Intermodal Logistics Centre at Enfield

Modification Application No. 5 On Site Management of Unsuitable Engineering Fill

Response to Submissions

August 2011

Revision 1.0

ILC – E – PT3A – Mod Application 5 Response to Submissions Final v1.0 1 August 2011

SYDNEY PORTS

FIRST PORT, FUTURE PORT

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Abbreviations

AHD	Australian Height Datum
ARI	Average Recurrence Interval
ARTC	Australian Rail Track Corporation
BCC	Bankstown City Council
BoM	Bureau of Meteorology
CEMP	Construction Environmental Management Plan
CLC	Community Liaison Committee
CLM Act	*Contaminated Land Management Act 1997*
CoA	Condition of Approval
DECCW	Department of Environment, Climate Change and Water (now OEH)
DP	Deposited Plan
DP&I	Department of Planning & Infrastructure
EA	Environmental Assessment
EM	Environmental Manager
EMP	Environmental Management Plan
EP&A Act	*Environmental Planning & Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
FHCA	Frog Habitat Creation Area
FMP	Frog Management Plan
FPP	Frog Protection Plan
GGBF	Green and Golden Bell Frog
ILC	Intermodal Logistics Centre
LEP	Local Environment Plan
NIA	Noise Impact Assessment
NoPE	No Port Enfield
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
PM_{10}	Particulate Matter of size 10 micrometers or less
RSM	River Sheoak Monoculture
SMC	Strathfield Municipal Council
SMP	Site Management Plan
Sydney Ports	Sydney Ports Corporation
TSP	Total Suspended Particulates
TSC Act	*Threatened Species Conservation Act 1995*

1 Background

1.1 Introduction

Sydney Ports Corporation (Sydney Ports) submitted an application, including assessment report (referred to in this current document as Modification Application 5), dated May 2011, to the Department of Planning & Infrastructure (DP&I) to modify the Project Approval granted by the Minister for Planning on the 5 September 2007 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the development of an Intermodal Logistic Centre (ILC) at Enfield (Application Number 05_0147).

Modification Application 5 was submitted under Section 75W of the EP&A Act and applied to the onsite relocation and reuse of excavated material deemed unsuitable for engineering fill at the ILC operational areas to the southern part of the site.

As part of the assessment process, DP&I placed Modification Application 5 on public exhibition from Tuesday 28 June to Thursday 14 July 2011. Advertisements regarding the public exhibition were placed in the Canterbury Bankstown Express on Tuesday 28 June 2011 and in the Inner West Courier on Thursday 30 June 2011. Copies of Modification Application 5 were displayed at the offices of DP&I, Strathfield Municipal Council and the Nature Conservation Council. An electronic version was also made available in DP&I's website. DP&I sent copies of the application to the following organisations:

- Office of Environment and Heritage (OEH);
- RailCorp;
- Strathfield Municipal Council (SMC);
- Bankstown City Council (BCC); and
- Qenos.

Submissions received by DP&I in response to the application were forwarded to Sydney Ports for consideration and response. Sydney Ports has prepared this report to address the comments made in the submissions to the Modification Application. Section 2 provides responses to stakeholder's comments made in the submissions. This report does not address issues unrelated to the Modification Application.

1.2 Submissions

Key issues raised in the submissions are summarised below. All submissions are attached in Appendix A.

1.2.1 Office of Environment and Heritage (Environment Protection and Regulation)

The OEH (Environment Protection and Regulation) (formerly DECCW) stated that its main concern is the steepness of the proposed slope of Mt Enfield, which appears to be in excess of the recommended slope for stockpiling in *Soil and Construction, Managing Urban Stormwater* (the Blue Book) (Landcom, 2004).

OEH recommends that the approval require the development of a management plan to explicitly address the management of the steep batters of Mt Enfield during construction and until it is stabilised with vegetation, and that the plan cover soil and water and dust issues. Due to the proximity of residential receivers and prevailing weather conditions, OEH indicated

that the management plan should ensure that dust generation is minimised and that dust is prevented from leaving the site, through the implementation of dust mitigation measures.

1.2.2 Office of Environment and Heritage (Conservation Team)

The OEH (Conservation Team) (formerly the Heritage Office) stated that the proposed project modification is unlikely to have any adverse impacts on the existing heritage items located at the site. No objections to the proposal were raised.

1.2.3 Strathfield Municipal Council

Strathfield Council objected to the proposed modification request. Council are unable to support the proposed modification request until the following issues have been fully addressed:

- **Dust**: concerns raised regarding the impacts of dust from the fill material during excavation, transportation by truck and stabilisation of the mound.
- **Height of mound**: further consultation and shadow diagrams requested.
- **Ecological issues**: concerns regarding protection of frog habitat corridor and loss of habitat for other animals, request for a further ecological assessment and species impact statement to be undertaken.
- **Drainage**: more detail on location and control of runoff from Mt Enfield required.
- **Noise**: mitigation measures proposed must be adhered to, including consultation with the community.
- **Contamination**: CEMP should be revised to include the modification including how contaminants will be addressed.
- **Landscaping/revegetation**: local genetic stock and hydro-mulching using seed should be used, plants proposed are satisfactory, proposed slopes too steep for planting, steepness may result in scouring and possible sedimentation of downstream areas.
- **Traffic reduction**: traffic reductions only temporary and not enough to justify the permanent placement of fill at Mt Enfield.
- **Labelling of diagrams**: a number of minor issues relating to figures in the application.
- **Future use of subject area**: concerns that by creating level access from Punchbowl Road to the southern end of the site that the area may in future be used for commercial industrial opportunities instead of as an ecological, community, heritage area as originally designated in the Project Approval.

1.2.4 Bankstown City Council

Bankstown City Council provided the following comments regarding the modification application:

- Justification for the new estimate of excess spoil required.
- Visual amenity concerning the proposed mound at Mt Enfield. Recommend that Council be consulted with for the preparation of Landscape Plans.
- Cumulative noise and dust impacts.
- Recommend that Council be notified and consulted with for the preparation of EMPs.

1.2.5 Qenos

Qenos Pty Ltd is the owner of the high pressure ethylene gas pipeline located on the eastern side of the ILC site and Mt Enfield. Qenos provided the following comments regarding the modification application:

- the protocols that are in place between Sydney Ports, Qenos and their contractors, which are referenced in the modification application, must be maintained.
- Sydney Ports must identify defined crossing points of the Ethylene pipeline for truck movements if and when they are required.

1.2.6 No Port Enfield Community Group

The No Port Enfield (NoPE) Community Group objected to the modification request. It believes that the Modification Application failed to adequately address issues regarding the Green and Golden Bell Frog (GGBF) and dust. NoPE raised the following key concerns:

- The Modification Application request is a major alteration to the original proposal and should be subject to a new and separate development application.
- The nature of the modification and the recently discovered frogs to the east of the site combine to trigger the *Environmental Protection and Biodiversity Conservation (EPBC) Act* and should be a controlled action under the EPBC Act.
- The alterations to the initial proposal in relation to the frog habitat area and the recent discovery of a colony of GGBF east of the ILC site make the ILC's site function as GGBF habitat and movement corridor absolutely critical in maintaining the local population.
- The size and extent of the Ecological and Community area has been downsized and modified through the approval process and it is unclear what future use the community will have of the area.

1.2.7 Gary Blaschke

Gary Blaschke objected to the modification application and raised the following concerns:

- Sydney Ports should demonstrate how the modification will not create further contamination impacts.
- Sydney Ports should demonstrate that no contamination from the site would cross the site boundary during and after the modification works.
- Sydney Ports should carry out continuous monitoring of air, water and impacts on threatened species.
- The modification proposal does not take into consideration impacts on the "Conservation" area (Heritage Precinct) and Tarpaulin Factory, which will be located in close proximity to Mt Enfield.
- Sydney Ports should demonstrate that no impact on GGBF at the site or at upstream and downstream colonies will occur through contamination.
- Sydney Ports should produce all records of soil contamination of the existing stockpile and or any leaching, regional air quality findings and downstream water quality results.
- Gary Blaschke objects to any proposal to increase the size of the existing stockpile and calls on the DP&I to direct Sydney Ports to dispose correctly of the proposed and existing contaminated soils from Mt Enfield.

2 Response to Submissions

The following sections identify and address the areas of concern identified from the stakeholder submissions.

2.1 Dust

2.1.1 Summary of Modification

An air quality impact assessment , including dust modelling, of the proposal was carried out by SLR Consulting Australia Pty Ltd as part of the Modification Application 5 report. The assessment predicted that annual average Total Suspended Particles and annual PM_{10} concentrations would be below the assessment criteria at all sensitive receptors. It also concluded that, provided dust mitigation measures are implemented, there is only a low risk of offsite impacts at surrounding receptors due to short term (24 h average) exceedance of the PM_{10} criteria due to the fill emplacement activities. Mitigation measures recommended included:

- continuation of real-time meteorological and PM_{10} monitoring at the south-eastern part of the site to identify periods when work activities may result in adverse off-site impacts;
- progressive rehabilitation of completed fill areas at Mt Enfield, including the use of dust suppressants, revegetation or other suitable methods;
- continuation of the use of water carts along internal roads and at the reuse area;
- minimisation of the active reuse area as far as practicable.

On site real-time air quality monitoring of PM_{10} concentrations indicates that no exceedance of the 24-hour average PM_{10} criteria due to current construction activities has occurred to date. Management practices and mitigation measures have been shown to be effective.

2.1.2 Response to Submissions

Mitigation Measures

SMC raised concerns regarding the impacts of dust from the fill material during excavation, transportation by truck and stabilisation of the mound. SMC indicated that more intensive mitigative measures than those proposed in the Modification Application report, such as sprinklers or protective covering, should be established. SMC also indicated that the CEMP for the original proposal should be amended to include the proposed new works and to better address this issue. SMC noted that a copy of the revised CEMP should be provided to Council.

OEH noted that due to the proximity of residential receivers and prevailing weather conditions, the management plan should ensure that the dust mitigation measures ensure that dust generation is minimised and that dust is prevented from leaving the site.

As discussed above, predicted dust impacts were assessed by SLR and no significant impacts were anticipated, provided the mitigation measures, referred to in Section 2.1.1 above, are implemented. Notwithstanding, to address concerns raised in the submissions Sydney Ports, in consultation with its construction contractor, has developed the following additional mitigation measures to be implemented during the fill emplacement activities:

- Either spray grassing or dust suppressant agents will be utilised progressively as a temporary measure prior to final landscaping where filling works in discrete areas are completed.
- There will be one designated route to transport the material to Mt Enfield. Defined vehicle tracking paths will be established and controlled during operations for dust by wetting down and compacting the running surface.
- At the end of each day the active filling area will be stabilised and watered as required.
- During longer non-working periods (eg. weekends, holidays), stand-by crews will be rostered to be available to water spray potential dust generating areas should weather forecasts predict potential dust generating conditions (eg. dry and windy weather);
- A number of dust suppressants, including short and long term suppressants, will be tested during the fill emplacement activities. The trial will determine whether the dust suppressants are suitable for use at Mt Enfield during filling operations.

The approved Stage 3 CEMP will be amended to include the measures identified in the Modification Application 5 documentation.

Airborne Contaminants and Past Site Performance

NoPE indicated that it was not convinced the proposal would have no negative air quality impacts. NoPE was concerned that previous soil tests showed contamination levels that were close to, or above, acceptable levels of contaminants, and proposed that "once particulates become airborne the levels of contaminants become a human health issue". NoPE also noted that residents in the local area feel that the rate of dust deposition is above average and that while there have been no dust issues during construction to date, above average rainfall has been received during this period.

Mr Gary Blaschke indicated that once contaminants become airborne, there was a health issue.

A discussion of possible negative air quality impacts is provided in the air quality impact assessment in the Modification Application 5 report. Contamination issues are addressed below and in Section 2.10.

Bulk remediation works were undertaken at the site during 2009 and 2010 in accordance with the Project Approval and Site Audit Statements issued by a Site Auditor accredited under the *Contaminated Land Management Act*. Following remediation works during 2009 and 2010, any unexpected finds have been managed, and will continue to be managed, in accordance with the approved CEMP documentation, the *Contamination Management Plan for Construction* (Coffey Environments, 2009) and the advice provided by the contamination consultant in consultation with the Site Auditor.

Sydney Ports acknowledges the possibility of asbestos finds during excavation works. Sydney Ports' contractor will continue to implement the mitigation measures prescribed in the approved CEMPs and monitor real time dust levels at the site during construction. These measures have proved to be successful in managing air quality impacts during construction works at the site to date.

The presence of asbestos in soils is relatively common in many rail related sites and previously filled industrial areas in Australia. There is significant experience in managing asbestos soils on construction sites, with management measures well documented. Sydney Ports contractors have continuously demonstrated strict adherence to the measures required

under the ILC Conditions of Approval and CEMP framework to the satisfaction of the Independent Environmental Site Auditor Environ. As indicated above, Sydney Ports' contractor will implement the measures identified in the CEMPs and Safety Plans to ensure that airborne materials (eg. dust, asbestos) does not pose a risk to workers and site neighbours.

Monthly and annual statistics for the Bureau of Meteorology's (BoM) rainfall station at Strathfield Golf Club are provided in Table 2.1 below. The Strathfield Golf Club is located approximately 800 m north of the ILC site.

Table 2.1: Rainfall Statistics and Totals for Strathfield Golf Club (mm)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Statistics													
10th %ile (dry year)	25	19	23	14	10	16	6	4	7	8	18	13	**553**
50th %ile (Median yr)	70	75	77	54	57	67	36	33	34	42	59	48	**945**
Mean (Average yr)	86	111	105	87	77	91	48	61	46	66	81	66	**936**
90th %ile (wet year)	174	235	238	200	162	188	106	182	89	158	167	141	**1,227**
Recorded Data 2009 -2011													
2009	12	124	70	123	125	57	48	5	17	131	18	55	**785**
2010	26	199	62	29	127	106	57	23	93	65	132	81	**1,000**
2011	41	20	129	171	91	67							

Source: BoM website: http://www.bom.gov.au/climate/data/ accessed 22 July 2011

It can be seen that annual rainfall totals for 2009 and 2010 were 785 mm and 1,000 mm respectively. The long-term (1952 – 2011) average annual rainfall total for Strathfield Golf Club is 936 mm, indicating that 2009 was a drier year than average while 2010 was wetter than average. The monthly statistics indicate that although some months were significantly wetter than average, others were drier than average. The statistics do not indicate that the rainfall over the construction period to date were predominantly wetter than average. The dust monitoring results indicate that even in the drier than average months, no exceedances of the dust criteria attributable to project activities occurred.

2.2 Noise

2.2.1 Summary of Modification

A noise impact assessment (NIA) of the proposal, including noise modelling, was carried out by SLR Consulting Australia Pty Ltd as part of the Modification Application 5 report. The assessment concluded that the construction activities associated with the modification would not result in noticeable increases to the ILC site construction noise emission levels predicted in the EA (SKM, 2005). As was found in the EA, SLR's results indicated that under the worst case scenario with equipment operating at the closest point to residences, no control measures in place and all equipment operating at once, potential occasional exceedances could occur. However, these exceedances can be mitigated through the implementation of the following measures:

- Plant items to have noise emission levels measured before commencement of earthworks at the spoil reuse area to confirm assumed assessment sound power levels;
- Plant and equipment to be inspected regularly to ensure it is in good running order, regularly maintained and free of defective components to minimise noise emissions;
- Noisy plant and equipment to be located as far as possible from noise sensitive areas, optimising attenuation effects from topography, material stockpiles and existing built barriers;
- Plant operators to be inducted in noise management to ensure equipment is operated in the quietest way possible;
- Compliance noise monitoring at the nearest residential areas to be undertaken on a regular (monthly) basis during fill placement activities;
- Regular community consultation, including notification of the works in advance, to be undertaken;
- Complaints to be dealt with in accordance with the contractor's documented complaints handling procedure;
- Work to be carried out within the standard working hours prescribed in the Project Approval, unless approval has been obtained from the DP&I for out of hours works.

2.2.2 Response to Submissions

SMC noted that the proposed modification may cause potential noise impacts on adjoining residential areas from the movement of trucks and operation of machinery and equipment. It indicated that there is a need to ensure the mitigation measures outlined in Section 3.1.1 of the Modification Assessment Report (listed in Section 2.2.1 above) are adhered to, including the need for regular and ongoing consultation with the community.

The mitigation measures listed in Section 2.2.1 above will be included in the CEMP for the works. Regular site surveillance is carried out by the contractor's Environmental Manager. Site activities are also subject to independent environmental audits.

Refer section 2.13 below for details of the regular and ongoing community consultation proposed during the main construction phase of the project.

2.3 Ecological Issues

2.3.1 Summary of Modification

Modification Application 5 stated that the Frog Habitat Creation Area (FHCA) on the ILC site would not be affected by the proposed filling works at Mt Enfield. The frog ponds and potential habitat will remain frog fenced for the duration of the filling works. The frog ponds and fringing area will be separated from the works by a sediment fence and construction machinery will not be allowed to enter the fenced frog pond area. Sydney Ports' Frog Protection Plan (Biosphere, June 2009), which is attached as Appendix F to Sydney Ports' Construction Environmental Management Plan Framework (available on Sydney Ports' website), will continue to be implemented during the filling works. No significant negative impacts on flora and fauna were predicted.

