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section 22(1)(a)(ii) - irrelevant to scope of request

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Department of Infrastructure, Planning and Logistics

Middle Arm Sustainable Development Precinct



THE TERRITORY
BOUNDLESS POSSIBLE

Strategic location • Enabled infrastructure • Environmental approvals • Ecosystem approach

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



The Precinct

A master planning industrial precinct to establish a low emissions/renewable energy and manufacturing hub.

Sustainable outcomes and environmental protection of Darwin Harbour and surrounds are at the core of planning for the Middle Arm Sustainable Development Precinct.

Target industries include low emission hydrocarbons, green hydrogen, advanced manufacturing, carbon capture and storage and minerals processing.

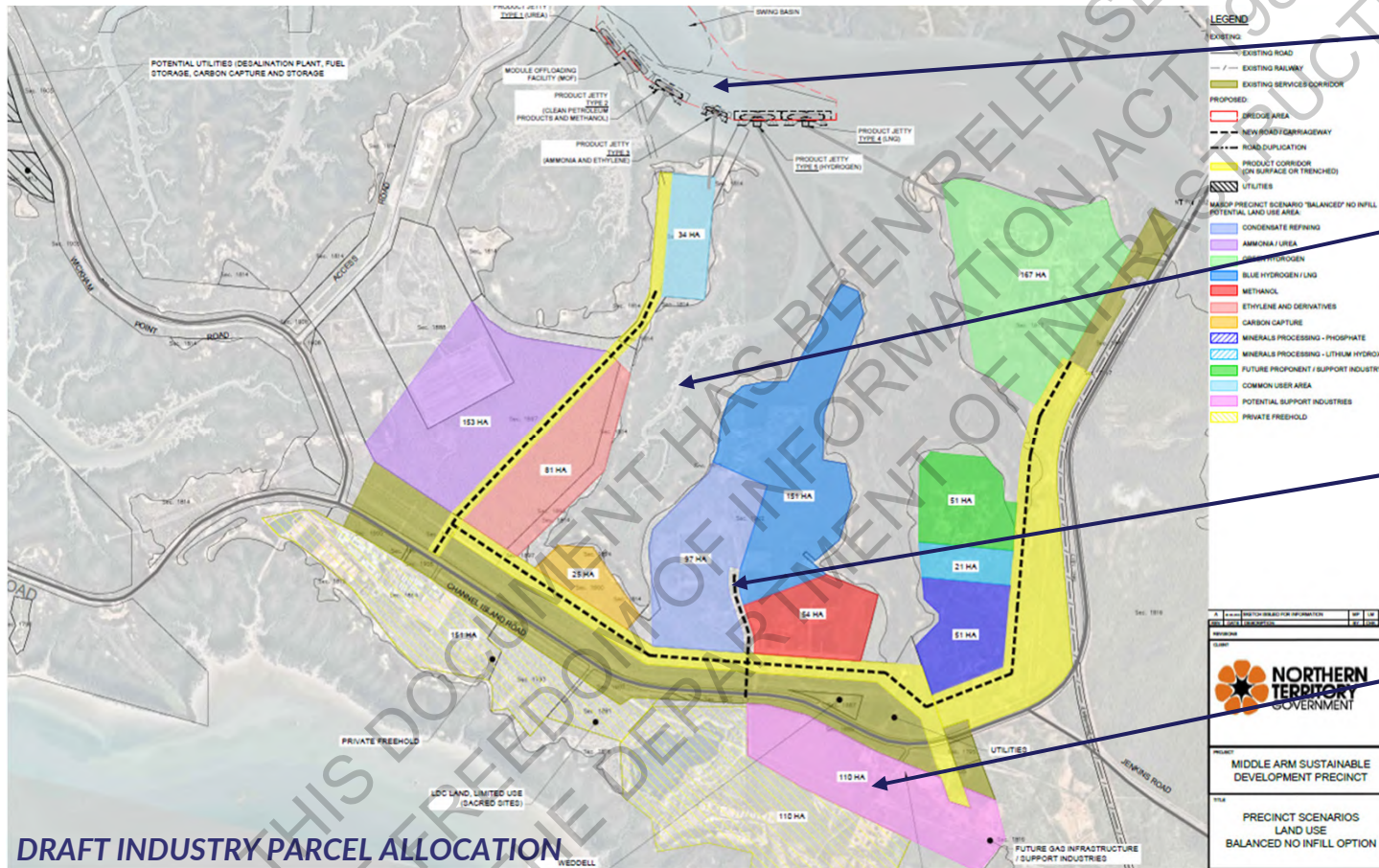
-  - Precinct development >1500 ha
-  - Marine terminal + MOF
-  - Rail access
-  - Product & feedstock corridors
-  - Renewable power & water
-  - Carbon capture infrastructure

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Middle Arm SDP - Current Balanced Scenario Layout



Marine infrastructure:
Up to six product jetties +
MOF + CUF

An option for a dredge
spoil disposal and infill of
the creek will be carried as
an option

Innovative Land Layout
Designs to allow flexibility
for industry scenarios

Advanced Manufacturing
and Support Industries

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DRAWING No: MASDP_NTG_PRD_SK_TPL_WPA_0112

DO NOT SCALE

FOI 23-216



NOTES

1. BERTH LAYOUT IS PRELIMINARY AND FOR DISCUSSION PURPOSES ONLY.

LEGEND

EXISTING:

- EXISTING ROAD
- EXISTING RAILWAY
- EXISTING SERVICES CORRIDOR

PROPOSED:

- DREDGE AREA
- NEW ROAD / CARRIAGEWAY
- ROAD DUPLICATION
- PRODUCT CORRIDOR (ON SURFACE OR TRENCHED)
- UTILITIES

MASDP PRECINCT SCENARIO "BALANCED" NO INFILL POTENTIAL LAND USE AREA:

