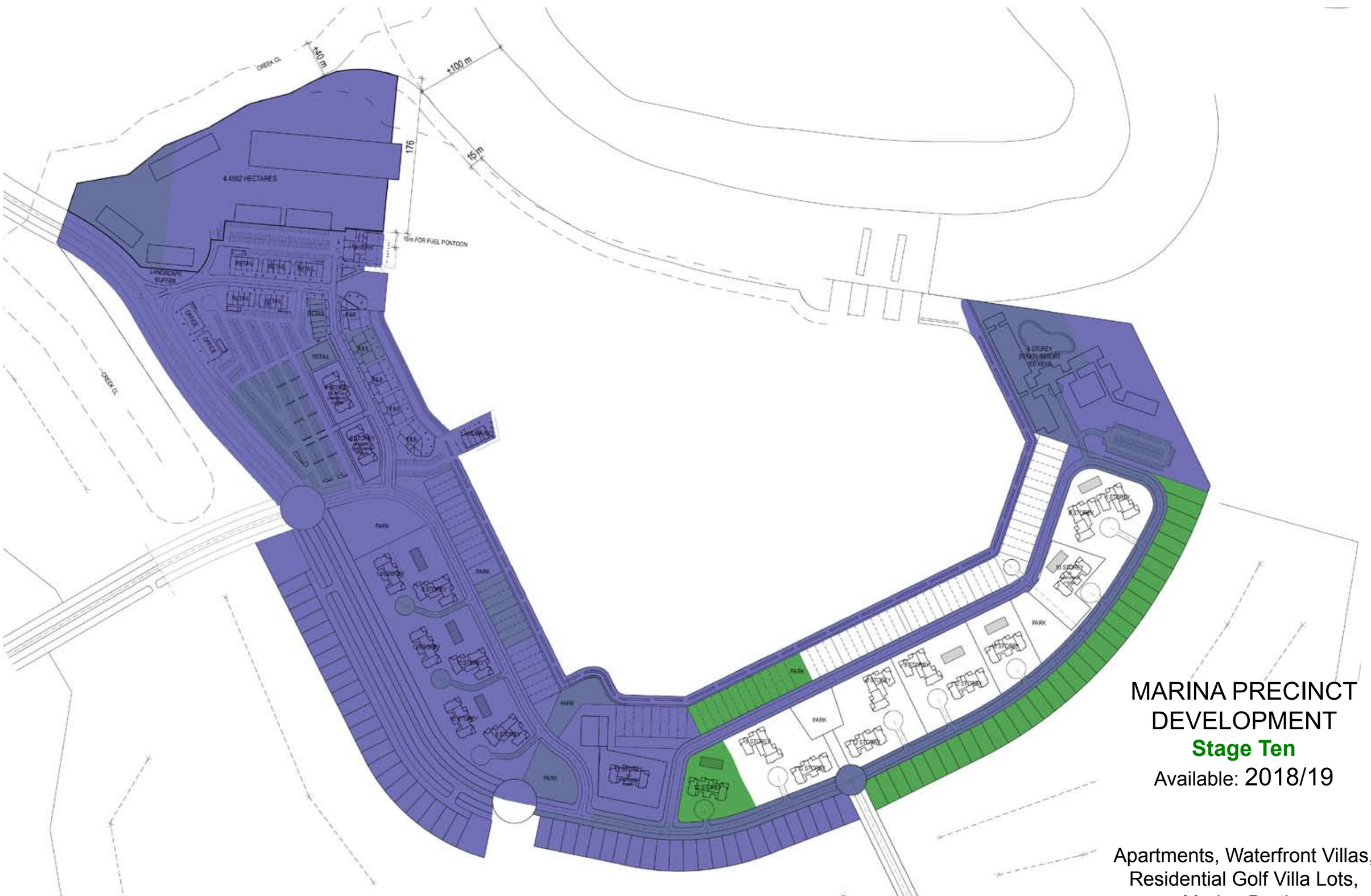
Stage Ten

Available: 2018 / 19

Marina Precinct Built Product

Residential South Land

Northeast Business Park Indicative Staging Plans



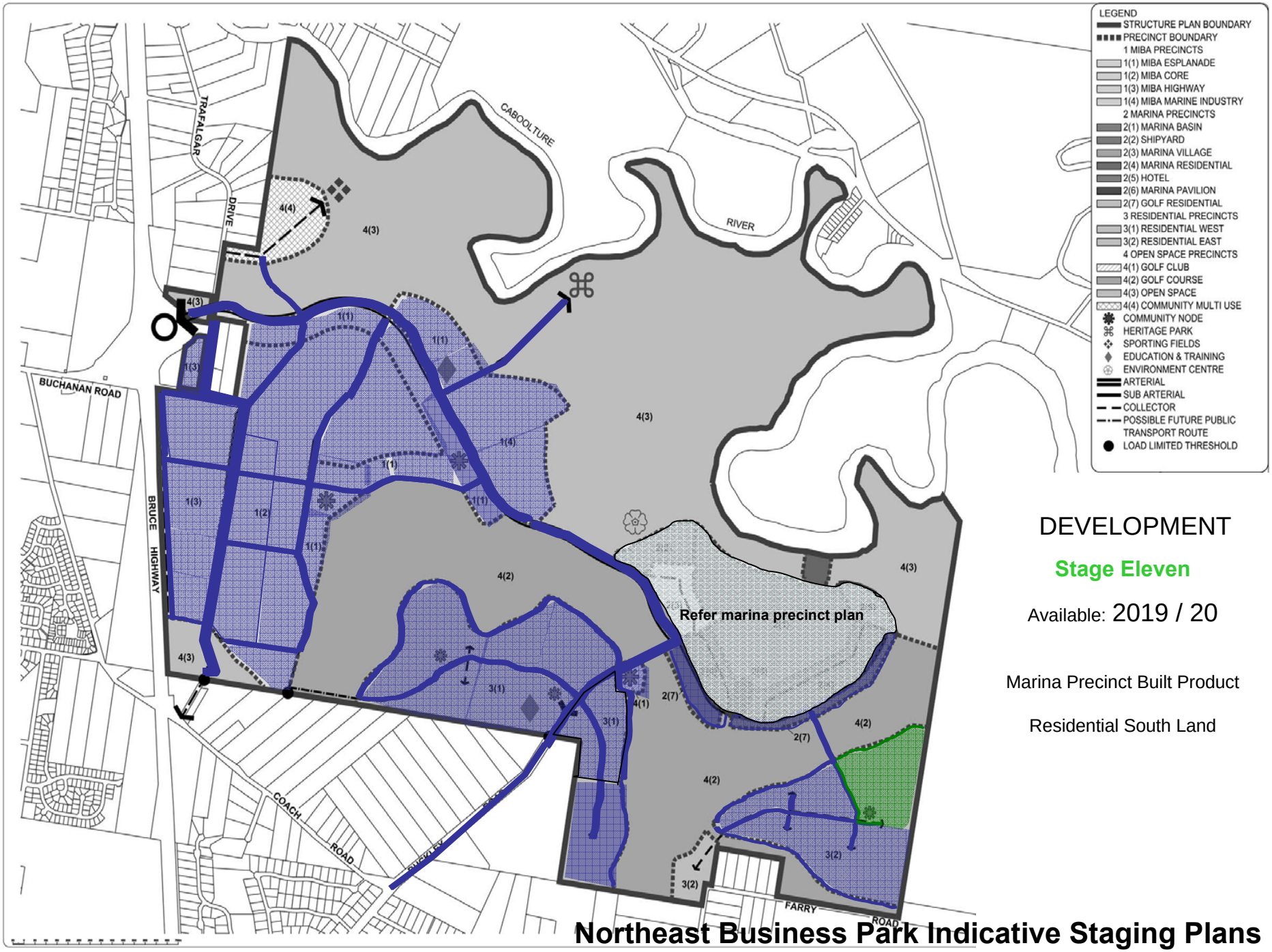
MARINA PRECINCT
DEVELOPMENT

Stage Ten

Available: 2018/19

Apartments, Waterfront Villas,
Residential Golf Villa Lots,
Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Eleven

