REPORT

Darwin City Waterfront Redevelopment Project

Draft Environmental Impact Statement

Prepared for

Department of Infrastructure, Planning and Environment

GPO Box 4000
DARWIN Northern Territory 0801

May 2004

36909-007 (Draft EIS)

URS

Project Manager:

Paul Lloyd
Senior Environmental Scientist

URS Australia Pty Ltd
Level 1, Arkaba House, The Esplanade
GPO Box 2005, Darwin, NT, 0801, Australia
Tel: 61 8 8980 2900
Fax: 61 8 8941 3920

Project Director:

Charles Johnston
Principal, NT Manager

Date: **May 2004**
Reference: 36909-007
Status: Final Draft EIS

INTRODUCTION

The Department of Infrastructure Planning and Environment (DIPE) within the Northern Territory Government, proposes to redevelop the Darwin wharf area. The proposed **Darwin City Waterfront Redevelopment** (the Redevelopment) will transform an existing disused industrial area into a living precinct which captures the unique tropical character of Darwin for the use and enjoyment of the people of Darwin. The Redevelopment will create a community asset and attract Darwin residents and visitors with features including a Convention and Exhibition Centre, residential accommodation, commercial and entertainment, tourist and recreational facilities.

The Draft EIS was prepared to satisfy the requirements of the Northern Territory *Environmental Assessment Act* (1982). The document addresses issues noted in the *Guidelines for Preparation of an Environmental Impact Statement on the Proposed Darwin City Waterfront Redevelopment at the Darwin Wharf* issued by the Northern Territory Minister for the Environment in November 2003. The Draft EIS presents the findings of comprehensive studies of the existing environment and the potential impacts of the Redevelopment. The Commonwealth Minister for the Environment determined that the proposed development did not require additional approval under the *Environment Protection and Biodiversity Conservation Act*.

The Draft EIS has been based on the Concept Plan for the project. The Master Plan for the Redevelopment will be finalised in December 2004. If the Master Plan differs substantially from the Concept Plan and raises further environmental issues, additional environmental review will be undertaken through the normal environmental impact assessment processes.

Consultation about the Redevelopment has occurred over several years as the planning for the project has progressed. More recently, consultation has been carried out with business and tourism groups, Darwin City Council, specific interest groups, tenants and residents in and near the site and the general community.

OBJECTIVES OF THE PROPOSED PROJECT

The primary objectives of the project is to develop and invigorate a declining industrial site, to generate significant economic benefits for the Northern Territory and create an active precinct with new facilities and attractions that draw Darwin residents and visitors to the site and the Darwin Central Business District (CBD).

Specifically, the proposed project aims to:

- establish a world class waterfront development;
- revitalise and regenerate the Darwin waterfront area from its current form based largely on industrial and post-industrial land uses, including clean-up of areas of historic land contamination;

- establish a significant recreational and lifestyle resource for Darwin residents and intrastate, interstate and overseas visitors; and
- provide a significant stimulus to the business and tourism industries in Darwin and the Northern Territory.

PROJECT JUSTIFICATION

The Darwin City Waterfront site is currently a declining industrial area, which has become under utilised and semi-derelict. The project will reclaim valuable and strategically situated land, and utilise the site for the economic and social benefit of Darwin and the Northern Territory. The Redevelopment will create major financial/economic, social, urban design and environmental benefits for Darwin and the Northern Territory, including:

- the enhancement of the city environment;
- the potential to recognise and enhance the cultural and historical significance of the site;
- significant stimulation of Darwin business and the construction and tourism industries;
- $600m in development value;
- $550m economic benefit, over a 25 year period, from the conference and exhibition centre alone;
- significant increase in visitor nights to the Darwin area;
- the generation of employment during the construction and operation phases;
- the inclusion of residential housing within the development
- the provision of a major feature for the enjoyment of locals and tourists; and
- remediation of the contamination left by past industrial activities.

