

# Statement of Reasons

## DEPARTMENT OF INFRASTRUCTURE, PLANNING AND LOGISTICS – BARNESON BOULEVARD

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### PROJECT

The Department of Infrastructure, Planning and Logistics (DIPL, the Proponent) submitted a Notice of Intent (NOI) for the construction of Barneson Boulevard and duplication of Tiger Brennan Drive between Dinah Beach Road and McMinn Street (the Project) to the Northern Territory Environment Protection Authority (NT EPA) on 26 July 2017 for consideration under the *Environmental Assessment Act* (EA Act). Additional information was submitted on 13 September 2017, 21 September 2017 and 9 October 2017.

The Project is a joint initiative between the Australian and Northern Territory (NT) Governments and the City of Darwin. It is intended to provide a new arterial access road to the Darwin Central Business District (CBD) to alleviate traffic demand on Stuart Highway and Tiger Brennan Drive in the vicinity of the CBD and to provide for future land use planning.

The Project (Figure 1) includes construction of:

- Barneson Boulevard, predominantly in an existing road corridor approximately 900 m in length, extending from Cavenagh Street at Stott Lane northeast toward McMinn Street, across Woods Street, beside the Frog Hollow Arts Centre, along the length of Barneson Street, and through vacant crown land to a proposed new intersection south of the existing Dinah Beach Road / Tiger Brennan Drive intersection
- Tiger Brennan Drive realignment and duplication between Dinah Beach Road and the Tiger Brennan Drive/Bennett Street/McMinn Street intersection
- a cul-de-sac in Wood Street blocking car access to Barneson Boulevard from the northwest (Daly Street end)
- a cul-de-sac at the southeast end of the service road parallel to McMinn Street
- construction of cycle paths and pedestrian access
- three traffic-light intersections on Barneson Boulevard at Cavenagh Street, McMinn Street and Tiger Brennan Drive.

In the northern section (Dinah Beach end) of the Project up to 2.1 hectares of vegetation would be cleared or impacted within the road reserve, including areas of mangroves and vine thicket habitat.

Works are planned to commence in the 2017 Wet Season and be completed in the 2019 Dry Season.

### CONSULTATION

The NOI and further information have been reviewed as a notification under the EA Act in consultation with Northern Territory Government (NTG) advisory bodies, in accordance with clause 8(1) of the Environmental Assessment Administrative Procedures. The Proponent has undertaken an independent and ongoing public and stakeholder consultation process and published the outcomes of this process on its website.

### JUSTIFICATION

Review of the NOI and further information by the NT EPA and NTG advisory bodies has identified potential environmental impacts associated with the following preliminary environmental factors:

Terrestrial Flora and Fauna; Marine Environmental Quality; Air Quality and Greenhouse Gases; Social, Economic and Cultural Surroundings; and Human Health.

### ***Terrestrial Flora and Fauna***

The project is located within the Darwin Harbour Site of Conservation Significance. The location is, however, in an historically impacted sub-catchment adjacent to the central business district meaning that it has limited environmental value from a Terrestrial Flora and Fauna perspective.

The Project area contains a patch (approximately 2.1 hectares) of native vegetation including mangroves and vine thicket. These vegetation types have been stranded by historic development including reclamation of land for Tiger Brennan Drive and Frances Bay Mooring Area. Habitat values of the native vegetation patch are reduced by its isolation from larger remnant vegetation stands. The patch is impacted by weeds such as coffee bush, rubbish inputs from Tiger Brennan Drive and receipt of stormwater drainage from roads and upstream developments within the Frances Bay catchment.

Proposed clearing for the Project of up to 2.1 hectares of combined mangrove and vine thicket habitat would result in the loss of less than 0.1% of vine thicket and less than 0.01% of mangroves present around the Harbour. The NT EPA considers that potential impacts and risks to Terrestrial Flora and Fauna are not significant and can be adequately managed through the implementation of measures proposed in the NOI. The NT EPA's objective for Terrestrial Flora and Fauna is therefore likely to be met.

### ***Terrestrial Environmental Quality***

Terrestrial environmental values are degraded in the Project area due to the existing impacted nature of the site, including historic industrial land uses, extensive land reclamation over mudflats in lower areas, and the filling of higher areas for subsequent development on the site.

Historic land uses in the vicinity of the Project corridor included a railway and series of fuel terminals (Figure 2). The Northern Australian Railway crossed the Project corridor near the end of Barneson Street. One Mile Dam (Railway Dam), 180 m west of the Project corridor, served as a water source for steam trains on the railway.