Available: 2019 / 20

Marina Precinct Built Product

Residential South Land

Northeast Business Park Indicative Staging Plans

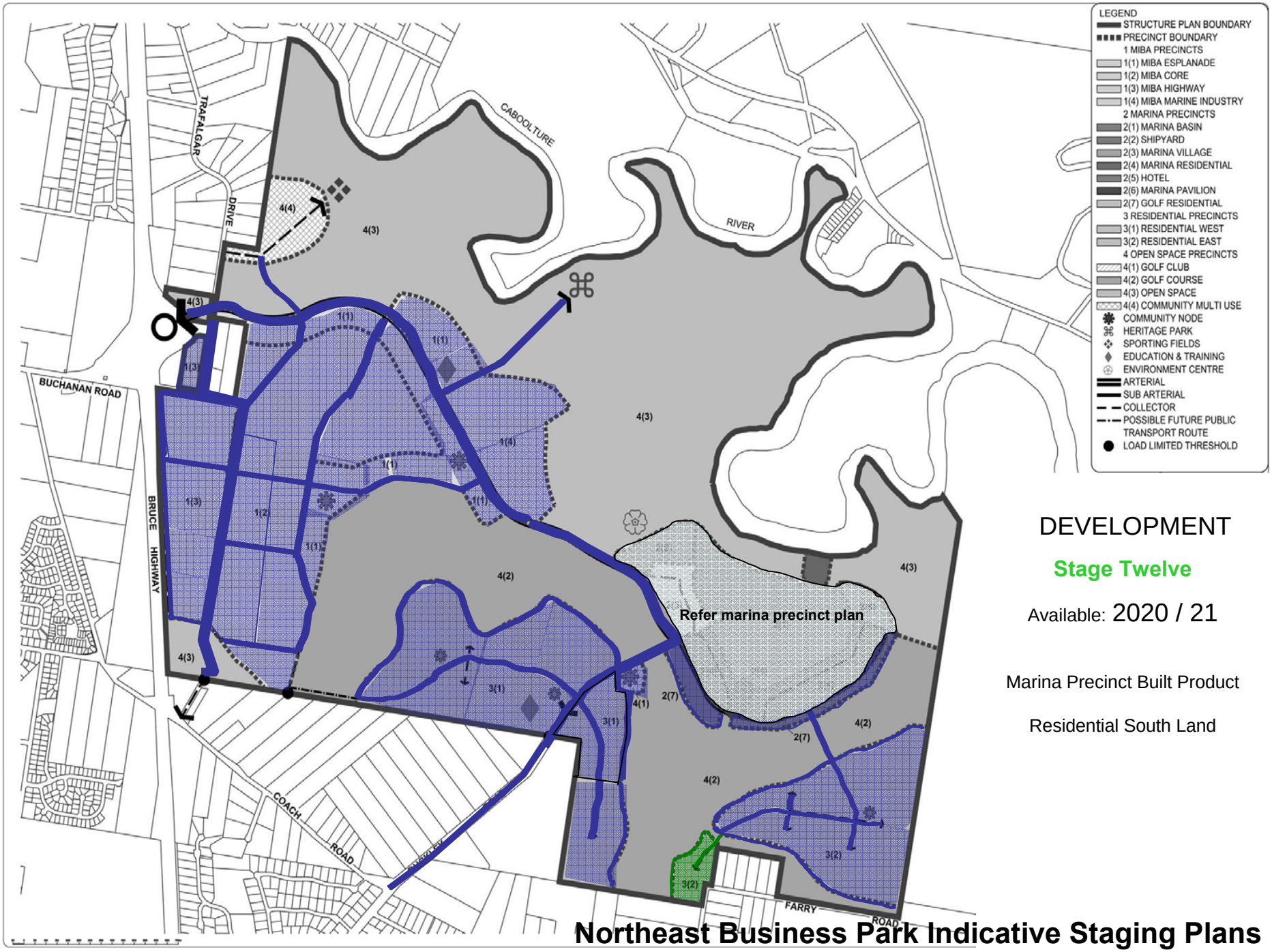
MARINA PRECINCT
DEVELOPMENT

Stage Eleven

Available: 2019/20

Apartments - 2 Buildings,
Waterfront Villas, Marina Berths

Northeast Business Park Indicative Staging Plans



DEVELOPMENT

Stage Twelve

Available: 2020 / 21

Marina Precinct Built Product

Residential South Land

Northeast Business Park Indicative Staging Plans

Northeast Business Park Indicative Staging Plans

MARINA PRECINCT
DEVELOPMENT

Stage Thirteen

Available: 2021/22

Apartments - 2 Buildings,
Waterfront Villas

Northeast Business Park Indicative Staging Plans

MARINA PRECINCT
DEVELOPMENT

Stage Fourteen

Available: 2022/23

Apartments - 2 Buildings,
Marina Berths

Northeast Business Park Indicative Staging Plans

MARINA PRECINCT
DEVELOPMENT

Stage Fifteen

Available: 2023/24

Apartments - 2 Buildings,
Marina Berths

Northeast Business Park Indicative Staging Plans

APPENDIX E

DMR Guidelines for Installation Works

RECEIVED
17.09.07

Queensland Government

Department of **Main Roads**

12 September 2007

Mr Bill Edmonds
Laing O'Rourke Australia Pty Limited
Level 10
100 Eagle Street
Brisbane Qld 4000

Dear Mr Edmonds

Caboolture Shire
Bruce Highway
Services under the Bruce Highway at Buchanan Road Interchange, Morayfield

Thank you for your letter of 3 September 2007.

Main Roads has planning in progress to widen the Bruce Highway from 4 lanes to 6 lanes. This widening will affect the area where the proposed services are planned to cross under the highway. You are advised to contact Main Roads officer Mr Chris Nagel on (07) 3337 8169 to obtain information on the proposed widening of the highway.

Main Roads will require detail plans showing the alignment and longitudinal section of the proposed services crossing under the Bruce Highway.

Please find enclosed for your information a copy of Main Roads specification "Installation of Underground Conduits Within The Boundaries of State-Controlled Road".

For approval of your project, please submit plans to this office.

Yours sincerely

for D G Tennant
District Director
(North Coast-Hinterland)

Office of the Deputy Director-General / Districts
North Coast-Hinterland
50 River Road
PO Box 183
Gympie Queensland 4570
ABN 57 836 727 711

Our ref 25/1/702.9H f29 kte7093
Your ref --
Enquiries Mr Keith Elliott klc
Telephone +61 7 5482 0333
Facsimile +61 7 5482 0465
Website www.mainroads.qld.gov.au
Email www.northcoast@mainroads.qld.gov.au

Queensland Government
Department of Main Roads

TRANSPORT PLANNING

INSTALLATION OF UNDERGROUND CONDUITS WITHIN THE BOUNDARIES OF STATE-CONTROLLED ROAD

1. General

This specification applies to the installation of underground conduits and associated plant on State-controlled roads declared under the Transport Infrastructure Act 1994.

"Owner" refers to the owner of the conduit.