PROPOSED PROJECT

The Site

The site for the proposed Redevelopment is the Darwin Wharf and associated waterfront, which covers approximately 25 hectares immediately to the south of the Darwin CBD. The Northern Territory Government owns the site, and no land acquisition is required for the Redevelopment.

The Proposed Project

The Concept Plan shows that the Redevelopment will include:

- significant public open space to encourage a diversity of community-oriented activities;

- a continuous promenade along the length of the waterfront;
- community and tourist attractions such as a visitor centre and a cultural / heritage centre;
- the Darwin Convention And Exhibition Centre (DCEC);
- focal "landmark" feature to achieve orientation and create a sense of place;
- accommodation, including residential development, hotel(s) and serviced apartments;
- commercial and retail activities, such as cafes and kiosks;
- land reclamation in Kitchener Bay;
- construction of shoreline protection measures along Kitchener Bay such as a revetment structure or a sea wall constructed off-shore;
- leisure craft moorings and associated marina-oriented commercial and public transport facilities;
- a marina or jetties in Kitchener Bay and marine structures along the western side of Fort Hill;
- pedestrian and visual connections between the site and the CBD along the Smith Street axis; and
- improved road and pedestrian access to the site and its facilities.

The most significant single feature of the redevelopment will be the DCEC, which will comprise a 1,500-seat convention centre, 4,000 m^2 of exhibition space and cover approximately 10,000 m^2. The Northern Territory Government will commit $100 million towards the DCEC and offsite support infrastructure.

Redevelopment of the site is anticipated to occur in stages over a 10 to 15 year period. Construction of the first stage of the development, including the DCEC, is expected to commence in early 2005. The timing of future stages of construction, particularly any residential developments, will be led by demand.

Remediation of the Site

The Redevelopment will remediate contamination at the site to appropriate health and ecological protection standards. The assessment of site contamination and the requirement for remediation will be carried out under the rigorous review and approvals of the Victorian EPA Contaminated Land Audit Process. An independent Victorian EPA Contaminated Land Auditor has been appointed to the project by the Territory Government.

Alternatives

The primary objective of this project is to revitalise a disused and contaminated industrial area close to the Darwin CBD and create a more valuable, environmental economic and social resource. Non-development will not realise these socio-economic, community and environmental benefits. Several options have been considered for the location of the DCEC. Of the nine assessed options, the current

wharf area was the most suitable on the set selection criteria and offered the greatest opportunities for integrated development linked to the Darwin CBD.

EXISTING ENVIRONMENT

Physical Environment

The site has been heavily disturbed by past activities with extensive importation of fill material for reclamation of Kitchener Bay, the leveling of Fort Hill and widespread industrial development. Stokes Hill is the only major topographic feature in the site and rises to about 25 m. The existing foreshore along the site consists of exposed fill material. The marine sediments in Kitchener Bay are relatively flat and are approximately 3-5 m lower than the adjacent reclaimed areas.

The catchment for the site extends above the escarpment into the southern CBD area. Drainage has been heavily modified, and no natural drainage lines remain. The quality of runoff is affected by the previous industrial land uses with elevated levels of sediment, metals and hydrocarbons. The groundwater movement under the site is generally towards the harbour and is slow.

Kitchener Bay lies near the main channel of Darwin Harbour with relatively deep water on the southern side of Stokes Hill and Fort Hill wharves. Broad intertidal mudflats cover much of the bay. Acid Sulfate Soil (ASS) materials occur in some areas of the marine sediments underlying the reclaimed areas. No AAS materials were found in the top 1 m of marine sediments of Kitchener Bay during recent testing.

As expected from the long history of industrial land use, the site contains some contamination from past activities which will be remediated and managed. Contamination of soils, groundwater and marine sediments varies across the site. Contaminants include:

- metals (arsenic, barium, cadmium, copper, lead, manganese, mercury, nickel and zinc), particularly from past mineral ore handling at the site; and
- hydrocarbons (total petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and chlorinated hydrocarbons).

