

## **SUBMISSION TO INFRASTRUCTURE AUSTRALIA**

### **INCREASING AND EXTENDING NORTHERN AUSTRALIA'S TRANSPORT INFRASTRUCTURE TO EXPAND AUSTRALIA'S PRODUCTIVITY CAPACITY**

#### **1. SUMMARY**

Funding support, from *Infrastructure Australia*, for the provision of critical transport infrastructure in the Northern Territory will not only benefit the Wonarah Phosphate Project and expand Australia's productivity to compete globally, but it will also facilitate the development of industry in regional Australia. This in turn will lead to direct training and employment opportunities and an improved quality of life thus advancing social, educational and economic ambitions of indigenous and non-indigenous communities in regions which are currently severely disadvantaged.

The leverage from provision of this critical transport infrastructure has the potential to provide wide-spread advantages both social and economic for many decades.

#### **2. BACKGROUND**

Through its studies in connection with the development of the Wonarah Phosphate Project in the Northern Territory, Minemakers Limited has become aware of deficiencies in the capacity and extent of existing transport infrastructure in Northern Australia.

These deficiencies will impact in the near and long term on the development of projects in the north of Australia. They will also limit the capacity of projects that are developed.

**As a consequence of these insights, Minemakers proposes that:**

- **The bulk commodity handling capacity of the Port of Darwin be significantly increased to meet both near and longer term projected growth in mineral exports.**
- **A standard gauge railway be constructed between Mt Isa and Tennant Creek**

Both of these projects would increase Australia's export earning capacity and tax base, and advance the economic, social, and educational wellbeing of the communities in the region and Australia as a whole, potentially for decades, by:

- Providing the infrastructure necessary to support a long term world class rock phosphate industry in a more economically efficient way.
- Facilitating development of industry in an area of Australia that is severely lacking in meaningful training and employment opportunities
- Generating royalty revenue streams for the Traditional Owners of the land
- Providing royalty revenues to the Northern Territory and Queensland Governments.
- Providing increased tax revenue to the Federal Government.

### **3. PORT OF DARWIN**

The Port of Darwin is the only deep water port capable of accepting Panamax class vessels, within an approximately 6,000km stretch of coastline along Australia's north. The nearest adjacent ports are Townsville, lying approximately 1,800km in a straight line to the south east and Dampier, a similar distance to the south west.

With adequate capacity and facilities, and with appropriate road and rail links, Darwin could service a vast hinterland of northern Australia and act as Australia's Northern Gateway positioned as it is so close to the markets of South East Asia.

The port is well located to support highly valuable resource exports in the Northern Territory, and South Australia, and it has an excellent north south rail connection. These factors position the Port of Darwin as a port of national significance.

#### **3.1 *The problem - The port will be at capacity next year***

In about 2006 the Port commissioned a bulk commodity loading facility at East Arm Wharf. This system has a design capacity of 6Mt per annum. This capacity has quickly been taken up. Clients already using the bulk loading facilities will account for approximately 4Mtpa of bulk export in 2009.

It is understood that the Port Corporation may soon sign Heads of Agreement with two other clients who, together, would add another 2.4Mtpa, thereby reaching or exceeding the facility's notional capacity. Over the next 5 years, there could be demand for nearly 14 million tonnes of bulk mining products.

Without a significant increase in the bulk commodity handling capacity at the Port, in the very near term, projects that would otherwise develop regional capacity by providing jobs, and creating educational and training opportunities with real outcomes, will be delayed or abandoned.

These projects would also provide royalty streams to the Traditional Owners of the land as well as State and Territory Government, in addition to increasing Australia's export earning capacity and tax base.

The NT Government is making a separate submission to Infrastructure Australia on infrastructure requirements for the Port of Darwin.

#### **3.2 *Wonarah Phosphate Project***

As an example of the potential capacity shortfall that the Port faces, we would highlight our own Wonarah Phosphate Project, which is located approximately 270km to the east of Tennant Creek adjacent to the Barkly Highway.