"Main Roads" refers to the Queensland Department of Main Roads.

"District Director" refers to the District Director, North Coast-Hinterland District, Queensland Department of Main Roads.

This specification shall be applied together with any relevant codes of practice. Where there is any conflict between this specification and a code of practice, the Owner shall be responsible for resolving that conflict, with the District Director, before any works are commenced.

2. Application

A written application, with plans and specifications, shall be submitted to the District Director at least 6 weeks prior to the proposed date of commencement of work. The application shall include the following documents:

* Plans
* Specifications [1]
* Works Program [1]
* Traffic Management [1]

[1] When required in letter of approval

3. Approval

No work shall be commenced until the District Director issues an Approval to Commence Work in writing.

a) Approval by Main Roads shall not interpreted as approval by the Local Government or any other Government Department or Service Authority. Likewise, approval by any other body shall not be interpreted as approval by Main Roads.

b) If there are any conflicts between Main Roads conditions and conditions imposed by other bodies, the Owner shall bring them to the attention of the District Director for resolution prior to commencing the work.

c) Approved work shall be completed within a period of 2 years from the date of Main Roads approval. Should the approved work not be completed within this 2 year period, a new application will be required.

4. Motorways and Access Limited Roads

a) Installation of underground conduits along motorways and access limited roads will not generally be approved. In order to gain approval the Owner would be required to demonstrate that such installation would result in significant benefits to the community at large.

b) Any approval would be on the condition that all work associated with installation and maintenance of the conduit be carried out without direct access from the carriageways of the motorway or access limited road.

5. Supervision and Inspection

a) Public utility works shall be supervised by the Owner. Private works shall be supervised by a qualified Consulting Engineer retained by the Owner or developer and approved by the District Director.

b) The District Director shall be notified 1 week prior to the proposed commencement of the work so that Main Roads inspection can be arranged.

6. Correspondence

Correspondence should be addressed to : District Director, North Coast-Hinterland District, Department of Main Roads , P O Box 183, Gympie Qld 4570.

7. Installations

7.1 Specifications

Unless approved otherwise, all materials and processes shall be in accordance with current Main Roads Standard Specifications or, if there is no relevant Main Roads Standard Specification, in accordance with the appropriate Australian Standard.