- CONDENSATE REFINING
- AMMONIA / UREA
- GREEN HYDROGEN
- BLUE HYDROGEN / LNG
- METHANOL
- ETHYLENE AND DERIVATIVES
- CARBON CAPTURE
- MINERALS PROCESSING - PHOSPHATE
- MINERALS PROCESSING - LITHIUM HYDROXIDE
- FUTURE PROPONENT / SUPPORT INDUSTRY
- COMMON USER AREA
- SUPPORT INDUSTRIES
- PRIVATE FREEHOLD

B	29.03.2022	SKETCH ISSUED FOR INFORMATION	MP	LM	-
A	29.03.2022	SKETCH ISSUED FOR INFORMATION	MP	LM	-
REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

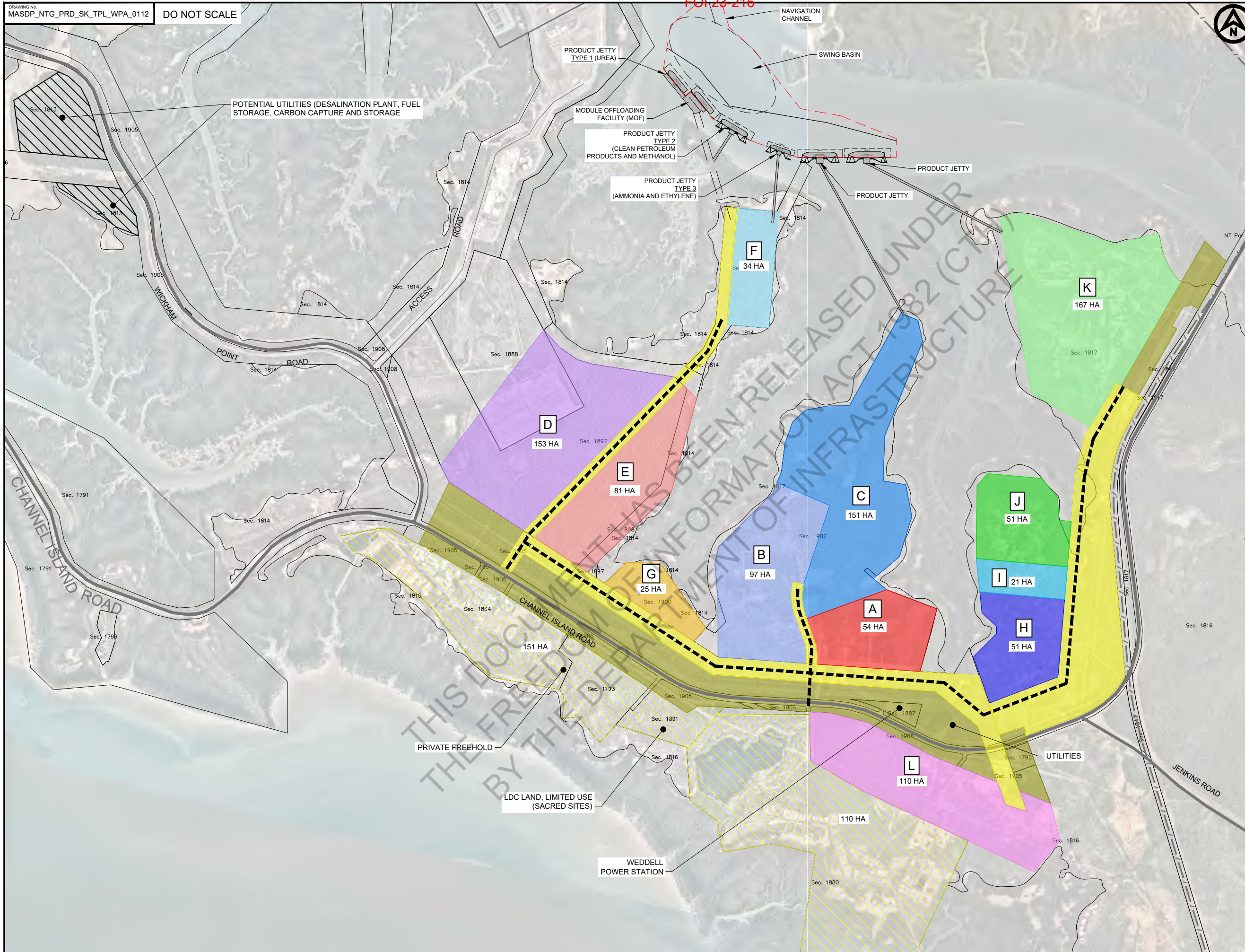


MIDDLE ARM SUSTAINABLE DEVELOPMENT PRECINCT

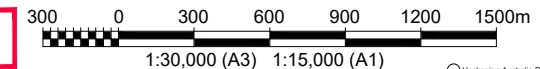
PRECINCT SCENARIOS LAND USE BALANCED NO INFILL OPTION



DRAWN	COORD. SYSTEM	DATUM	DATUM
BAM	GDA2020 MGA52	CHART	DATUM
DATE	SCALE	REF.	
29.03.2022	AT A1	MASDP_NTG_PRD_M2_TPL_WPA_0112	
DRAWING No:		PRECINCT PLANNING - LAND USE -	
MASDP_NTG_PRD_SK_TPL_WPA_0112		BALANCED NO INFILL OPTION	
		REVISION	
		B	



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The Precinct

A master planned industrial precinct to establish a low emission/renewable energy and manufacturing hub. Target industries include low emission gas and petrochemicals, minerals processing, hydrogen and advanced manufacturing.

