

Common User Infrastructure at Middle Arm Sustainable Development Precinct – Stage 2 assessment feedback

27 July 2023

Infrastructure Australia thanks the Northern Territory Government (you) for submitting the Stage 2 business case for the Middle Arm Sustainable Development Precinct to us for assessment. Based on our review, we are pleased to advise that the *Infrastructure Priority List* proposal for *Common user infrastructure at the Middle Arm Precinct* will be updated to reflect the progression of the proposal from Stage 1 to Stage 2.

The next step for this proposal is developing a business case (Stage 3 of Infrastructure Australia's Assessment Framework).

We have assessed the submission against the Stage 2 criteria set out in the [Assessment Framework](#). Below, we have identified areas for feedback to assist with the development of the Stage 3 business case.

General feedback

The submission provides a detailed options analysis process that is well documented, thorough, and followed a logical sequence that relied on input from subject matter experts, government departments, consultations with key stakeholder groups and industry soundings.

The packaging of options based on the outcomes of multi-criteria analysis (MCA), essential dependents and industry soundings is reasonable, and the scoring of program packages through a second MCA and rapid Cost-Benefit Analysis (CBA) including sensitivity testing is robust.

We consider the options analysis and progress towards a package of options, and the rapid CBA analysis alongside this, satisfies the Assessment Framework Stage 2 requirements and supports progressing the preferred program packages for more detailed analysis.

The modelling of emissions scenarios was complementary to the rapid CBA in the submission. Early modelling of precinct enabling emissions demonstrates alignment with national and Territory net zero targets.

We note your intention to continue to test Program Packages 2 and 4 in a detailed business case, and detailed CBA. This is vital to assessing whether capturing a wider set of benefits and costs changes the preferred option. Based on the results of the rapid CBA and the detailed nature of the options analysis, we agree with the your preferred program options for further analysis as part of a Stage 3 business case.

Detailed feedback for future Stage 3 submission

Our Assessment Framework, including Stage 3 guidance and supporting technical guides, sets out our requirements for a Stage 3 business case to identify a preferred package. Based on our review of the Stage 2 submission, we also expect the following specific activities to occur:

Strategic fit

Stakeholder engagement:

- Demonstrate a clearer link between the common user infrastructure that will be delivered and the project types and private proponents that require that infrastructure to invest in the Precinct. This should include evidence of stakeholder engagement, and apparent market appetite/demand for the precinct's common user infrastructure. A Stage 3 submission should also explain how engagement with private proponents has informed the design and deliverability of common user elements (such as delivery staging, precinct structure, governance, revenue assumptions etc.) and the level of engagement with the wider private sector ecosystem (including export finance, banks and financiers). This would support a robust case for latent/incipient demand for the precinct. The Project Team should maintain an open mind about whether specific infrastructure projects (that were ruled out in Stage 2) come back into the assessment for Stage 3 if these are considered as being required by industry to achieve financial close and have characteristics suitable for common user infrastructure (i.e. multiple proponents and the ability to link to existing common user infrastructure).
- Community engagement should also address social and environmental concerns including the impacts of the proposal on Aboriginal sites, First Nations outcomes, workforce and housing affordability in Darwin (e.g. FIFO vs residential workforce), and marine and terrestrial ecosystems (e.g. for tourism and recreation). At this point it is not clear how these stakeholder issues have been addressed. A risk register outlining these key risks and mitigations, including a defined stakeholder strategy, will need to be identified in the business case.

Societal impact

Base case:

- It is not clear how much development occurs under the base case and under the Program options. The base case needs to be more clearly and quantitatively articulated in the Stage 3 submission. A clear base case should establish development activity and GHG emissions in the absence of government provision or coordination of common user infrastructure.

Design maturity:

- Develop designs and more detailed costings for the prioritised common user infrastructure. See Box 8 in our [Guide to economic appraisal | Infrastructure Australia](#) for detail.

Demand analysis:

- Despite the significant work undertaken, **demand uncertainty for an industrial precinct such as this is high**. Strategies to ensure infrastructure decisions are aligned to business investment decisions can mitigate the risk of investing in infrastructure without seeing sufficient demand. The Stage 3 submission should focus on this.
- Develop and provide a robust model linking common user infrastructure to potential private sector projects to establish private demand, as well as the likelihood of private projects occurring (for example noting conditions precedent for private investment as part of program

risks). This would provide the basis for the projection of activity within the Precinct under each of the options.

- Given the Precinct's focus on LNG as a key export industry, and the future uncertainty of that industry in the transition from 'blue' to 'green' energy, we would expect to see more developed future demand scenarios in the Stage 3 submission. We note that an assumption around ongoing LNG demand was based on information provided by potential LNG projects through consultations conducted in 2022. Further modelling and evidence across all the commodities and products expected to be located at the precinct will need to be provided to support an understanding of how macroeconomic trends and global forecasts will impact precinct demand. This may require a global demand model to provide long-term planning assumptions for the industrial products and fuels envisaged to be exported from the precinct, and therefore the precinct projects that should be delivered first.

