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12 February 2003

Reference: TOP-RAIL COR ORAR re Clause 9 Floor & Ceiling determination

Dr Ken Michael
Acting Rail Access Regulator
PO Box 7459
Cloister Square WA 6850

Dr Michael

Re: Floor & ceiling prices for certain routes

Thank you for the opportunity to comment on the proposed floor and ceiling prices on a number of routes.

Worsley has structured its comments on the proposed floor and ceiling prices as follows.

1. Worsley will comment on the costing model used to implement the costing principles, as described in WNR's paper "Costing Principles" (19 December 2002);
2. Worsley will comment on the supporting paper "Pricing of Track Infrastructure" (December 2002); and
3. Worsley will advise its own estimate of the GRVs for MEAs for the route sections from Brunswick Junction to Bunbury Inner Harbour

Worsley believes that there are a number of pervasive errors in WNR's costing model:

1. Inclusion of costs that should have been excluded;
2. Costing on an average basis when the information is available to allow specific costing;
3. Assumption of a general specification for the network when this exceeds the actual specification on many route sections;
4. Assuming the use of existing facilities when greenfields construction would likely have optimised these facilities; and
5. Inappropriate market testing of unit rates.

Worsley also has great difficulty in critiquing WNR's maintenance costing due to the lack of detail presented by WNR.

Worsley has retained an independent engineer to analyse the costing used by WNR. Where possible, Worsley has compared WNR's unit rates with those obtained from recent costing information from roadworks and the South West Metropolitan Railway. Where valid comparisons are possible Worsley finds that WNR's estimates are generally overstated.

WNR's description of the calculation of the Floor price in accordance with the Code is vague. The outcome as illustrated in Figure 1 of "Pricing of Track Infrastructure" so beggars belief that one can only assume that the calculation of the Floor is fundamentally flawed.

These comments are attached and Worsley would welcome the opportunity to discuss them with the Regulator. Worsley will disclose the sources of costing information on a confidential basis if requested. Worsley will advise its own estimate of the GRVs for MEAs for the route sections from Brunswick Junction to Bunbury Inner Harbour as soon as it is able to do so.

Yours faithfully
WORSLEY ALUMINA PTY LTD

B Gaynor
Commercial Administrator

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Comments on WNR's paper: "Costing Principles"

Worsley believes that there are a number of pervasive errors in WNR's costing model:

1. Inclusion of costs that should have been excluded; specifically the cost of embankments
2. Costing on an average basis when the information is available to allow specific costing
3. Assumption of a general specification for the network when this exceeds the actual specification on many route sections
4. Assuming the use of existing facilities when greenfields construction would likely have optimised these facilities
5. Inappropriate market testing of unit rates

What infrastructure is included

The infrastructure to be included is as defined in the Code and described in s2.2 of the Costing Principles. In s3.3.1 of "**Pricing of Track Infrastructure**", however, it is stated that the GRV includes the cost of construction of a 1.5m high embankment. Worsley contends that this element should be excluded from the GRV.

Gross Replacement Values

WNR contends, and Worsley does not dispute, that the existing network can meet the current and reasonably projected demand for all users taken together. As such, an MEA should replicate the existing service as provided and not some augmented service with a higher capacity.

WNR identifies the key capital cost drivers as:

- Operating track standard (axle load, speed)
- Population of supporting infrastructure (bridges, culverts); and
- Topography of route

Each of these differs by route-section within the routes encompassed in this determination.

On p8 of "**Costing Principles**" WNR lists the only instances in which the existing assets cannot be adopted as MEA. Implicit in the "**Pricing of Track Infrastructure**" is the concept of a uniform specification for the track over the routes considered although the actual specification is nowhere stated. An analysis of the Train Operating Data for the route Kwinana to Bunbury Inner Harbour shows that the asset has a variable specification in use. Specifically, a number of route sections, eg Picton/Bunbury Inner Harbour, have maximum speeds (40kmph) significantly less than the maximum applicable elsewhere, eg 70kmph for Mundijong/Picton. Worsley believes that the correct GRV for such route sections is that for an MEA capable of delivering the service as actually delivered, not a GRV for an MEA with a notional specification including, say, 70kmph maximum speed.