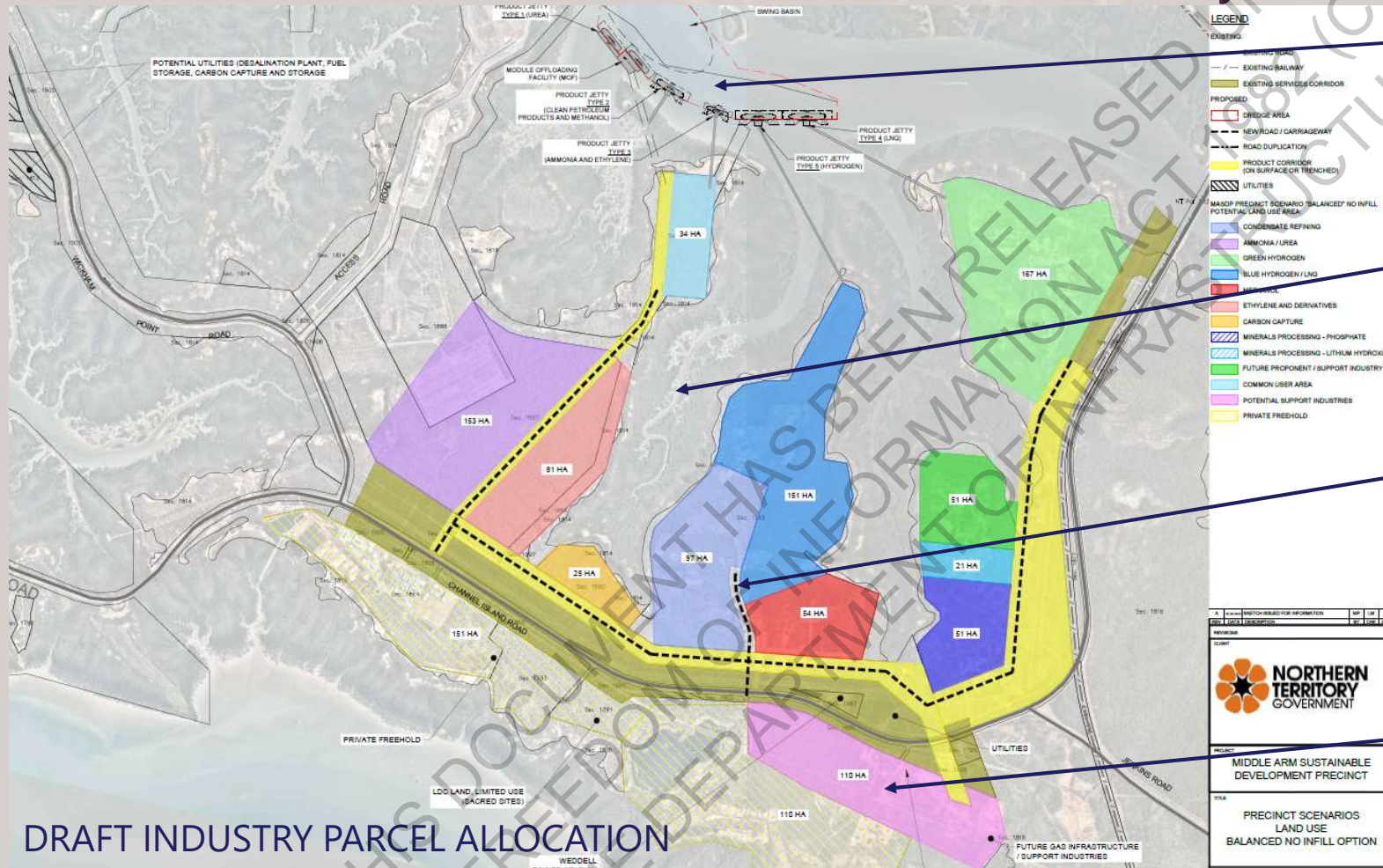
-  - Precinct development >1500 ha
-  - Marine terminal + MOF
-  - Rail access
-  - Product & feedstock corridors
-  - Renewable power & water
-  - Carbon capture infrastructure

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Middle Arm SDP – Current Balanced Scenario Layout



Marine infrastructure:
up to six product jetties
+ MOF + CUF

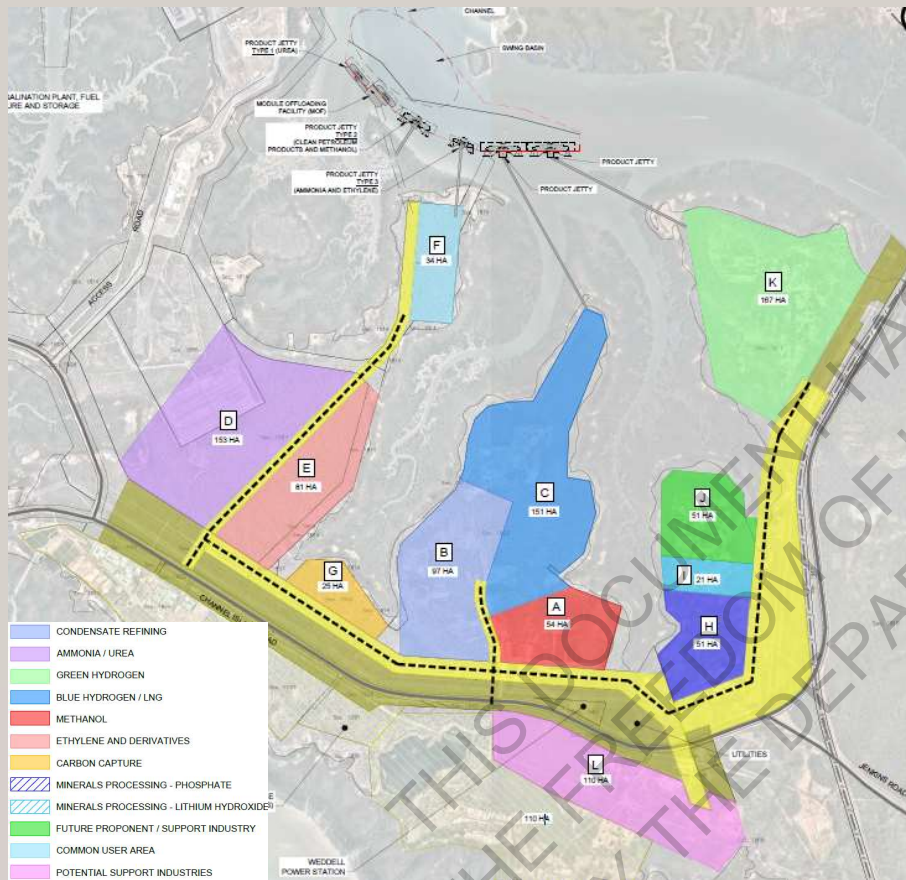
An option for a dredge
spoil disposal and infill of
the creek will be carried as
an option.