7.2 Clearing

Clearing shall be in accordance with Main Roads Specification 11.04 - MRS "General Earthworks" and shall be kept to the absolute minimum required for construction. All cleared vegetation should be preferably milled, or chipped and returned to site or used in rehabilitation works or made available for community projects. Any disturbed ground surfaces must be reinstated with turf, seed or mulch and in accordance with all relevant Commonwealth and State Government Laws and Regulations and Local Government By-laws.

7.3 Drainage

a) The work shall be carried out so as not to detrimentally affect the existing drainage provisions of the roadway.

b) No existing drains or structures are to be altered without approval from the District Director.

c) Provisions shall be made for all work to be adequately drained so as not to cause damage to, or interference to the operation of, Main Roads infrastructure.

7.4 Cover

Unless otherwise approved, the minimum cover over conduit shall be:

a) 1200mm to the lowest point of existing or future road formation (including the design invert of existing drains).

b) 600mm to the lowest point of existing or future footpath.

c) 900mm elsewhere in the road reserve.

7.5 Road Crossings

a) Unless otherwise approved in writing, all road crossings shall be bored or jacked with no disturbance to the pavement or shoulders.

b) All boring or jacking work shall be carried out by a specialist contractor with experience in similar work and with Third Party Quality Assurance Accreditation.

c) Water jetting methods are not to be used for under road boring or jacking.

d) Where required by the District Director, a Main Roads representative will be present at during road crossing construction.

e) Conduits, enveloping pipes or service tunnels shall be used for all road crossings and shall extend for the full width of the current and future road formation as approved by the District Director.

f) Where the diameter of the bored hole exceeds the diameter of the conduit, enveloping pipe or service tunnel, the surrounding cavity shall be filled with grout as approved by the District Director.

g) Unless otherwise specified the annular void, between a services pipeline and enveloping pipe, shall be pressure grouted with lean mix concrete.

h) Service tunnels shall be provided with drains to remove liquids and heavy gases and shall be provided with vent pipes to remove light gases. The outlets to drains and vent pipes shall be clearly marked and shall be located clear of existing and future road maintenance operations.

i) Where trenching across a roadway is approved, the work shall be carried out in accordance with the conditions specified in Clause 7.6.

7.6 Trenching

a) Trenching shall be organised so as to cause minimum disruption to traffic, pedestrians, and accesses to adjacent properties.

b) Trenches shall not be left open overnight.

c) The conduit shall be bedded in and surrounded by 100mm (minimum) compacted sand or, where specified by the District Director, 150mm (minimum) 20MPa/20 concrete.

d) Prior to excavation across roadways with asphalt surfacing, straight saw-cuts shall be made for the full depth of the asphalt at least150mm clear of the trench walls and the saw-cut edges shall be maintained as neat, straight edges during the work.

e) Backfill in trenches shall be as follows: -

i. Trenches in sealed pavements.

The backfill above the bedding sand or concrete surround shall be lean mix, flowable fill concrete (20:1 mix) manufactured in accordance with AS 1379 Ready Mixed Concrete. The finished surface of the concrete shall be a minimum of 75mm below the existing roadway surface.

ii. Trenches in unsealed road shoulders.

The backfill above the bedding sand or concrete surround shall be lean mix, flowable fill concrete (20:1 mix) manufactured in accordance with AS 1379 Ready Mixed Concrete. The concrete shall be level with the bottom of the existing pavement.

iii. Trenches in unpaved areas of the road reservation.

Backfill above the pipe surround may be compacted sand, or earth compacted in uniform layers of 150mm maximum depth, to a finished level at least 100mm below the natural surface. The layers shall be compacted to at least 95% relative dry density (Standard Compaction Test MRD No. Q110A). The top 100mm of the trench shall be filled with an approved top soil unless otherwise approved by the District Director.

f) Reinstatement of pavement and surfacing shall be as follows: -

i. Trenches in sealed pavements.

The surface of the flowable fill concrete [refer to clause (e)(i) above] and the remaining sides of the trench shall be dry and given a thorough brooming before being uniformly covered with a sprayed coating of bitumen emulsion. The bitumen emulsion shall comply with the requirements of MRS 11.21- "Specification for Bitumen Emulsion".

The trench shall be filled with hot mixed asphalt which shall comply with the requirements of MRS 11.30 - "Dense Graded Asphalt Pavements". The finished surface of the asphalt shall join smoothly to the existing pavement surface.

This work shall be carried out under the supervision of the District Director's representative.

Alternatively, if approved by the District Director, temporary cold-mix reinstatement may be made, with the permanent surfacing being carried out by the Main Roads maintenance contractor at the Owner's expense.

ii. Trenches in unsealed road shoulders.

Shoulder pavement material shall be an approved soil aggregate material conforming with the requirements for base material Type 2.3, Grading C or D, contained in the Main Roads Standard Specification MRS 11.05 - "Unbound Pavements".

In addition, the material shall have a maximum particle size of 25mm and shall be compacted to 100% relative dry density (Standard Compaction Test MRD No. Q110A).

7.7 Attachment to Bridge Structures and Culverts

a) Attachment to bridges and culverts will not generally be approved. In order to gain approval, the Owner would be required to demonstrate that such installation would result in significant benefits to the community.

b) The District Director may approve the attachment of conduits to bridges or culverts subject to the following conditions:

i. The Owner shall remove or protect the conduit during any Main Roads rebuilding or maintenance operations.

ii. The Owner shall maintain the conduit in good order and condition to the satisfaction of the District Director.

iii. Unless specifically approved otherwise, closure of any part of the roadway or footpath or the parking of service vehicles on the bridge or culvert during installation or maintenance will not be permitted.

7.8 Install through Culverts

a) Where installation through a culvert is approved in writing, the conduit shall be attached to the soffit of the culvert so that there is no appreciable sag in the conduit. At the inlet and the outlet of the culvert the conduit shall be attached to the wings of the culvert.

b) Except as provided above, the conduit is not to interfere with the existing drainage system in any way.