2.3.2 Response to Submissions

SMC, the NoPE community group and Gary Blaschke raised concerns regarding potential impacts on GGBF populations.

SMC raised the following key concerns:

- there is a need to ensure sufficient measures are implemented to protect existing frog habitat and movement corridors, including sediment controls and fencing;
- revegetation of Mt Enfield may attract species which are potential predators of GGBF;
- a further ecological assessment should be prepared in accordance with Section 5A of the EP&A Act 1979 to ensure that the impacts of the proposal on GGBF is fully considered;
- the ecological assessment should consider the importation of soil, compost and other landscaping material which may contain spores of Batrachochytrium;
- potential dust impacts on the GGBF populations

NoPE indicated that the proposed should be a controlled action under the EPBC Act, and that the alterations to the initial proposal in relation to the frog habitat area and the recent discovery of a colony of GGBF east of the ILC site make the ILC's site functionality as GGBF habitat and movement corridor absolutely critical in maintaining the local population. It also noted that Sydney Ports' current Frog Management Plan requires significant revision to take into account the new circumstances.

In response to these concerns, Sydney Ports' Consulting Herpetologist, Dr Arthur White from Biosphere Environmental Consultants, prepared an Ecological Impact Assessment, dated July 2011, for the proposed filling works. This assessment, which includes a Seven Part test in accordance with Section 5A of the EP&A Act and the TSC Act, is provided as Appendix C to this report.

The Ecological Impact Assessment concluded that the proposed works will not have a significant impact on any GGBF on the site or in the Enfield area. It concluded that Mt Enfield and the Mt Enfield fill emplacement area are not identified as a potential frog habitat area. It also concluded that the proposed reuse of material at Mt Enfield is not considered a controlled action under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* as the works are not considered likely to a have a significant impact on the GGBF.

The mitigation measures recommended as a result of the Ecological Impact Assessment are summarised below:

- The north-south haul road to Mt Enfield must be inspected after all rainfall events and any GGBF found relocated to the FHCA by the designated Environmental Manager (EM) before the haul road is used. The EM must receive instruction regarding the correct handling and transport of GGBF from Sydney Ports' Consulting Herpetologist before the works commence.
- Truck movements along the north-south haul road to Mt Enfield are not to occur outside daylight hours, unless otherwise undertaken under special authorisations issued under the project approval.
- No exclusion fences are to be placed around the north-south haul road to ensure GGBF can move across the site in the night or during the day in wet weather.

- Dust suppression, including use of water tankers, must be used during the earthworks activities at Mt Enfield to prevent wind-blown dust from reaching the FHCA and adjoining areas.
- Inspections must be carried out during the earthworks at Mt Enfield to identify predator presence on the site. Feral animal control measures should be implemented if predators, especially foxes and rats, are detected. The use of predator control measures should be carried out in consultation with Sydney Ports' Consulting Herpetologist to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.
- Predator inspections should continue during the landscaping and revegetation phase of the works. If the incidence of birds likely to attack GGBF, notably ibis and heron, increases as a result of the works or the revegetation, bird deterrent methods may need to be used to prevent predation of any potential GGBF in the FHCA. Sydney Ports' Consulting Herpetologist should be consulted to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.
- Sediment and erosion control measures, including silt fences, should be erected downstream of active emplacement areas which have not yet been stabilised to catch any silt from surface construction runoff and prevent sedimentation of downstream receiving waters.
- Soil, or vehicles that have been transporting soil or moist material from elsewhere on the ILC site, are not be permitted in the FHCA. The boundary fence separating the FHCA from the remainder of the site and signage must be regularly inspected and maintained.
- Restrict members of the public from entering the FHCA by ensuring that any members of the public admitted to Mt Enfield and the ILC site are accompanied by a Sydney Ports representative who will prevent access to the FHCA. If the system of guided escorts does not prevent access of unauthorised persons to the FHCA, other methods of securing the FHCA must be identified and implemented.

These measures will be incorporated in the CEMP for the construction phase.

Sydney Ports' ILC Frog Management Plan (FMP) provides details of the final FHCA and how it will be managed once it is operational. Sydney Ports' ILC Frog Protection Plan (FPP) contains measures to protect the frogs during the re-development of the site. (Both of these documents are available in the Sydney Ports' project website as Appendix F to Sydney Ports CEMP Framework).

The proposal does not change the FHCA or the operational management of the FHCA described in the FMP. Therefore Sydney Ports does not consider that it is necessary to revise the FMP. The FPP will continue to be implemented during construction. As indicated above, the measures identified in the Modification Application 5 documentation, including this response to stakeholders, will be incorporated in the CEMP for the construction phase.

2.4 Landscaping/Revegetation

2.4.1 Summary of Modification

In accordance with the requirements of Condition of Approval 6.3 d), the proposed fill emplacement area will be landscaped with locally-endemic native species. The proposed planting plan and schedule are provided in Appendix C of Modification Application 5.

Landscaping will be undertaken by a landscaping contractor who will be contractually required to comply with a landscape specification, which will include landscaping performance and maintenance requirements for a defects liability period of 52 weeks. Sydney Ports will include landscaping areas in their assets maintenance schedule after the end of the Contractor's defects liability period.

2.4.2 Response to Submissions

SMC made the following comments in regards to the proposed landscaping:

- It suggested that the landscaping works be undertaken using all indigenous plants species from local genetic sources, which must be ordered well in advance of the actual planting occurring;
- hydro- mulching may be a useful means of revegetating;
- the proposed species mix is satisfactory;
- if the river she oak monoculture (RSM) relies on *Casuarina littoralis* it will need to located upslope from poorly drained areas;
- the slopes of the mound appear to be too steep for planting, which may pose significant scouring and sediment loss during rainfall events;
- sediment eroded from Mt Enfield could potentially enter Coxs Creek and the GGBF FHCA.

The landscaping plan and schedule provided in Appendix C of Modification Application 5 contains the species to be used for revegetating Mt Enfield. Plant communities to be used on the reconfigured Mt Enfield comprise native species mostly from the locally occurring Cumberland Plains Woodland. These plants have been adopted as being suitable to the conditions and slopes expected on the reconfigured Mt Enfield. The landscaping plan has been developed by landscape specialists AECOM/EDAW based on the physical and geographical characteristics of the site.

Hydro-mulching and hydro-seeding will be considered as a method for vegetating the mound, at least for initial stabilisation. The landscape contractor will be encouraged to source the plants from local genetic sources where possible.

The Plant Communities Schedule in Appendix C of Modification Application 5 recommends that the RSM consist of *Casuarina littoralis.* The RSM will be planted on the side slopes of Mt Enfield, which will be a well drained area and therefore not a poorly drained area.

Section 2.5 below and Appendix E of this report provides information on how erosion and scouring will be prevented on the reshaped Mt Enfield. No runoff from Mt Enfield will be directed to the recently constructed frog ponds, however sediment protection will be provided to prevent sediment entering Coxs Creek.

BCC recommended that Council and the community be consulted for the preparation of a detailed Landscape Plan and Landscape Management Plan. Refer Section 2.13 below for a response regarding consultation carried out as part of this Modification Application.

NoPE were concerned that GGBF would be impacted because the presently existing vegetative habitat on Mt Enfield would not be replanted for two summer periods (in 2011 - 2012 and 2012 - 2013). NoPE noted that as the frog habitat north of Mt Enfield and south of Coxs Creek is presently under construction, this would effectively leave little or no vegetative frog habitat in most of the southern area for some period of time, at least until the end of main construction on the rest of the site.

The GGBF impact assessment provided in Appendix C of this report states that Mt Enfield and the fill emplacement area are not potential GGBF habitat area. Consequently, removal of the vegetation on Mt Enfield is not anticipated to impact on GGBF. The frog ponds and fringing pond vegetated area (which is part of the FHCA), located immediately to the north of Mt Enfield, were completed and revegetated in the first half of 2011 with the species recommended by Sydney Port's Consulting Herpetologist as being suitable for GGBF habitat and in accordance with the FMP. This area is being maintained by Sydney Ports' contractor. In view of the above, there will not be a lack of vegetative frog habitat in the southern portion of the site for any extended period of time.

2.5 Drainage/Hydrology

2.5.1 Summary of Modification

The proposed filling will be located above the 100 year ARI flood level and therefore no impacts on flooding for floods up to and including the 100 year ARI are anticipated. No changes in the overall catchment area, direction of flow or pervious nature of the proposed fill emplacement area are proposed as part of Modification Application 5.

2.5.2 Response to Submissions

Mound Drainage

SMC indicated that Modification Application 5 does not clearly demonstrate where the runoff from the proposed mound would be directed to. It noted that ponding and flow path areas for runoff should be provided to demonstrate that the additional runoff volume and velocity has been investigated and allowed for. SMC also noted that the drainage from the site should be controlled so that there is no additional stormwater leaving the site at each point of discharge than occurred prior to the proposed development.

The local catchment boundaries will not change as a result of the filling (ie the overall catchment area will be unchanged) and therefore the volume of stormwater falling on the catchment will remain unchanged. The reshaping of the mound will not significantly increase the volume of runoff to downstream receiving waters. The flows will continue to be directed to the existing drainage networks including Coxs Creek. There will be no significant increase in the volume of stormwater leaving the mound as the overall catchment area remains unchanged and the area remains pervious.

The increased length and steepness of the batters in some areas of Mt Enfield could result in increased velocities, which could create erosion and sedimentation issues. This will be mitigated by designing, constructing and maintaining appropriate drainage measures for the final landform and re-vegetating the mound. The final landform will incorporate appropriate measures to ensure that the emplacement area is not prone to an unacceptable rate of erosion and is capable of conveying runoff from the reshaped mound without risk of erosion and sedimentation.

Measures such as those recommended in *Soil and Construction, Managing Urban Stormwater* (Landcom, 2004) and other appropriate guidelines will be considered for the final design of the landform. Such measures may include provision of laterally drained benching and berms and use of diversion drains to control runoff and manage erosion as necessary.

The slopes of Mt Enfield are currently vegetated and the proposed design also shows appropriate vegetation on these slopes. Flow velocities and erosion will be retarded by the vegetation. Use of hydro-mulching and hydro-seeding may be adopted during the revegetation process to minimise erosion.

For further details refer to specialist engineers AECOM' Memo attached in Appendix E.

Construction water management is discussed below.

Side Slopes

The OEH (Environment Protection and Regulation) stated that its main concern is the steepness of the proposed slope of Mt Enfield which appears to be in excess of the recommended slope for stockpiling in Landcom (2004) Soil and Construction, Managing Urban Stormwater (the Blue Book).

OEH recommends that the approval require the development of a management plan to explicitly address the management of the steep batters of Mt Enfield during construction and until it is stabilised with vegetation. OEH noted that the plan should cover soil and water and dust issues.

Soil erosion and sedimentation control during construction will be managed by the implementation of the CEMP required under CoA 6.2 which includes a Soil and Water Management Plan. Site specific Erosion and Sediment Control Plan(s) will be developed under the Soil and Water Management Plan for the fill emplacement area. Sediment and erosion control measures will be installed prior to commencement of fill emplacement activities at Mt Enfield and will be modified and maintained as required during filling activities. The contractor will also develop a methodology for constructing the batters to ensure that fill material is retained and batters are progressively stabilised.

2.6 Visual Amenity

2.6.1 Summary of Modification

The highest point of the existing Mt Enfield is 29.369m AHD, while the highest point of the expanded and raised Mt Enfield will be 36.0 m AHD (refer Figure 1.3 in Modification Application 5).

The assessment provided in Modification Application 5 found that the visual impacts of the construction of the fill emplacement activities at Mt Enfield would be temporary and typical of a construction site in an urban area. Given the temporary nature of the proposed fill emplacement works, construction visual impacts were not considered significant. Shade cloth attached to the site fence along sections of Punchbowl Road and Cosgrove Road to minimise the visual impacts of construction.

The long term visual impact of the proposal was assessed in Modification Application 5 by evaluating the views to the final reconfigured Mt Enfield from three key viewpoints:

- View 1 from Punchbowl Road facing north-west;
- View 2 from Wentworth Street facing east;
- View 3 from Cosgrove Road facing west.

Photomontages showing the views to Mt Enfield before and after the proposed filling and landscaping activities were provided in Modification Application 5. Overall, it was concluded that, considering the existing degraded visual environment in the southern part of the ILC site,

the proposed reshaped and landscaped Mt Enfield will not have significant negative visual impacts for surrounding landuses. In fact, the proposed landscape treatment would, in the longer term, result in an improvement in the visual amenity of the areas to the south of the ILC site.

2.6.2 Response to Submissions

BCC indicated that the reshaped Mt Enfield will be visible from a number of residential areas around the locality with the most severe impacts on residences located south of Mt Enfield, along the Punchbowl Road overpass facing north-west and fronting Punchbowl Road in the vicinity of the rail corridor with approximate viewing distance of 20 to 300 m.

SMC noted that the raised earth mound will be visible from a number residential areas and this may potentially impact on views from adjoining residential areas and screen less attractive views. SMC also noted that the aesthetic impact of the enlarged mound will be dependent on the success of the revegetation.

The existing development adjoining the southern part of the ILC site provides considerable screening to the fill emplacement area from much of the surrounding environment as discussed below.

The ILC site is located within predominantly industrial land (refer to Figure 1.1 in Appendix B). The proposed fill emplacement area is surrounded by industrial land and rail corridor to the west, Punchbowl Road and rail corridor to the south, the disused Tarpaulin Factory and existing warehousing to the east and the remainder of the ILC site (future industrial land) to the north. Low density residential development is located to the east of the Tarpaulin Factory and Cosgrove Road and to the south-east of Punchbowl Road (refer Figure 1.1 attached in Appendix B). A small number of residents in these areas will have views of the reshaped Mt Enfield, however most of these residents already have views of the existing degraded Mt Enfield.

As shown in the photomontages provided in Figures 3.1 to 3.6 of Modification Application 5, the reshaped Mt Enfield will not obscure significant views from residential areas. A number residents located on Wentworth Street and Juno Parade will lose most of their existing views of Mt Enfield (refer Figures 3.3 and 3.4 of Modification Application 5) due to an industrial warehouse development currently being constructed in the area generally surrounded by Juno Parade, Wentworth Street, Punchbowl Road and the RailCorp Marshalling Yard.

A small number of residences along Punchbowl Road (refer Figures 3.3 and 3.4 of Modification Application 5) will have existing partial views of the degraded Mt Enfield and distant industrial and residential development replaced by a more prominent native-landscaped Mt Enfield.

The residential area in the south of Cosgrove Road will have the existing partial views (through the gap between the Tarpaulin Factory and warehousing development as shown in Figures 3.5 and 3.6 of Modification Application 5) of the degraded Mt Enfield replaced by partial views of the reshaped and native-landscaped Mt Enfield.

Sydney Ports considers that in the long term the reshaped and landscaped Mt Enfield will result in an improvement in the visual amenity for areas with views to the southern end of the ILC site. Weeds will be removed from the degraded Mt Enfield and replaced by indigenous native species. No significant views from residential areas will be screened by the reshaped Mt Enfield.

Landscaping/revegetation of the reshaped Mt Enfield is discussed in Section 2.4.

2.7 Height of Mound

2.7.1 Summary of Modification

According to the topographic model of Mt Enfield, the highest point of the existing Mt Enfield is approximately 29.369 m AHD, while the highest point of the reshaped Mt Enfield will be 36.0 m AHD between long section CH 55.41 m to 73.57. Figures 1.3 and 1.4 of Modification Application (also provided in Appendix B of this report) show a long section and cross sections of the existing and proposed fill emplacement area.

2.7.2 Response to Submissions

Cross Sections - Clarification

SMC indicated that the information in the modification report appears to be misleading and requires clarification. SMC noted that Section 2.1 of Modification Application 5 describes a rise of approximately 6.7 m at its highest point whilst the long section in Figure 1.3 shows the highest point of the proposed ground level to be 35.2 m AHD with an existing ground level of 21.1 m AHD which results in difference of 14.1 m, which is significantly greater than the 6.7 m rise identified.

A long section and three cross sections are provided in Modification Application 5 showing the existing and proposed elevations for the mound. The increase in height varies depending on the location of the fill emplacement area. The rise of 6.7 m described in Section 2.1 of Modification Application 5 refers to the difference between the **highest point of the existing mound** (29.369 m AHD at long section CH 178 approx) and the **highest point of the proposed mound** (36 m AHD between long section CH 55.41 to 73.57). Note that the highest point of the existing mound in the topographic model is 29.369 m AHD but the chainage of this point is not recorded on Figure 1.3.

Shadow Diagrams

SMC noted that the proposal should include shadow diagrams to illustrate the full potential impacts of increasing the mounds heights. These should demonstrate the 9am, 12pm and 3pm shadowing effects of both the existing and proposed mounds.

Shadow diagrams have been prepared for the worst case scenario (the winter solstice - 21 June) at different times of the day including 9am, 12pm and 3pm and are provided in Appendix D of this report. As shown in the shadow diagrams, the shade caused by the reshaped mound during the shortest day of the year will not impact on surrounding residential areas or industrial buildings.