Innovative Land Layout
Designs to allow flexibility
for industry scenarios.

Advanced Manufacturing
& Support Industries



Middle Arm Sustainable Development Precinct Scenario 1 - Balanced

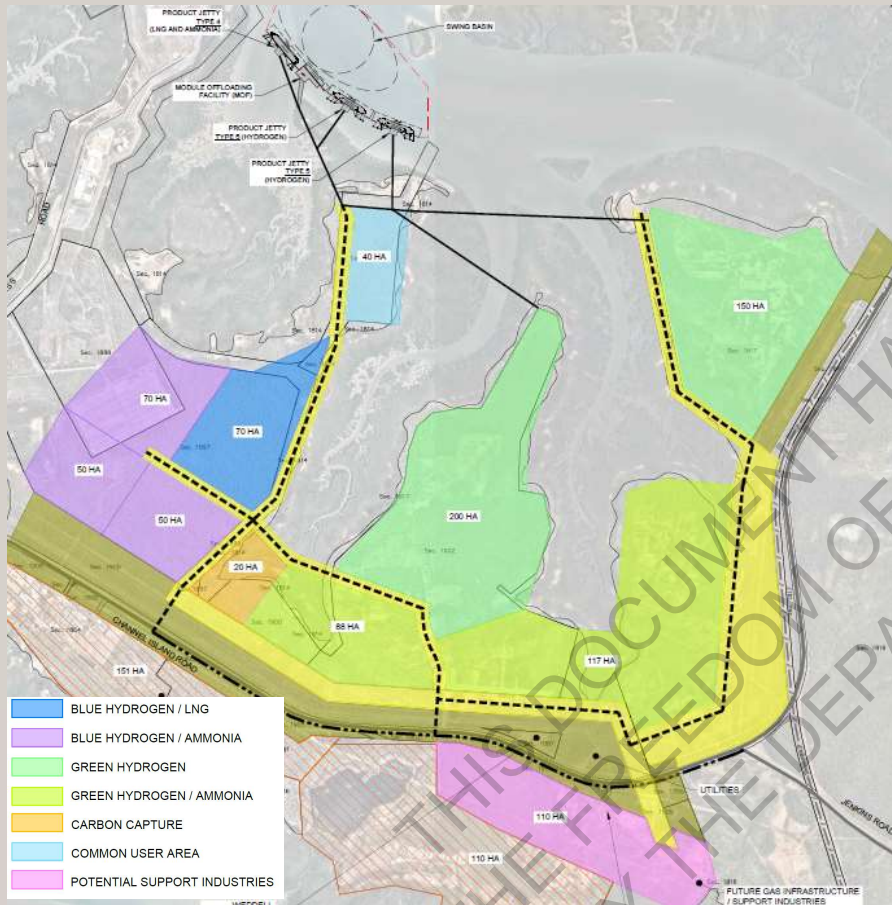


Potential Middle Arm Industry Types		Inputs	Outputs	Typical uses
Liquid Natural Gas LNG	5 Mtpa	⚡	LNG	⚡
Gas to Liquid GTL	36.5 mmbbls pa	⚡	CONDENSATE, DIESEL, PETROL, AV1, LIGHT OIL	⚡, E, F
Blue Hydrogen H ₂	600 Tpd	⚡	NH ₃	⚡, E, F
Green Hydrogen H ₂	300 Tpd	☀️, ⚡	H ₂	⚡, E, F
Hydrogen H ₂ - Green NH ₃	300 Tpd	☀️, ⚡	NH ₃	⚡, E, F
Ammonia	1.1 Mtpa	⚡, ⚙️	NH ₃	🧪 Chemicals, 🌾 Fertiliser
Urea	2 Mtpa	⚡, ⚙️	🚚	🧪, 🌾 Fertiliser
Methanol	1.6 Mtpa	⚡, ⚙️	METHANOL	🧪, 🚗, ⚡, F
Ethane	400 Ktpa	NGL, ⚙️	ETHYLENE	🧪, 🚗, 📱, 🖨️
Mineral Processing 1	20,000 Tpa	⚡, 🚚	🚚	🧪, 📱, 🖨️
Mineral Processing 2	500,000 Tpa	⚡, 🚚	🚚	🧪, 📱, 🖨️
Carbon Capture, Utilisation & Storage CCUS	12 Mtpa	⚡, 🚚	🏭, 🌳	🧪, CO ₂ , 🌳
Advanced Manufacturing	120Ha	⚡, ☀️, ⚙️	🏭, 🏠	⚡, 🚗, ⚡, F

NTG Brief	Marine – 5 x Jetty's MOF 880ha Heavy Industry 120ha Advanced Manufacturing	Precinct Demand Profile	
Staging Plan/Options	<ul style="list-style-type: none"> Stage 1 – GTL + Methanol Stage 2 – Ammonia, Urea, Ethane, Minerals, CCUS Stage 3 – LNG, Hydrogen, Advanced Manufacturing 	Gas	1219TJ/day
		Power	507MW
		Renewable	2000MW
		Water	26 GL/year
		Sea Water	82 GL/year
		Shipping	499 vessels/year