The site contains a mixture of existing industries that generate atmospheric discharges. These Include particulate matter (PM), combustion products (carbon monoxide and dioxide [CO_x], nitrogen oxides [NOx], sulfur oxides [SOx]) and small amounts of organic compounds (including volatile organic compounds [VOC], methane [CH_4]), and possibly some air toxics such as polycyclic aromatic hydrocarbons (PAHs).

Until recently, the project site served as the primary wharf for Darwin with associated industrial development and activity. Loading conveyors, marine vessel noise, transportation vehicles and processing plants would have dominated the noise climate of the site at that time. With the transfer of a large proportion of significant port operations to East Arm, numerous industrial facilities across the site have been decommissioned with a corresponding reduction in noise levels.

Biological Environment

Past disturbance of the site has left little vegetation of significance. The coastal vine-forest on the escarpment immediately to the north is the most significant vegetation community nearby. As would be expected by the generally poor habitat quality offered by the vegetation, only two fauna species of significance were found on the site, and only few shorebirds were noted in Kitchener Bay. These species have extensive suitable habitat available within the region.

Biting midges do not breed in significant numbers at the site, but migrate from extensive breeding areas to the north-east. The site contains several mosquito breeding areas, however the mosquito problem in the area is minor. Development of the site will remove many current breeding sites.

The marine areas of the site support typical, but not exceptional, marine fauna. The project area does not contain habitats which could be considered critical for dugongs or other marine mammals, and the activities associated with the wharves discourage the presence of any noise-sensitive marine mammals. The closest marine area of sensitivity to potential impacts from the project site is 2 km away from the site and considered to be well beyond the potential influence of the Redevelopment.

Built Environment

Traffic access is adequate for current uses, although the road network is of a low standard.

The visual characteristics of the site in its current form are poor, reflecting the past industrial uses and the current semi derelict state. The road network will be upgraded as part of the Redevelopment.

The project site may contain Unexploded Ordnance (UXO) from wartime activities, particularly the bombings of Darwin in 1943. The UXO, if present, will be found embedded in landforms that remain unchanged since 1942, and are not considered likely in areas that have been subsequently filled. However, any UXO remaining in the area is unlikely to be readily detonated after such prolonged environmental exposure.

Cultural Environment

No archeological sites have been identified in the project area. Stokes Hill has been recorded as a Sacred Site, and a second Sacred Site lies within a kilometer of the site at Lameroo Beach. The portion of the Stokes Hill Sacred Site extending into the project area is a "Restricted Works Area" under the Aboriginal Areas Protection Authority Certificate.

The Darwin Waterfront area has been fundamentally linked to the establishment and development of Palmerston Town (to be renamed Darwin in the early 1900s) and its port from 1869. Three heritage sites within or near the project area are on the Northern Territory Heritage Register: the Oil Storage Tunnels, the Steam Pump House and the MV *Neptuna*. In addition, Goyder's Camp and Hughes Avenue were nominated recently for inclusion on the Heritage Register. Three sites within or in the vicinity of the project area on the Register of the National Estate: Oil Storage Tunnels (1, 5, 6,10 and 11), the Steam Pump House and Traveller's/Chinaman's Walk (to be delisted). Four sites in or near the vicinity of the

project area are listed on the National Trust Register of Significant Places: Knight's Folly, the Oil Storage Tunnels (5 and 6), Traveller's (Chinaman's) Walk and the Burnett design "G" Type Residence.

Socio-economic Environment

The project site supports a range of commercial and tourism activities. These activities generate some economic and amenity benefits, however much of the area remains in a state that does not facilitate active commercial, tourism or recreational use. The project site is used by the Darwin community for a range of recreational activities focused on Stokes Hill Wharf and its surrounds. Community attitudes to the site indicate an interest in highlighting the connection between land and water, Darwin's tropical environment and lifestyle, and the history and culture of the site. The community also indicate an interest in greater recreational opportunities for local people and visitors, greater access to the site and enhancement of the aesthetics of the site with connection to the CBD.