The Proponent has presented Independent Preliminary (Phase 1) and Investigative (Phase 2) contamination studies for the Project corridor. The NT EPA considers the studies are adequate to provide an understanding of the contamination status of the Project area and provides appropriate guidance for acceptable development of the area.

The studies of soil and groundwater identified elevated levels of lead, zinc and chromium at the western (CBD) end of the alignment, while the eastern end of the alignment (near Tiger Brennan Drive) contained elevated levels of zinc, nickel, lead, asbestos and per-and poly-fluoralkyl substances (PFAS compounds). Analysis of groundwater and soil contamination studies conclude that impact levels present a low but acceptable risk, provided the identified impacted soil and groundwater are managed in accordance with a site environmental management plan. Groundwater is discussed further below (Inland Water Environmental Quality).

The Project is not expected to intersect soils contaminated with PFAS during construction due to excavation being limited to the portion of the Project at higher elevations (CBD end) above depths of PFAS containing groundwater occurrence. The Proponent has identified that areas requiring cutting to reduce the road level (along the existing Barneson Street) do not contain impacted soils or groundwater above detection levels. Areas of soils identified as impacted by historic land use are generally located at lower elevations requiring fill to construct the road level, in effect capping and encapsulating the existing contaminated soils. The Project will require net import of approximately 50,000m<sup>3</sup> of fill. Only fill certified as fit for purpose will be accepted on-site.

The Proponent has identified that the management of construction will be in accordance with auditor recommendations and a Construction Environmental Management Plan (CEMP) developed in accordance with the DIPL Standard Specification for Environmental Management. PFAS will be managed in accordance with the draft PFAS National Environmental Management Plan.

To further address potential impacts or risks from historically contaminated soils or groundwater, the Proponent has committed to engaging an accredited contaminated site auditor to:

- undertake an independent third party review of the contamination studies completed to date
- provide recommendations regarding the completeness of sampling and whether additional sampling is needed
- provide advice and recommendations to manage risks associated with any actual or potential contaminated soil and groundwater, to be incorporated into the Project's CEMP. The site auditor will provide third party review of the CEMP to ensure all contamination risks are appropriately addressed.

The Proponent has committed to engage an independent environmental consultant during construction to ensure that the contractor complies with all requirements of the CEMP.

The Proponent has identified potential acid sulfate soils in waterlogged soils near Tiger Brennan Drive. The Proponent will require the construction contractor to prepare an acid sulfate soils management plan prior to commencement of excavation works. The management plan will be consistent with the Queensland Acid Sulfate Soil Technical Manual (Soil Management Guidelines).

The NT EPA considers that the Proponent has presented appropriate measures to mitigate potential impacts and risks associated with construction of a new arterial road in the vicinity of formerly impacted sites. The proposed land use of roads and bike paths provides a suitable, non-sensitive overlying use of the site. The measures proposed are likely to reduce the existing risks associated with historically impacted soils that are present on the Project site.

The NT EPA considers that potential impacts on Terrestrial Environmental Quality are not significant and can be adequately managed through the implementation of measures proposed in the NOI and additional information, and in accordance with any recommendations for management of soil and groundwater from the site auditor. The NT EPA's objective for Terrestrial Environmental Quality is therefore likely to be met.

### ***Inland Water Environmental Quality***

The Project is located in a catchment that has been historically impacted, as identified above. The Project has the potential to influence surface and groundwater quality as a result of disturbance of existing contaminated groundwater, sedimentation and spills of hydrocarbons and hazardous chemicals entering stormwater during construction.

As discussed above, groundwater surveys have revealed the presence of PFAS chemicals at locations down-gradient of the Project area. The Project is not expected to intersect potentially contaminated groundwater during construction due to excavation being limited to the portion of the Project at higher elevations (CBD end) above depths of groundwater occurrence. Analysis of groundwater and soil contamination studies conclude that impact levels present a low but acceptable risk, provided the identified impacted soil and groundwater are managed in accordance with a site environmental management plan.

The NT EPA supports the measures identified by the proponent (and detailed above under Terrestrial Environmental Quality), including: incorporating auditor recommendations in a Construction Environmental Management Plan (CEMP); and ensuring that PFAS will be managed in accordance with the draft PFAS National Environmental Management Plan. The NT EPA is of

the opinion that construction and operation of the Project has the potential to reduce pathways for PFAS exposure and transmission due to capping and encapsulation of PFAS containing soils.

To mitigate construction impacts on stormwater, the Proponent will require the construction contractor to manage erosion and sediment transport in accordance with an Erosion and Sediment Control Plan (ESCP) to be developed as part of the CEMP. Measures to manage chemical / hydrocarbon spills and storm water contamination will also be included in the CEMP developed and approved in accordance with the DIPL Standard Specification for Environmental Management.