2.8 Future Use and Extent of Ecological Area

2.8.1 Summary of Modification

Future landuses at the southern part of the ILC site are described in Section 3.2.4 of Modification Application 5. These landuses include the GGBF FHCA and the reconfigured and landscaped Mt Enfield. The FHCA will include frog ponds, frog movement corridor and frog foraging area. The reconfigured and landscaped Mt Enfield will remain as an undeveloped precinct within the Sydney Ports' owned industrial/commercial ILC site. Mt Enfield and the adjoining FHCA will serve as a buffer between the operational ILC areas in the north and the residential area to the south east.

2.8.2 Response to Submissions

SMC indicated that the original 5/9/2007 ILC project approval was based on the south eastern portion of the Sydney Ports site being established as "Ecological Heritage Community Area with controlled access" which included the Tarpaulin Shed and Frog Ponds. SMC expressed concerns for the future use of the "Ecological Heritage Community Area" that was committed for community and ecological purposes as part of the original approval. It noted that by creating level access to Punchbowl Road, this may potentially encourage Sydney Ports to pursue approvals to use this area for commercial uses such as a service station or other commercial industrial opportunities in the future.

NoPE noted that "*the proposal was 'sold' to the community with the promise of a substantial ecological and community area at the south of the site (the entire area south of Coxs Creek) that would comprise revegetation of the existing stockpile and habitat for the threatened GGBF, and would otherwise remain untouched by the ILC development.*" NoPE indicated that "*the size and extent of the Ecological and Community area has been continually downsized and modified through the project application, approval process and modification proposals.*" NoPE also indicated that "*despite being called an Ecological and Community area, it remains unclear as to what use the community will have of the area*."

The proposed landuse at the southern part of the ILC site, including Mt Enfield, as described in Section 3.2.4 of Modification Application 5 is consistent with the Project Approval.

The FHCA being constructed at the southern part of the site has been designed in accordance with the requirements of the Project Approval, specifically CoA 2.48, and the commitments made in the EA (SKM, 2005). In accordance with the requirements of CoA 2.48, the FHCA will include at least 2 ha of improved foraging habitat at the southern end of the site. The frog ponds and the immediate surrounding pond fringing vegetated area were constructed in the first half of 2011. The remainder of the FHCA will be constructed and commissioned once the permanent source of water to the ponds (stormwater detention basin D), the rail line along the western part of the site, and cut and fill activities near the southern part of the site have been completed.

The proposed reshaped, revegetated and undeveloped Mt Enfield is consistent with the Project Approval and the EA, which stated that the southern area "*would serve as a buffer between operations on the site and residences to the south of the site*" and that it "*would provide the prospect of incorporating ecological enhancement and community opportunities.*" Mt Enfield is currently degraded and overgrown with weeds. The reshaped Mt Enfield will be landscaped with native species which will further enhance the ecology of the area, in addition to the benefits already provided by the FHCA and the earth noise mound, located immediately to the east of the frog ponds, which has been landscaped with species from the locally endemic Cumberland Plain Woodland community. The Landscape Management Plan provided in Appendix C of Modification Application 5 provides details of the landscaping of the entire southern part of the ILC site.

The Pillar Water Tank, a heritage item recommended for state significant listing, has been relocated to the southern part of the site for future display in a heritage precinct to be created in this part of the ILC site. The heritage precinct will also include heritage interpretation panels relating to the history of the ILC site (for details refer to the Heritage Interpretation Plan and Strategy prepared under CoA 6.3c) and available in Sydney Ports' website).

Community opportunities will be provided by the heritage precinct and the lookout proposed at the top of the reshaped Mt Enfield. Controlled escorted public access will be provided in these areas as discussed in Section 3.2.4 of Modification Application 5. This is consistent with Section 4.7 of the EA which indicates that "*it is also possible that access for the community to the (southern) area would be available under supervised conditions.*" Restricted access will be provided to the FHCA as discussed in Section 3.2.4 of Modification Application 5.

The Tarpaulin Factory is not part of the ILC Project Approval (refer CoA 2.34: "*except for the necessary stabilisation works agreed in consultation with the NSW Heritage Office, the Proponent is not permitted to destroy, modify or otherwise physically affect the Tarpaulin Factory as part of this approval*...") and therefore is not included in Modification Application 5. Sydney Ports is currently preparing a feasibility study into possible landuse options for the Tarpaulin Factory.

Modification Application 5 does not include any requests or proposals to develop the area near Punchbowl Road. Modification Application 5 indicates that the area immediately north of Punchbowl Road and south of Mt Enfield may be developed in the future for commercial/industrial purposes in connection with the future development of the Tarpaulin Factory. It also notes that any future development of the Tarpaulin Factory or the area immediately north of Punchbowl Road will be subject to separate assessment and approval in accordance with the EP&A Act. Any such proposal, if it eventuates, would need to obtain the appropriate approval by the relevant approval authority, which may be SMC.

Consequently, under the proposed modification, the southern part of the ILC site (ie the area generally south of Coxs Creek), incorporates both ecological enhancements and some community opportunities consistent with the Project Approval. The extent of the area south of Coxs Creek (excluding the Tarpaulin Factory, the RailCorp/ARTC vehicular access track and the rail siding along the western boundary) is approximately 6.25 ha, which is consistent with the information provided in the EA. This area increases to over 7 ha if Bio-Retention Basin D, located immediately adjacent to the FHCA and which will also be vegetated, is included.

2.9 Cumulative Impacts

2.9.1 Response to Submissions

BCC indicated that the cumulative noise and dust emissions from both the approved facilities and the additional filling activities at Mt Enfield will have an adverse environmental impact on the surrounding residential properties if appropriate monitoring systems and remedial mechanisms are not in place.

Cumulative noise and dust impacts (approved development plus the modification proposal) were assessed in Modification Application 5 and it was concluded that the additional noise and dust contribution of the proposal would be negligible. Cumulative traffic impacts were predicted to be beneficial to the local community.

2.10 Contamination

2.10.1 Summary of Modification

A Spoil Management Plan (SMP) will be developed and implemented during relocation of unsuitable fill material to ensure that material reused at the southern part of the ILC site meets the industrial/commercial land use criteria applicable to the ILC site. The SMP will be submitted to the Site Auditor accredited under the CLM Act as part of the documentation to be prepared under CoA 2.42 and 2.43. Works will not commence until the SMP has been reviewed and endorsed by the Site Auditor. For further details refer to Section 3.1.5 of Modification Application 5.

2.10.2 Response to Submissions

Documentation

SMC indicated that the CEMP submitted with the original proposal should be updated and revised to include the recent modification including how to address any contaminants exposed during the excavation process.

As indicated in Modification Application 5, any unexpected contamination found during excavation will be managed in accordance with the ILC *Contamination Management Plan for Construction* (Coffey Environments, November 2009), which is attached as Appendix G to Sydney Ports' CEMP Framework (available in the project website) and approved CEMP documentation.

In addition, the draft *SMP for the Reuse of Unsuitable Engineering Fill at Mt Enfield* has recently been prepared by specialist contamination consultants Coffey Environments and submitted to the Site Auditor accredited under the CLM Act for review and endorsement. Once endorsed by the Site Auditor, this SMP will form part of the environmental management documentation for the project.

Contamination Testing

Mr G. Blaschke noted that Sydney Ports should demonstrate that the existing stockpile (Mt Enfield) has been regularly tested for leaching into the Cooks River. Mr Blaschke states *"I was the first person to raise the issue of contaminated soils on the site and personally had a NATA approved laboratory screen the soil from what we called Mt Enfield...Obviously the findings were different than that of the railways, yet still showed high levels of heavy metals, asbestos, arsenic and other contaminants."* He indicated that Sydney Ports should have been told a decade ago to dispose of the existing stockpile correctly and not be allowed to add to existing and future environmental problems.

Previous assessments by CMPS&F (1996) and CHM2Hill (1999 a & b) concluded that spoil within the five site stockpiles, including Mt Enfield, (Stockpile 4), had contaminant concentrations less than the adopted site criteria and that there was no significant contamination in any of the five stockpiles on site. CH2M Hill (1999b) concluded "*there is no contamination associated with Stockpiles 1, 2, 3, 4 or 5 that poses a potential threat to the environment or to human health under the proposed land use scenario...the material could be retained on site and used for landscaping purposes or to further level/reclaim areas on the site.*"

Sydney Ports would welcome any other contamination sampling results that may have been undertaken at the site in the past.

Groundwater investigations at the site were also undertaken by CHM2Hill (1999 a & b) and more recently by Coffey Environments (November 2009) as part of the assessment and remediation of the Sydney Ports' ILC site during 2009 and 2010. The accredited Site Auditor concluded in Site Audit Statement GN401-2A (prepared under CoA 2.43 and available in the project website) that "*the risk of migration of contaminants to groundwater has been fully assessed and no further on site groundwater management or remediation is required.*"

Additional sampling will be undertaken under the *SMP for the Reuse of Unsuitable Engineering Fill at Mt Enfield* to ensure that material reuse at Mt Enfield meets the land use soil criteria. The risk of asbestos in soils will be managed in accordance with the approved CEMPs, the *Contamination Management Plan for Construction* (Coffey, November 2009) and Safety Management Plans. The management of any residual contamination on site during construction will be undertaken in accordance with the *Contamination Management Plan for Construction* and the requirements of the accredited Site Auditor. A long term Site Management Plan will be prepared for the management of any residual or potential contamination retained on the ILC site, including Mt Enfield, during site operations.

2.11 Estimate of Excess Spoil

2.11.1 Summary of Modification

The EA estimated that approximately 37,000 m^3 of material unsuitable for engineering fill would be removed from the site and disposed off site to a landfill facility. Recent investigations undertaken as part of the design development phase of the project indicate that the volume of unsuitable material at the site may be up to 60,000 m^3.

2.11.2 Response to Submissions

BCC recommended DP&I to seek further clarification on the variation to the estimate of excess spoil.

The EA was based on a concept design and on the results of initial site investigations. Following approval, Sydney Ports and its contractors undertook detailed design and further site investigations to determine site conditions. This is a standard process in large projects.

The 60,000 m^3 estimate of material for disposal at Mt Enfield is an upper limit based on available site information. It is possible that this estimate will be reduced once cut and fill activities are underway. The final exact volume will not be known until all cut and fill activities have been completed.

2.12 Traffic

2.12.1 Summary of Modification

The proposal will avoid the traffic impacts of around 8,000 truck movements on public roads for the off-site transport of fill to a landfill facility.

2.12.2 Response to Submissions

SMC indicated that the reduction of local area traffic impacts from the removal for retaining the excavated material on site would only be a temporary reduction and should not be used to justify the permanent placing of excavation fill material on site.

It is not the intention of Sydney Ports to justify the proposal purely based on its traffic benefits. Of the two options available for managing unsuitable engineering fill (off-site disposal or on-site management/reuse), Sydney Ports considers that the on-site management/reuse option provides the most benefits. Sydney Ports justified the proposal following consideration of all its potential benefits and dis-benefits as assessed in Modification Application 5.

2.13 Consultation

2.13.1 Summary of Modification

Sydney Ports presented the proposal to the Community Liaison Committee (CLC) during CLC Meeting no. 8 held on 4 May 2011. The CLC unanimously supported the proposal recognising that the changes will result in a substantial improvement in the visual quality of Mount Enfield and on balance would be a major benefit to the local community provided adequate measures are taken during construction to mitigate dust impacts and to manage the internal traffic movements appropriately across any potential frog corridors within the site.

SMC and BCC are updated on project progress by Sydney Ports on an approximately quarterly basis. Sydney Ports presented the proposal to SMC in a meeting held on the 13 May 2011. Sydney Ports will update BCC on the proposal during the next quarterly update.

2.13.2 Response to Submissions

BCC recommended that Council and the community be consulted for the preparation of a detailed Landscape Plan and the Landscape Management Plan. BCC also recommends that Council be notified and consulted regarding the preparation of CEMPs and OEMPs in order to ensure that concerns are addressed appropriately.

SMC indicated that further consultation should be undertaken to obtain feedback from local residents and to address their concerns.

The detailed Landscape Management Plan for the reshaped Mt Enfield and the southern part of the ILC site was provided in Modification Application 5, which has been publicly exhibited as discussed in Section 1.1 of this report. Appendix C of Modification Application 5 provides specific details of plant species, locations and densities. Comments provided during the public exhibition period on the Landscape Management Plan are considered in Section 2.4 of this report.

Environmental Management Plans are prepared in accordance with the requirements of the Project Approval, including the consultation requirements in CoA 6.2 and 6.3. SMC and BCC are provided with regular updates on project progress by Sydney Ports. During the updates, Council concerns are discussed and addressed by Sydney Ports.

Public notification of the proposal, including the placement of advertisements in the Canterbury Bankstown Express and in the Inner West Courier, is discussed in Section 1 of this report. Comments were sought from stakeholders and the community during the public exhibition period. The proposal documentation was available at a number of public locations and electronically from the DP&I's website. In addition, the proposal was presented to SMC and the CLC prior to being submitted with the DP&I. Sydney Ports therefore consider that appropriate consultation has been undertaken as part of the planning approval process under the EP&A Act.

Regular and ongoing consultation with the community will continue during the main construction phase of the project. This will include monthly resident updates which are letter dropped to residences and businesses around the ILC site as well as regular website updates. Regular CLC meetings will continue with during main construction. Minutes of the CLC meetings are also available on Sydney Ports' website.

Sydney Ports and its contractor comply with the consultation requirements of the Project Approval and their respective Community Consultation Plans.

2.14 Rezoning

2.14.1 Response to Submissions

NoPE noted that "*Sydney Ports is proposing the rezoning of the site from Special Uses to Industrial,*" and "*this is being undertaken outside the ambit of this modification request but has bearing on the present proposals*" and "*any rezoning of ...the whole area south of Cox's Creek...should reflect its value in perpetuity as habitat for the threatened GGBF, and its community use*."

As indicated in Modification Application 5, the current zoning of the ILC site, including the fill placement area, is Special Uses "B" (Railways) under Strathfield Council's Planning Scheme Ordinance.

Sydney Ports has not lodged any application to DP&I or Council to rezone the southern part of the ILC. In its website, SMC states "*Council is currently developing a new Strathfield Comprehensive Local Environmental Plan (LEP)...The process is being undertaken in consultation with the community, the Department of Planning and other stakeholders." (Source SMC website, accessed 28 July 2011).* As part of this process, Council consulted with Sydney Ports on the zoning of the ILC site during 2010.

As stated in SMC's website, once the DP&I are satisfied with the content of the draft Strathfield Comprehensive LEP and any outstanding policy matters are resolved, Council will be able to request a section 65 certificate from the Department to allow the draft LEP to be publicly exhibited. Following the public exhibition, any public submissions received will be reviewed and considered by Council and any necessary amendments made before submitting to the Department for final assessment and then gazettal.

2.15 Approval Process

2.15.1 Response to Submissions

NoPE indicated that the Modification Application request is a major alteration to the original proposal and should be subject to a new and separate development application.

The Modification Application has been submitted under Section 75W of the EP&A Act. Section 75W is the current mechanism provided in the EP&A Act for requesting modifications of major projects. The proposed reuse area subject to the modification is located in Lot 14 DP 1007302 which is within the ILC approval land site, and the works are directly related to the approved project. Sydney Ports considers that the modification application follows the correct approval process.

2.16 Qenos Pipeline

2.16.1 Response to Submissions

Qenos Pty Ltd provided the following comments regarding the modification application:

- the protocols that are in place between Sydney Ports, Qenos and their contractors, which are referenced in the modification application, must be maintained.
- Sydney Ports must identify defined crossing points of the Ethylene pipeline for truck movements if and when they are required.

Sydney Ports and its contractor will continue applying the protocols already in place between Sydney Ports, Qenos and their contractors.

No additional truck crossing points of the Ethylene pipeline other than those already agreed with Qenos are required as part of the fill emplacement works.

2.17 Labelling of Diagrams

2.17.1 Response to Submissions

SMC made a number of comments in relation to Figures 1.1, 1.3 and 1.4. In response to these comments, the figures have been updated as follows:

- the area opposite Dean Reserve is now shown as industrial in Figure 1.1;
- text has been included in Figure 1.3 to indicate that the level identified as “Punchbowl Road footpath level” is the level at the vehicular bridge crossing over the railway yards;
- the typographical error in Figure 1.4 has been corrected.

The updated figures are provided in Appendix B.

3 Conclusion

This report provides responses to comments and issues raised by SMC, BCC, OEH, Qenos, the NoPE community group and Mr Gary Blaschke on Sydney Ports' Modification Application 5. The Modification Application applies to the onsite relocation and reuse of excavated material deemed unsuitable for use as engineering fill under the ILC operational areas at the southern part of the site.

In response to the submissions, additional mitigation measures have been developed and will be implemented during the fill emplacement activities, particularly in regards to dust and GGBF management as discussed in this report.

It was concluded in Modification Application 5 that the proposed modification is not expected to have significant impacts on the environment either during construction or in the long term, provided the proposed mitigation measures are implemented. This response to stakeholders' submissions report makes the same conclusion and provides additional measures to further manage any potential environmental risks associated with the proposal and to reassure stakeholders of Sydney Ports' commitment to environmental management at the site.

The additional mitigation measures identified in this document are shown in green font in Section 3.1 below, which also includes the original mitigation measures proposed in Modification Application 5.