Middle Arm Sustainable Development Precinct Scenario 2 – Future Fuels

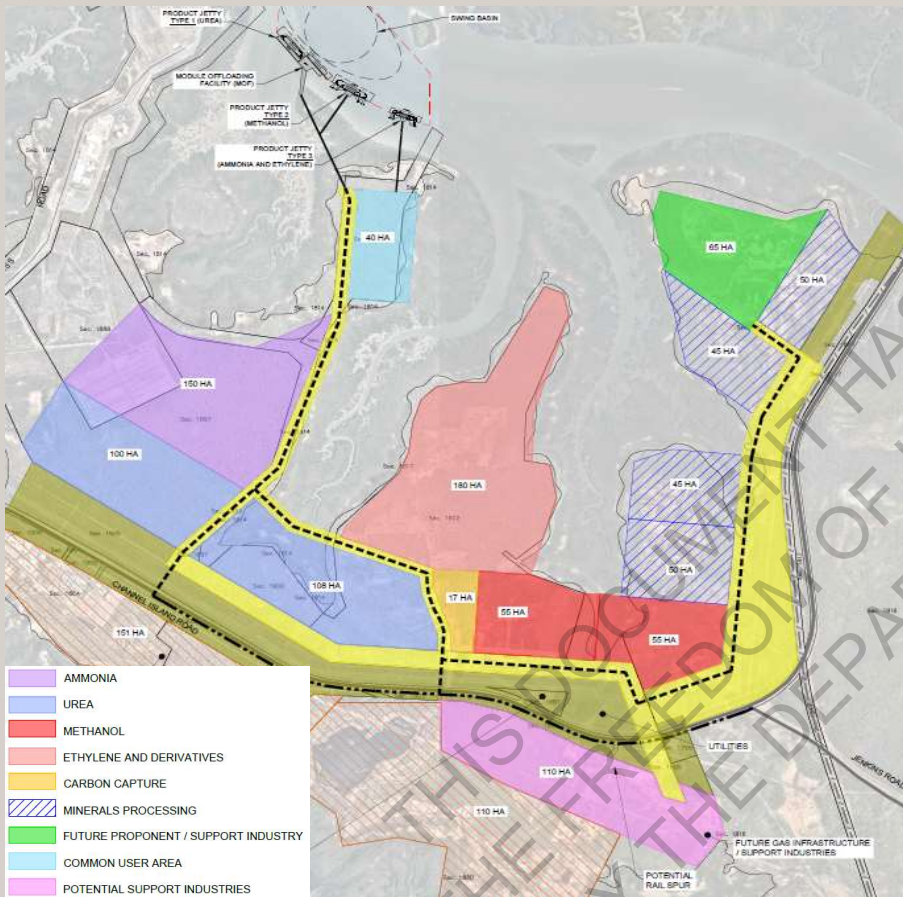


Potential Middle Arm Industry Types	Inputs	Outputs	Typical uses
Liquid Natural Gas LNG	5 Mtpa	LNG	⚡
Blue Hydrogen H ₂	1800 Tpd	CCUS CO ₂ / NH ₃	⚡, E, F
Green Hydrogen H ₂	1200 Tpd	H ₂	⚡, E, F
Hydrogen H ₂ - Green NH ₃	900 Tpd	H ₂	⚡, E, F
Carbon Capture, Utilisation & Storage CCUS	10 Mtpa	CO ₂	⚡, E, F
Advanced Manufacturing	130Ha	⚡, E, F	⚡, E, F

Infrastructure Brief	Marine – 3 x Jettys + MOF	Precinct Demand Profile	
	940ha Heavy Industry 120ha Advanced Manufacturing	Gas	871 TJ/day
Staging Plan/Options	<ul style="list-style-type: none"> Stage 1 – LNG, Blue H₂, CCUS Stage 2 – Green H₂, Stage 3 - Advanced Manu. 	Power	544 GW
		Renewable	7 GW
		Water	14 GL/year
		Sea Water	29 GL/year
		Shipping	265 vessels/year



Middle Arm Sustainable Development Precinct Scenario 3 – Downstream



Potential Middle Arm Industry Types	Inputs	Outputs	Typical uses
Gas to Liquid GTL	36.5 mmbbls pa	CONDENSATE, DIESEL, PETROL, AV1, LIGHT OIL	Chemicals, Fertiliser
Ammonia	2.2Mtpa	NH ₃	Chemicals, Fertiliser
Urea	4Mtpa		Pharma, Fertiliser
Methanol	3.2Mtpa	METHANOL	Chemicals, Fertiliser
Ethane	800Ktpa	ETHYLENE	Paints, Textiles, Plastics
Mineral Processing 1			Chemicals, Fertiliser
Mineral Processing 2			Chemicals, Fertiliser
Carbon Capture, Utilisation & Storage CCUS	10 Mtpa		CO ₂ , Fertiliser
Advanced Manufacturing	150Ha		Chemicals, Fertiliser

Infrastructure Brief	Marine – 3 x Jetty's + MOF	Precinct Demand Profile	
	Land – 1000ha occupied	Gas	871 TJ/day
Staging Plan/Options	850ha Heavy Industry 120ha Advanced Manufacturing <ul style="list-style-type: none"> Stage 1 – GTL + Methanol Stage 2 – Ammonia, Urea, Ethane, Minerals, CCUS Stage 3 – Adv Manu 	Power	544 GW
		Renewable	7 GW
		Water	40 GL/year
		Sea Water	134 GL/year
		Shipping	349 vessels/year