First discovered in 1967, exploration and evaluation has been undertaken over the past 31 years. In 2000 Rio Tinto calculated an Inferred Resource of 72Mt @ 23% P<sub>2</sub>O<sub>5</sub>.

Minemakers acquired the project in 2006 and has undertaken further exploration that will result in late calendar 2008/early calendar 2009 in the publication of an updated resource which is expected to be several times the Rio number. This would mark the project out as the largest, undeveloped, JORC compliant phosphate resource in Australia.

The Company is currently conducting a scoping study to establish the general operating parameters and economics of a mining project at Wonarah.

Given the anticipated updated resource and subject to the phosphate price, the project will have a life that will be measured in decades.

Initial indications are that a Stage One project producing approximately 3Mtpa of beneficiated rock phosphate by late 2010 is likely. However, the whole project is predicated on the ability to export the product via the Port of Darwin, there being no other practically viable and economic export route.

### **3.2.1 Economic and financial benefits of the phosphate project**

Were the project in operation today, and using current world phosphate prices, it would generate export earnings of approximately \$1.7B per annum<sup>1</sup>:

- The Central Lands Council, as agent for the Traditional Owners, could expect about \$40M per annum in royalties,
- the Northern Territory Government would enjoy annual royalties estimated to be in the region of \$170M per annum, and
- Annual tax revenue of \$330M would be paid to the Federal Government.

#### *Benefits to the local region*

The project would create between 250 and 300 long term jobs in a region of high unemployment, particularly within the indigenous community.

Training would be a key component of the development and would justify the creation of a training hub in Tennant Creek. However, unlike many earlier training programs, the project would offer the opportunity for real employment outcomes in long term positions, thereby enhancing the social, economic, educational and skills capacity of the region.

### **3.2.2 Impact of inadequate port capacity on Wonarah and other mining projects**

Whilst Minemakers has engaged in dialogue with the Port of Darwin and been given verbal assurances that our capacity requirements can be met by 2010, based on the numbers that have been presented to date, we are unclear as to how the additional capacity will be realised.

Ours is only one project and whilst we cannot speak for others, we are aware of at least two other potential phosphate rock producers whose projects could well benefit from utilisation of enhanced bulk cargo capacity at Darwin. These projects would bestow similar benefits to their respective regional communities and to the State and Territory Governments, and increase national export earnings and tax revenue.

Together with our own project, they could constitute the creation of a world standard rock phosphate industry in Australia.

### **3.3 Proposed solutions for addressing the problem**

Quite clearly, adequate bulk cargo capacity at the Port of Darwin is one of the critical factors effecting the commercial and economic viability of not only the Wonarah phosphate project but also many other highly valuable mining projects in the Northern Territory.

---

<sup>1</sup> (Further details are available in Appendix 1, "Wonarah Phosphate Project" Confidential Briefing Notes.)

Darwin Port Corporation has a 10-year infrastructure project plan to facilitate future growth in trade volumes.

Although the Northern Territory government has already committed \$59.5 million to improve bulk ship loading productivity and expanding the hardstand at East Arm, the full cost of developing additional berth capacity including a shiploader, conveyors and dredging is somewhere between \$150m and \$220m, while the estimated cost of all of the elements of the port corporation's capital development program is likely to be more than \$600 million over the next five years. From the perspective of Minemakers Limited and the mining sector as a whole, it is imperative that this development proceeds in a timely fashion.

#### **4. MT ISA – TENNANT CREEK RAIL LINK**

Port capacity is of course useless without the transport links to bring goods to the port. Without those links, many projects that could develop regional Australia will remain paper exercises only, either being too remote from existing transport links or compelled to use higher cost transport methods, which will impact on viability, profitability and taxation levels.

Again, Minemakers' Wonarah Project is used as an example.

Stage One production is anticipated to be of the order of 3Mtpa. All of this production must be hauled by Road Train 270km to Tennant Creek where it will be loaded onto rail wagons at the multi-purpose freight terminal to be built by Global Port Solutions.

The project output is, we believe, constrained by the use of road haulage to around 3Mtpa.