3.1 Summary of Mitigation Measures

3.1.1 Construction

Noise

- Plant items to have noise emission levels measured before commencement of earthworks at the spoil reuse area to confirm assumed assessment sound power levels;
- Plant and equipment to be inspected regularly to ensure it is in good running order, regularly maintained and free of defective components to minimise noise emissions.
- Noisy plant and equipment to be located as far as possible from noise sensitive areas, optimising attenuation effects from topography, material stockpiles and existing built barriers.
- Plant operators to be inducted in noise management to operate the equipment in the quietest way possible.
- Compliance noise monitoring to be undertaken on a regular basis (eg. monthly) during fill placement activities at the nearest residential areas.
- Regular community consultation, including notification of the works in advance, to be undertaken.
- Complaints to be dealt with in accordance with the Contractor's documented complaints handling procedure.
- Work must be carried out within the standard working hours provided in the Project Approval, unless approval has been obtained from the DP&I for out of hours works.

Dust

Potential short term air quality impacts can be managed by implementing the following dust management and mitigation measures, some of which are already being implemented:

- Continuation of real-time meteorological and PM_{10} monitoring activities at the south-eastern part of the site to identify periods when work activities may result in adverse off-site impacts;
- Progressive rehabilitation of completed fill areas at Mt Enfield, including as required the use of dust suppressants, revegetation or other suitable methods;
- Continuation of the use of water carts along internal roads and at the reuse area; and
- Minimisation of the active reuse area as far as practicable.
- Either spray grassing or dust suppressant agents will be utilised progressively as a temporary measure prior to final landscaping where filling works in discrete areas are completed.
- There will be one designated route to transport the material to Mt Enfield. Defined vehicle tracking paths will be established and controlled during operations for dust by wetting down and compacting the running surface.
- At the end of each day the active filling area will be stabilised and watered as required.
- During longer non-working periods (eg. weekends, holidays), stand-by crews will be rostered to be available to water spray potential dust generating areas should weather forecasts predict potential dust generating conditions (eg. dry and windy weather);
- A number of dust suppressants, including short and long term suppressants, will be tested during the fill emplacement activities. The trial will determine whether the dust suppressants are suitable for use at Mt Enfield during filling operations.

Soil and Water Management

- The contractor will implement a soil and water quality management plan as part of the CEMP for the works. The soil and water management plan will be prepared in accordance with Landcom's '*Managing Urban Stormwater: Soils and Construction'*. Site specific Erosion and Sediment Control Plan/s will be developed under the Soil and Water Management Plan for the fill emplacement area.
- Exposed working areas will be minimised as much as feasible at any one time.
- Completed fill areas will be progressively rehabilitated.
- Clean stormwater runoff will be diverted from the fill emplacement area.
- Weather forecasts and current weather will be monitored and works planned accordingly.
- The velocity (and erosivity) of runoff will be minimised by reducing flow lengths through the installation of sandbags, check banks, speed humps and other devices in exposed areas.
- Appropriate sedimentation control devices, including sediment fences, will be installed downstream of the active fill emplacement working area.
- The frog ponds and surrounding fringing pond area will be separated from the works by a sediment fence. Construction machinery will not be allowed to enter the fenced frog pond area.

- Sedimentation basins, sized in accordance with Landcom's Blue Book, will be established, if required, to capture turbid site runoff. Water captured in sediment basins will be manage and treated, preferably for reuse on-site or controlled discharge where necessary.
- Erosion and sediment controls will be retained during construction and until all ground surfaces have been stabilised.
- Chemical storage and refuelling activities will not be permitted in the fill emplacement area.
- Sediment and erosion control measures must be installed prior to commencement of fill emplacement activities at Mt Enfield and will be modified and maintained as required during filling activities.
- The contractor will develop a methodology for constructing the batters to ensure that fill material is retained and batters are progressively stabilised.

Flora and Fauna

- The frog ponds and potential habitat will remain frog fenced for the duration of the filling works. Construction machinery will not be allowed to enter the fenced frog pond area.
- The Frog Protection Plan (Biosphere, June 2009), which is attached as Appendix F to Sydney Ports' Construction Environmental Management Plan Framework, will continue to be implemented during the filling works.
- The north-south haul road to Mt Enfield must be inspected after all rainfall events and any GGBF found relocated to the FHCA by the designated Environmental Manager (EM) before the haul road is used. The EM must receive instruction regarding the correct handling and transport of GGBF from Sydney Ports' Consulting Herpetologist before the works commence.
- Truck movements along the north-south haul road to Mt Enfield are not to occur outside daylight hours, unless otherwise undertaken under special authorisations issued under the project approval.
- No exclusion fences are to be placed around the north-south haul road to ensure GGBF can move across the site in the night or during the day in wet weather.
- Dust suppression, including use of water tankers, must be used during the earthworks activities at Mt Enfield to prevent wind-blown dust from reaching the FHCA and adjoining areas.
- Inspections must be carried out during the earthworks at Mt Enfield to identify predator presence on the site. Feral animal control measures should be implemented if predators, especially foxes and rats, are detected. The use of predator control measures should be carried out in consultation with Sydney Ports' Consulting Herpetologist to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.
- Predator inspections should continue during the landscaping and revegetation phase of the works. If the incidence of birds likely to attack GGBF, notably ibis and heron, increases as a result of the works or the revegetation, bird deterrent methods may need to be used to prevent predation of any potential GGBF in the FHCA. Sydney Ports' Consulting Herpetologist should be consulted to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.

- Sediment and erosion control measures, including silt fences, should be erected downstream of active emplacement areas which have not yet been stabilised to catch any silt from surface construction runoff and prevent sedimentation of downstream receiving waters.
- Soil, or vehicles that have been transporting soil or moist material from elsewhere on the ILC site, are not be permitted in the FHCA. The boundary fence separating the FHCA from the remainder of the site and signage must be regularly inspected and maintained.
- Restrict members of the public from entering the FHCA by ensuring that any members of the public admitted to Mt Enfield and the ILC site are accompanied by a Sydney Ports representative who will prevent access to the FHCA. If the system of guided escorts does not prevent access of unauthorised persons to the FHCA, other methods of securing the FHCA must be identified and implemented.

Spoil and Contamination Management

- Any unexpected contamination found during the fill cut and fill activities will be managed in accordance with the *Contamination Management Plan for Construction* (Coffey Environments, 25 November 2009)
- Contractor to implement the *SMP for the Reuse of Unsuitable Engineering Fill at Mt Enfield* which will be endorsed by the Site Auditor accredited under the *Contaminated Land Management Act* 1997 prior to commencement of works.

Heritage Protection

- Provide temporary fencing of the Pillar Water tank during the works;
- Install a demarcation fence at the northern end of the Tarpaulin Factory to ensure that no machinery is able to access the area in the vicinity of the Tarpaulin Factory.

Visual Impact Management

- Shade cloth to be placed at the site fence along the sections of Punchbowl Road and Cosgrove Road where the filling works are visible to minimise construction visual impacts.

Utilities

- Prior to commencing the filling works, the Contractor must carry out a services search to confirm no services will be impacted by the filling works.
- No filling work over RailCorp signalling cable will be undertaken until RailCorp's agreement is received to either undertake "straight rail" works in a section of the rail adjacent to the Tarpaulin Shed or the signalling has been isolated to RailCorp's satisfaction.
- Extreme caution to be employed while working in the vicinity of the ethylene pipeline. The Contractor will liaise and comply with the requirements of Savcor ART and Qenos for any works in the vicinity of the high pressure ethylene gas pipeline.
- Sydney Ports and its contractor will continue to apply the protocols already in place between Sydney Ports, Qenos and Qenos' contractor for works in the vicinity of the high pressure ethylene gas pipeline.

3.1.2 Operation

Landscaping and Visual

- Landscaping to be carried out in accordance with the proposed planting plan and schedule provided in Appendix C with locally-endemic native species, in accordance with the requirements of Condition of Approval 6.3 d.
- Hydro-mulching and hydro-seeding will be considered as a method for vegetating the mound, at least for initial stabilisation.
- The landscape contractor will be encouraged to source the plants from local genetic sources where possible.

Flooding

- Filling to occur above the 100 year ARI flood level (RL 16.75 m AHD) to avoid impacts on local flood levels for flood events up to and including the 100 year ARI event.

Long term erosion and sedimentation control

- The final landform will incorporate appropriate measures to ensure that the emplacement area is not prone to an unacceptable rate of erosion and is capable of conveying runoff from the reshaped mound without risk of erosion and sedimentation.
- Measures such as those recommended in the Blue Book (Landcom, 2004) or other relevant guidelines will be considered in the final design of the landform.

4 References

Biosphere Environmental Consultants (June 2009). *ILC at Enfield. Green and Golden Bell Frog Protection Plan* (Appendix F of the ILC at Enfield CEMP Framework). Prepared for Sydney Ports Corporation.

CH2MHill (1999a). *Enfield Marshalling Yards Part A Environmental Contamination Assessment*. Prepared for Sydney Ports Corporation/Rail Estate

CH2MHill (1999b). *Enfield Marshalling Yards Part B Environmental Contamination Assessment*. Prepared for Sydney Ports Corporation/Rail Estate

CMPS&F Environmental (June 1996). *Enfield Marshalling Yard Soil Validation Report*. Prepared for Department of Public Works and Services

Coffey Environments (25 November 2009). *ILC at Enfield. Contamination Management Plan for Construction* (Appendix G of the ILC at Enfield CEMP Framework). Prepared for Sydney Ports Corporation.

Coffey Environments (November 2009). *Additional Groundwater Assessment* (Ref. ILC - CO - D&R - ENVIHOD00634AA-R031). Prepared for Sydney Ports Corporation.

Coffey Environments (28 June 2011). Draft *Site Management Plan for the Reuse of Unsuitable Engineering Fill at Mt Enfield.* Prepared for Sydney Ports Corporation.

Landcom (2004). *Soil and Construction, Managing Urban Stormwater (the Blue Book).*

SKM (October 2005). *Environmental Assessment: Intermodal Logistics Centre at Enfield.* Prepared for Sydney Ports Corporation.

SKM (June 2006). *Intermodal Logistics Centre: Preferred Project Report.* Prepared for Sydney Ports Corporation.

Sydney Ports Corporation (September, 2010). *CEMP Framework Rev 10*.

Sydney Ports Corporation (May, 2011). *ILC at Enfield. Modification Application No. 5 On Site Management of Unsuitable Engineering Fill.*

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Appendix A: Stakeholder's Submissions

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NSW GOVERNMENT | Planning & Infrastructure

Contact: Diane Sarkies
Phone: (02) 9228 6370
Fax: (02) 9228 6455
Email: diane.sarkies@planning.nsw.gov.au

Our ref.: 11/05775

Mr Stephen Zaczkiewicz
Enfield ILC Senior Development Manager
Sydney Ports Corporation
PO Box 25
MILLERS POINT NSW 2000

Dear Mr Zaczkiewicz

Subject: Exhibition of Enfield ILC - Modification 5 (MP 05_0147 MOD 5)

The exhibition of the modification report for the above project ended on 14 July 2011. All submissions received by the Department during the exhibition of the project are available on the Department's website at the following location: majorprojects.planning.nsw.gov.au. Should further submissions be received by public authorities, you will be notified and the submission also placed on the website.

As a result of the issues raised in submissions, the Department requests Sydney Ports Corporation to respond to the issues raised in these submissions.

Your contact officer for this proposal, Diane Sarkies, can be contacted on (02) 9228 6370 or via email at diane.sarkies@planning.nsw.gov.au. Please mark all correspondence regarding the proposal to the attention of the contact officer.

Yours sincerely

25/7/11

Glenn Snow
A/Director
Infrastructure Projects

Our reference : DOC11/32795
Contact : Mark Jansons
Ph No : 02 9995 6829

NSW GOVERNMENT | Office of Environment & Heritage

Diane Fajmon
Infrastructure Projects
Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Ms Fajmon,

Modification Request for the Enfield Intermodal Terminal

I refer to your letter dated 27 June 2011 requesting comments from the Office of Environment and Heritage (OEH) on the modification of the Enfield Intermodal Terminal.

OEH has one main concern regarding the proposal: the steepness of the proposed slope of Mount Enfield. From the information provided in the Modification Application, the slope of Mount Enfield appears to be in excess of the recommended slope for stockpiling in Landcom (2004) *Soil and Construction, Managing Urban Stormwater* (the Blue Book).

OEH recommends that the conditions of approval require the development of a management plan to explicitly address the management of the steep batters of Mt Enfield during construction and until it is stabilised with vegetation. The plan should cover soil and water and dust issues.

OEH notes there are residential receivers in close proximity to the east of Mount Enfield and that the winter weather conditions as shown in the modification report for this site are strong westerly winds and minimal rainfall. With respect to dust, the management plan should ensure that the dust mitigation measures applied to Mount Enfield ensure that dust generation is minimised and that dust is prevented from leaving the site.

If you have any enquiries please contact Mark Jansons on 9995 6829.

Yours sincerely

18.07.2011

JACINTA HANEMANN
Unit Head Transport Infrastructure
Environment Protection and Regulation

PO Box 668 Parramatta NSW 2124
79 George St Parramatta NSW 2150
Telephone (02) 9995 5000
Facsimile (02) 9995 6900
ABN 30 841 387 271
www.environment.nsw.gov.au

Contact: Gary Estcourt
Telephone: (02) 9873 8562
Gary.estcourt@planning.nsw.gov.au
File: 10/14294
Our Ref: B430281
Your Ref: MP05_0147 MOD 5

Infrastructure Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Diane Fajmon

Dear Ms Fajmon

RE: MODIFICATION REQUEST FOR INTERMODAL LOGISTICS CENTRE AT ENFIELD – MODIFICATION 5 (MP 05_0147 MOD 5)

I am responding to your correspondence seeking advice on the modification to the Project Approval granted by the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Intermodal Logistics Centre (MP05_0147).

The Environmental Assessment for this project estimated that approximately 37,000m^3 of material unsuitable for engineering fill would be removed from the site and disposed off-site to a landfill facility. It is understood that this volume is now predicted to rise to approximately 60,000m^3.

The proposed modification will involve the relocation and reuse of the unsuitable material to the southern part of the site on and around 'Mt Enfield'. Mt Enfield would be expanded and raised by approximately 6.7 m at its highest point, flattened at the top and landscaped in accordance with the approved Landscape Plan.

The proposed location for the fill is physically separated from the existing heritage items on the site (former Tarpaulin Factory and Pillar Water Tank) by a disused rail line and the Heritage Protection Plan for the site will continue to be implemented.

It is expected that the proposed project modification is unlikely to have any adverse impacts on the existing heritage items located at the site. If you have any questions regarding the above matter please contact Gary Estcourt at the Heritage Branch on (02) 9873 8562.

Yours sincerely

14-07-2011

Dr Siobhan Lavelle OAM
Acting Manager
Conservation Team
Office of Environment and Heritage

STRATHFIELD COUNCIL

65 Homebush Road, Strathfield NSW 2135
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Web www.strathfield.nsw.gov.au
ABN 52 719 940 263

Roger Brook

14 July 2011

Major Projects Assessment,
Department of Planning & Infrastructure
GPO Box 39,
Sydney NSW 2001

Dear Sir/Madam

INTERMODAL LOGISTICS CENTRE AT ENFIELD – MODIFICATION 5 (MP 05_0147 MOD 5)

The enclosed submission has been prepared in response to the public exhibition of the modification request for Intermodal Logistics Centre at Enfield - Modification 5 prepared for Sydney Ports Corporation (application number MP 05 _0147 MOD 5.) Thank you for the opportunity to provide comments in relation to the modification request.

Council is unable to support the proposed modification request until the following issues have been fully addressed. These issues include but are not limited to: an ecological assessment to ensure the impacts on the green and golden bellfrog population have been fully considered, further mitigative measures to control dust, the need to control drainage from the site, noise impacts, potential impacts on views, contamination, re-vegetation issues etc.

These comments are outlined in more detail in the enclosed submission.

Should you have any questions in regard to this letter please contact Roger Brook, Council's Strategic Planning Co-ordinator on 9748 9932 during normal business hours.

Yours sincerely,

PATRICK WONG
DIRECTOR TECHNICAL SERVICES

STRATHFIELD COUNCIL SUBMISSION
July 2011

Exhibition of Modification Request for Intermodal Logistics Centre at Enfield (Modification 5 (MP 05_0417 MOD 5)

INTRODUCTION

This submission has been prepared by Strathfield Council in response to the public exhibition of the modification request for the Intermodål Logistics Centre at Enfield.

Council is unable to support the proposed modification request until certain issues are further addressed. These include an ecological assessment to ensure that the impacts of the proposal on the Green and Golden Bellfrog population have been fully considered and sufficient mitigative measures adopted to minimise the impacts of the proposal on adjoining residential areas such as dust and impact on views. These concerns are outlined in the submission as follows.

Dust

Concerns are raised regarding the dust impacts from the fill material during both excavation, its transportation by truck and stabilizing the mound. These activities particularly during periods of high winds may potentially impact on adjoining residential areas. The Environmental Construction Management Plan for the original proposal should be amended in relation to the proposed new works to better address this issue and a copy provided to Council.

The modification request indicates that a watercart will be used to spray water onto the internal haul route and material deposition area (ie Mt Enfield) to control potential dust due to the large scale and extent of the works (eg transportation of 120,00 tonnes, approx. 8000 short truck movements over an 18 month period). However more intensive mitigative measures need to be established with this modification to ensure impacts of dust are minimized eg. sprinklers could be activated automatically using recycled water during periods of high or alternatively exposed areas could use protective covering to prevent dust.