8. Conduits Carrying Combustible Liquids or Flammable Fluids

a) Fireproof markers shall be installed to clearly indicate the conduit position and shall be fitted with clearly visible signs providing information on action to be taken in emergency situations.

b) Where a conduit is installed in a trench, marker tape shall be placed between 450mm and 600mm above the conduit for the full length of the trench.

9. Works Program

a) A Works Program shall be submitted to the District Director with the application and shall be approved by the District Director prior to the commencement of the work.

b) The Works Program shall show the start and finish dates of the work.

c) Where the work is to be carried out in stages, the Works Program shall show the start and finish dates of each stage.

d) If the Works Program is to be varied by more than 2 weeks, a revised Works Program shall be submitted to the District Director for approval.

10. Traffic Management

a) The Owner shall be responsible for traffic management wherever the normal flow of traffic is disrupted by the work.

b) A Traffic Management Plan shall be submitted to the District Director with the application and shall be approved by the District Director prior to the commencement of the work.

c) The Plan shall be consistent with the Manual of Uniform Traffic Control Devices (Queensland) and shall comply with the Main Roads Specification MRS 11.02- "Control of Vehicular Traffic at Roadworks".

d) The Plan shall show how provision will be made for the safe and orderly passage of traffic through the site during all stages of the work.

e) The District Director may require that the Plan be amended and may require that certain work be restricted to certain hours to minimise the disruption to traffic.

f) The work shall proceed without interruption to traffic and shall be organised so as to cause minimum disruption to traffic, pedestrians, and access to adjacent properties.

g) The Owner shall be responsible for the provision of all warning signs and other devices required for traffic control.

h) All temporary signs and other devices shall be promptly removed when no longer required.

i) The District Director may order additional traffic control measures to be implemented by Main Roads or by a third party and may recover the costs of those measures from the Owner.

11. Environmental Management

a) The Owner shall be responsible for compliance with all relevant Environmental Protection legislation.

b) The Owner shall undertake a site-specific Review of Environmental Factors (REF) which shall contain an assessment of the environmental impacts of the proposed work.

c) The Owner shall produce an Environmental Management Plan (EMP) which shall address all of the issues identified in the REF.

d) The REF and EMP shall be submitted to the District Director with the application and shall be accepted by the District Director prior to the commencement of the work. Such acceptance shall not remove the Owner's responsibilities under the relevant legislation.

12. Quality Management

a) All organisations involved in the work shall have current Third Party Accreditation for Quality Systems which comply with the requirements of AS/ISO 9001 or AS/ISO 9002 and which include the requirements of Clause 8 of Main Roads Specification MRS 11.50 - "Specific Quality Management Requirements". The interpretation of AS/ISO 9001 and AS/ISO 9002 for construction work shall be based on AS 3905.2.

b) Quality Plans from each organisation shall be submitted to the District Director with the application and shall be approved by the District Director prior to the commencement of the work.

c) The Quality Plans shall be consistent with Main Roads Specification MRS 11.50.

13. Construction Safety

The Owner shall be responsible for ensuring that the works comply with the requirements of the Workplace Health and Safety Act and Regulations.

14. Damage to Roadway and Maintenance

The Owner shall be required to repair, at no cost to Main Roads, any damage to the road due to the installation or existence of the conduits.

15. Privately Owned Conduits

a) Privately owned conduits will be treated as Ancillary Works and Encroachments under the provisions of the Transport Infrastructure Act 1994.

b) If approval is given for a privately owned conduit, a permit will be issued for a specific term and subject to the following conditions:

i. Payment of a fee

ii. Signing of an Indemnity Statement

iii. Provision and maintenance of Public Liability Insurance

iv. Removal of the conduit if required by the District Director

v. Removal or protection of the conduit during Main Roads construction or maintenance operations.

c) The permit is not transferable. A new owner must obtain a new permit.

16. Costs

All costs shall be payable by the Owner, including any additional traffic control ordered by the District Director.

17. Completion of Work

The District Director's representative will inspect the work and notify the Owner of any defects which require rectification.

18. Indemnity

The Owner, by accepting the above conditions, hereby indemnifies The Director-General, Department of Main Roads against any claim, action or process for damage and/or injury which might arise during the progress of the work and shall keep indemnified The Director General, Department of Main Roads against any claim, action or process for damage and/or injury which might arise due to the installation or existence of the conduit.

19. References

a) PACP69 Design Guide - Lighting

APPENDIX F

DP Remediation Action Plan – Land Contamination

APPENDIX 1

REMEDIATION ACTION PLAN

2-32 and 24 NOLAN DRIVE, MORAYFIELD, BRISBANE

DATE OF EFFECT: (Date of Approval of Development Application, EPA application number)

RPD: Lot 10 on RP 902079 **EPA File:**

1.0 INTRODUCTION

This Remediation Action Plan (RAP) was prepared for the site at 2-32 and 34 Nolan drive, Morayfield, Brisbane. The site is 515 ha in area, and is vacant, except for a house, garage, dairy sheds, and cattle yards at the end of the main gravel road entering the property.

The site was previously used for rural purposes including dairying, cotton and sugar cane growing from about 1862 to 1970. During the 1970's pine trees were planted over most of the site. The pine trees were removed between 1997 and 2002 and the property has since been used to graze cattle. A 2000 litre underground fuel storage tank (UST), an aboveground fuel storage tank (AST), and a cattle dip still exist on the site.

This RAP is submitted as part of an application for commercial/industrial redevelopment of the site.

1.1 Purpose of the RAP

The purpose of the RAP is to provide a detailed plan of activities, procedures and objectives to ensure the effective and controlled remediation of the site. It describes the procedures and standards to be followed throughout the project to facilitate successful remediation and ensure protection of human health and the environment.

1.2 Objectives

The primary objectives of the remediation program at the site are:

- To make the site safe for planned future use including medium-rise residential.
- To prevent the potential long-term generation and release of contaminated surface water, groundwater and soils impacting on the environment of adjoining land and aquifers.
- To ensure the protection of the community and local environment.