Were there to be a rail line passing within close proximity of the site, the Company would immediately consider increasing output. A Stage Two output of 6Mtpa has been suggested.

Not only would a rail link facilitate higher output, but it would also reduce freight costs very significantly: a very rudimentary analysis would suggest about \$20 per tonne with reduction in greenhouse gas emissions being a welcome secondary effect.

We are aware of several other iron and phosphate projects in Northern Australia that are either on hold awaiting a viable transport link or are considering expensive alternative transport links to other ports that lack Panamax vessel capacity. Construction of a Mt Isa to Tennant Creek rail link would provide not only a more economically sound solution to the transport needs of these projects, but would also act as a trigger to the re-evaluation of shelved projects and reinvigoration of investment and exploration in this region of Australia. A significant multiplier effect could be anticipated in that not only could current discoveries be brought into production, but the rail link would stimulate exploration for, and discovery of, more mines.

##### **4.1 Why Mt Isa to Tennant Creek?**

As noted earlier, Darwin is the only deep water port along a 6,000km stretch of our northern coast, with Dampier and Townsville as its nearest neighbours.

Dampier is focussed on the Iron Ore export trade and already has reasonably extensive rail links to the Pilbara.

An existing rail link runs from Mt Isa to the port of Townsville. The route is narrow gauge and speed and axle load limited. The existing rail link is restricted to 20 tonnes axle loading and a speed of 80km/hour (in places the speed is restricted to 40-60km/hour). The narrow

gauge line excludes the use of double stacking of container freight. Upgrading of this link is understood to be impractical. This therefore limits the production capacity and growth potential of the mining industry in the Mt Isa region.

A standard gauge rail line from Mt Isa to Tennant Creek would offer the opportunity to alleviate the current bottleneck as well as ease pressure on the Port of Townsville, which is understood to have little surplus capacity and limited scope to expand further.

Construction of a standard gauge track between Mt Isa and Tennant Creek and linking to the standard gauge Adelaide – Darwin line would enable speeds of 115km/hour to be achieved at axle loads of up to 25 tonne with new generation rolling stock offering significantly lower risk transport operations.

Construction of such a line would not only overcome the capacity restrictions on the Mt Isa to Townsville line but also open up the interior of Northern Australia allowing projects to precede that currently lack a transport link. It also has defence logistic implications.

Such infrastructure is of national significance and therefore beyond the demarcation of State and Territory borders. It requires visionary thinking and commitment at a national level.

#### **4.2 Assessment of the proposal**

On the basis of a preliminary benefit cost analysis, the construction of a new standard gauge railway that would run between Mt Isa and Tennant Creek, where it would connect with the existing Adelaide Darwin railway, would cost approximately \$1.423 billion and would realise a net present value of \$1.426 billion over a 30 year period, from 2010 to 2040.

This assessment is based on an estimate of the outputs of nine mining projects, the expected capacity and life of the projects and the probability of their proceeding over the next 30 years. These estimates suggest that the combined output of the nine mining projects would be 1.6 million tonnes in 2010, increasing to 8.6 million tonnes per year in 2014, a level that would be maintained until 2022, after which volumes would be about 5.6 million tonnes per year for the remainder of the forecast period up to 2040.

##### **4.2.1 Appraisal Key Results and Assumptions**

**Table 1 Assumptions underlying monetised benefits and costs**

<b>Item</b>	<b>Assumption</b>
Key drivers	Long haul rail mode is more cost efficient in accommodating the overall freight task; Higher cost of road asset maintenance due to heavy and lengthy road haulage
Base case	Use of existing roads
First year of construction	2009
Last year of construction	2011
Discount rate	7% (real)
Appraisal period	30 years
Remaining life	Assumed zero at end of evaluation period
Residual value	40%