In estimating GRV WNR has worked on a route basis using a standard track and infrastructure specification and used average costs for components. The information required is available on a route-section basis and Worsley believes that this is the appropriate level at which the GRV should be estimated. In the routes subject to this determination Worsley's principal interest is in the Brunswick/Picton/Bunbury Inner Harbour sections. [As Worsley will be seeking access on a route-section basis its access will ultimately be priced on a route-section basis.] Worsley is not aware of any traffic that traverses the total route Kwinana/Bunbury Inner Harbour and hence other parties seeking access will require access to only part of this route also. With differing traffic volumes it is reasonable

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to anticipate that maintenance costs will also vary by route-section. WNR notes that one of the key capital cost drivers is the topography of the route. As such, average costings are not appropriate for the diversity of terrain covered in this determination. Hence Worsley believes that it is appropriate that the determinations be on a route-section basis.

Determination of operating costs

Worsley accepts in broad terms the definitions of operating costs in the “**Costing Principles**”. Worsley notes, however, that while MPM has been excluded from the operating cost but the information supplied in this paper does not allow Worsley to be satisfied that the redefinition of MPM and the definition of Routine and Cyclical Maintenance properly eliminates the double counting.

Worsley believes that if the capital charge allows the asset to be rebuilt every three years then the cost of repairing incidents is a time-value-of-money issue, not a cost of repair issue, as the cost is at most the cost of reconstruction somewhat earlier than would normally have been the case.

Track Maintenance

Worsley also has great difficulty in critiquing WNR’s maintenance costing due to the lack of detail presented by WNR.

This was perplexing in the light of the following comments on p20 of the “**Determination of The Western Australian Independent Rail Access Regulator**”:

“The Regulator understands that recent benchmark cost levels for cyclic and routine maintenance for networks similar to WNR have varied between \$5,000 and \$16,000/km. Unless exact assumptions and costs are comparable, there will always be the potential for apparent significant gaps.

WNR will need to provide in the costing principles a detailed methodology, including key assumptions, on how cyclical and routine maintenance costs are calculated and benchmarked on different sections of its network.”

WNR has not provided this level of detail, particularly given the extent to which they have exceed the upper bounds of the expected costs.

In the absence of detail to the contrary, Worsley has assumed that WNR’s maintenance costing is on the basis of its existing practice. If this is to be used as a basis it should be reviewed and benchmarked against current best practice.

The WNR track and civil maintenance task is asset managed in house with the works outsourced. The works are largely outsourced to a single contractor however they do not include special tasks *eg* rail flaw detection, or major upgrades. The maintenance contract is structured as an all-inclusive labour rate for a set resource. The rate includes recovery of overheads, contract management, contract supervision, equipment ownership and operating costs and the like.

The following comments are offered in relation to the existing arrangement:

1. The resource is structured around the existing asset and therefore may not be appropriate for an MEA.

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2. The public tender process was conducted in 1995/96 with current rates set by escalation clauses within the agreement and also by negotiation when the resource schedule is altered. This may not reflect current, or greenfields, best practice.
3. The model used for the outsourcing is also not necessarily the most economic given some duplication in the Principal's and Contractor's overhead structure.
4. WNR's current resource also maintains yards for AWR; these costs need to be excluded.
5. Routine maintenance tasks listed are not in accordance with the MEA, eg cross boring, replacement of failed sleepers and the like are not consistent with a concrete sleepered track.
6. Economic life of assets listed in s2.4 are unrealistic and WNR should be requested to back them up with their own replacement program. The following specific examples are cited:
 - blades and stockrails on the standard gauge (approx 12 MGT per annum) have achieved 15 year lives,
 - the goupings for rail life are very broad and do not appear to take account of rail grinding whereas this is listed as a maintenance activity. Again experience on the standard gauge for a 400m radius curve were rail lives in the order of 18 to 20 years (with rail grinding). There is a rail selection model that can be used to predict rail life.
 - most of the ballast within the system is older than 25 years. For instance the recent resleepering exercise on the standard gauge replaced ballast that was 35 years old. Recovery of the existing ballast through a screening process was estimated at 45 to 50%.
 - design life for concrete bearers is generally 50 years.
 - life of existing turnouts is already exceeding that specified.
 - life of roadways and access roads is assumed at 10 years. The reality is that they are not reconstructed every 10 years – they are repaired as part of maintenance.
7. It is unclear from the information provided how the variable economic life of individual components within the track structure is handled. As an example Reballasting is listed as a maintenance activity, does this imply WNR has factored into the maintenance cost an annual allowance for full replacement of the ballast every 25 years, is it MPM and therefore ignored or is it taken up in how the asset is capitalised?