Cost Benefit Analysis:

- The CBA presented in the Stage 2 submission is a financial CBA based on revenue. The Stage 3 business case should quantify the social, environmental, and economic externality impacts of the program options, where these differ to revenue. This includes the impact of GHG emissions not attributable to CCUS revenue.
- Including producer surplus from potential precinct proponents would support the CBA. A stronger link between the preferred package of infrastructure projects and industrial activities that can therefore occur, would allow an evaluation of the producer surplus expected from the industrial activities.
- Scenario testing should consider impacts from demand and supply side shocks, and climate change.

CCUS assumptions:

- The assumptions regarding Carbon, Capture, Utilisation and Storage (CCUS) revenue will need to be re-tested at Stage 3, noting that the current parameter (\$35) is based on the cost to sequester 1 ton of CO₂, rather than the value-added component that the precinct will provide (underground manifold and pipes connecting to a third-party CCS pipeline).
- The majority of emissions savings is predicated on CCUS. Significant offshore CCUS facilities of the scale required to offset this level of emissions from the precinct have not been developed before in Australia and present a significant risk to the proposal. Further demonstration of the technology's efficacy as well as regulatory progress to enable offshore CCUS in the Stage 3 business case will be required to validate the modelled assumptions.

Environmental & GHG emissions:

- The Stage 3 submission should provide further detail to ensure that GHG emissions impacts cover embodied and operating emissions (scopes 1, 2 and 3) from the common user infrastructure and are consistent with the base case and project case definitions.
- The impacts of the proposal were not included in the rapid CBA, including from positive and negative externalities for human and environmental health and residual GHG emissions. This would be expected for a Stage 3 submission.
- Further detail regarding environmental approvals and the costs and impacts of the precinct development on coastal, marine and benthic ecosystems surrounding Middle Arm will be required as part of the Stage 3 submission.
- Impacts from land-clearing and dredging should be appropriately costed in the CBA, including for CO₂ emissions, biodiversity offsets and cultural values (where these are able to be defined, or qualitatively described where they cannot). In noting this, the social cost of carbon used in the Stage 3 submission should be referenced to jurisdictional and/or national guidance or otherwise justified (the value of \$50 used in the Stage 2 submission was not referenced).

Deliverability

Capability and capacity:

- The business case should develop mechanisms to de-risk the provision of infrastructure so that the government does not invest without high levels of confidence that private proponents will develop their activities within the Precinct.
- Identify the planning pathways for approval of the private projects, and the environmental framework that will be used to assess and progress private proponents seeking to invest in the precinct.
- Market testing to demonstrate that the market has sufficient capacity (labour and materials) to support the delivery of the precinct.

Project governance:

- Develop a governance model to ensure private industry participants have ongoing input to decision making regarding common user infrastructure, particularly where private proponents have indicated potential demand (e.g. wastewater and water desalination).
- Develop and propose a commercial governance structure for how the Northern Territory intends to develop the Precinct and manage the ongoing maintenance and operations of common user infrastructure, including common user agreements and land-lease contracts with private proponents and revenue projections based on private industry willingness to pay.
- Develop user pays models for how private industry participants will fund the infrastructure over time.

Risk:

- Undertake a risk assessment of the program options and identify risk mitigation activities.
- The Stage 3 business case will need to provide a robust analysis of climate hazards faced at the Precinct location (such as sea level rise, increasing severity of cyclones etc) and for infrastructure projects. This analysis should inform the risk register and precinct design. We note the proponent has indicated that option designs will be assessed in part based on their climate change resilience.

Lessons learnt:

- A Post Completion Review or Program Outcomes Management plan that sets out objectives, metrics and measures to monitor and report performance against key indicators during delivery. This may include a Benefits Realisation Plan defining a strategy for benefits measurement and management. As this is a program proposal, there should be a plan in place to learn lessons from delivery of one project to the next.
- Case studies of similar common user projects delivered by governments either domestically or internationally could provide a strong basis for drawing lessons learnt to inform precinct delivery.

Program information

Infrastructure Australia requires additional information to be included in Stage 3 (business case) submissions for Pathway 2 programs, specifically a program business case for an overall program. Please refer to the [Guide to program appraisal | Infrastructure Australia](#) in particular Table 5 p. 51 and Table 6 p. 53 'Pathway 2' for additional requirements for Program Stage 3 submissions.

A Pathway 2 Program Business Case should set out:

- Clear justification for delivery as a program (see our definition in Section 1.4).
- Defined program outcomes.

- Options assessment defining the program options and project makeup in detail. — Where relevant (for inter-related or ongoing programs), the prioritisation framework that will be used on an ongoing basis to select projects.
- Design maturity sufficient to inform investment decision with regard to the program (see Box 15 in Section 2.3).
- Cost maturity sufficient to inform investment decision to provide an estimate of program cost (see Box 15 in Section 2.3).
- Detailed value-for-money assessment (CBA) and financial assessment.
- Report economic benefits and outcomes metrics for monitoring the program.
- Proposed delivery sequence and implementation plan, including deliverability assessment.
- Details of program governance arrangements.
- Program-level risks and mitigations, and a plan for how project-level risks will be assessed, monitored and mitigated as the program proceeds.
- Demonstrate relationships between projects and with other programs (where they exist).
- Program outcomes management plan, including post completion reviews for each project as they are delivered to inform future projects within the program