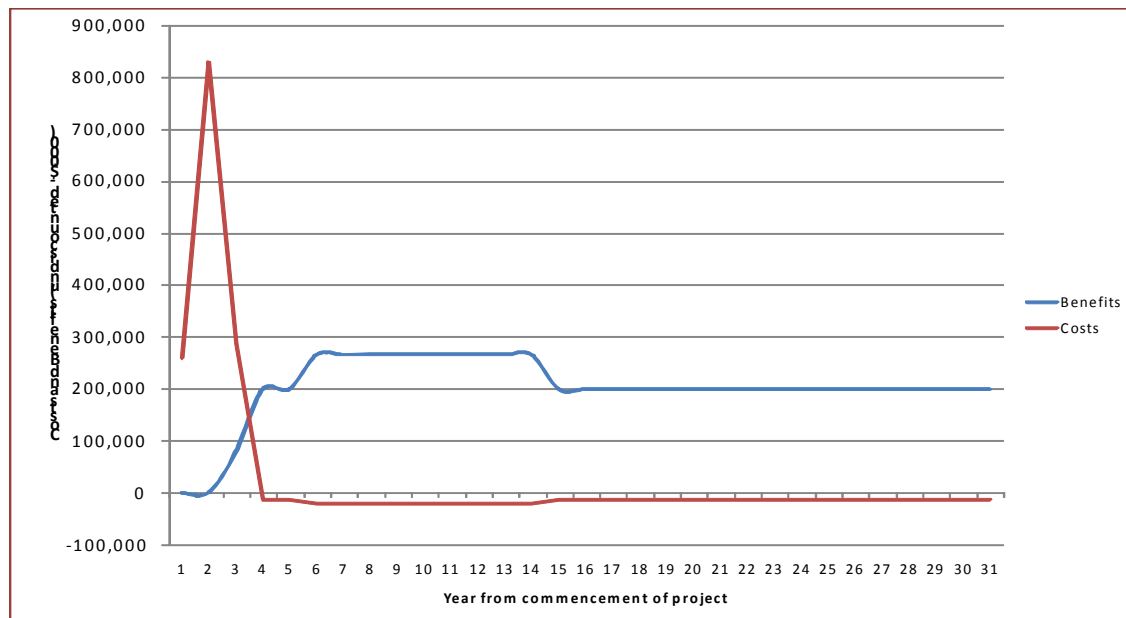
Item	Assumption
Benefit ramp up	See chart below
Capital cost	\$ 1,287 million
Maintenance cost	See attached spreadsheet
Operating cost	See attached spreadsheet
Benefit components	See chart below
Cost & benefit time streams	See chart below
Other	n.a.

#### 4.2.2 Details of costs and benefits

The major source of benefit will be the savings to users – principally exporters, achieved through a lower cost of transportation, as well as a modest benefit in the costs attributable to externalities. Despite the high level of capital cost incurred during construction of the Mt Isa to Tennant Creek rail line, there is an observed overall cost saving resulting from the use of rail instead of road.

Taken together, the benefits and costs as shown in Figure 1 imply a significant net benefit being realised over the longer term. If the project were to proceed in the next couple of years, the analysis suggests a strong net benefit profile in line with the commencement of exports from proposed mines.

**Figure 1: Time profile of costs and benefits<sup>2</sup>**



<sup>2</sup> Total incremental costs of the project are negative from year 4 – this reflects the fact that Operating Costs (rail maintenance and road wear) are substantially lower in the project cast than they would otherwise be. Given that there is no further CAPEX expenditure from year three – this give rise to a negative cost. This is analogous to an economic benefit which is fully captured in this analysis.

Table 2 clearly demonstrates a positive BCR at a range of discount rates. Even at a high discount rate of 10% the project would realise a BCR of 1.7%.

**Table 2 Cost Benefit Analysis Results for Mt Isa to Tennant Creek Rail Line**

	Discount Rate		
	4%	7%	10%
BCR	3.5	2.3	1.7
NPV (\$000)	2,612,381	1,426,081	735,000
NPV/\$ of Capex	1.9	1.1	0.6
IRR		9%	

The breakdown of the BCR component is shown in Table 3 while Table 4 provides useful guidance on the relative robustness of the base case BCR results. At substantially reduced volume levels (-50%), a BCR greater than 1 (1.1) is still realised.