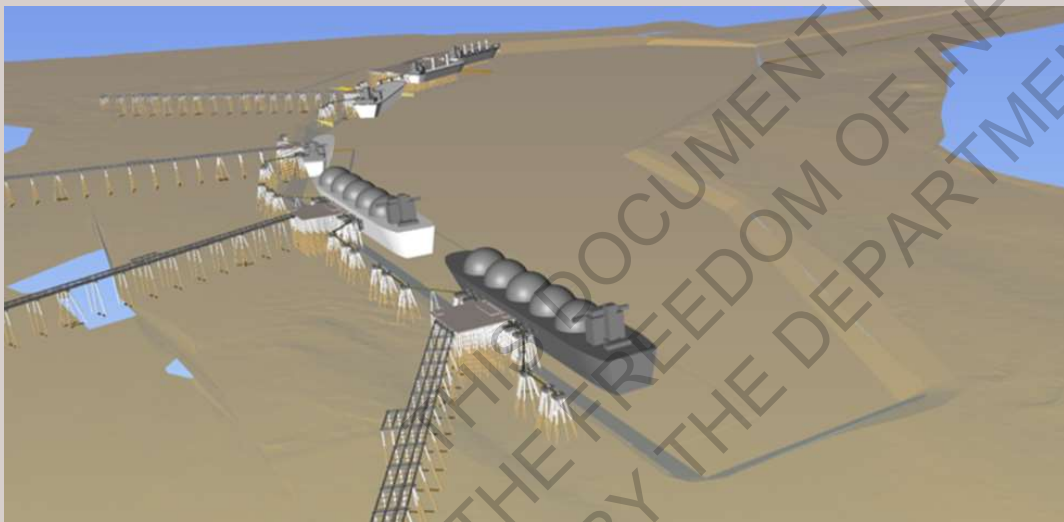
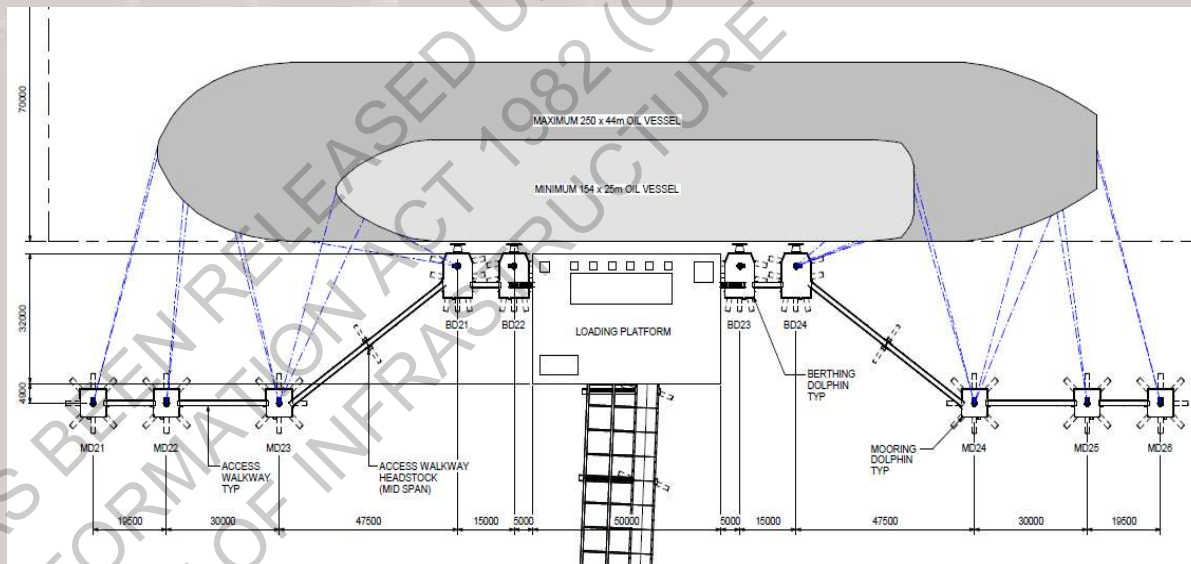