The NT EPA considers that potential impacts to Inland Waters Environmental Quality are not significant and can be adequately managed through the implementation of measures proposed in the NOI and additional information, and in accordance with any recommendations for management of soil and groundwater from the site auditor. It is therefore of the view that its objective for Inland Water Environmental Quality is likely to be met.

### ***Marine Environmental Quality***

The Project has the potential to impact water quality in Darwin Harbour through sedimentation and spills of hydrocarbons and hazardous chemicals entering stormwater during construction.

To mitigate impacts from poor quality stormwater entering the Harbour, the Proponent will require the construction contractor to manage erosion and sediment transport in accordance with an Erosion and Sediment Control Plan (ESCP) to be developed as part of the CEMP. Measures to manage chemical / hydrocarbon spills and stormwater contamination will also be included in the CEMP developed and approved in accordance with the DIPL Standard Specification for Environmental Management.

The NT EPA considers that potential impacts and risks associated with Marine Environmental Quality are not significant and can be adequately managed through the implementation of measures proposed in the NOI and further developed in the ESCP and CEMP. The NT EPA considers that its objective for Marine Environmental Quality is likely to be met.

### ***Air Quality and Greenhouse Gases***

Air quality of the Darwin CBD is monitored at Stokes Hill Wharf, 600 m southwest of the Project area. Air quality index values reported for November 2017 were very good for all parameters except PM10 (good). The parameters CO, NO<sub>2</sub> and SO<sub>2</sub> all occur at very low levels in Darwin compared to large cities in other parts of Australia while ozone occurs at moderate levels, typically due to natural processes. The primary air pollutant in Darwin is smoke from distant and local vegetation burning during the Dry season.

The Project has the potential to generate air emissions through its construction (dust, odours) and operation phases (vehicle exhaust fumes).

Project activities including clearing, excavation, stockpiling and vehicle movements could generate dust, particularly in the Dry Season. Dust management measures proposed for the Project include the spraying of earthwork formations and roads with water or suitable stabilising agents, speed limits, use of dust screens, timing of dust-generating activities to avoid periods of high wind, and development and compliance with an approved Erosion and Sediment Control Plan incorporated into the CEMP, in accordance with the DIPL Standard Specification for Environmental Management.

Disturbance of any soils associated with the previous fuel-terminal sites has the potential to generate hydrocarbon odours. Disturbance and management of such soils will be in accordance with auditor recommendations.

Project works will involve bitumen spray sealing and line marking resulting in the release of chemical vapours, which may generate localised odours. These odours disperse in a short amount of time and construction planning and methods to minimise odour include the use of chemicals which generate less odour than alternatives and the application of bitumen and spray paint when wind direction is away from the nearest human sensitive receptors.

The NT EPA considers that potential impacts associated with emissions of dust and odour can be adequately managed through the implementation of the CEMP, in accordance with measures proposed in the NOI and DIPL Standard Specification for Environmental Management. The Project is not expected to generate significant greenhouse gases.

The NT EPA considers that its objective for Air Quality and Greenhouse Gases is likely to be met.

## ***Social, Economic and Cultural Surroundings***

### Community concerns

The NT EPA is aware that community consultation on the Project has revealed concerns regarding social, economic, cultural and historic values held by the community, associated largely with the Frog Hollow area. The values identified include recreational value of Frog Hollow Park (including values associated with mature trees and scarcity of greenspace in general); historic value of the boab tree in the Post Office car park; and historic value of the Frog Hollow Centre for the Arts (as the site of Darwin's first primary school). Some community feedback also expressed a view that the project was not justified by traffic demand, and was unlikely to deliver the benefits identified. Further feedback was critical of the expenditure for this project in contrast with other projects that were considered to give a greater perceived benefit.

While the NT EPA considers that resolving community sentiment expressed about project justification and benefits versus expenditure is a matter for Government, the NT EPA has considered the community's concerns with respect to potential impacts to historic and cultural heritage which are matters within its legislative remit. In doing so, it has consulted with the NT Government advisory agencies that have responsibility for identifying, protecting and maintaining historic and cultural heritage values.

### Historic and cultural values

Frog Hollow Park and a boab tree in the centre of the post-office carpark are both listed as NT Heritage places. The park is outside of, but adjacent to the Project area, and will be flagged off to prevent access and avoid disturbance. No disturbance of the boab tree is anticipated.

