

Paul Coughlan
Project Director – new parallel runway
Brisbane Airport Corporation



Presentation

How BAC approached environmental and community management on the Phase 1 NPR works - a pragmatic overview of how a large infrastructure project addresses the environmental aspects of the works



NEW PARALLEL RUNWAY PROJECT

Strategic Approach to Environmental Compliance
in the Construction Phase of a Major Infrastructure Project



PAUL COUGHLAN
PROJECT DIRECTOR
NPR PROJECT

EIANZ ANNUAL CONFERENCE
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The background features a light beige color with a faint, stylized illustration of an airport terminal and several aircraft. The terminal is on the left, and the aircraft are scattered across the upper and middle sections of the slide.

1. PRESENTATION OVERVIEW

1. THE PROJECT
2. APPROVALS
3. APPROACH TO COMPLIANCE
4. KEY ISSUES AND ENVIRONMENTAL MANAGEMENT RESPONSE

KEY FACTS



22.5

million
Total Annual Passengers
(+ 2.0%)



28

International Direct
Destinations



5.3

million
Annual International
Passengers
(+ 3.9%)



614

International Aircraft
Movements
(per week on average)



17.2

million
Annual Domestic Passengers
(+1.5%)



3,169

Domestic Aircraft
Movements
(per week on average)



2015/16

AUSTRALIA'S 3RD BUSIEST AIRPORT HANDLING 22M PAX & 220K AIRCRAFT PER YEAR
THAT IS, ON AVERAGE OVER 60K PEOPLE AND 600 AIRCRAFT PER DAY

1. THE PROJECT

1. KEY FEATURES
2. PROJECT PHASES
3. PHASE 1 CONSTRUCTION COMPLETE
4. PHASE 2 OVERVIEW

NPR OVERVIEW KEY FEATURES OF PROJECT

Phase 1: Site Preparation

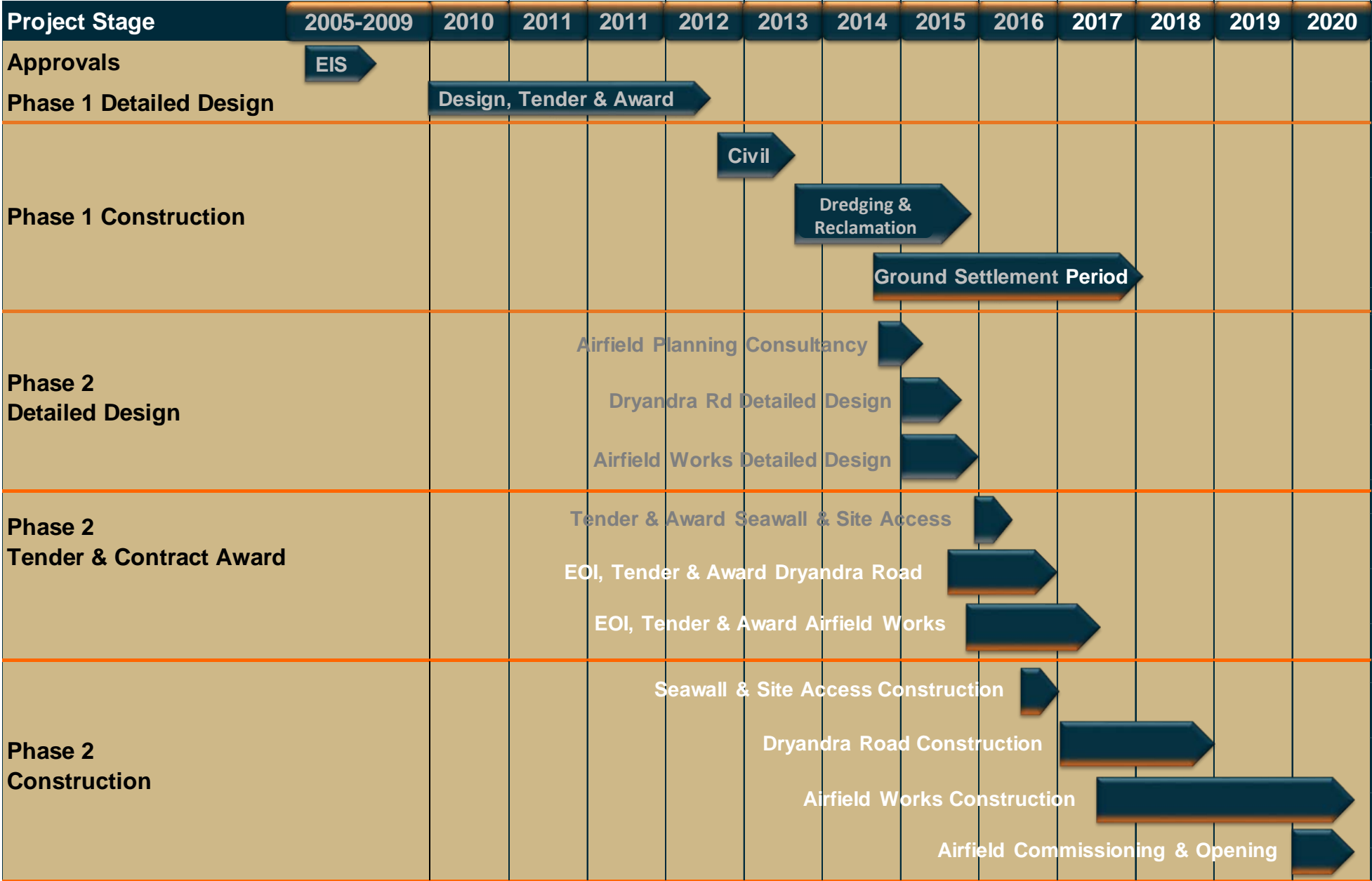
- Clear 360ha site
- Fill and surcharge with 13M m³ of sand
- Treat with 8Mm of vertical wick drains
- Allow ground settlement 2-4 years

Phase 2: New Airfield Construction

- 3300m runway, 12km taxiways
- 4 lane vehicle underpass
- Landscape 300ha of airfield
- Navigation aids, ground lighting
- All other airfield infrastructure