ENVIRONMENTAL EFFECTS, MITIGATION AND MANAGEMENT

The following issues have been assessed as being significant potential impacts and will require appropriate mitigation and management controls to be implemented during the construction and operational phases of the project.

Site Contamination	
Potential Impacts	Disturbance and mobilisation of contaminants in soils and groundwater during various operations, including excavation, dewatering of contaminated groundwater from excavations, removal of existing infrastructure and erosion of exposed soils Distribution of contaminated soil as dust Mobilisation of metal contaminants through exposure to acidic groundwater or surface runoff generated from exposure or drying of Acid Sulfate Soils Disturbance and mobilisation of contaminants from dredging of marine sediments from Kitchener Bay and disposal to a suitable land or offshore disposal area
Mitigation	A thorough contaminated site assessment is being finalised, to characterise the sources, type, location and extent of contamination. This will allow determination of appropriate remediation and management actions. Health levels for some contaminants are exceeded in a number of areas. However, contamination can be dealt with satisfactorily through a combination of on-site remediation and management of any residual contaminants, that are determined to be present at acceptable levels. These actions will be undertaken to the requirements of the Contaminated Land Auditor. Remediation and on-site management of residual contamination will be carried out through a series of plans (Pre-remediation Site Works Environmental Management Plan, Remediation Action Plan and Site Management Plan for on-going post-remediation activities).

Sites for disposal of contaminated terrestrial soils and contaminated marine sediments are currently being investigated and options will be assessed through standard Northern Territory Government approvals processes and the Darwin Harbour Dredging Technical Advisory Committee.

Acid Sulfate Soils

Potential Impacts Exposure of ASS material by excavation, dewatering or dredging, and acidification of nearby groundwater or surface runoff, which can result in effects as described under Site Contamination.

Mitigation A detailed ASS Management Plan for minimising the impacts from the site works will be developed if significant quantities of ASS material are to be disturbed. This will address excavation, dewatering and stockpiling. This will achieve the desired outcome of containment, treatment or appropriate disposal of ASS material

Erosion and Sedimentation

Potential Impacts Soil erosion and sedimentation in near shore areas of Kitchener Bay, may result in effects as described under Site Contamination

Mitigation An Erosion and Sedimentation Control Plan will be incorporated into the Construction and Operational Management Plans which will be implemented to minimise soil erosion, sedimentation and dust generation.

Marine Environment

Potential Impacts Localised and temporary increase in water turbidity from dredging, spoil disposal, reclamation and foreshore engineering works which may also contribute to effects discussed in Site Contamination.

Mitigation Dredging and reclamation, if required, will be controlled to minimise water quality impacts through implementation of a Dredging and Reclamation Management Plan. Environmental specifications for activities will be defined to ensure that turbidity and contamination effects are minimised. Extensive monitoring will be undertaken and triggers included to stop work if certain criteria threshold are exceeded.

Unexploded Ordnance

Potential Impacts Detection of UXO during dredging and excavation activity is most likely in the remaining pre-1942 landform. Due to prolonged environmental exposure, the risk of UXO detonation is considered low.

Mitigation Operational procedures covering detection of UXO and contingency plans in the event of detection have been developed and will be integrated within Construction and Operational Management Plans.

European Cultural Heritage

Potential Impacts Heritage sites within the project area have been identified. There is the potential for damage to, or loss of, these heritage features and values.

Mitigation Wherever possible heritage sites will be incorporated into the Redevelopment as a "feature", such as the Steam Pump House. Any identified heritage sites that are to be removed will be thoroughly documented, including photographs and video, to the requirements of the Office of Environment and Heritage before any works are undertaken.