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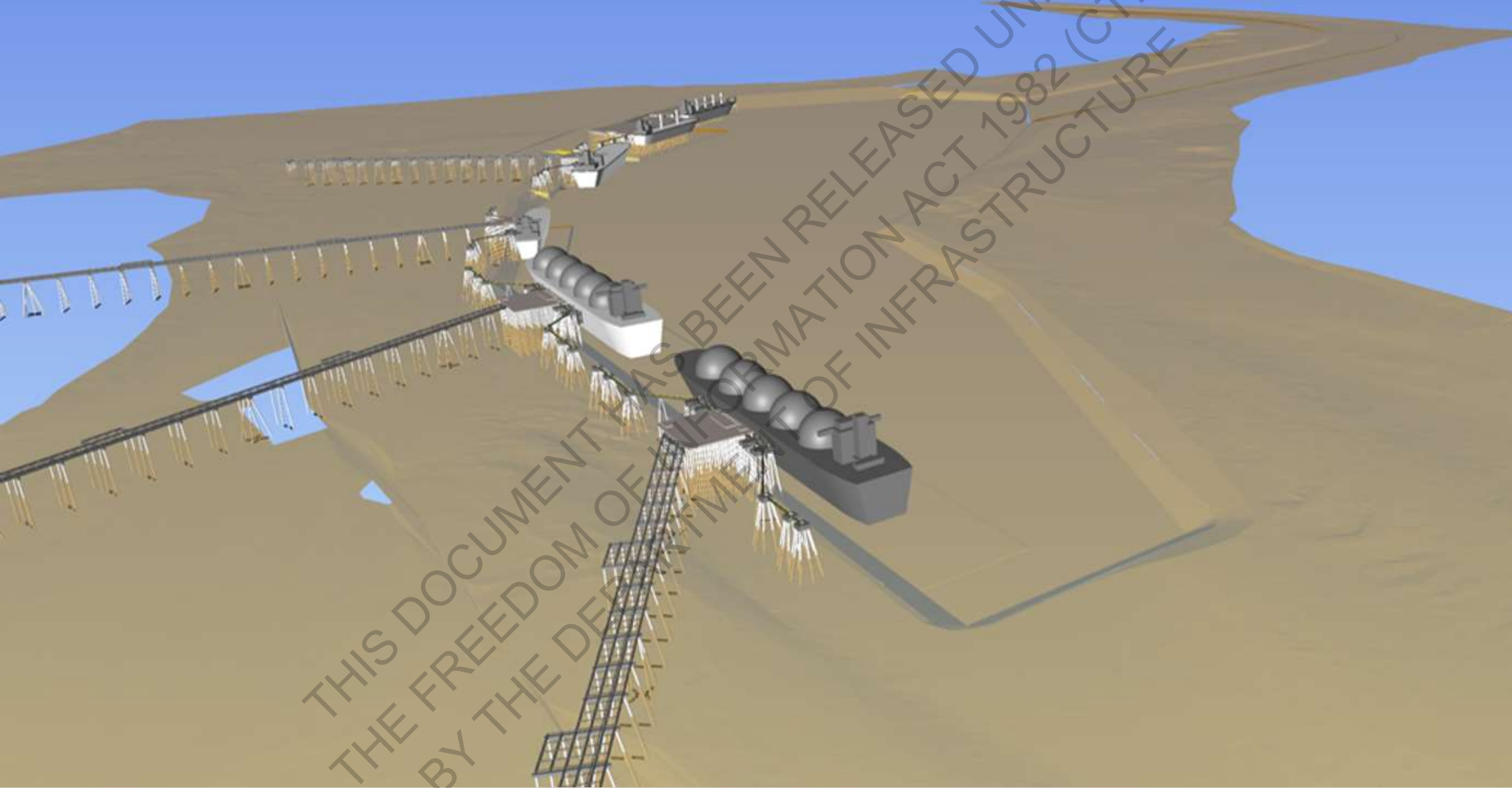
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Marine & Terrestrial – Actual Deliverables