This RAP:

- Summarises the current status of the site; and
- Provides pre-validation and remedial strategies to remove contamination from the site in a manner that protects human health and the environment and ensures the site is suitable for the proposed redevelopment for residential use.

Contaminated soil must be removed from the site or treated on-site in accordance with this RAP.

2.0 BACKGROUND

2.1 Description of Proposed Development

An application has been made for construction of a modern business and industrial precinct.

2.2 Previous Investigations

The following contamination investigations have been conducted at the site:

- Douglas Partners Pty Ltd (August 2003) *Stage 1Preliminary Site Contamination Investigation, 2-32 & 34 Nolan Drive, Morayfield.* Project 33454.

2.3 Local Topography

Lot 10 slopes to the north and east towards the Caboolture River. It varies in elevation from approximately 18 m AHD near Nolan Drive to 2.0 m AHD along the Caboolture River.

Stormwater runoff is directed to the northeast into drains and creeks, which then flow into the river.

2.4 Geology

The Caboolture 1:100 000 Geological Sheet indicates the site is underlain by Quarternary aged estuarine deposits comprising clay and sand within the floodplain levels of Lot 10. The more elevated regions of Lot 10 are underlain by the Jurassic aged Landsborough Sandstone comprising sandstone, siltstone, shale, and minor conglomerate.

2.5 Hydrogeology

Little or no groundwater was found in the DP 2003 investigation in test pits excavated across the site, with the exception of pits that intersected sand (pits 13, 21, and 22) at depths between 0.8 m and 1.3 m depth. Groundwater is expected at depths greater than 20 m within the Landsborough Sandstone.

3.0 EXTENT OF CONTAMINATION

3.1 Heavy Metal Levels

No elevated levels of heavy metals were recorded in soil samples from DP test pits.

3.2 Petroleum Hydrocarbons

Elevated levels of petroleum hydrocarbons were recorded in DP Test Pit 3 located next to the UST. Concentrations up to 1,135 mg/kg exist, and 10-20 m^3 of soil is expected to be affected.

3.3 Pesticides

OC/OP test results were all below HBIL-A and the laboratory's level of reporting, except for a slightly elevated level of DDT (1.0 mg/kg) in DP Test Pit 8 (0-0.2 m) located adjacent to the exit point of the cattle dip. Additional sampling and testing will be carried out to further validate the DDT levels in the soil are below the HBIL-A.

3.4 Groundwater

No groundwater testing has been carried out.

3.5 Current Impact

A layer of relatively clean soil over the surface of the UST area currently mitigates the impact of hydrocarbon contamination on health and the environment.

4.0 ENVIRONMENTAL GUIDELINES

Remedial activities conducted at the site must comply with relevant procedures described in the following documents:

- *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (ANZECC guidelines) published by the Australian and New Zealand Environment and Conservation Council/National health and Medical Research Council, January 1992;
- Australian Standard, *Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds*, 1997 (AS 4482.1-1997); and
- Australian Standard, *Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances*, 1999 (AS 4482.2-1999).
- National Environmental Protection Council (December 1999) *Guidelines issued under Schedule B of the National Environment Protection (Assessment of Site Contamination) Measure* (NEPM),;
- Queensland Department of Environment (May 1998) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland.*
- Queensland Environmental Protection Agency (March, 2001) *Queensland Water Quality Guidelines, Draft for Comment.*

5.0 REMEDIAL STRATEGIES

5.1 Remediation Goals

Remediation goals are described in Tables 2 and 3. These goals will ensure that the remediated soil does not pose a risk to human health or the environment.

Table 2: Soil Remediation Goals

Analyte	Soil Remediation Goals (mg/kg)
Arsenic	100
Cadmium	3
Chromium	50
Copper	200
Lead	300
Zinc	500
Other metals	HBIL (A) levels as per Table 9.1, EPA *Guidelines.*
TPH (C_6-C_9)	100
TPH (C_{10}-C_{14})	100
TPH (C_{15}-C_{28})	1000
TPH (C_{29}-C_{35})	1000
Total TPH	1000
Benzene	1
Total BTEX	7
DDT	1

If any stormwater or groundwater is required to be discharged from the site during construction excavations, it must be tested for Cr, Pb, Cd, Ni, Zn, Cu, As and oil and grease to determine an appropriate discharge destination. Table 3 lists the acceptable discharge water quality criteria.

Table 3 Water Quality Goals

Analyte (Total where applicable)	Remedial Goals (µg/L)
Arsenic	50
Cadmium	2
Chromium	10
Copper	5
Lead	5
Zinc	50
Nickel	150
Oil and Grease	20 mg/L

If water is required to be discharged from the site, prior approval must be obtained from the Caboolture Shire Council.

5.2 Suitably Qualified Persons to Conduct / Supervise Works

A person qualified in accordance with S.381 and S.395 of the *Environmental Protection Act 1994* must conduct all investigations, supervise all remediation works and compile report/s required to remediate the site.

5.3 Extent of Contamination

The main concern for contamination at the site consists of total petroleum hydrocarbons (TPH) detected in DP Test Pit 3. The source of these compounds is from the UST currently on-site. The volume of affected soil is expected to be 10-20 m^3.

Marginally elevated level of DDT was found in one location near the cattle dip, and additional sampling of soil from 0-0.2 m depth around the dip and cattle yards are planned in this area. Testing of the samples for OC pesticides and arsenic will be carried out to further validate that the cattle dip area is not contaminated.

5.4 Strategies Applied

Remedial strategies will be as follows:

- Excavation and off-site disposal of UST, bowser, and vent pipe;
- Excavation of the TPH impacted soil from the UST pit and validate to be clean. Contaminated soil must be either bio-remediated on-site or disposed off-site;
- Excavation and off-site disposal of any soil found to be contaminated with OC pesticides, DDT, or arsenic.