Aboriginal Cultural Heritage

Potential Impacts Apart from the Stokes Hill Sacred Site, there are no archaeological impediments to the Redevelopment due to the extensive disturbance of the site. There are two areas of Aboriginal cultural value, at Stokes Hill, which is within the project area and Lameroo beach which is just outside the project area. Consideration within design and construction will help to minimise any potential for diminishing of Aboriginal cultural values for the site

Mitigation The cultural significance of the project site, particularly Stokes Hill, will be acknowledged as part of the Redevelopment. Aboriginal community will be consulted about any proposed uses of Stokes Hill, and guidance will be sought on possible cultural heritage interpretation.

Socio-economic Impacts

Potential Impacts Most socio-economic impacts from project will be positive. However, occasional, short-term impacts, which might inconvenience local businesses, are possible.

Mitigation Potential impacts on existing businesses will be mitigated through integration of the CBD and Redevelopment site in the Master Plan. Access will be maintained during

all construction activities for the existing businesses operators in and near the site and works will conducted during normal working hours unless required on special occasions.. Potential short term impacts will be countered by medium and long term significant commercial benefits as the Redevelopment progresses.

Air Quality

Potential Impacts Generation of dust and other emissions, may occur during site clearing and construction, which can result in effects as described under Site Contamination..

Reduced emissions of air pollutants are likely due to the replacement of current industrial sources, which will be a positive impact.

Fugitive emissions are predicted from the Naval Fuel Installations (NFI), which has the potential to affect future land uses in adjacent areas in the medium to longer term. Impacts will be dependant on future land uses, the lifespan of the NFI and future air quality standards.

Mitigation Construction, remediation and site management plans will be implemented to reduce dust and other emissions, and reduce risk from contamination

Once the future operational lifespan of the NFI has been confirmed, the details of the future adjacent land uses, an assessment of the dispersion of fugitive emissions from the NFI may be undertaken.

A program of dust monitoring will be implemented as part of the construction environmental management plan.

The following details summarise potential impacts and management controls for those issues assessed as of low to moderate significance:

- Surface water quality and stormwater flow management will improve significantly. The risk of storm surge flooding will be reduced.
- Groundwater impacts are not expected and can be managed if they occur.
- There is minimal native vegetation and no fauna habitat of significance in the site and the escarpment coastal vine-forest will not be disturbed in any significant way. Weed control is likely to improve.
- Measures will be incorporated to minimise biting insect breeding areas at the site.
- Traffic and transport impacts will be mitigated by improvements in road capacity and changes to the layout of various parts of the road network as required.

- Potential impacts on noise sensitive premises will be managed to comply with the requirements of Northern Territory Government regulators
- Visual characteristics and amenity of the site will be improved significantly.
- Construction and remediation wastes will be managed and disposed of in accordance with all Northern Territory Government requirements.
- All site works will be carried out under a Construction Environmental Management Plan, which will outline measures to deal with all relevant issues. Ongoing management of the redeveloped site will be carried out under an Operations Environmental Management Plan.

MONITORING PROGRAM AND REPORTING PROCEDURES

A comprehensive baseline environmental monitoring program has been either carried out for the preparation of the draft EIS or recommended as a future action to evaluate the pre-construction conditions at the site. On-going monitoring is also recommended to evaluate the iterative change in environmental conditions during the planned construction, post-construction and operational phases of the project These will collectively form the Environmental Monitoring Program, which will test and validate the main predictions about the project effects which have the potential to adversely impact the environment. The monitoring program will also ensure that potential environmental effects are minimised and that the facility complies with any regulations governing particular activities

The Draft EIS is provided in two (2) Volumes, which are available in CD ROM and Hard Copy version:

Volume 1 - The Executive Summary and Main Assessment Report

Volume 2 – Appendices, Including Specialist Research Reports and Environmental Management Plans

Copies of the draft EIS may be purchased from: URS Australia, Level 1 Arkaba House, 13 The Esplanade, Darwin, NT, 0801 or ordered by email darwin@urscorp.com or phone 08-8980-2900.