Overhead costs

There is no detail of overhead costs to allow Worsley to form a view as to whether they are “reasonable”. While the allocation of ARG costs is detailed there is no description of the allocation of overhead costs across the entire network. [The routes subject to this determination are about 30% of the network.]

Other matters

Floor and ceiling variation

Worsley maintains that data previously supplied has shown that a number of the components of rail construction costs have decreased in both real and nominal terms in the last decade. As such, there is no basis for capital cost escalation between triennial GRV estimates.

Calculation of the Floor

WNR’s description of the calculation of the Floor price in accordance with the Code is vague. The outcome as illustrated in Figure 1 of “**Pricing of Track Infrastructure**” so beggars belief that one can only assume that the calculation of the Floor is fundamentally flawed.

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Comments on WNR/GHD’s paper: “Pricing of Track Infrastructure”

Introductory Comments

It is Worsley’s understanding that the application of the Costing Principles under the Code require WNR to apply market-based pricing to below rail services in developing Floor and Ceiling prices.

Worsley recognises the Code sets out the capital charge based on an annuity formula, calculated having regard for the Gross Replacement Value (GRV) of the infrastructure, its economic life and an allowable rate of return. It also acknowledges that the GRV can be calculated as the lowest cost to replace existing assets with assets that have the capacity to provide the level of service that meets the actual and reasonable projected demand and are if appropriate, Modern Equivalent Assets (MEA).

While Worsley has prepared its overall response to the pricing of rail infrastructure, it has made specific reference to the two sections between Brunswick Junction and Bunbury Inner Harbour within the Kwinana to Bunbury Inner Harbour route. It is Worsley’s contention that the MEA is inappropriate for these route-sections and over-estimates the Ceiling costs. It therefore considers that the Regulator should calculate the GRV using the pre-existing infrastructure for the following route sections:

Brunswick Junction – Picton Junction 17km
Picton Junction – Bunbury Inner Harbour Junction 4km

Worsley has reviewed the documentation titled “**Pricing of Track Infrastructure**” and contends that some aspects of the data contained therein have not been derived in an “open market” and therefore cannot be considered to represent current best practices for construction.

It is Worsley’s intention to provide the Regulator with a fully supported costing model for the pre-existing infrastructure represented in the route sections specified above. Pricing will be based on a “Greenfields” approach derived from competitively tendered rates for public infrastructure within the Bunbury regional area.

Response to Pricing

Pricing Methodology

While the unit rates are stated to be based upon open market costs of undertaking the work and not WNR’s costs, WNR has not provided evidence to support competition in the derivation of unit rates. To the contrary, pricing information includes:

- Track Laying Costs - “*verbal advice from JHCE*”
- Turnouts “*only VAE responded*”

Worsley contend that unit pricing can be tested against road infrastructure where similar works exist including structures (bridge and culvert) and embankment construction including limestone capping. Similarly, estimated costs associated with the South West Metropolitan Railway (SWMR) appear to have been overlooked. It is Worsley’s intention to utilise such information in determining the value of pre-existing infrastructure associated with the Brunswick Junction to Bunbury Inner Harbour route sections.

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WNR states that it has considered the implication of the unit replacement cost rates for each respective location (sub-section) of each of the four nominated routes. There is no data confirming any outcome of these considerations. It is Worsley's contention that the two route sections between Brunswick Junction and Bunbury Inner Harbour are not representative of the overall route between Kwinana and Bunbury Inner Harbour, let alone representative of all routes under consideration, as considered by WNR in determining some unit costs, including track laying.

It is further contended that consideration of the overall route length misrepresents the specific topography and population of supporting infrastructure found within the Brunswick Junction to Bunbury Inner Harbour route sections.