There are also potential dust impacts on the Green and Golden Bellfrog populations (refer comments Protection of Frog Habitat Corridor).

Height of Mound

The modification report confirms that the raising of the earth mound at its highest point from 29.3m AHD to approx 36.0m AHD will be visible from a number of residential areas. This may potentially impact on views from adjoining residential areas or may actually screen less attractive views. Further consultation should be undertaken to determine the feedback of local residents and to address their concerns. Additionally the aesthetic impact of the enlarged mound will be dependent on the success of the re-vegetation. (Refer to comments Proposed Landscaping/Re-vegetation).

The information in the modification report relating to height also appears to be misleading and requires further clarification. Contrary to section 2.1 which identifies a rise of approx 6.7m at its highest point, according to the long section provided in figure 1.3, the highest point of the proposed ground level appears to be 35.2 with an existing ground level of 21.1 which results in a 14.1m high difference. This is significantly greater than the 6.7m rise identified.

The proposal furthermore should include shadow diagrams to illustrate the full potential impacts of increasing the mounds height. These should demonstrate the 9am, 12pm and 3pm shadowing effects of both the existing and proposed mounds. These plans should be provided before the modification proposal is considered.

Protection of Frog Habitat Corridor

There is a need to ensure sufficient measures are implemented to protect the existing frog habitat and movement of frogs which are located in close proximity to proposed works in accordance with 'the Frog Protection Plan'. This includes sediment and erosion controls & fencing.

The report indicates that the Mt Enfield mound does not contain significant plant or animal species, the filling over the mound is not anticipated to have significant negative impacts on flora and fauna and in the long term. The re-vegetation of Mt Enfield with suitable native species will have a positive impact on the ecology of the area. Council has concerns however that the re-vegetation of Mt Enfield may attract species which are potential predators for the Green and Golden Bellfrogs. A further ecological assessment should be undertaken to ensure that the impacts of the proposal on frog population are fully considered.

The proposed development should be subject to an ecological assessment in accordance with Section 5A of the EP&A Act 1979. Council's experience in the past in relation to the Green and Golden Bellfrog habitat is that it is paramount to ensure that shrubs and only a few low trees adjoin the Green and Golden Bellfrog habitat in order to prevent the establishment of vegetation that provides roosting sites for predatory birds.

The ecological assessment should consider the importation of soil, compost and other landscaping materials for the implementation of the re-vegetation of 'Mt Enfield' as these materials may contain spores of *Batrachochytrium* which is potentially fatal to the Green and Golden Bellfrog. Such materials should be certified to have been heat treated in accordance with industry standards to kill chytrid.

Concern is also raised in relation to leachate and dust protection measures that will be incorporated in order to ensure these do not adversely affect the nearby Green and Golden Bellfrog habitat.

The assessment also notes that sediments could enter Coxs Creek and can cause a decline in water quality and potential damage to aquatic ecosystems. Given that Coxs Creek is potentially a species movement corridor for the endangered Green and Golden Bellfrog to adjoining habitat areas such as the Juno frog ponds and Coxs Creek reserve, and there is a potential impact on this threatened species as a result of the proposed mound modifications, a new species impact statement, should be provided to demonstrate the potential damage to this endangered species.

The species impact statement should also address what the loss of existing vegetation / potential habitat on the existing mound will have on the species particularly as other frog habitat areas directly north of the mound were recently cleared of all existing vegetation to allow for the creation of frog ponds.

In addition runoff from the mound could flow into the new frog ponds as could sediment in dust form blow into the adjoining frog ponds resulting in excessive sediment in the new ponds which would be detrimental on the water quality and habitat the new ponds provide.

In relation to section 3.1.4 although the existing mound is primarily colonised by weeds, it may be providing habitat for the Green and Golden Bellfrog particularly as vegetated habitat areas where the frog ponds have recently been constructed were wiped out and frogs may have accessed the vegetation within or near the mound as a result.

Concerns are also raised in relation to the potential loss of existing habitat that the vegetation on the mound currently provides for small birds, reptile and amphibian species. Consideration of where such fauna can move to during the proposed construction period should also be included in the modification application report.

Drainage

The plans and information do not clearly demonstrate where the runoff from the proposed mound would be directed to. Ponding and flow path areas for runoff should be provided to demonstrate that the additional runoff volume and velocity has been investigated and allowed for.

The drainage from the site needs to be controlled so that there is no additional stormwater leaving the site at each point of discharge than occurred prior to the proposed development.

Noise

The proposed modification poses a number of potential noise impacts on adjoining residential areas from the movement of trucks and operation of machinery and equipment involved with the excavation and potentially with the mounding.

The modification report indicates that the additional noise contribution from the proposed modification is negligible at all surrounding residences. There is a need to ensure that the mitigation measures outlined in section 3.1.1 of the modification report are adhered to. This includes the need for regular and ongoing consultation with the community.

Contamination
The Environmental Construction Management Plan submitted with the original proposal should be updated and revised to include the recent modification including how to address any contaminants exposed during the excavation process.

Proposed Landscaping/Re-vegetation
It is suggested that the landscaping works to stabilize the mound be undertaken using all indigenous plant species from local genetic sources. Considerable care needs to be taken with the selection and sourcing of species for the proposed fill mound. In terms of planting due to the volume of plants required they need to be ordered well in advance of the actual planting occurring. If a suitable quality of seed is available hyrdomulching could be a useful means of re-vegetating perhaps in conjunction with plantings which would capture site runoff. The proposed species mix identified in the Landscaping Planting Plan) and density of planting appear to be satisfactory. It is suggested that the 'River She Oak Monoculture' relies on a species of Hilloak (C. littoralis). If the monoculture is dependent on this species then it will need to be located upslope away from the poorly drained areas.

It also appears that the slopes of the proposed mound are too steep for planting. The cross section at chainage 23 identified in figure 1.4 for instance identifies a very steep banked proposed mound. With an estimated 42.5m vertical : 34.5m horizontal = grade of approx 1:2.5. recommended planting grade is 1:10. the slopes are too steep to accommodate for suitable grading for planting, this can pose significant scouring and sediment loss particularly in rainfall events where the steepness of the slopes will cause excessive scouring.

Sediment can potentially run off into the adjoining Coxs Creek and Green and Golden Bellfrog habitat area (refer to Protection of Frog Habitat Corridor). Section 3.1.3 of the modification application report also indicates that the soils have a highly variable erodibility level. The proposed mound with its very steep slopes should not therefore be permitted.

Traffic Reduction
The reduction of local area traffic impacts for the removal for retaining the excavated material on site would only be a temporary reduction and should not be used to justify the permanent placing of excavated fill material on site.

Incorrect Labelling of Diagrams
Figure 1.1 is inaccurate and a large area of land identified as 'recreational' on the southern side of Cooks River opposite Dean Reserve is actually industrial and will be developed in the near future.

Figure 1.2 identifies a cross section at chainage '32' however the cross section provided in figure 1.4 is identified as chainage 23. This should be clarified as to the exact location of the section.

The fill reuse area long section shown in Figure 1.3 is misleading given that the level identified as 'punchbowl rd footpath level' is actually approximately the highest point on the existing vehicular bridge crossing over the railway yards. This bridge is quite evident in the existing landscape and to note that the proposed mound will be more than 10m higher than the existing bridge level, the proposed mound will be visually intrusive on the

landscape. The existing mound is already quite large and intrusive. It should be clearly identified that the footpath is actually on the existing vehicular bridge.

Future Use Of Subject Area.
One of the proposed outcomes of the modification will be to establish level access from the south eastern corner of the Enfield site to Punchbowl Road, as currently Punchbowl Road is higher than the adjoining subject site. Whilst creating level access is not necessary a negative impact of the proposal, it may have implications on the future use of this land.

The original 5/9/2007 Enfield ILC project Approval by the Minister of Planning was based on the south eastern portion of the Sydney Ports site being established as "Ecological Heritage Community Area with controlled access" which included the Tarpaulin Shed and Frog Ponds. This area is the land bordered by Punchbowl Road, Cosgrove Road, the Rail Corp Existing Marshalling Yards land and extending hard stand areas associated with 'Warehouse A' to the north.

Council has concerns for the future use of the "Ecological Heritage Community Area" that was committed for community and ecological purposes as part of the original approval. For instance in creating level access to Punchbowl Road, this potentially may encourage Sydney Ports in the future to pursue approvals to use this area for commercial uses such as a service station or other commercial industrial opportunities.

Conclusion
Council is unable to support the proposed modification request until the issues identified in this submission have been fully addressed.

BANKSTOWN CITY COUNCIL
PO Box 8, Bankstown NSW 1885 **PH** 02 9707 9999 **FAX** 02 9707 9495

BANKSTOWN
City of Progress

14 July 2011

Director of Infrastructure Projects
Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Sir/Madam,

Exhibition of Modification Request for Intermodal Logistics Centre at Enfield- Modification 5 (MP 05_0147 MOD 5)

Thank you for providing Bankstown City Council the opportunity to comment on the proposed modification request for Intermodal Logistics Centre at Enfield.

In considering the modification request, Council raises the following issues and concerns that the Department must address prior to determining the proposal:

A) Justification for the variation to the new estimate of excess spoil

The modification request shows a significant variation to the previously estimated amount of excess spoil considered unsuitable for engineering fill. It is noted that the previous estimate of the spoil was 37,000 cubic metres which was proposed to be removed from the site and disposed off site to a landfill facility. The new estimate shows that the volume of unsuitable material which must be disposed off may be up to 60,000 cubic metres.

The proposal however does not provide much information to justify how the project allowed such variation to occur which is nearly twice the previous estimate.

The modification request is a significant departure from the previously approved plan in terms of how it would permanently affect the future landscape of the locality. Although the proposal would eliminate the need for additional heavy vehicle traffic from the site to dispose off the excess spoil, it does raise a serious concern on the visual amenity of the surrounding area due to the volume and scale of the mound proposed.

It is recommended that the Department seek further clarification on the variation to the estimate of the excess spoil prior to determining the proposal.

B) Visual amenity concerning the proposed mound at Mt Enfield

The excess spoil is proposed to be relocated at the southern part of the site on and around Mt Enfield, increasing the height of the hill by 6.7 metres at its highest point.

As indicated in the proposal, the level of the footpath on the northern side of Punchbowl Road is approximately 26m AHD, whereas the highest point of Mt Enfield will be raised from 29.3 m AHD to 36.0m AHD. This means the reshaped Mt Enfield will be visible from a number of residential areas around the locality with most severe impacts to those on the southern part of Mt Enfield, along Punchbowl Road overpass facing north-west and residences fronting Punchbowl Road in the vicinity of the rail corridor with an approximate viewing distance of 20 to 300 metres.

It is recommended that Council and community be consulted for the preparation of a detail Landscape Plan and the Landscape Management Plan.

C) Construction and Operational Environmental Management Plans and Sub Plans

Council considers that neither the Environmental Assessment nor the Preferred Project Report satisfactorily resolved Council's previous concerns relating to traffic, noise, air quality and hazard assessment of the project.

Council notes that the cumulative noise and dust emissions from both the approved activities and the additional filling activities at Mt Enfield will have an adverse environmental impact on the surrounding residential properties if appropriate monitoring systems and remedial mechanisms are not in place.

It is recommended that Council be notified and consulted with for the preparation of Construction and Operational Environmental Management Plans and Sub Plans including Construction Traffic Management Plan, Environmental Noise Management Plan, Dust Management Plan etc in order to ensure that our concerns are addressed appropriately.

If you have any questions relating to this submission, I can be contacted on 9707 9606.

Yours faithfully,

James Carey
Manager, Sustainable Development

Olefines Plant / Botany Site
Qenos Pty Ltd

16 - 20 Beauchamp Road
Matraville NSW 2036 . Australia

Tel 61 2 8336 1444
Direct Tel 61 2 8336 1352
Fax 61 2 8336 1385

28 July 2011

Department of Planning & Infrastructure
23-33 Bridge Street
SYDNEY NSW 2000

Attention: Dianne Fajmon

Dear Dianne,

SUBJECT : Modification Request for Intermodal Logistics Centre at Enfield – Modification 5 (MP 05_0417 MOD 5)

We have reviewed the information provided in relation to the modification to the Intermodal Logistics Centre and have the following requirements / comments:

- Maintain the protocols that are in place between SPC, Qenos and their contractors. These are referenced in the document.

- Determine defined crossing points of the Ethylene pipeline if and when they are required, for truck movements

Yours faithfully,

Mark Walker

Off Site Storages and Pipelines Manager, Botany
Qenos

No Port Enfield Community Group
49 Water St BELFIELD NSW 2191

Email: noportenfield@hotmail.com

14 July 2011

Diane Fajmon
Department of Planning and Infrastructure

Submitted electronically

RE: Enfield Intermodal Logistics Centre MP 05_0147 Modification 5 Re-Use of Unsuitable Engineering Fill onsite

The No Port Enfield Community Group (NoPE) makes the following submission in relation to the Enfield Intermodal Logistics Centre (EILC) Modification 5 Re-Use of Unsuitable Engineering Fill onsite. Having read the publicly exhibited documentation regarding the proposal NoPE **objects to the present modification request.**

The No Port Enfield Community Group opposed the 2005 EILC proposal and the previous 2001 Sydney Ports Corporation proposal for the site. Members of NoPE also opposed the National Rail proposal for the site in the early 1990's.

The author of this submission is a member of the EILC Community Liaison Committee and a member of the EILC Community Enhancement Program Committee (for Strathfield Council area). This submission is made on behalf of the NoPE group.

At Meeting Number 8 on 4 May 2011 the Community Liaison Committee was given an overview presentation of the present Modification proposal. The CLC expressed general approval for the proposal for adding fill to the stockpile at the southern end of the site known as 'Mount Enfield' with the proviso that dust and frog issues are adequately addressed.

NoPE believes that the Modification 5 request documentation prepared by Sydney Ports Corporation and on public exhibition has -

- **failed to address issues regarding the Green and Golden Bell Frog.**
- **not adequately addressed dust issues.**

NoPE is also concerned with the following:

- The Modification 5 request proposal is a huge alteration to the original proposal in relation to the Ecological and Community area at the southern end of the site, and **should be subject to a new and separate development application,** rather than being the subject of a modification request.
- The huge alterations to the initial proposal in relation to frog habitat area and the recent discovery of a colony of Green and Golden Bell Frogs east of the EILC site make the EILC site's functionality as GGBF habitat and movement corridor absolutely critical in maintaining the local population of this threatened species.

  NoPE believes that the extensive nature of the proposed modifications and the recently discovered frogs combine to trigger the Environmental Protection and Biodiversity Conservation Act and that the **proposed works should be a 'controlled action' under the EPBC Act.**

- The **proposal was 'sold' to the community with the promise of a substantial ecological and community area** at the south of the site (the entire area south of Cox's Creek) that would comprise revegetation of the *existing* stockpile, and habitat for the threatened Green and Golden Bell Frog, and would otherwise **remain untouched by the EILC development.**

- The **size and extent of the Ecological and Community area has been continually downsized and modified through the project application, approval process and modification proposals.** In particular the area and extent of Green and Golden Bell Frog habitat and its potential functionality as foraging and overwintering habitat, and movement corridor, has been downgraded since the initial project application by successive modifications.

- Despite being called an Ecological and Community area, it remains unclear as to what use the community will have of the area.

- Sydney Ports Corporation is proposing the rezoning of the site to from Special Uses Railway to Industrial. This is being undertaken outside the ambit of this modification request but has bearing on the present proposals. Any such rezoning is not supported by NoPE. Any rezoning of the Community and Ecological Area (the whole area south of Cox's Creek) should reflect its value in perpetuity as habitat for the threatened Green and Golden Bell Frog, and its community use.

Green and Golden Bell Frog.

The Green and Golden Bell Frog, is an endangered species in NSW, and vulnerable under the EPBC Act. It is known from the local area around the EILC and parts of the EILC site have historically provided GGBF foraging and movement habitat. The Management Plan for the Green and Golden Bell Frog Key population at Greenacre (DECC NSW, 2007) as the local population is known, concludes that "the Greenacre population is critically endangered."

NoPE is aware of the ILC – E – REP – FMP Rev 4 Green and Golden Bell Frog Management Plan, and that a Sydney Ports contractor is constructing a *Frog Creation* Habitat Area (refer 3.2.4 Flora and Fauna, although we assume they meant a Frog Habitat Creation Area)

The Modification 5 proposal refers to studies undertaken for the EILC development in 2005. It further states that frog surveys on the site in 2001, 2004, 2008 and 2011 failed to locate any GGBF's on the EILC site.

However, the Modification 5 proposal fails to mention the recent and very important discovery of a colony of GGBF's to the east of the site. (Refer Dr Ann Goethe, Senior Threatened Species Officer, Office of Environment and Heritage). NoPE understands that Sydney Ports Corporation are aware of the recent sightings.

The recently discovered existence of GGBF's east of the EILC means it **is absolutely critical that an east west movement corridor is maintained at all times for potential frog movements between the eastern population and the population west of the EILC site** in the former Greenacre Brickpit (now Hannas industrial site) and Cox's Creek Reserve.

Modification 5 would be a substantial alteration to the initial EILC proposal. In particular the modification request would significantly alter the southern area of the site with **negative impacts on foraging and sheltering habitat, presently found on Mt Enfield and surrounding area.** NoPE believes that the whole of the southern area of the site is potential GGBF habitat and that the poor and degraded vegetation and shelter provided by the existing Mt Enfield is also important potential GGBF habitat.