The Project area is of traditional and cultural significance to the Larrakia people. Aboriginal Areas Protection Authority (AAPA) certification for the Project identifies three significant trees within the Frog Hollow Centre for the Arts, in the area of the proposed relocation of the new amenities block and car park. The three trees will be protected from damage during works in consultation with a professional arborist engaged by the Proponent. Two sacred sites exist near but outside the Project footprint. Restricted access will apply to the areas to prevent disturbance.

The NT EPA is of the opinion that the historic and cultural environmental values of the area have been appropriately identified. The Heritage Branch of the Department of Tourism and Culture has confirmed that the Proponent has taken appropriate measures to protect the two declared heritage places.

While the NT EPA is of the opinion that the potential impacts and risks to historical and cultural values are unlikely to be significant, it acknowledges that the Project will result in a change in character of the Frog Hollow area in order to deliver its intended benefits to the community including improved public amenity and car and bicycle access to the Frog Hollow area and to the CBD.

## Noise

Sensitive receivers in the vicinity of the Project include Travelodge Mirambeena; Frog Hollow Centre for the Arts; One Mile Dam Community; and city apartment residences. Background and ambient noise levels are measured as being in the range of 41 – 61 dB(A).

Project construction has the potential to generate noise impacts in its general vicinity. A Noise and Vibration Impact Assessment and Management Plan identifies sensitive receptors, potential impacts and mitigation measures. The Plan is in accordance with NT EPA Noise Guidelines for Development Sites in the Northern Territory and references relevant Australian Standards, international or industry guidelines and DIPL's Standard Specification for Environmental Management.

The NT EPA considers that the potential impacts associated with emissions of noise and vibration can be adequately managed through the implementation of measures proposed in the NOI and the DIPL Standard Specification for Environmental Management.

The NT EPA considers that potential impacts and risks associated with Social, Economic and Cultural Surroundings are not significant and can be adequately managed through the implementation of measures proposed in the NOI. The NT EPA therefore considers that its objective for Social, Economic and Cultural Surroundings is likely to be met.

## ***Human Health***

The NT EPA is aware that community consultation on the Project has revealed concerns regarding the potential impacts and risks to human health as a result of construction of the project, particularly in the vicinity of historically impacted land.

The NOI identifies that low level contamination of asbestos and PFAS is present at discrete locations within the Project area, in soil and groundwater. There is also potential for soils and groundwater in the project area to contain low levels of metals, TRH, BTEX, PAH, PCB, OCP and phenol.

Asbestos is a known health risk due to potential for fibres disturbed by construction activities, to become airborne, where they may be inhaled by people living or working in the area. The Proponent has identified that the generation of dust will be avoided through maintaining adequate soil moisture levels (using water carts when required). The Proponent has also identified that it will incorporate independent site contamination auditor recommendations in a CEMP that meets the DIPL Standard Specification for Environmental Management.

PFAS is an emerging human health concern. Its longevity in the environment and transmission through water make containment and remediation of impacted sites difficult. While the Project is not expected to distribute or change the status of PFAS contaminated soils and groundwater, the Proponent will ensure that potential impacts to human health will be avoided by incorporating auditor recommendations in the CEMP and ensuring that PFAS is managed in accordance with the draft PFAS National Environmental Management Plan.

The NT EPA considers that potential for impacts to Human Health are appropriately identified and can be managed through implementation of proposed measures and compliance with regulatory requirements and standards. The NT EPA therefore considers that its objective for Human Health is likely to be met.

## **Conclusion**

The NT EPA considers that significant environmental impacts are unlikely due to the location of the Project on and adjacent to historically impacted land, the limited period of construction, the commitment by the Proponent to adopt appropriate mitigation and management actions and the commitment to engage an accredited contaminated site auditor to:

- undertake an independent third party review of the contamination studies completed to date
- provide recommendations regarding the completeness of sampling and whether additional sampling is needed
- provide advice and recommendations to manage risks associated with any actual or potential contaminated soil and groundwater, to be incorporated into the Project's CEMP. The site auditor will provide third party review of the CEMP to ensure all contamination risks are appropriately addressed.

The NT EPA considers that the potential environmental impacts and risks associated with the Project are not significant and that the Project does not require assessment under the EA Act. Comments from NTG advisory bodies have been provided to the Proponent and the NT EPA has provided recommendations to ensure that potential impacts on the environment are minimised and responsibilities under relevant legislation can be met.