Conceptual Design of Middle Arm Marine Infrastructure



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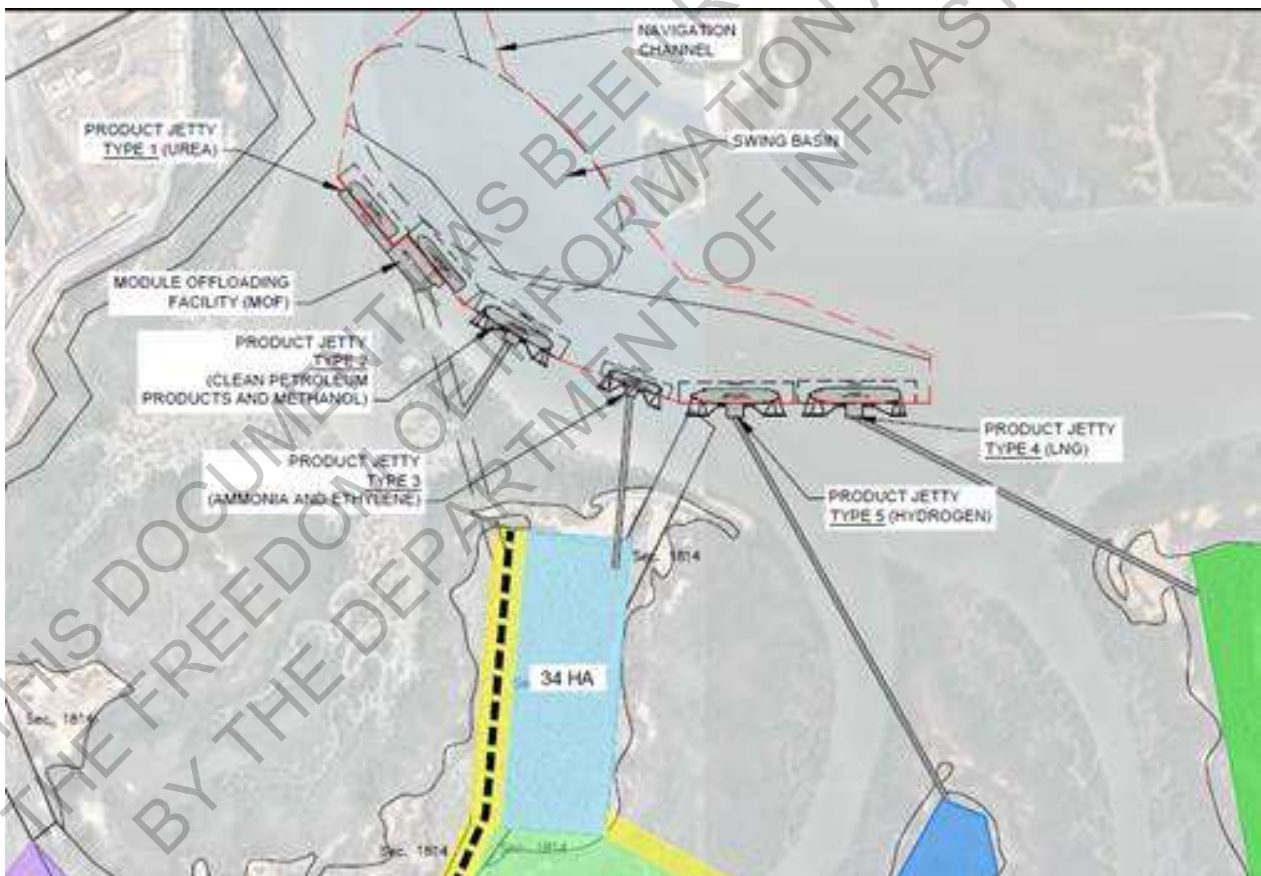
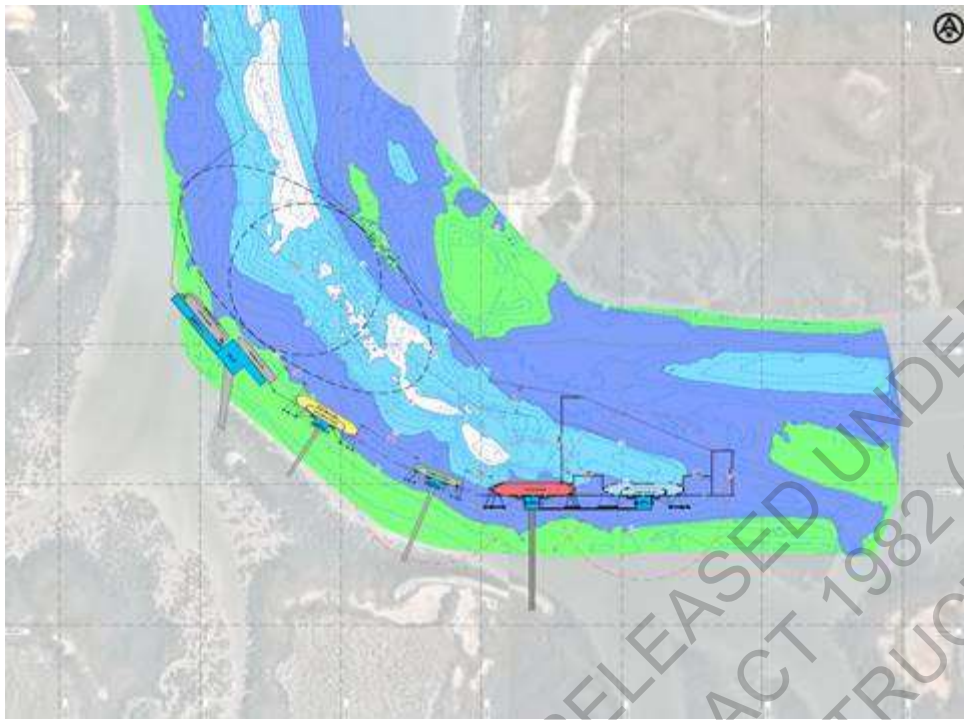
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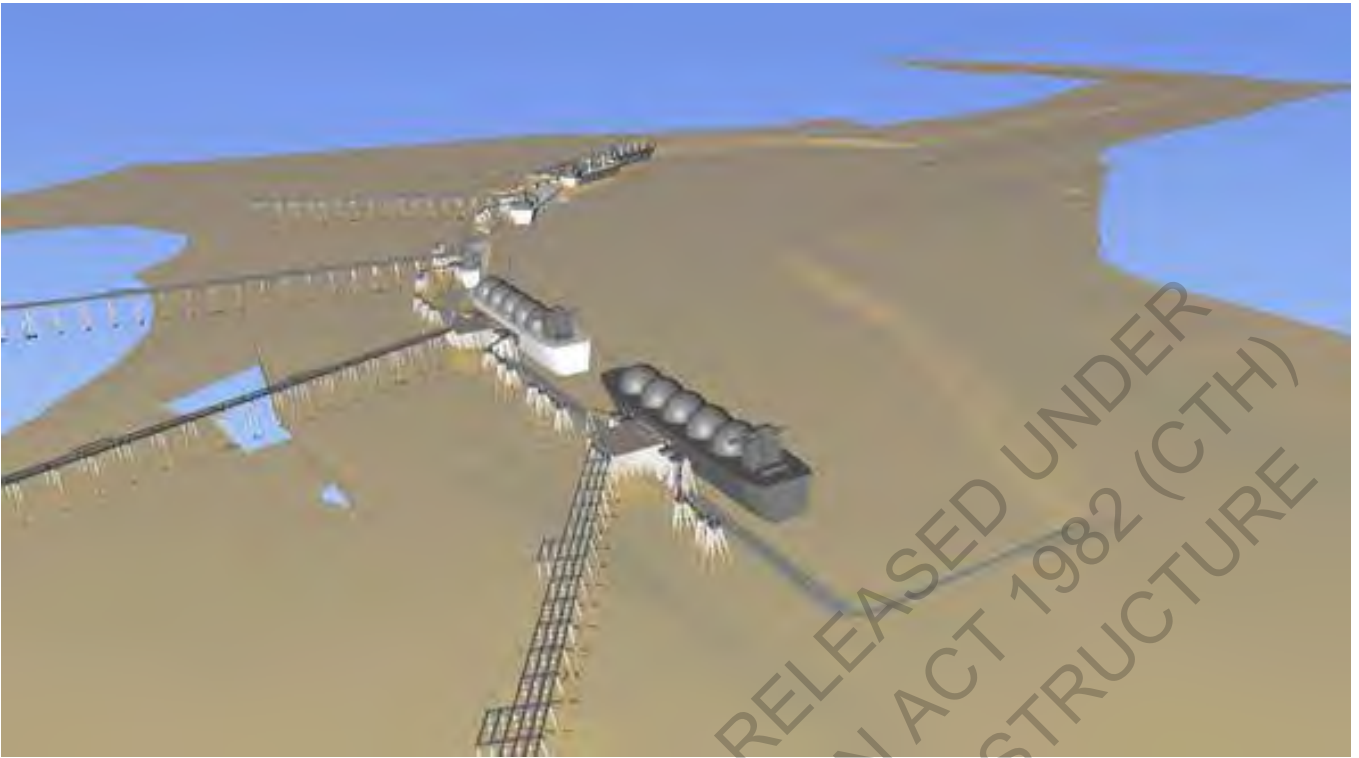
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Middle Arm Sustainable Development Precinct - Federal Funding



Middle Arm Sustainable Development Precinct - Federal Funding



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