Existing Airfield

PROJECT PROGRAM 2005 – 2020



NEW RUNWAY SITE – SOFT COMPRESSIBLE LOW LYING LAND



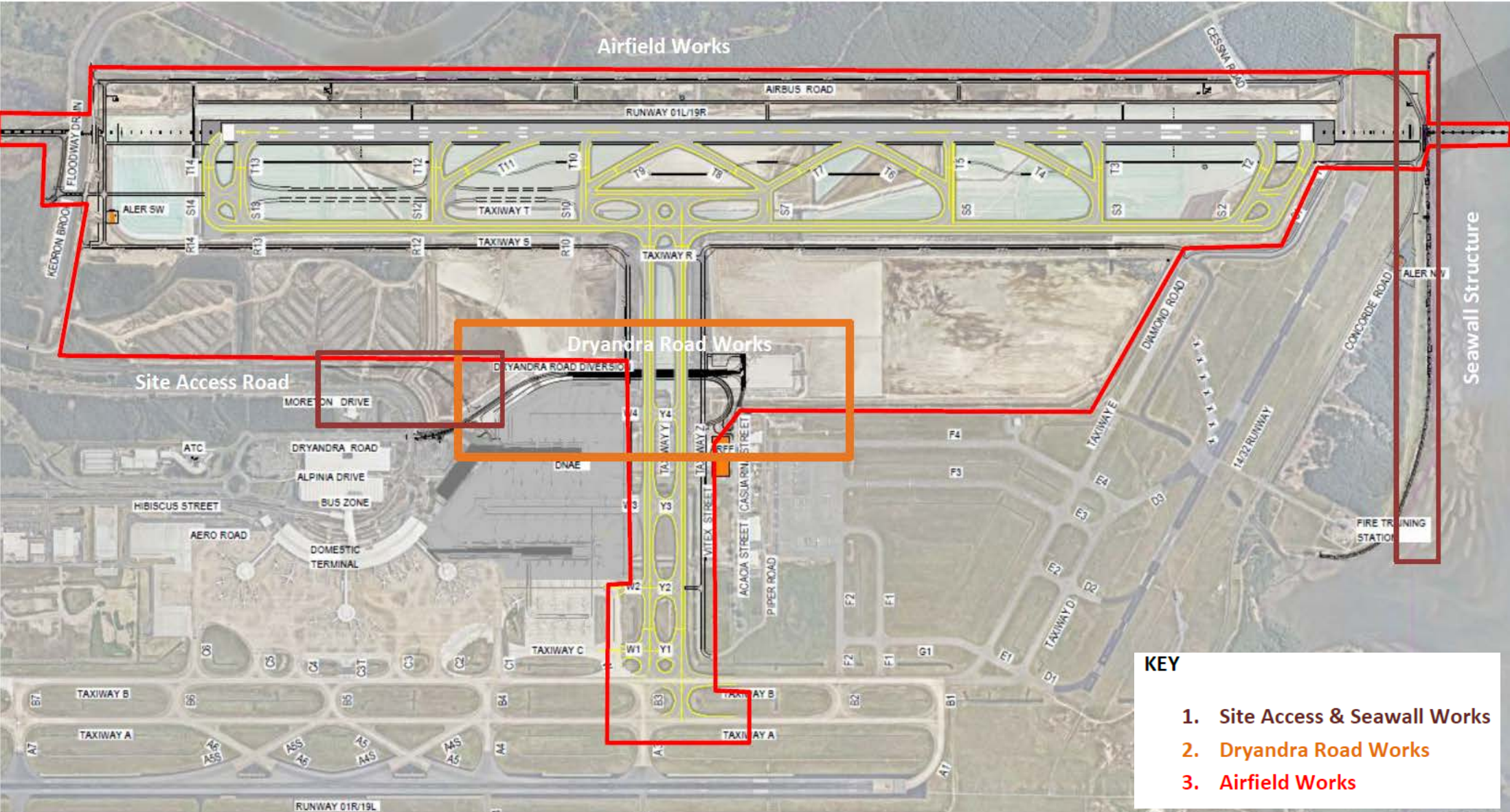
NPR SITE RECLAMATION SAND PUMPING AND PLACEMENT