## **DECISION**

The proposed action, which was referred to the NT EPA by the Department of Planning Infrastructure and Logistics, has been examined by the NT EPA and preliminary investigations and inquiries conducted. The NT EPA has decided that the potential environmental impacts and risks of the proposed action are not so significant as to warrant environmental impact assessment by the NT EPA under provisions of the *Environmental Assessment Act*. Environmental management of the potential environmental impacts and risks is the responsibility of the DIPL through preparation and implementation of the procedures and management plans specified in this Statement.

This decision is made in accordance with clause 8(2) of Environmental Assessment Administrative Procedures and subject to clause 14A the administrative procedures are at an end with respect to the proposed action.



DR PAUL VOGEL

CHAIRMAN

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

20 NOVEMBER 2017



Figure 1 - Barneson Boulevard - layout

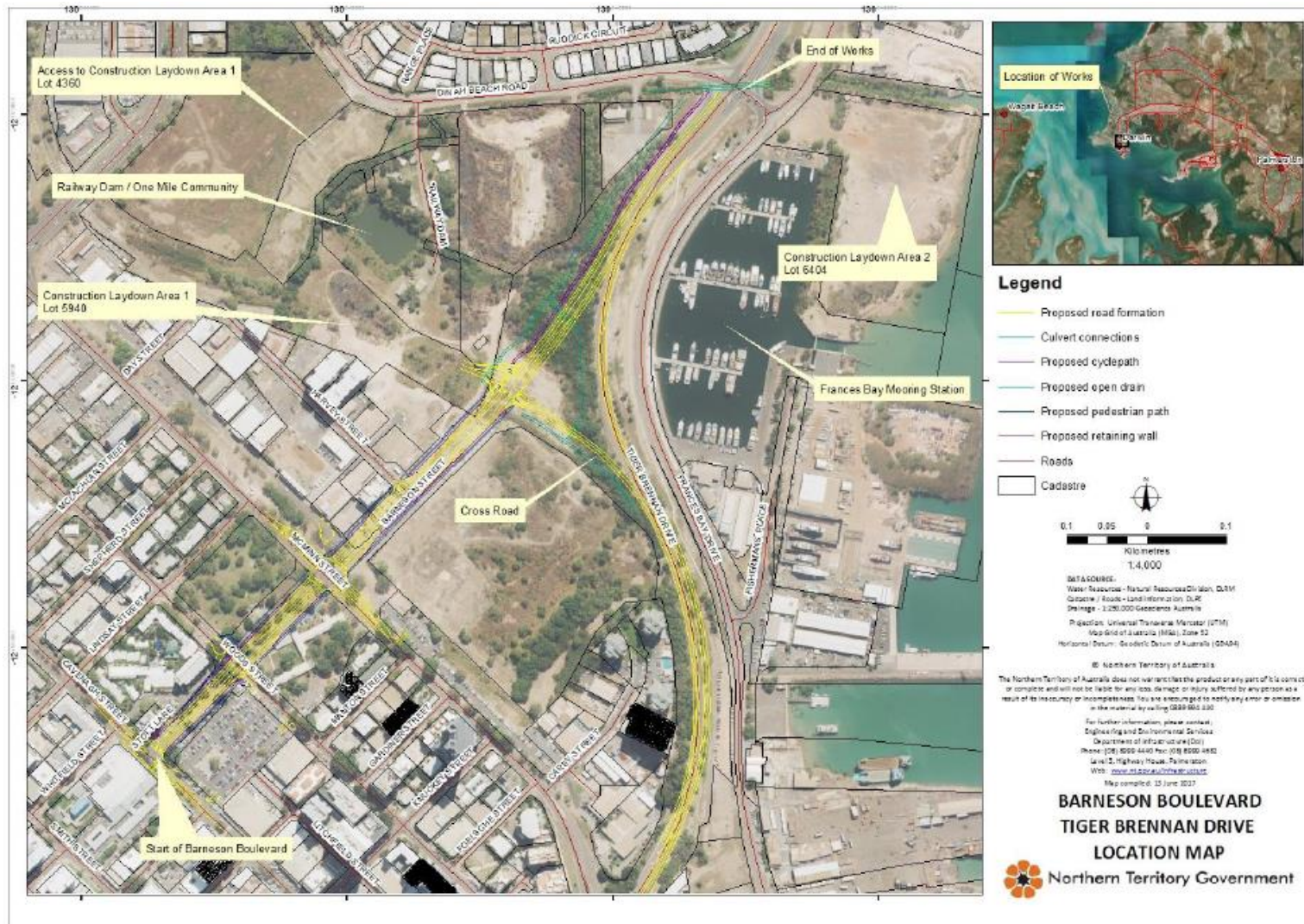




Figure 2 - Frances Bay historic fuel terminal locations