The Modification 5 request would also **effectively sever the critically important east-west frog movement corridor by the placement of a north-south haulage road and the movement of large earth moving trucks from the north of the site to the Mt Enfield stockpile.**

The Modification 5 request proposes an 18 month construction period for the works, followed by landscaping and presumably revegetation of the Mt Enfield stockpile. If approved, this would mean that the presently existing vegetative habitat would not be replanted for two summer periods (2011 - 2012 summer an 2012 - 2013 summer). Summer is the time of year when most recent sightings of GGBF have occurred and the time when frogs are active. As the frog habitat north of Mt Enfield and south of Cox's Creek is presently under construction, this would effectively leave little or no vegetative frog habitat in most of the southern area for some period of time, at least until the end of main construction on the rest of the site. Again, the recent discovery of an eastern population of GGBF makes the existing habitat on the EILC critically important on maintaining linkages between the Brickpit ponds and the new population. The present Frog Management Plan does not plan to have permanent frog habitat in place until the end of main construction:

NoPE believes that the recent discovery of the new eastern population together with the substantial alterations proposed by Modification 5 in combination are of such significance to the threatened GGBF that the proposed works should be considered a 'controlled action' under the EPBC Act.

Additionally the current Frog Management Plan for the site requires significant revision to take into account the new circumstances and most importantly, to provide that frog foraging and sheltering habitat, and safe and effective frog movement corridors be in place before any earthworks take place on the southern end of the site including placement of the fill proposed by this Modification 5 proposal.

Furthermore, the previous Modification 4 has approved an access road at the southern end of the site for use by the Australian Rail Track Corporation, that acts to fragment the habitat linkages and further erodes the area of frog habitat.

Other aspects of the present proposal that may impact on the frog population include stormwater runoff and sedimentation, and dust deposition on frog foraging habitat.

Dust issues

Despite the air quality impact assessment exhibited with Modification 5 proposal, members of NoPE remain unconvinced that the proposal would not have negative air quality impacts.

NoPE is concerned that previous soil contamination tests conducted on the EILC showed levels that fell close to, or over acceptable levels of contaminants. However NoPE is of the view that once contaminated soil is disturbed and particulates become airborne, the levels of contaminants become a human health issue.

Residents of this area feel that the rate of dust deposition is above average in this area. While onsite construction has apparently not presented dust issues to date, it is worthwhile to note that during this period above average rainfall has been received and that may have skewed any findings or conclusions.

Size and extent of the Ecological and Community Area.

The size and extent of the Ecological and Community area has been continually downsized and modified through the project application, approval process and modification proposals. In particular the area and extent of Green and Golden Bell Frog habitat and its potential functionality as foraging and overwintering habitat, and movement corridor, has been downgraded since the initial project application by successive modifications.

As detailed below the Ecological and Community area went from being described by DECCW as eight hectares, to six hectares in Sydney Ports Community newsletters, to five hectares in the actual EILC project application, to two hectares of 'Foraging habitat' in the project approval.

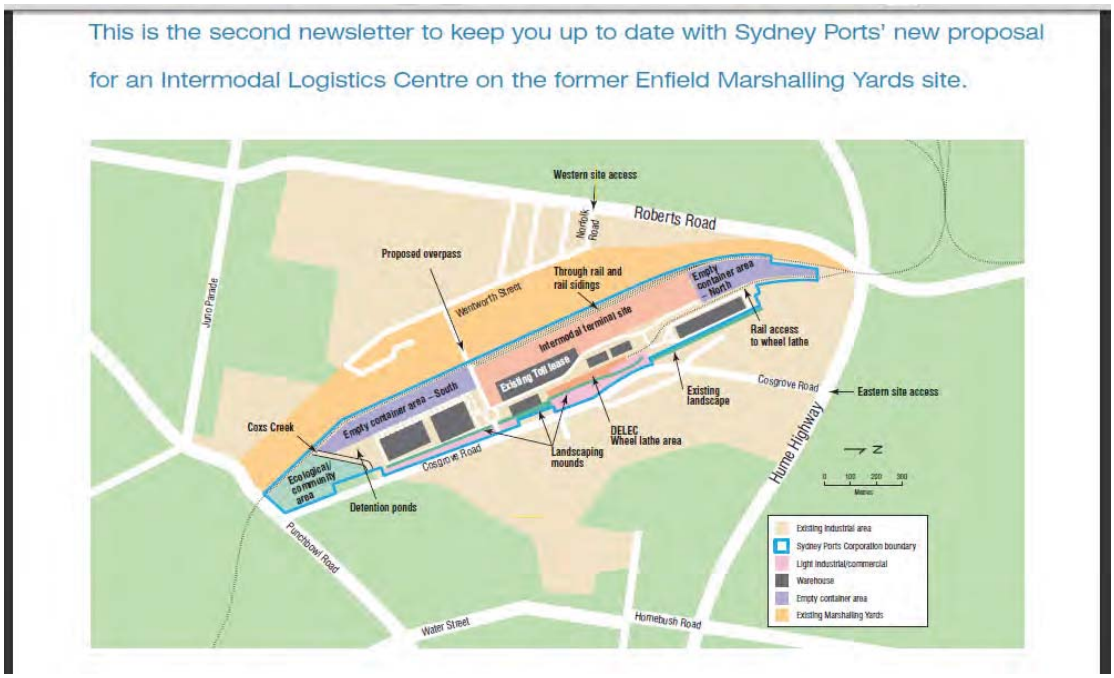
NoPE is concerned at the apparent shrinkage of the area and would like to see the Ecological and Community area defined and described clearly and definitively, instead of it being eroded by the slice and dice method.

History of the "Ecological and Community area':

The Management Plan for the Green and Golden Bell Frog Key population at Greenacre (DECC NSW, 2007) states:

> The ILC development proposal for part of the former Enfield Marshalling Yards (understood to be with the Minister for Planning for consideration of approval) proposes setting aside **eight hectares** of the southern portion of that land ('Ecological Community' land) ostensibly as GGBF habitat. (*Emphasis and highlighting added)*
>
> Properly designed, constructed, managed, and proved functional, this amount of habitat could provide the additional area needed to boost and secure longer term the conservation of the Greenacre Key Population. Linkages outlined above between the Juno Parade site and the former FreightCorp site would also strategically link with the ILC site and benefit the GGBF habitat compensation component of this initiative, development approval pending. This proposed compensatory habitat should also be further strategically linked to potential and possibly future created habitat along the Cooks River in Strathfield South and Belfield and coordinated with other 'Green Web' and Cooks River Foreshore initiatives.

The following image is from Sydney Ports Corporation Intermodal Logistics Centre at Enfield Project Newsletter Issue 2 June 2005, showing the entire area south of Cox's Creek (minus privately owned land fronting Cosgrove Rd) as part of the Ecological and Community Area



From Sydney Ports Corporation Intermodal Logistics Centre at Enfield Project Newsletter Issue 3 January 2006:

"A major benefit to the local community establishment of an ecological and community area of **nearly six hectares** at the southern end of the site. Sydney Ports will work with local community and environmental groups to develop ideas for the ongoing use and management of this area including the Tarpaulin Shed on site" (*Emphasis and highlighting added)*

The EILC project application documentation states:

Chapter 4
Project Description
SINCLAIR KNIGHT MERZ SYDNEY PORTS CORPORATION
PAGE 4-28

4.7 The Community and Ecological Area

The Community and Ecological Area has been incorporated into the proposed development to provide an opportunity to enhance the site's ecological value and community amenity. The site is currently a highly modified and degraded landscape. The development of the Intermodal Logistics Centre provides the opportunity for ecological improvements and community benefits. These improvements have the potential to link to other projects in the area. The Community and Ecological Area lies southof Coxs Creek, covers an area of **about 5ha** and would incorporate the following:

- Revegetation of the existing spoil stockpile, replacing weed species with species endemic to the area; and
- Habitat for the threatened Green and Golden Bell Frog. (*Emphasis added*)

It is also possible that access for the community to the area would be available under supervised conditions. The future use for the Tarpaulin Factory is undecided. It will therefore be stabilised against further deterioration and its on-site use, removal or relocation decided at a later time. Its usage would be subject to a separate development application. The area would act as a buffer zone for nearby residential properties on Cosgrove Road and south of Punchbowl Road. Establishment of the Community and Ecological Area could provide potential benefits for wildlife and for the community.

The Project Approval Conditions stated:

Ecological Impacts

2.48 The Proponent shall implement all of the relevant actions for the site recommended in the *Management Plan for the Green and Golden Bell Frog Key Population at Greenacre* (DECC, May 2007), being:

a) creation of overwintering habitat as part of the two-hectare improved foraging habitat at the southern end of the site;
b) provision of linkages to the former RailCorp ponds; and
c) restrictions on the use of herbicides in known frog habitat and attainment of water quality standards for water discharged from the site.

These actions shall be incorporated within both the Construction Environmental Management Plan (refer to condition 6.2) and the Operation Environmental Management Plan (refer to condition 6.4) as relevant, including provisions for monitoring the outcomes of these actions and periodically reporting outcomes to the DECC at a frequency agreed with the DECC.

NoPE submits that the Modification 5 request proposes a substantial alteration to the EILC project. Much more detail is required to address issues regarding the impact of the proposal on the threatened species Green and Golden Bell Frog before the proposal is assessed. As it stands, the proposal should be rejected.

Yours faithfully,

Jenny Maddocks
No Port Enfield Community Group
49 Water St BELFIELD NSW 2191

Major Projects Assessment

11 July 2011

Department of Planning and Infrastructure

Department of Planning and Infrastructure

GPO Box 39 SYDNEY NSW 2001

APPLICATION No. 05_0147 MOD 5 Intermodal Logistics Centre Enfield – Modification 5

OBJECTION TO MODIFICATION

I was one of the first objectors to the Intermodal over sixteen years ago. I lived next door, grew up playing on the site and in the Cooks River and most probably know more about the site than most who are still alive.

The entire proposal is nothing of which was put forward to the public nearly two decades ago. The community was able to raise issues on health and environmental degradation to inquiry after inquiry having the Federal Government and State Government withdraw their application on many occasions.

It is apparently obvious that politics and big money have greater control over the future of our communities, as seen over many years of proposals for this site. Government after government could not accept their own inquiry findings and slowly eroded the original proposal and the community objections.

I was the first person to raise the issue of contaminated soils on the site and personally had a NATA approved laboratory screen the soil from what we called Mount Enfield. Obviously the findings were different than that of the railways, yet still showed high levels of heavy metals, asbestos, arsenic and other contaminants.

Once the issue became an air born issue of soil being deposited over the neighbouring suburbs, it became a health issue, even though the Health Department was reluctant to do anything about it. Environmental legislations have become more stringent in 2011 and it is up to the proponent to demonstrate how the modification will not impact further than that of the existing stockpile of contaminated soil.

It would need to be demonstrated that the existing contaminated stock pile has been regularly tested for leaching into the Cooks River, as shown in the original testing. What is proposed is a totally unacceptable way of overcoming what Sydney Ports see as a removal of soil issue and if the Contaminated Sites section of the Department of Environment and Climate Change were doing their job properly, Sydney Ports would have been told a decade ago to dispose of the existing stock pile correctly, not be allowed to add to the existing and future environmental problems.

The proponent would also need to demonstrate that nothing from the site (one contaminated particle of soil) would be able to cross the boundary during and or after modification. That continual monitoring of Air, Water and Environmental impacts on threatened species would occur.

The Department of Planning and Infrastructure have also failed miserably in any form of "Sustainable" planning of the region. Politics has over-ridden practical and common sense planning which will not only see over-development issues in the near future, but ongoing health issues and claims against the Government for failure to take every precaution available during the two decades of uncontrolled movement of contaminated soil on this site.

I and others have an archive of contamination issues from this site that have been raised at Government Inquiries and public meetings over the past two decades. Most being supported by several Government Inquiry findings and NATA approved laboratories and it will be demonstrated in the future that all Government Departments have erred with every aspect of this proposal, especially contamination.

This proposal does not take into consideration the further impacts on the so called "Conservation" area to be constructed in close proximity, nor does it understand the ramifications for the "Community" area proposed for the old tarpaulin shed at the base of the mountain.

The proposal needs to demonstrate that no impact on the Green and Golden Bell Frog would occur, as this Government recognised site and many new colonies both upstream and downstream may become contaminated.

The Department of Planning and Infrastructure must direct Sydney Ports Corporation to produce all records over the past decade or since ownership, showing regular readings of soil contamination of the existing stockpile and or any leaching, regional air quality findings and downstream water quality results over the same period. Unless these findings can be produced, it is an example of how Sydney Ports Corporation has not only failed in their corporate duty to the environment, yet has total disrespect for the health of the local community.

I object totally to any proposal to increase the size of the existing stockpile and call on the Department of Planning and Infrastructure to give a directive to Sydney Ports Corporation to dispose of correctly, the proposed and existing contaminated soils from this site.

Don't make this another environmental disaster for Sydney, as per the Ethylene dichloride groundwater plume at Botany.

Gary Blaschke OAM

Vice President of the South West Enviro Centre Inc.

2 Hartog Ave. Lake Munmorah NSW 2259

Mobile : 0424 890 455

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Appendix B: Figures (revised)

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PLAN LIMITATION STATEMENT

This plan has been prepared in accordance with accepted practice for the use only of Sydney Ports Corporation for a specific purpose. No Warranty or representation, expressed or implied is made to any other party regarding this survey and plan. This plan should not be relied upon for any other purpose or use by any party including Sydney Ports Corporation as the plan may not contain sufficient information for that purpose or use.

THIS NOTE IS AN INTEGRAL PART OF THIS PLAN

NOTE :STATED MEASUREMENTS ARE INDICATIVE ONLY AND SUBJECT TO SURVEY

50m 0 50 100 150 200 250 300 350 400 450 500m

Scale in Metres

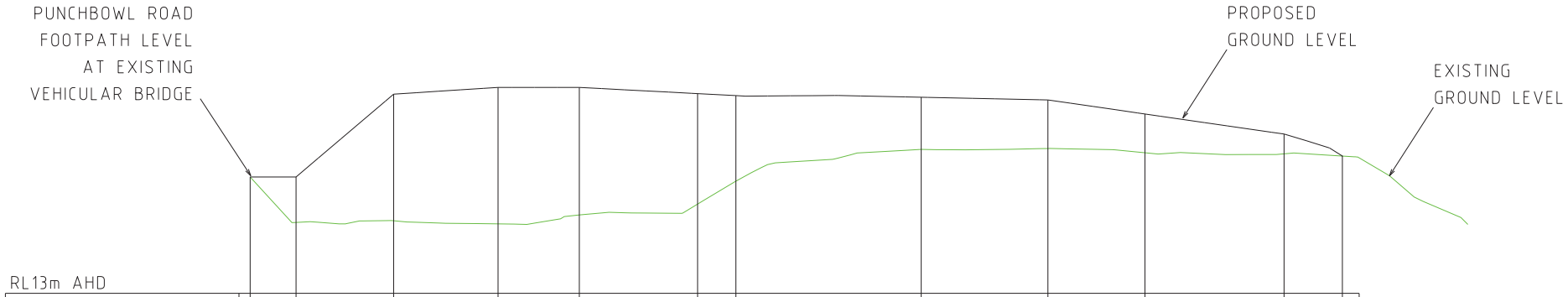
N

SYDNEY PORTS
FIRST PORT, FUTURE PORT

PLAN PRODUCED ON MGA GRID

FIGURE 1.1
ILC AT ENFIELD
LOCATION OF "MT ENFIELD" WITHIN THE ILC AND SURROUNDING LAND USES

DRAFTED BY: A.K., J.T.	DATE: 21/07/2011	PLAN SCALE: AS PER SCALE BAR
PROJECT CODE: ILC-ECI-DR-C-FIG 1.1 MOD 5		DWG NO: SENP092B



RL13m AHD

PRPOSED GL	26 000	25 998	35 250	36 000	36 000	35 310	35 086	34 902	34 600	33 035	30 800	28 332
EXISTING GL	25 998	20 921	21 108	20 762	21 759	22 962	25 515	29 076	29 179	28 703	28 582	28 333
Depth OF FILL	-0 002	-5 077	-14 142	-15 238	-14 241	-12 348	-9 572	-5 826	-5 421	-4 332	-2 218	0 001
Chainage	0 000	10 252	32 084	55 413	73 574	100 000	108 574	150 000	178 313	200 000	231 083	244 133

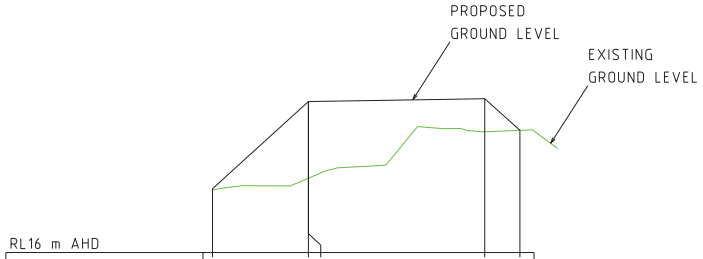
5m 0 5 10 15 20 25 30 35 40 45 50m
Scale In Metres (Horizontal)