NPR SITE RECLAMATION **FINISHED PLATFORMS**



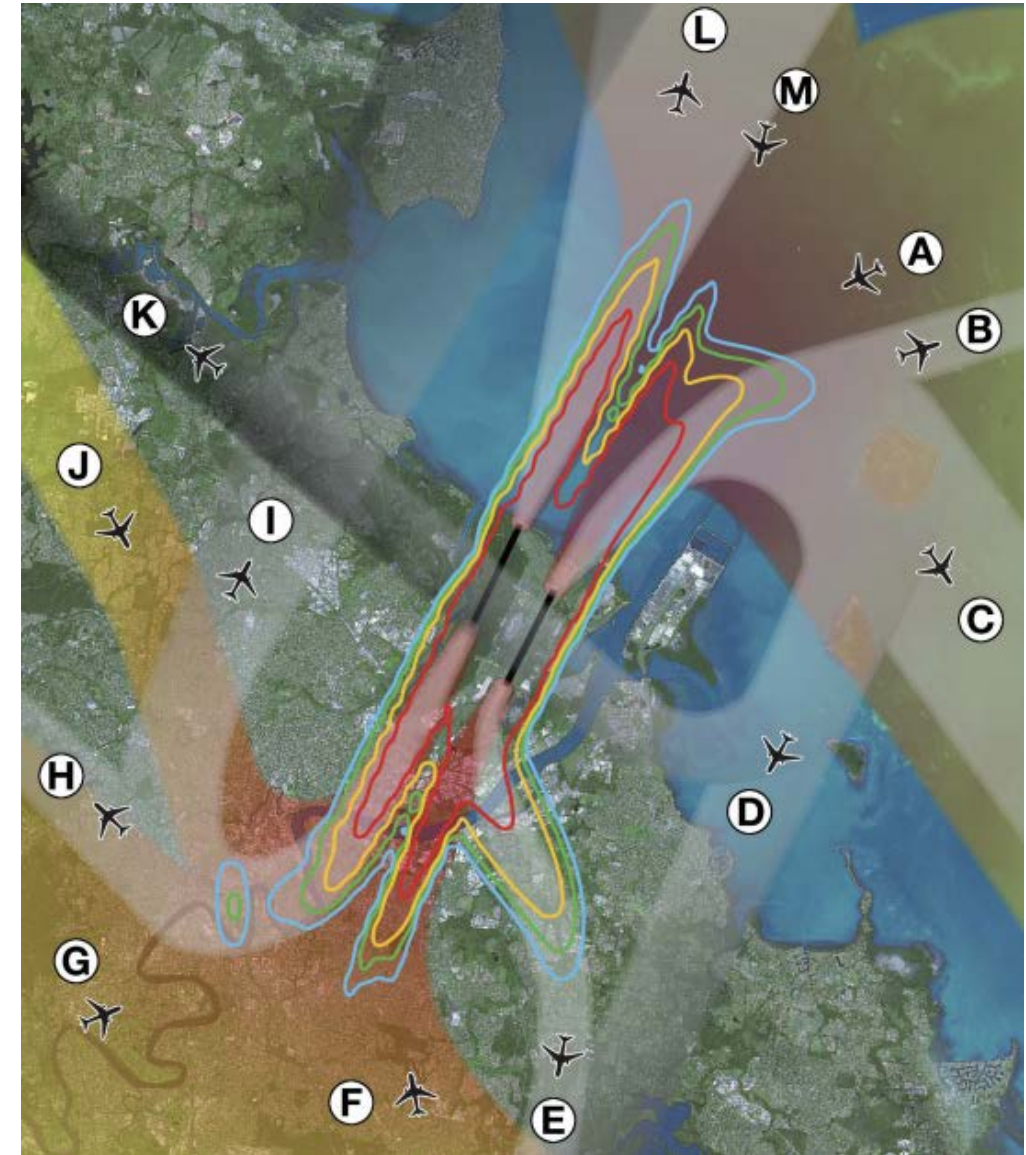
PHASE 2 CONSTRUCTION



- KEY**
- 1. Site Access & Seawall Works
 - 2. Dryandra Road Works
 - 3. Airfield Works

PHASE 3 AIRSPACE DESIGN & COMMUNITY ENGAGEMENT

1. The process of finalising the flight paths and re-engaging with the community ahead of the NPR opening is termed Phase 3.
2. Phase 2 and Phase 3 are occurring simultaneously.
3. Airspace procedures based on the airspace design presented in the EIS/MDP are being finalised by Airservices for approval by CASA (Civil Aviation Safety Authority).
4. A community engagement program has been underway since 2005 on the changes to airspace design and aircraft noise patterns for the NPR with an intensive focus during the public comment period for the EIS/MDP in 2006/07.
5. Community engagement on this issue will intensify again in the lead up to the NPR opening in 2020 to refresh community awareness of the upcoming changes in aircraft overflight areas.





2. APPROVALS

1. BRISBANE AIRPORT REGULATORY ENVIRONMENT
2. APPROVALS REQUIRED
3. APPROVAL PROCESS