Off-site disposal of contaminated soil must be carried out under an EPA *Disposal Permit*.

6.0 REMEDIATION PROGRAM

6.1 Overview

Remediation of contamination must be carried out as follows:

- Excavation of soil identified as contaminated and bio-remediate on-site or dispose off-site;
- Validation of excavations must be carried out;
- A qualified professional, in accordance with S.5.2 of the *EP Act* must supervise all remediation works involving the excavation and disposal of contaminated material.

6.2 Off-Site Disposal Provision

Off-site disposal of contaminated soil must be carried out in accordance with the conditions of a Section 424 Disposal Permit, granted under the *Environmental Protection Act 1994*. Contaminated soil must not be removed off-site without a Disposal Permit. An application for Disposal Permit must be accompanied

by a sampling plan and associated results (including bore logs) clearly indicating the material and depth intended for removal. The EPA will assess the findings of the investigations at that time.

6.3 Overview of the Remedial Program

The suitably qualified professional qualified in accordance with S.5.2, must carry out the following duties:

- Monitor and enforce compliance to the Health and Safety Plan;
- Monitor and enforce contractor compliance with the RAP,
- Inspection and maintenance of the integrity of the environmental protection measures around the site;
- Report to the owner and Administering Authorities (Caboolture Shire Council (CSC) and EPA) any breaches or possible breaches of environmental compliance within 48 hours following detection, this includes any strong or unusual odours or unusual substances encountered in any excavation;
- Overseeing excavation, with particular reference to any contaminated soil not previously identified.
- Maintain a site diary in which the following will be recorded:
  - date
  - general weather conditions
  - details of any unusual materials revealed during the excavations and details of actions taken to determine their risk
  - details of any incidents, near misses or incidents, which may have resulted in injury, and the actions taken to prevent their recurrence
  - details of any environmental issues, which may result in environmental concern and measures taken to correct them
  - details of any other matters relating to environmental or health issues.

6.4 Unexpected Contamination

If, during any site earthworks or excavation evidence of gross contamination not previously detected is observed, site works are to cease in that area and action taken to appropriately delineate the contamination. This material must be validated and remediated in accordance with provisions of this RAP, under supervision of a person suitably qualified in accordance with S.5.2.

7.0 OPERATIONAL CONTROL

The remediation program must be conducted with all due regard to the environment and to statutory requirements. In particular, in addition to any statutory compliances required, the contractor will be responsible for conducting remediation works with all due care to ensure compliance with the following conditions:

- Minimal air-borne dust is to be generated from the site. In the event of a dust complaint, mitigation measures such as watering must be used;
- Water containing any suspended matter or contaminants must be managed within the site in such a manner to minimise pollution of adjacent sites and waterways;
- Vehicles must be controlled so that minimal mud, soil or water will fall or be deposited on any public or private roadway or adjacent areas;

- Noise levels at the site boundary will comply with the required legislative requirements.

The owner must ensure that the contractor's site manager/foreman is conversant with the contents of the RAP and Health and Safety (H&S) Plan. Additionally they will ensure that each employee or sub-contractor involved with remediation is inducted into the requirements of the RAP and H&S Plan.

7.1 Control of Stormwater Runoff

Remediation works must comply with requirements for stormwater management as outlined in Schedule B(9) of the NEPM. This includes stockpiling excavated soil in a manner that shall prevent contamination from being transported off-site by stormwater.

The contractor must control surface waters on the site as follows:

- Divert clean stormwater runoff so that it does not flow through contaminated areas;
- Control drainage by interception and redirecting clean runoff in a controlled manner;
- Stormwater collected in trenches or sumps will be appropriately managed;
- Silt fences will be erected at locations where stormwater may flow from disturbed areas.

Water collected in excavations in contact with contaminated soil must be sampled and analysed for the analytes listed in S.5.1 to determine a suitable disposal option. Procedures such as pumping discharge water through hay bales or a silt fence will be required to reduce sediment load before discharge.

7.2 Control of Soil and Sediment

Sediment released to surface waters must be minimised by the use of sediment controls such as diversion drains, hay bales and silt fencing. In particular, a silt fence must be located around the perimeter of stockpile material.

Soil undergoing bioremediation must be stockpiled in a manner and location so that it is not easily spread by wind or rain action. If adverse weather conditions are anticipated, stockpiles of contaminated soil must be covered. Stockpiles must be tagged and records maintained to track the disposal or reuse of soil from the site.

Any plant or equipment that handles contaminated soils must be inspected prior to leaving the site, and cleaned as necessary.

The requirements for the management of sediment and soil described in Schedule B(9) of the NEPM (from which the above control measures are drawn) must be complied with during remedial works.

7.3 Control of Groundwater

Groundwater is not expected to be encountered during the remediation works.

7.4 Control of Noise

Noise levels must comply with CSC and EPA requirements. It is expected that equipment to be used in the remedial program will not generate unacceptable levels of noise above these requirements. The contractor will keep noise levels to a minimum and levels will not exceed limits indicated in AS 2436-1981.

7.5 Control of Dust

Generation of dust must be kept to a minimum. Water used for dust suppression will not be allowed to escape off-site by the stormwater system, sewer, or any other means. Compliance with Schedule B(9) of the NEPM, must be achieved, which is in addition to CSC and EPA requirements.

7.6 Odour Control

The level of odour generated during remedial activities must be monitored, with compliance to EPA requirements.

In the event that odorous compounds are encountered, the contractor under the supervision of the person qualified in accordance with S.5.2 shall take all precautions to ensure minimal obnoxious odours migrate from the site boundaries. To minimise odours if encountered, only small volumes of the material must be excavated at any one time. Any fill containing significant quantities of odorous compounds must be placed in a bunded area and covered with plastic sheeting and sprayed with an odour suppressant as soon as possible.

7.7 Public Complaints System

A public complaints system must be established prior to the commencement of remedial works to address any issues that may arise in the community as a result of works on the site. Records must be kept of the name, date, time, reason, investigation person, responsible site person, and outcome of the complaints.