SYDNEY PORTS
FIRST PORT, FUTURE PORT

PLAN PRODUCED ON MGA GRID

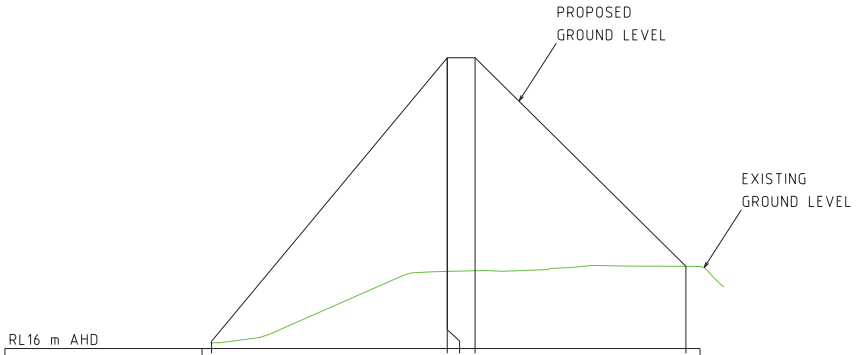
FIGURE 1.3
ILC AT ENFIELD
FILL REUSE AREA LONG SECTION

DRAFTED BY: J.T.	DATE: 21/07/2011	PLAN SCALE: AS PER SCALE BAR
PROJECT CODE: ILC-ECI-DR-C-FIG 1.3 Mod 5		DWG NO: SEDP170A



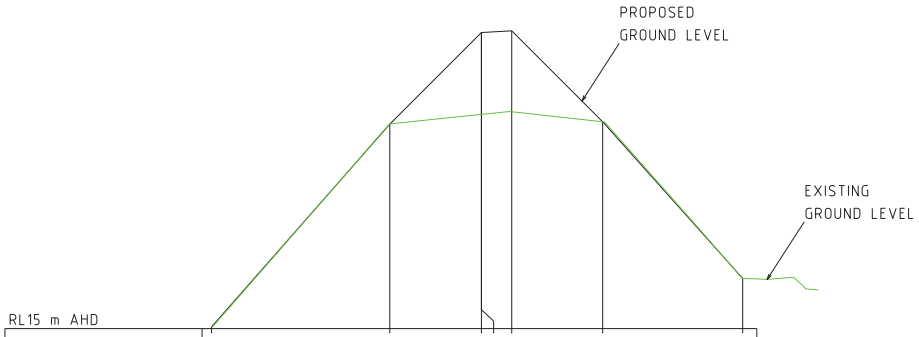
RL16 m AHD					
PROPOSED GL	20.225	25.998 25.998		26.185	24.091
EXISTING GL	20.143	20.921 20.921		23.994	24.091
Depth OF FILL	-0.081	-5.077 -5.077		-2.192	0.000
Chainage	-12.700	0.000 0.000		23.334	27.992

X SECT CH10 252



RL16 m AHD					
PROPOSED GL	16.479	35.250 35.250 35.250			21.443
EXISTING GL	16.386	21.108 21.108 21.151			21.443
Depth OF FILL	-0.093	-14.142 -14.142 -14.099			0.000
Chainage	-31.207	-0.000 0.000 3.682			31.581

X SECT CH32 083



RL15 m AHD						
PROPOSED GL	15.113	28.535	34.600 34.600 34.710		28.688	18.325
EXISTING GL	15.113	28.535	29.179 29.179 29.351		28.688	18.324
Depth OF FILL	-0.000	-0.000	-5.421 -5.421 -5.359		0.000	-0.001
Chainage	-35.719	-12.130	-0.000 0.000 4.010		16.053	34.585

X SECT CH178 312

SYDNEY PORTS
FIRST PORT, FUTURE PORT

PLAN PRODUCED ON MGA GRID

FIGURE 1.4
ILC AT ENFIELD
FILL REUSE AREA CROSS SECTIONS

DRAFTED BY: J.T. | DATE: 03/05/2011 | PLAN SCALE: AS PER SCALE BAR

PROJECT CODE: ILC-ECI-DR-C-Fig 1.4 Mod 5 | DWG NO: SEDP171A

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Appendix C: Green and Golden Bell Frog Assessment

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Biosphere Environmental Consultants Pty Ltd

Dr. Arthur White - ph & fax: (02) 9599 1161

Mail Address: 69 Bestic St. Rockdale NSW 2216
e-mail: 1arthur@tpg.com.au
A.C.N. 065 241 732 A.B.N. 32 065 241 732

ILC at Enfield
Impact Assessment on Green and Golden Bell Frogs: Addition of Fill Material to Mt Enfield

Table of Contents

1 Introduction

The Intermodal Logistic Centre (ILC) at Enfield site is subject to construction activities which will culminate in the development of the ILC. Some of the material at the site is considered unsuitable as engineering fill and therefore will either have to be transported off-site or stored on-site in an acceptable manner.

The most recent assessment of the volume of unsuitable engineering fill material on site that needs to be moved is about 60,000 m^3, comprising:

- approximately 10,000 m^3 of grubbed vegetation (soil mixed with vegetation);
- approximately 20,000 m^3 of wet and unusable gravel and fill;
- approximately 30,000 m^3 of boulders, unsuitable materials and sleepers.

Sydney Ports is proposing to reuse this material at the southern part of the ILC site as described in Sydney Ports' Modification Application 5 (May 2011). This option minimises the handling and trucking requirements, minimises the disturbance to the local Council area and utilises the fill in a way that enhances the ILC site.

Specifically, the proposal is to add the fill material to Mt Enfield, an existing fill mound on the southern part of the site. The addition of the fill would raise the maximum height of Mt Enfield by over 6 m. The fill would be consolidated and Mt Enfield would be reconfigured and landscaped.

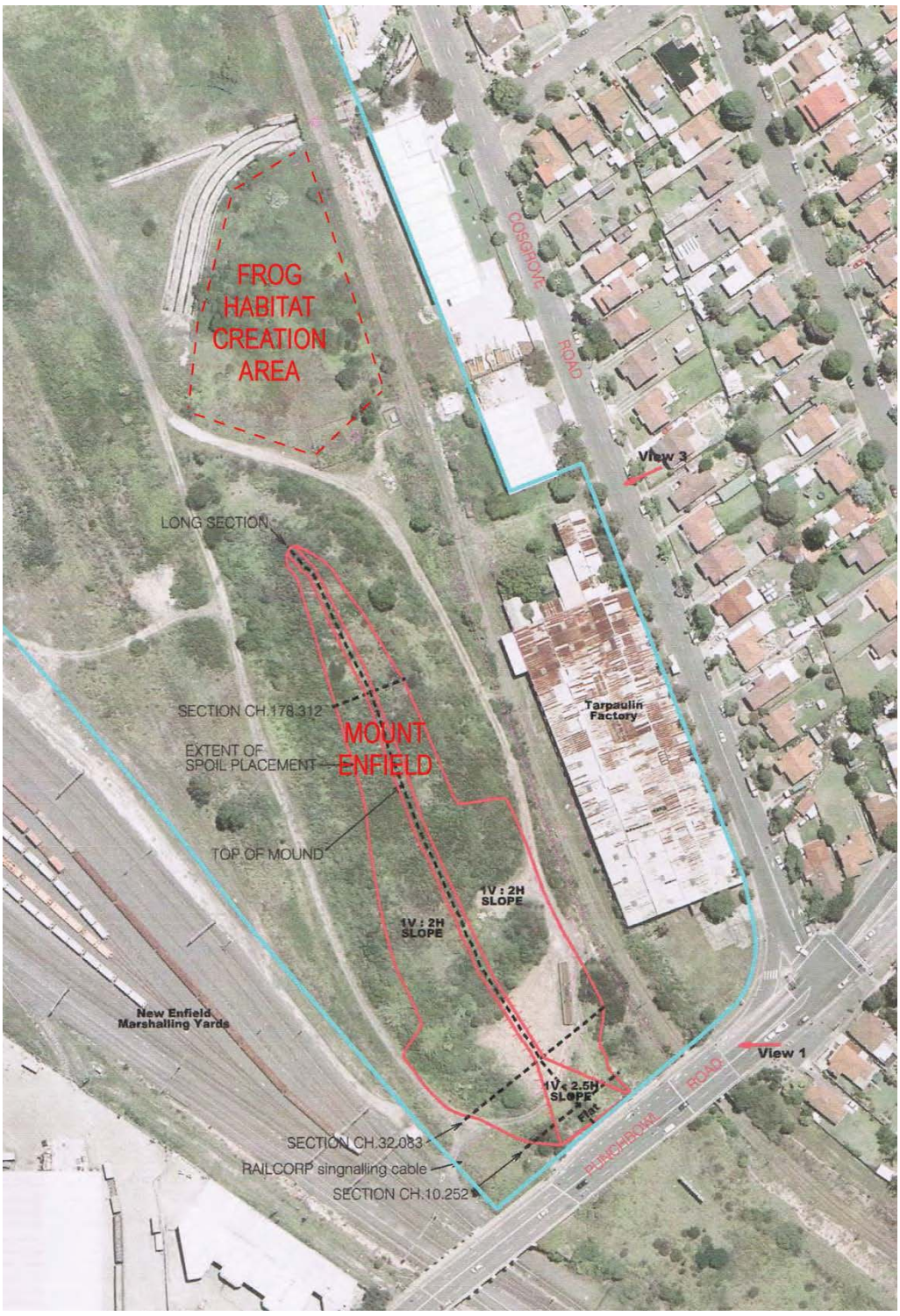
Mt Enfield lies immediately south of the recently constructed frog ponds and fringing vegetated area which will form part of the Frog Habitat Creation Area (FHCA) to be created on the ILC site. The FHCA is an area of habitat designed specifically for the on-site conservation of the endangered Green and Golden Bell Frog (GGBF) (*Litoria aurea*). In the future the FHCA will also include a permanent frog corridor and additional foraging areas. For the purpose of this report, the recently constructed frog ponds and pond fringing vegetated area are referred to as the FHCA (Figure 1).

Because of the proximity of potential GGBF habitat areas to the proposed filling and landscaping activities at Mt Enfield, this impact assessment of the proposed works on the GGBF has been undertaken. This report will review the potential and likely impact of the proposed works on the GGBF and, where necessary, make recommendations to ameliorate any significant impacts which may arise from these works.

2 Project Area and Habitat Status

Mt Enfield lies at the southern end of the ILC site, as shown on Figure 1. It is proposed that trucks will transport material unsuitable for engineering fill from the remainder of the ILC site along a haul road at the west of the site to the southern end of Mt Enfield. At Mt Enfield a decline will be created for vehicles to place the fill on the existing fill mound.

Figure 1: Location of Mt Enfield and ILC Frog Habitat Area



Previous studies and frog surveys in the area are summarised in Sydney Ports' Frog Management Plan (Biosphere, March 2010) available from Sydney Ports' website. Potential frog habitat areas at the ILC site are identified in Sydney Ports' Frog Protection Plan (Biosphere, June 2009), which is also available from Sydney Ports' website.

Mt Enfield and the Mt Enfield fill emplacement area are not identified as a potential frog habitat area. No GGBF have been recorded or sighted at the ILC site to date. Frog surveys conducted on the ILC site from 2001 have not located any GGBF. GGBF were recorded at the RailCorp Marshalling Yard in 1995 (Greer, 1995) located to the west of the ILC site. GGBF are known to occur in the area including the Juno Parade brick pit site and around the Cooks River/Coxs Creek Reserve in Strathfield South. In March 2011 a small population of GGBF was found in a residential area of Strathfield South, in the vicinity of the Cooks River corridor (OEH comm. to Sydney Ports). This site is located about 1 km from the ILC site.

3 Potential Impacts on GGBF

Potential impacts to GGBF that could arise from the proposal to place fill at Mt Enfield include:

1. Injury or death to GGBF on or near the haul road during truck movements
2. Disturbance to GGBF arising from the movement of trucks along the western haul road
3. Disruption to GGBF movements around the ILC site during the truck movements
4. Increased dust, noise, night light and activity close to the FHCA affecting GGBF behaviour
5. Increased feral animal presence in the area around the FHCA as a result of the increased soil disturbance and works occurring at Mt Enfield
6. Changes in the local predator community associated with the landscaping and vegetation changes planned for Mt Enfield
7. Changes in runoff from Mt Enfield impacting the FHCA
8. Increase in possibility of chytrid infection through soil importation
9. Impacts arising from the subsequent use of Mt Enfield by the public.

Measures to mitigate these potential impacts are provided in Section 5 below.

4 Potential Impacts on Other Species

Although Mt Enfield is an artificial structure, it is well vegetated and provides habitat for a number of other native species; mostly small birds and lizards. No frogs occur on Mt Enfield although there are several damp areas around the base of Mt Enfield that provide habitat for the Common Eastern Froglet Crinia signifera. Small skinks have been observed foraging around the lower parts of Mt Enfield while the thickets of small exotic shrubs and Acacia are frequented by a range of small birds including, House Sparrows, Common Starlings, Noisy Miners, Red-whiskered Bulbuls, Superb Fairy-wrens, Common Mynas, Rock Doves, Silver-eyes, Magpies, Australian Ravens, Grey Butcherbirds and Red-browed Finches (A. White pers. obs.). Most of these birds use the small trees and shrubs for shelter or roosting sites and some foraqging does occur within the lower ground vegetation at Mt Enfield.

The addition of the fill material to Mt Enfield will result in the loss of vegetation over most of the southern half of the mound, as well as sections of the eastern and western flanks. Mt Enfield will later be revegetated using native species that were known to occur in the area

prior to development (Sydney Ports 2011). However, there will be a period, of perhaps 12 months, when Mt Enfield will have much reduced vegetative cover and it is likely that many of these bird species will be forced to roost in nearby areas instead of Mt Enfield. None of the birds known to utilise Mt Enfield are threatened species, and many are exotic. The replanting of Mt Enfield with native vegetation will restore roosting sites but will probably also alter the composition of bird species using the new habitat in favour of native bird species.

The only reptiles recorded for Mt Enfield are small skinks (the Garden Skink *Lampropholis guichenoti* and the Grass Skink *L. delicata*). Other skinks (such as the Eastern Water Skink *Eulamprus quoyii*) are known from nearby areas but do not seem to inhabit Mt Enfield. It is likely that the earthworks around Mt Enfield will result in the dislocation of some of these small skinks but they should be able to rapidly recolonise the site once the replanted vegetation becomes established. None of the lizards known to utilise Mt Enfield are threatened species. Consequently, the proposed fill emplacement works are not anticipated to have significant impacts on fauna species.

5 Amelioration of Potential Impacts

It is recommended that the following measures be implemented to ameliorate any potential impacts on GGBF during the proposed filling works at Mt Enfield.

5.1 Injury or death to GGBF on or near the haul road during the truck movements

The FHCA and potential frog habitat areas at the site are currently enclosed by frog-exclusion fencing. This fence has an inwards overhanging lip that prevents frogs from escaping from the area but permits frogs to enter the area from outside. The fence was erected to protect any frogs inside the FHCA during construction of the ILC. However, any frogs that may be outside of the fence are potentially at risk.

The western haul road runs roughly north-south through the ILC site, parallel with the boundary of the RailCorp Marshalling Yards. There are no standing water sites or wetlands close to the haul road that could attract GGBF. However there are occasional stacks of sleepers and site material that could be used as shelter sites by any GGBF which may be outside the FHCA or near the haul road. Such GGBF would only be at risk when moving about the site. **Note that GGBF are only likely to move at night or during the day after rain.**

No truck movements along the haul road to Mt Enfield are planned for the night. Truck movements will stop during significantly wet weather as the haul road is unsealed. Therefore the chances of GGBF encountering trucks in this area are very low.

It is recommended that after rainfall and before any trucks use the haul road, the road should be inspected to ensure that GGBF are not occupying any puddles or wet areas close to the road. If GGBF are found, they should be immediately relocated to the FHCA by the designated Environmental Officer/Manager (EM). The EM must receive instruction regarding the correct handling and transport of GGBF from the site Herpetologist before the works commence.

5.2 Disturbance to GGBF arising from the movement of trucks along the western haul road

Many sites where GGBF occur are located in industrial or commercial areas. Monitoring studies on sites including Sydney Olympic Park, Arncliffe and Port Kembla have shown that GGBF are reasonably tolerant of day noise and movement in the area, but are much less tolerant of noise, light and movement at night (A. White pers. obs.). All truck movements to Mt Enfield will take place during daylight hours and so ambient noise and movement is not expected to be a problem for any potential GGBFs in the FHCA.

5.3 Disruption to GGBF movements around the ILC site during the truck movements

GGBF occupy sites at Juno Parade located west of the RailCorp Marshalling Yard, the RailCorp Pond on the western side of the Marshalling Yard, and other sites to the east of the ILC site. The GGBF can potentially move between these sites, which means that they could potentially cross the ILC site from east to west or vice versa. Any potential east-west movement corridor will be intersected by the haul road.

No exclusion fences are to be placed around the haul road to ensure GGBF can potentially move across the site in the night or during the day in wet weather. It is recommended that the haul road be inspected after each rain event and any GGBF found relocated to the FHCA before the haul road is used. In this way the potential east-west crossing of the site by GGBF remains functional and any risk to frogs stopping near the haul road can be negated.