APPROVALS BRISBANE AIRPORT REGULATORY ENVIRONMENT

1. Brisbane Airport is a regulated airport under the *Airports Act 1996*
2. All planning and environment is subject to the Airports Act regulations:
 1. The Airport Regulations; and
 2. The Airport (Environment Protection) Regulations; and
 3. Administered by the Australian Government Transport portfolio (currently DIRD)
3. The Airports Act planning and environment provisions apply to the 2700 ha Airport lease area.
4. Brisbane Airport has a full-time DIRD employed Environment regulator on site – the Airport Environment Officer (AEO).



APPROVALS 3 LEVELS OF GOVERNMENT

Australian

1. EPBC Act Action Approval – assessed via the EIS pathway
2. Airports Act Major Development Approval – assessed via a Major Development Plan (MDP)

State

1. Resource Allocation Permit
2. Dredging ERA Permit (now Environmental Authority (EA))
3. Marine Park Permit

Local Government

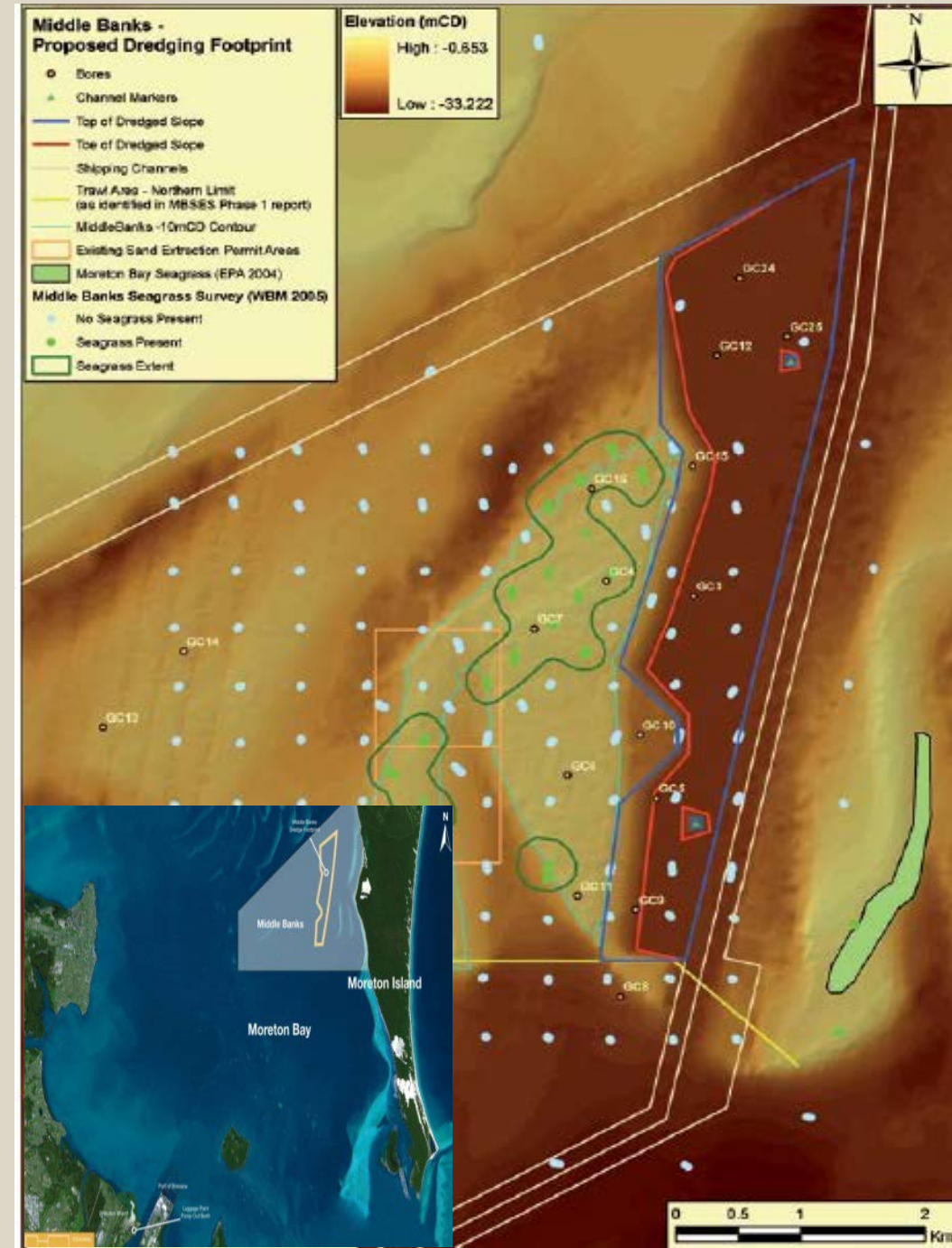
1. Development Approval for a new drain into Kedron Brook Floodway
2. DA for Temporary Dredge Mooring
3. DA for Pipeline (off-airport)