8.0 VALIDATION PROGRAM

The objective of the validation program is to ensure that:

- All soil contaminated above the remedial goals is excavated, and contaminant concentrations in the walls and bases of the excavations comply with the remedial goals.

A quality assurance/quality control (QA/QC) program must be implemented to verify the accuracy and reproducibility of the analyses performed for the validation program. The QA/QC program must be conducted in accordance with the Australian Standard AS4482.1-1997 and the NEPM guidelines. All validation works must be supervised by a suitably qualified professional in accordance with S.5.2.

8.1 Validation Soil Sampling

Sampling intensity of validation sampling on the sides and base of excavated voids must be at least one sample per 25-40 m^2 over the surface of excavations, and one sample per 5-10 linear metres of excavations less than two metres in depth. All remediation excavations must be carried out to the limit of clean boreholes and/or samples, as far as reasonably possible.

In addition to the above tests, representative TCLP tests must be conducted for the samples with the highest levels of contamination, to identify leachability characteristics for any off-site disposal.

All validation samples must be discrete, and taken by a suitably qualified person as defined in S.381 of the *EP Act* and dispatched to the laboratory in accordance with the soil sampling and handling procedures outlined in the Australian Standard AS 4482.1-1997 and NEPM guidelines. Lithological logging of the excavation must also be performed according to the procedures outlined in AS 4482.1-1997 and the NEPM.

If additional excavations and validation sampling and testing are required, the methodology for the validation sampling program must be in accordance with the protocols for the assessment of site contamination that are provided in the EPA May 1998 guidelines, the Australian Standard AS 4482.1-1997 and NEPM guidelines. The sampling program must be a systematic sampling pattern. Analyses must be performed at a NATA approved laboratory.

Where contaminant concentrations in validation samples exceed the remedial goals, further excavation and validation sampling must be conducted until the site is remediated to a level within the remedial goals.

8.2 Sample Dispatch and Documentation

Samples must be collected in the appropriate containers and labelled to identify their origins as described by AS4482.1-1997 and dispatched to the laboratory for analysis within 48 hours of collection. Chain of Custody documentation and handling must be performed in accordance with the Australian Standard AS4482.1-1997 and the NEPM guidelines. Sample Receipt Advice documentation must be submitted in the validation report along with Chain of Custody documents.

8.3 Quality Assurance/Quality Control (QA/QC) program

A field QA/QC program must be conducted in accordance with the NEPM, Australian Standard AS4482.1-1997 and EPA recommendations, to measure the precision of the field/laboratory analyses and to determine the accuracy of the primary laboratory's analyses.

9.0 DECONTAMINATION PROCEDURES

Decontamination procedures for sampling equipment, personnel and the general site must be in accordance with the Australian Standard AS 4482.1-1997 and the NEPM guidelines (Schedule B(9)).

10.0 HEALTH AND SAFETY

A Health and Safety Plan must be prepared for the activities to be performed on the site where employees may be exposed to toxic or other hazardous compounds and elements. Specific requirements relating to dermal contact and inhalation as well as public safety, vehicle decontamination, protective clothing, equipment and appropriate safety controls must be addressed. Personnel working on the site must read and understand the Health and Safety Plan. All staff working on the site during remediation works must be inducted and sign relevant forms stating that induction has been carried out.

11.0 REPORTING REQUIREMENTS

A validation report must be prepared by a person qualified in accordance with S.5.2, and submitted to the EPA CLU within 45 days of the completion of remediation and validation works. The report must be prepared and submitted in accordance with the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*, May 1998, the NEPM and the Environmental Protection Act 1994. The report must document remediation and validation program activities including the results of any further excavation and/or validation required by the results of the initial validation testing, an evaluation of the results against the remedial goals and an investigation demonstrating compliance with the conditions of this RAP.

The report must also include the results of the QA/QC program, and copies of documentation validating the appropriate handling, disposal and treatment of contaminated soil and water in accordance with EPA requirements. The validation report must be submitted to the EPA for review in accordance with the *Environmental Protection Act 1994* and the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* (1998).

If requested by the EPA, progress reporting must be finalised and submitted to the EPA within one business day.

12.0 STATEMENT OF SUITABILITY

Prior to commencement of the land use proposed by the material change of use, a Statement of Suitability must be obtained from the EPA. The Statement of Suitability must specify that the site is suitable for the intended use(s) and removal from the EMR.

STATUTORY DECLARATION
(INVESTIGATOR and REPORT PREPARER)

Address of Site Investigated:	2-32 & 34 Nolan Drive Morayfield Qld 4506
Real Property Description:	Lot 2 on RP902075 and lot 10 on RP902079
Title of Report(s):	Stage 1 Preliminary Site Contamination Investigation 2-32 & 34 Nolan Drive, Morayfield

I, Carl Deegan of Douglas Partners, 439 Montague Road, West End, in the State of Queensland, do solemnly and sincerely declare that;

- I was the investigator and report preparer of the report described above;
- I am a member of Australian Institute of Geoscientists and my qualifications and experience as previously supplied to the Environmental Protection Agency are relevant to this investigation,
- I have not knowingly included any false, misleading or incomplete information in the report;
- I have not knowingly failed to reveal any relevant information or document to the administering authority; and

I certify that:

- The report addresses the relevant matters for the investigation and is factually correct; and
- The opinions expressed in it are honestly and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the *Oaths Act 1867*

Signature .....C. Deegan.....

Name .....C. Deegan.....

Taken and Declared before me at .....this 6th day of February 20 04.....

Witness (Justice of the Peace/Commissioner for Declarations)

Signature .....S Daly.....

Name (& JP Number if applicable).....

JUSTICE OF THE PEACE (QUALIFIED) DEPT. OF JUSTICE & ATTORNEY-GENERAL Reg No.: 86995