5.4 Increased dust, noise, night light and activity close to the FHCA affecting GGBF behaviour

As indicated in Section 4.2, GGBF are tolerant of noise and movement during the day, but less so at night. Dust, however, will disturb GGBF at any time as it causes their skin to dry and may also potentially add to the silt load in the ponds. It is therefore recommended that water tankers be used during the earthworks at Mt Enfield to prevent wind-blown dust from reaching the FHCA and adjoining areas.

5.5 Increased feral animal presence in the area around the FHCA as a result of the increased soil disturbance and works occurring at Mt Enfield

Soil disruption is a powerful stimulus to many animals, especially predators. Newly turned soil areas are likely be inspected as soon as possible following the disturbance by various animals in search of newly exposed prey. The proposed works at Mt Enfield will result in disturbance at the site for several months and so it is likely that would-be predators such as foxes, cats and rats will be attracted to the vicinity by these works. Many of these predators can potentially attack frogs: foxes and Black Rats have been recorded attacking GGBF (A. White pers. data.).

It is recommended that inspections be carried out during the earthworks at Mt Enfield to identify predator presence on the site. Feral animal control measures should be enacted when predators, especially foxes and rats, are detected. The use of predator control measures should be carried out in consultation with Sydney Ports' Herpetologist to ensure that the proposed measures are not themselves a potential impact on the frogs.

5.6 Changes in the local predator community associated with the landscaping and vegetation changes planned for Mt Enfield

Other activities involving soil disturbance, such as landscaping and revegetation, can also act a stimulant to potential predators. For this reason, predator inspections should be continued during the landscaping and revegetation phase of the project. Sydney Ports' Consulting Herpetologist must be consulted regarding any measures proposed to be used during the revegetation phase.

The changes in the vegetation may result in changes in the diversity of birds visiting the site. Some birds, notably ibis and heron, could potentially attack frogs. If the incidence of these birds increases as a result of the works or the revegetation, bird deterrent methods may need to be used to prevent untoward predation of any potential GGBF in the FHCA. Sydney Ports' Consulting Herpetologist should be consulted to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.

5.7 Changes in runoff from Mt Enfield that impacts the FHCA

Impacts on the FHCA may occur if runoff from the newly placed fill on Mt Enfield enters the FHCA. Runoff from the existing Mt Enfield catchment is directed away from the constructed frog ponds and this will not change under the filling proposal. Notwithstanding, sediment and erosion control measures, including silt fences, should be erected downstream of active emplacement areas which have not yet been stabilised to catch any silt from surface construction runoff and prevent sedimentation of downstream receiving waters.

5.8 Possibility of chytrid infection through soil importation

Spores of the chytrid pathogen can potentially be transported in damp soil, water and other moist materials. Large amounts of soil will be moved about the ILC site with approximately 60,000 m^3 of fill being reused at Mt Enfield.

Soil, or vehicles that have been transporting soil or moist material from elsewhere on the ILC site, will not be permitted into the FHCA. The FHCA is already separated from the Mt Enfield area by a boundary fence and signs indicating the special nature of the FHCA have been erected. Trucks travelling along the haul road are physically separated from the FHCA.

It is not considered necessary to provide heat treatment to material imported to Mt Enfield.

5.9 Impacts arising from the subsequent use of Mt Enfield by the public

The final Mt Enfield landform will incorporate a scenic viewing platform. Controlled public access is expected to be provided on occasions via a secure delineated pathway with visitors escorted by Sydney Ports' personnel or authorised contractors. A pathway leading to the top of Mt Enfield is planned as part of the final landscaping of the mound. It is recommended that visitors to the site are not allowed access to the FHCA, although they will be able to view it from the proposed lookout at the top of Mt Enfield.

The restriction of the public from entering the FHCA is essential if it is to be managed in the most effective manner for GGBF conservation. Of particular concern is that GGBF and tadpoles may be taken from the site, other unwanted animals such as fish may be added to

the ponds, or chemicals that might compromise the water quality of the ponds could be inadvertently added.

It is not proposed that the FHCA be individually enclosed in security fencing to prevent access of unauthorised persons, as any members of the public admitted to Mt Enfield and the ILC site will be accompanied by a Sydney Ports representative who will prevent access to the FHCA.

If the system of guided escorts does not prevent access of unauthorised persons to the FHCA, other methods of securing the FHCA will be identified and provided.

6 Considerations under the TSC Act 1999

A Seven Part test has been undertaken for the proposal for filling at Mt Enfield in accordance with Section 5A of the *Environmental Planning and Assessment Act 1979* and the *Threatened Species Conservation Act 1995*. The impact assessment in this report assumes that all recommended amelioration measures will be in place as required. The effectiveness of the proposed amelioration measures in removing or reducing potential impacts on the existing populations of GGBF at Juno Parade and the general Enfield-Greenacre area is assessed through the Seven Part Test described below.

1. *In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction*

The GGBF is an endangered species listed on Schedule 1 Part 1 of the *Threatened Species Conservation Act 1995*. GGBF have been recorded at Juno Parade Frog Habitat Area, Coxs Creek Nature Reserve, the RailCorp Pond in the RailCorp Marshalling Yards, around the Cooks River and in houses near Hebe Street. Of these sites, only the Juno Parade Frog Habitat Area and Coxs Creek Nature Reserve are known breeding sites. Both sites are quite distant from Mt Enfield and will not be affected by the works. It is also noted that a small population of GGBF were found in a residential area of Strathfield South, in the vicinity of the Cooks River corridor, around March 2011 (OEH comm to Sydney Ports). This site is located about 1 km from the ILC site and will not be affected by the works.

In addition, the proposed mitigation measures should ensure that any GGGF in the ILC site are well protected. Therefore the fill placement at Mt Enfield will have negligible impact on any GGBF in the FHCA or other parts of the site during construction and during the later use of the area.

As the proposed works will not have a significant impact on the GGBF community at Enfield, the works will not place the local GGBF population at risk of extinction.

2. *In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction*

The Juno Parade GGBF population has not been listed as an endangered population because of the legal status already afforded to them as an endangered species.

3. *In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:*
   - *(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
   - *(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*

Not applicable.

4. *In relation to the habitat of a threatened species, population or ecological community:*
   - *(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and*
   - *(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and*
   - *(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,*

No habitat will be lost or isolated as a result of the proposed works. The general development of the haul road and Mt Enfield work site may result in the potential temporary disruption of any east-west frog movement, but no works at Mt Enfield are proposed for the night and measures have been proposed to safeguard these areas after rain when GGBF might be active. As part of the ILC development, a permanent frog movement corridor will be constructed to link the ILC frog ponds to the RailCorp Marshalling Yards.

5. *Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)*

No critical habitat has been formally declared at Enfield

6. *Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,*

The Draft Recovery Plan (DEC 2005) for the GGBF states that the actions should not result in the loss of habitat or a decrease in the population size of GGBF at Greenacre. Neither of these outcomes is likely to occur, in fact, the creation of the FHCA at Enfield will significantly increase the area of habitat available to the frogs.

7. *Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.*

A recognised key threatening process is chytridiomycosis (or Frog Chytrid Disease). The works will involve the movement of soil and vegetation that could potentially harbour the chytrid spores. No soil or vegetation destined for Mt Enfield will reach the FHCA and it is likely that the spreading of the soil before compaction at Mt Enfield will result in the death of any spores. No soil, water or vegetation will be moved between Mt Enfield and the FHCA, which is to be treated as a sterile site. Therefore the proposed development is not a threatening process.

7 Conclusion

The proposed reuse of unsuitable engineering fill material and the landscaping and revegetation of Mt Enfield will not result in the loss of habitat or impact adversely on GGBF in the ILC site. The amelioration measures identified in this assessment and summarised in Section 6.1 below will ensure that GGBF cannot enter active construction areas and cannot be accidentally harmed or killed during the works. The proposed works will not prevent any potentially occurring GGBF from behaving normally in the FHCA or potentially dispersing east-west across the Enfield Marshalling Yards; there will be no significant impact on the frogs or their life cycle. Site preparation measures prior to the onset of the works will prevent dust, sediment or run-off from entering nearby frog habitat areas. Amelioration measures proposed during the occupation and use of Mt Enfield by the public will ensure that no adverse impacts arise as a result of activities.

The proposed reuse of material at Mt Enfield is not considered a controlled action under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as the works are not considered likely to have a significant impact on the GGBF.

Overall, the proposed works will not have a significant impact on the Green and Golden Bell Frogs on the site or in the Enfield area.

7.1 Summary of Recommended Mitigation Measures

The mitigation measures recommended as a result of this Ecological Assessment are summarised below.

- The north-south haul road to Mt Enfield must be inspected after all rainfall events and any GGBF found relocated to the FHCA by the designated Environmental Officer/Manager (EM) before the haul road is used. The EM must receive instruction regarding the correct handling and transport of GGBF from Sydney Ports' Consulting Herpetologist before the works commence.
- Truck movements along the north-south haul road to Mt Enfield are **not** to occur outside daylight hours, unless otherwise undertaken under special authorisations issued under the project approval.
- No exclusion fences are to be placed around the haul road to ensure GGBF can move across the site in the night or during the day in wet weather.
- Dust suppression, including use of water tankers, must be used during the earthworks activities at Mt Enfield to prevent wind-blown dust from reaching the FHCA and adjoining areas.
- Inspections must be carried out during the earthworks at Mt Enfield to identify predator presence on the site. Feral animal control measures should be implemented if predators, especially foxes and rats, are detected. The use of predator control measures should be carried out in consultation with Sydney Ports' Herpetologist to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.
- Predator inspections should continue during the landscaping and revegetation phase of the works. If the incidence of birds likely to attack GGBF, notably ibis and heron, increases as a result of the works or the revegetation, bird deterrent methods may

need to be used to prevent predation of any potential GGBF in the FHCA. Sydney Ports' Consulting Herpetologist should be consulted to ensure that the proposed measures are appropriate and not themselves a potential impact on the frogs.

- Sediment and erosion control measures, including silt fences, should be erected downstream of active emplacement areas which have not yet been stabilised to catch any silt from surface construction runoff and prevent sedimentation of downstream receiving waters.
- Soil, or vehicles that have been transporting soil or moist material from elsewhere on the ILC site, are not be permitted in the FHCA. The boundary fence separating the FHCA from the remainder of the site and signage must be regularly inspected and maintained.
- Restrict members of the public from entering the FHCA by ensuring that any members of the public admitted to Mt Enfield and the ILC site are accompanied by a Sydney Ports representative who will prevent access to the FHCA. If the system of guided escorts does not prevent access of unauthorised persons to the FHCA, other methods of securing the FHCA must be identified and implemented.

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Dr Arthur White
19 July 2011.

Appendix D: Shadow Diagrams

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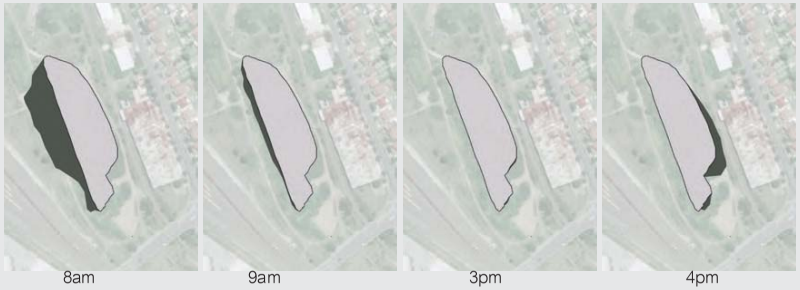
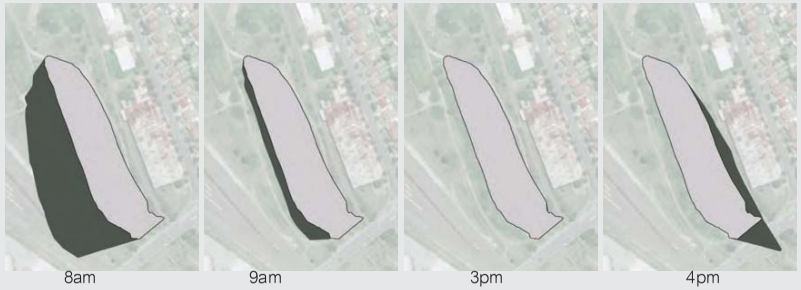


Shadow Study - Critical Shadow Times

Shadow Study - Existing

EXISTING STOCKPILE ANALYSIS

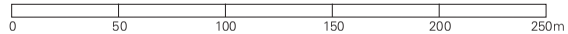


Shadow Study - Critical Shadow Times

Shadow Study - Existing and Proposed

PROPOSED STOCKPILE ANALYSIS

Lat: -33.905560° Long: 151.076896°
Winter Solstice: 21st June Sunrise: 0700 Sunset: 1654



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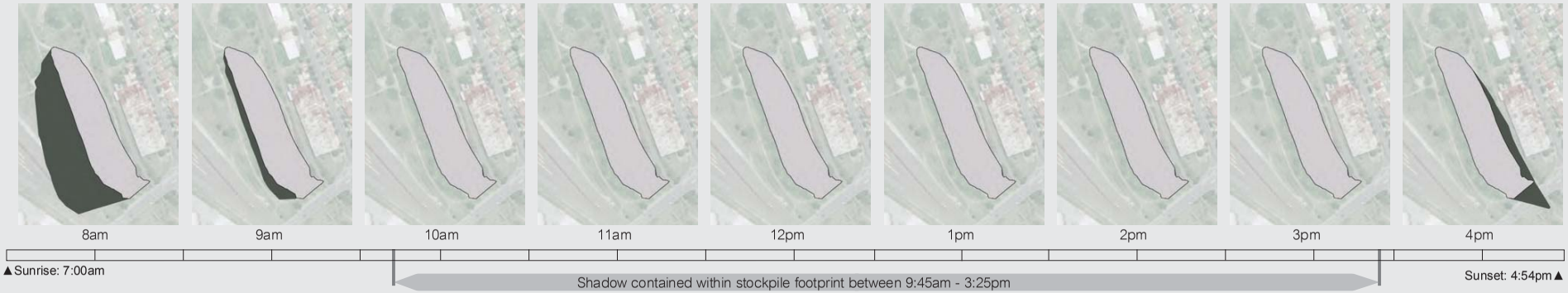
26TH, JULY, 2011

SHADOW ANALYSIS : **PROPOSED EXTENDED STOCKPILE**

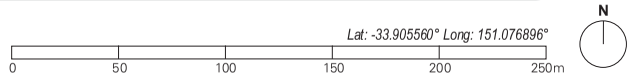
Winter Solstice (21st June)



PROPOSED STOCKPILE HOURLY INTERVAL SHADOW ANALYSIS

EXISTING STOCKPILE SHADOW ANALYSIS

PROPOSED STOCKPILE SHADOW ANALYSIS



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ENFIELD

27TH, JULY, 2011

SHADOW ANALYSIS : **PROPOSED EXTENDED STOCKPILE**

Winter Solstice (21st June)

Appendix E: Drainage Memo

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AECOM

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Memorandum

To	Stephen Zaczkiewicz	Page	1
CC			
Subject	Drainage of Mount Enfield		
From	Andy Jackson		
File/Ref No.	60051533\Drainage	Date	01-Aug-2011

Although AECOM have not undertaken the detailed design of the proposed extension of the stockpile, this memo discusses potential drainage related impacts of this proposal.

Runoff from the existing mound at the southern end of the ILC site (referred to as Mt Enfield) drains via overland flow to the foot of the batters and into surrounding existing drainage networks including Coxs Creek.

The proposal is to expand and increase the height of Mt Enfield, thereby increasing the length and locally steepening the batters in some areas of the mound.

The local catchment boundaries will not change as a result of the filling (ie the overall catchment area will be unchanged) and the volume of stormwater falling on the catchment will remain unchanged. Therefore the reshaping of the mound will not significantly increase the volume of runoff to downstream receiving waters. The flows will continue to be directed to the existing drainage networks including Coxs Creek. There will be no significant increase in the volume of stormwater leaving the mound as the overall catchment area remains unchanged and the area remains pervious.

The increased length and steepness of the batters in some areas of Mt Enfield could result in increased velocities, which could create erosion and sedimentation issues. This will be mitigated by designing, constructing and maintaining appropriate drainage measures for the final landform and re-vegetating the mound. The final landform will incorporate appropriate measures to ensure that the emplacement area is not prone to an unacceptable rate of erosion and is capable of conveying runoff from the reshaped mound without risk of erosion and sedimentation.

Measures such as those recommended in *Soil and Construction, Managing Urban Stormwater (*Landcom, *2004)* and other appropriate guidelines will be considered for the final design of the landform. Such measures may include provision of laterally drained benching and berms and use of diversion drains to control runoff and manage erosion as necessary.

The slopes of Mt Enfield are currently vegetated and the proposed design also shows appropriate vegetation on these slopes. Flow velocities and erosion will be retarded by the vegetation. Use of hydro-mulching and hydro-seeding may be adopted during the revegetation process to minimise erosion.

Erosion and sedimentation control issues during construction will be addressed in the contractor's CEMP and methods of working. It is recommended that a soil and water management plan be developed prior to commencing the proposed filling works to explicitly

address the management of the Mt Enfield batters during construction and until it is stabilised with vegetation. The plan should be incorporated into the contractor's CEMP. Appropriate mitigation measures for inclusion in the plan would typically include temporary bunding, sedimentation traps and temporary covers to protect earthworks as necessary."

Andy Jackson
Project Manager
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