EIS/MDP approved in September 2007

APPROVALS PROCESS

1. BAC released EIS/MDP for public comment Nov 2006 to Feb 2007;
2. Prepared Supplementary Report (public comment responses) and submitted Final EIS/MDP in April 2007;
3. Federal Govt approvals (from Environment and Transport Ministers) granted in September 2007.
4. Following Federal Govt approval BAC began formal State and Local Govt approval seeking process based on the approved EIS/MDP;
5. State Govt approval for sand extraction granted in 2008
6. Local Govt approval for construction components off-airport land sought and received 2007 to 2013



3. APPROACH TO ENVIRONMENTAL COMPLIANCE:

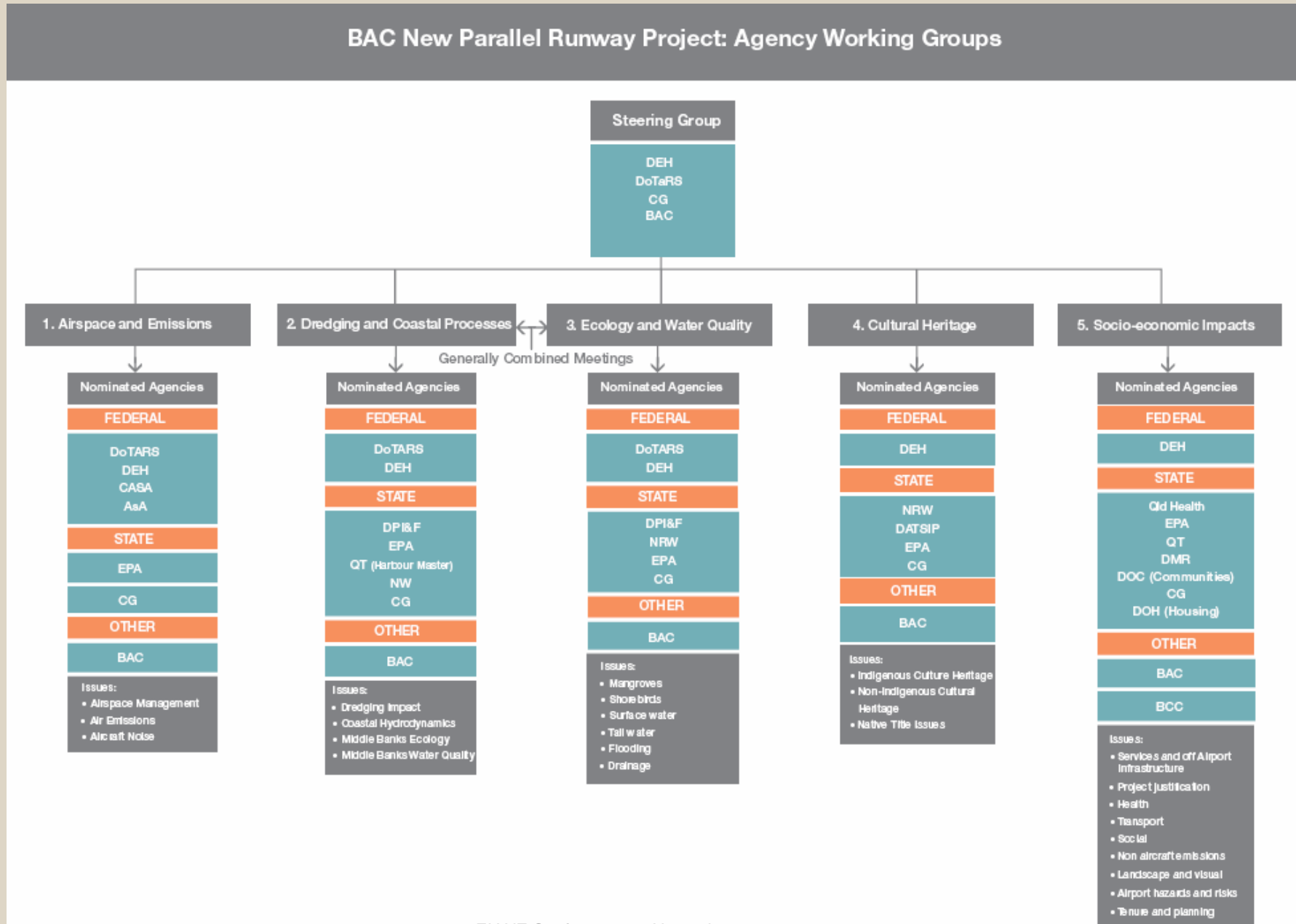
1. ESTABLISH CORPORATE PRINCIPLES
2. CONTINUE ENGAGEMENT WITH REGULATORY AGENCIES
3. CONTRACTUAL RESPONSE:
 1. CONTINUE AGENCY ENGAGEMENT – ALIGN PERFORMANCE EXPECTATIONS
 2. INCLUDE PERFORMANCE BASED CEMP IN TENDER AND FINAL CONTRACT
4. IMPLEMENTATION PLAN:
 1. PRE-TENDER
 2. DURING THE WORKS