**Table 3 Monetised Benefits and Costs for Mt Isa to Tennant Creek Rail Line**

	Value (\$000)	Share
<b>COSTS</b>		
Capital Costs	1,286,928	114.8%
Operating (Maintenance/Wear)costs	-166,171	-14.8%
	1,120,757	100.0%
<b>BENEFITS</b>		
Savings to users	2,394,973	95.8%
Savings - externalities	38,141	1.5%
Residual value of assets	66,969	2.7%
	2,500,083	100.0%

**Table 4 Sensitivity Test**

<b>Test No</b>	<b>Description</b>	<b>BCR</b>	<b>NPV (\$000)</b>
0	Base	2.3	1,426,081
1	Discount Rate 4%	3.5	2,612,381
2	Discount Rate 10%	1.7	735,000
3	Capex + 25%	1.8	1,121,240
4	Capex -25%	3.3	1,730,923
5	Traffic Growth -50%	1.1	67,139
6	Traffic Growth +50%	4.0	2,785,023

## **5. PUBLIC PRIVATE PARTNERSHIP FUNDING**

The two projects proposed in this submission are public infrastructure and therefore by definition have many potential users and beneficiaries.

Historically, public infrastructure has been financed, constructed and managed by Government, and there is merit in this model. Not least of which is the ability to maximise the utilisation of assets, including storage space. As one client ceases its operations and use of, say, a storage shed at the port, so it can be leased to a new client. The Government is not left with idle land that is unable to generate revenue.

It is understood that in recent times Governments have either had insufficient funds to meet the immediate infrastructure requirements or are risk averse to committing large sums of tax payers' funds to projects that may have a level of uncertainty about them in terms of future usage levels or demand growth.

Under such circumstances, Public Private Partnerships may be an appropriate mechanism by which to secure funding of projects. The difficulty in implementing such arrangements is in identifying who the private partner is or should be. In many cases the sums involved in constructing any of these infrastructure projects well exceed the fund raising capacity of any one user.

One is then left with the option of a third party infrastructure owner or a consortium; most likely comprised of users or potential users of the infrastructure.

In the case of a consortium, infrastructure ownership is unlikely to be core business and merely a means to achieve the necessary infrastructure for project implementation.

To encourage such non-core investment would require some concessional treatment by government such as a royalty holiday until such time as the capital outlay had been recovered. The asset would then vest with the state, territory or federal government and royalties would become payable.

Whilst Minemakers would prefer that such infrastructure were owned and operated by the state or a third party, we remain open to the concept of either paying for construction of the specific facilities to be utilised by us or to be part of a consortium that financed such assets.

## 6. CONCLUSION

This submission proposes two infrastructure projects that Minemakers considers to be of national significance that will enhance the productive capacity of a significant region of northern Australia.

Actioning these projects will lead to increases in export earnings, royalties and taxes. It will provide long term job opportunities and a focus for training in a part of Australia with high unemployment and a lack of employable skills.

Realisation of these infrastructure enhancement and extension proposals and their flow on effects will advance the economic, educational and social ambitions of regional communities in northern Australia and Australia as a whole.

APPENDIX I "Wonarah Phosphate Project" Confidential Briefing Notes  
*(This was presented to the Northern Territory government in August 2008. However the financial modelling has been reworked to reflect the AUD/USD exchange rate as at 10 October 2008)*

### **Contacts:**

Minemakers Limited  
Level 2, 34 Colin Street  
West Perth 6005  
Western Australia

Phone: +61 8 9264 7000  
Fax: +61 8 9264 7099  
Email: [frontdesk@minemakers.com.au](mailto:frontdesk@minemakers.com.au)

Andrew Drummond  
Managing Director  
Email: [andrewd@minemakers.com.au](mailto:andrewd@minemakers.com.au)

Neville Bergin  
General Manager, Projects Development  
Email: [nevilleb@minemakers.com.au](mailto:nevilleb@minemakers.com.au)