APPROACH CORPORATE PRINCIPLES

1. BAC's corporate principles:
 1. 100% compliance
 2. No regulatory breaches
 3. Go above and beyond regulator expectation
2. Approach based on thorough mapping of risk of environmental non-compliance or breach
 1. Risks ranged from reputational damage to temporary or permanent project cancellation
 2. Even minor outcome risks were considered unacceptable
3. The risk analysis was an important tool for setting:
 1. A consistent approach on environmental management
 2. Appropriate resource commitment levels
 3. A clear direction based on a whole of organisation view, rather than leaving it to those officers responsible for environmental management



APPROACH MAINTAIN ENGAGEMENT WITH AGENCIES

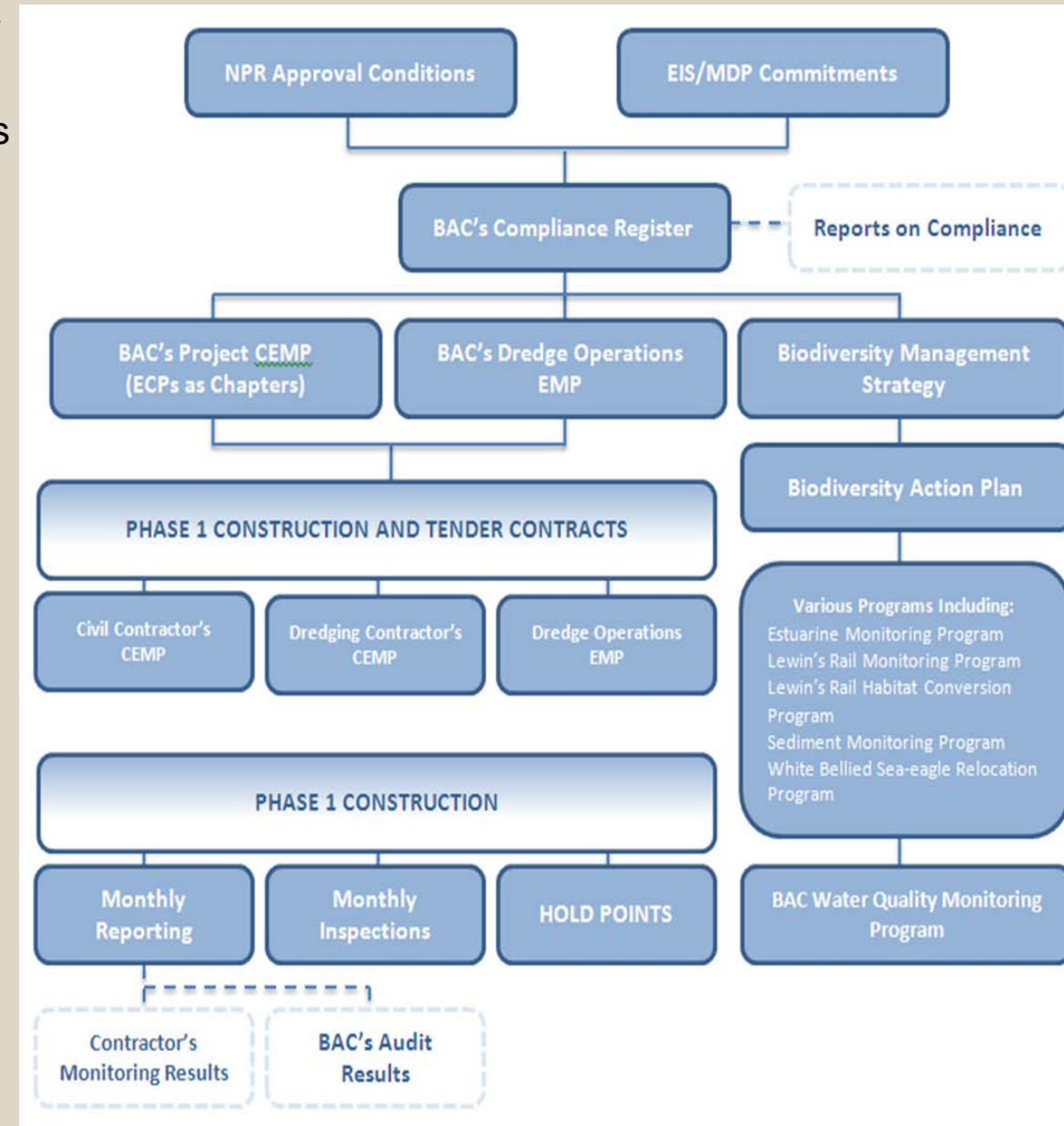


APPROACH DEVELOP CONTRACTUAL STRATEGY

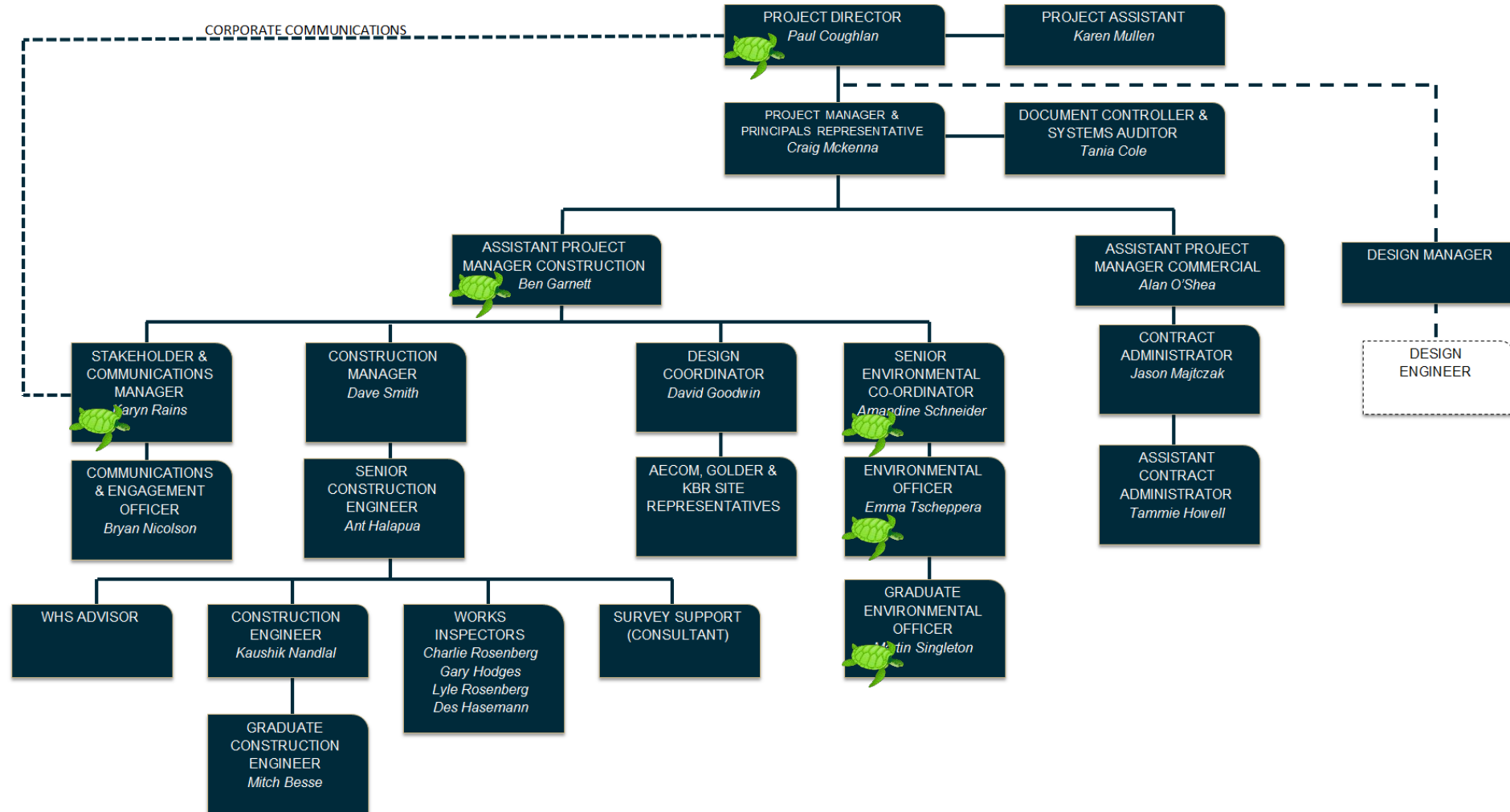
1. NPR had over 500 conditions – assigned responsibility for implementation to most suitable party (BAC or contractor)
2. Engaged with regulator to align expectations on conditions (transform condition wording to measurable contractor performance)
3. Gained agreement with regulator to review and approve performance based CEMP prior to tender
4. BAC included the CEMP as a conformance document at tender and contract award stage.
5. Incentivisation to drive behaviour.

OUTCOMES:

1. BAC and Agency expectations were aligned for management and monitoring
 2. Allowed effective communication of scope and extent of environmental obligations
 3. Contractually obligated the contractor to a known level of environmental management effort
 4. Enabled BAC to assess the tenderers approach in a competitive pricing environment
- BAC gained visibility of resources attributed to environmental compliance



NPR TEAM DREDGING & RECLAMATION WORKS



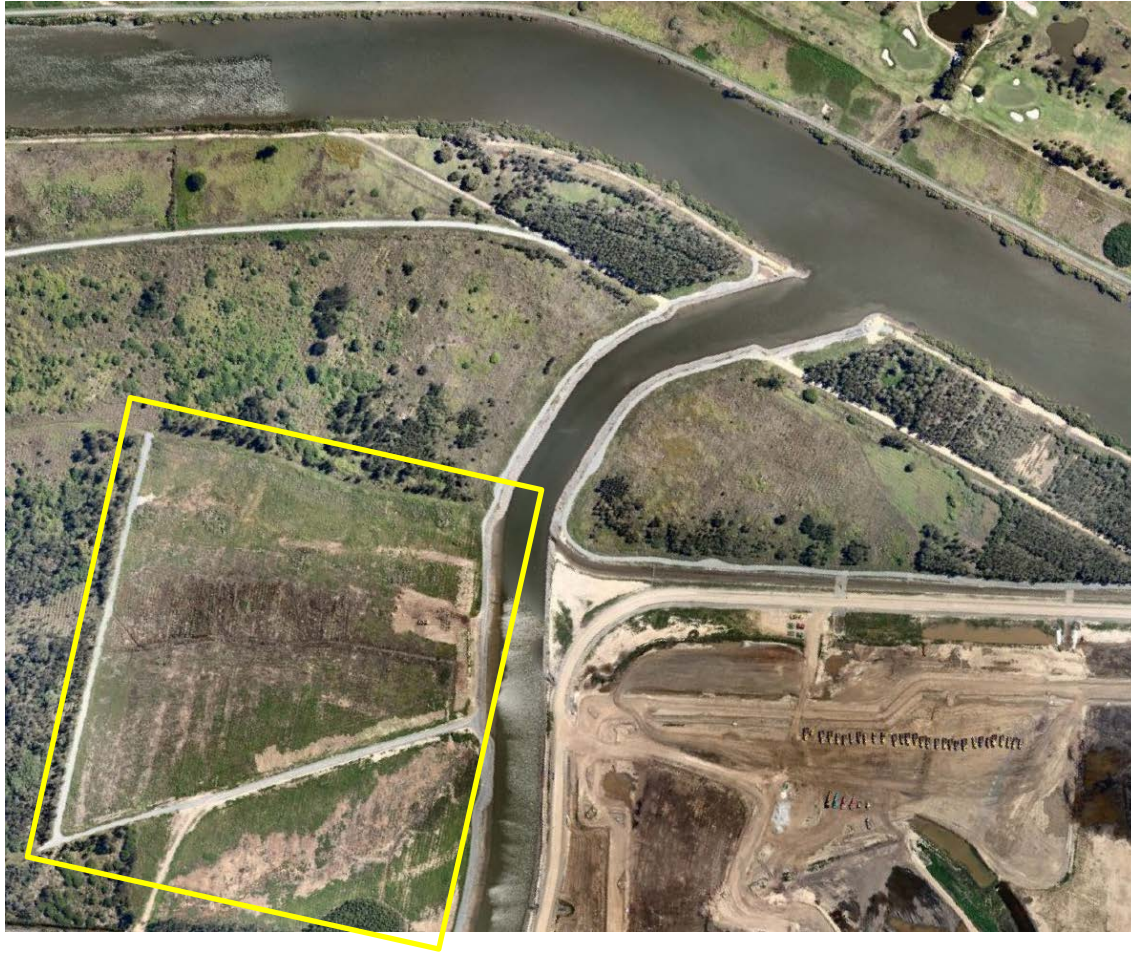


4. KEY ENVIRONMENTAL ISSUES AND MANAGEMENT RESPONSE

KEY ENVIRONMENTAL MANAGEMENT ISSUES FOR CIVIL WORKS

1. Acid Sulfate Soil (ASS) Management:
 1. Excavation and treatment of 250,000 m³ of ASS/PASS:
 - a. Kedron Brook Floodway Drain (KBFD) and
 - b. Serpentine Inlet Drain (SID)
 2. Lime treatment of new drain batters, base and banks
2. ASS Groundwater Management:
 1. Installation of double lime trench in preparation for any expedited groundwater movement from sand loading during the Dredging and Reclamation phase
 2. Groundwater drawdown treatment in new drains
3. Erosion and sediment control – high risk periods:
 1. New KBFD & SID excavations
 2. Civil clearing works
4. Conversion of 11ha Casuarina plantation to Lewin's Rail (Near Threatened) habitat
5. Mangrove bench colonisation
6. Cultural Heritage Management – co-ordinating and facilitating the Jagera CH monitors

LEWIN'S RAIL HABITAT CONVERSION AREA – 11 HA



TOPSOIL AND MULCH PRODUCTION AREA



Re-use of all vegetation from site – mulched, blended with existing topsoil (65/35) and left to break down to form all topsoil needs (300,000 m³) for landscaping of future new airfield

KEY ENVIRONMENTAL MANAGEMENT ISSUES FOR THE DREDGING AND RECLAMATION WORKS

MORETON BAY

1. Selection of the Sand Extraction Footprint
2. Selection of Dredge Pump-out location
3. 24/7 Real Time Water Quality Monitoring
4. Turtle Deflector Devices
5. Marine Fauna Spotter on board
6. Green Valve fitted on vessel

AIRPORT & SURROUNDS

1. Selection of Pipeline Alignment
2. Destocking of Jacksons Creek
3. Erosion and sediment control – high risk period - bulk clearing of site
4. Wildlife Management – spotting and relocation during clearing activities
5. Topsoil and Mulch Production
6. 24/7 Real Time Water Quality Monitoring - Kedron Brook Floodway

DREDGING - SAND EXTRACTION SITE

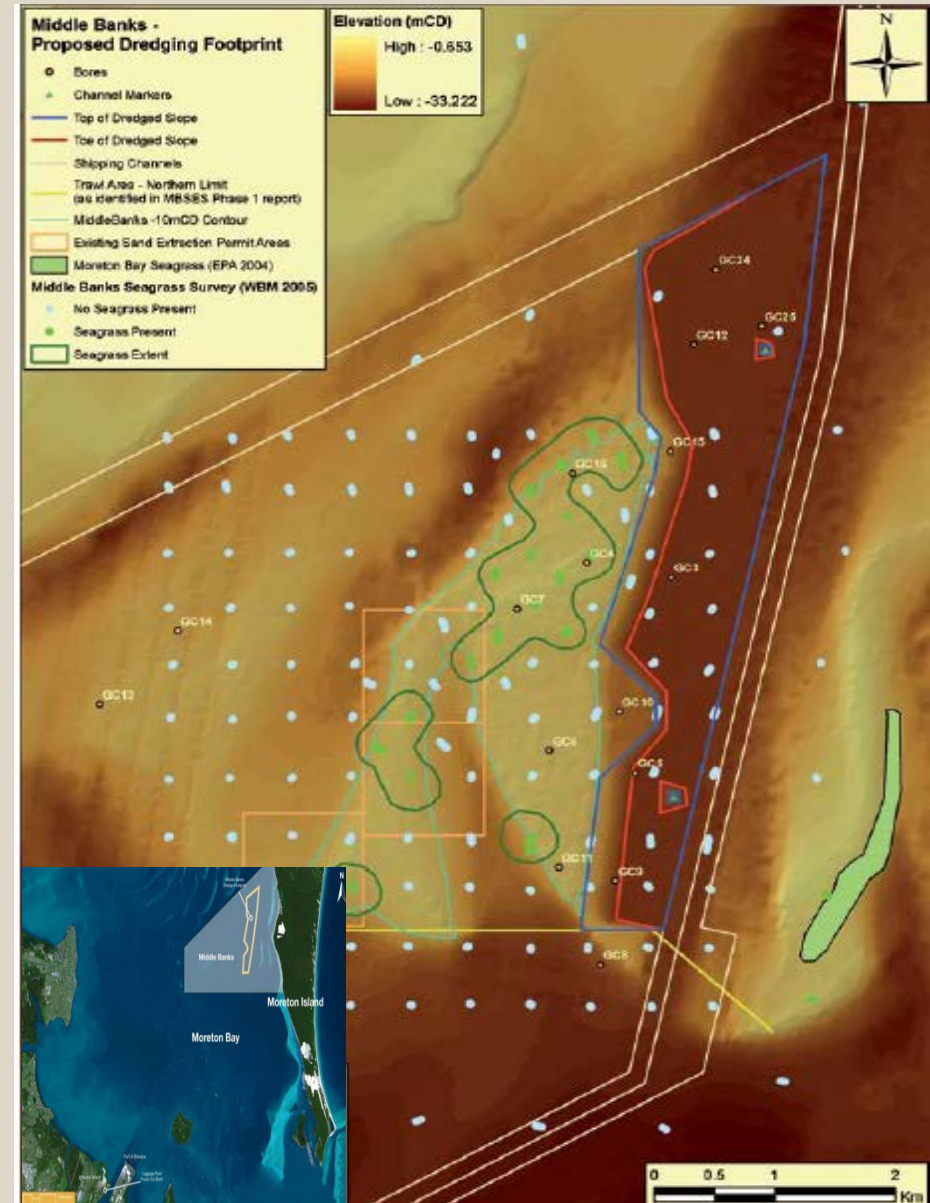
The sand extraction site (blue outlined area opposite):

1. Has been intensely studied for:

- Geological characteristics
- Tidal currents and wave propagation
- Ecological habitat and feeding uses
- Commercial and recreational fishing uses

2. Facts about the approved extraction site are:

- The area has been used by the airport on 3 separate occasions in the past for the airport
- The sand resource is clean sand, free of any contaminants, with negligible “fines”.
- Adjacent to the main shipping channel in the General Use Zone of the Moreton Bay Marine Park and avoids all seagrass areas, trawl fishing areas and is more than 12 km away from the main dugong feeding grounds to the south
- A 24/7 real time monitoring program is in place from before the dredge commences.
- Will not cause any changes to the tidal currents or naturally existing coastal processes.



DREDGING - WATER QUALITY MONITORING

Monitoring equipment is installed at 3 different locations around the Extraction Site:

1. At the edge of the seagrass
2. Within the High Environmental Value Site
3. At a Reference Site

The Monitoring equipment continuously measures:

1. Turbidity (cloudiness)
2. PAR (Photosynthetic Active Radiation); and
3. Current velocity and direction.

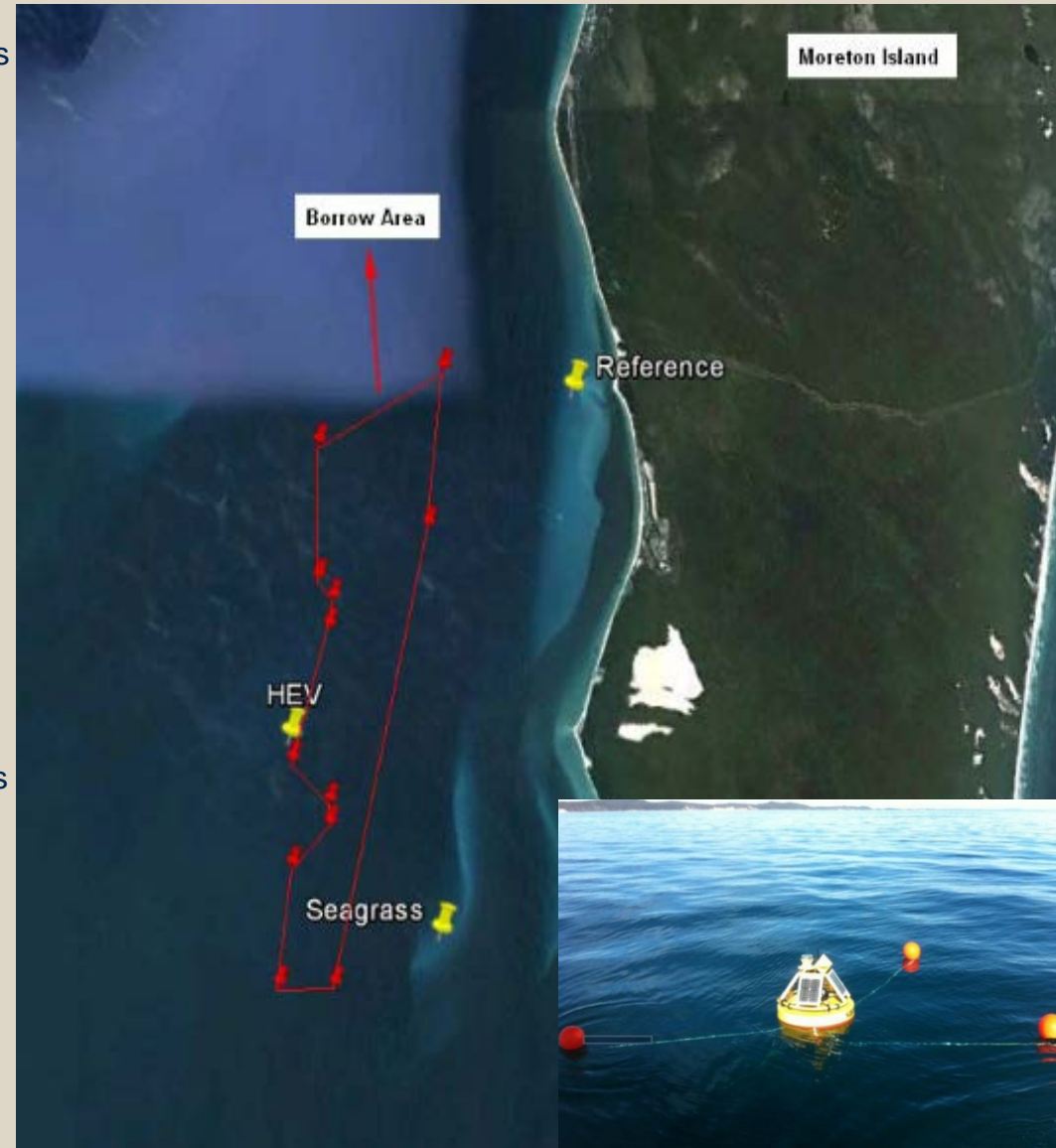
The Monitoring data is collected:

1. Turbidity: every 2 min
2. PAR: every 2 min
3. Current data: every 15 min

The data is then transmitted (by gprs) every 10 minutes to JDN and BAC for real time analysis.

Detection of rising levels sets alarms for environment staff to check and potentially modify the dredge pattern

Supplemented with vessel based monitoring to confirm permanent monitoring authenticity



EPBC CONDITIONS

1. 285 ha Biodiversity Conservation Area
2. Biodiversity Management Strategy (BMS)
3. White-bellied Sea Eagle nest relocation
4. Research Monitoring Plan
5. Sponsorships:
 - i. Wildlife Queensland (\$240K) and
 - ii. Nudgee Beach Environmental Education Centre (\$300K)

WHITE-BELLIED SEA EAGLE NEST RELOCATION



QUESTIONS