Transport of Materials

Worsley notes that transport costs associated with the transport of bulk materials have been obtained from Mr John Purcell of ARG. It is open to question whether these rates have been tested in the market and represent best practice in the delivery of materials to a "Greenfields" site. This statement applies to a number of items included in the pricing model. What access charge was included in the rail transport cost estimate?

As a minimum these prices should be assessed against road transport, especially where lead distances are short and where rail access is not available. This may well be appropriate in the case of ballast for the route sections Brunswick Junction to Bunbury Inner Harbour.

Rail

No competitive price is offered for the supply of steel rail, despite the presence of Bunbury harbour.

Sleepers

Worsley considers that the supply of sleepers by the Principal may not represent the least cost option and does not reflect open market conditions.

Ballast

While WNR defines key capital cost drivers to include operating track standards, (Axle Load and Speed), no information is provided in this context in relation to the MEA for the Brunswick Junction to Bunbury Inner Harbour route sections.

Worsley has adopted the nearby Hamilton route section as representing the appropriate track standard for Narrow Gauge Block Train operations in the Bunbury area, namely 21t axle at 90km/h. On this basis it has carried out a review of the proposed below rail structure and contends that the 300mm ballast thickness is excessive for 21t axle and concrete sleepers. Worsley believes that a more appropriate ballast thickness is 250mm.

Quarry sources for ballast are considered to be available in proximity to the two route sections linking Brunswick Junction to Bunbury Inner Harbour. Road transport is also viable and has not been considered. WNR pricing appears to have been determined over total route with transport cost of \$0.10t/km with lead distances from Perth. Average one way haul for the Brunswick Junction to Bunbury Inner Harbour sections is likely to be in the order of 13km.

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Turnouts

60kg turnouts – specified – Basis of supply price is single quote from VAE with installation and “assumed” rates. Supply cost appear to be OK but installation may not reflect a Greenfield site.

Track Laying

As noted previously unit rates provided by “verbal advice from JHCE”.

Bridges

Where route sections include substantial river crossings, bridge costs are significant and WNR’s approach of spreading the price over the Kwinana to Bunbury Inner Harbour route is potentially inappropriate. There is no evidence that the unit rates are competitive or that they represent construct only costs. Design, construction and project management fees are included elsewhere at 20%.

Worsley has reviewed bridge rates and considers them to be some 8-10% higher than previous experience for similar structures in the south west of Western Australia.

Culverts

RCBC and RCP culvert prices have been obtained from Humes and Rocla, however Humes pricing has been applied on the basis of overall value across a range of sizes. No evidence of the competitive nature of these prices is provided. Furthermore, culverts are supplied and delivered by the Principal, which may not reflect least cost.

Worsley has reviewed the rates for RCBC and RCP culverts and considers the unit rates applied by WNR to be far higher than comparable works on road alignments. While it is recognised that some variation in strength grade may exist between road and rail culvert, the 2-3 times price multipliers for culvert supply and installation are excessive.

Typically, a 1200x450 RCBC has been installed under a main road at a cost of \$695, compared to WNR’s stated cost of \$2093.

Railway Earthworks

Comment has already been made in relation to the inclusion of embankment within the pricing model for track infrastructure.

Notwithstanding Worsley’s contention that this element should not be included, the following illustrates the overall impact on the pricing of the Mundijong Junction to Picton Junction route section.

From information derived from WAGRC construction drawings the route section comprises:

Cut Sections 22% 0.33m average depth (including capping)
Bank Sections 78% 0.55m average height (including capping)

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This is not representative of the 1.50m high embankment assumed by in the WNR model. Furthermore, the unit rates for earthworks are considered to be excessive and better represented from recent road projects within the Bunbury Region where the following rates applied:

Item	WNR(Rail Embankment)	Worsley (Road embankment)
Cut to Fill	\$9.16	\$2.10 - \$3.15
Imported Fill	\$17.00	\$8.30 - \$12.50

Utilising the design parameter of 21t axle at 90km/h and typical allowable bearing pressures (CBR) for Limestone Capping, a thickness of 230mm is appropriate, which matches that proposed by the WNR costing model.

Rates for capping are stated to be \$8.50/m² compared to \$4.75 to \$6.50 for 250mm of limestone road sub base within the Bunbury area.

Remoteness Factors

WNR has provided Remoteness Factors for work in the Bunbury area as follows:

Bridge – 1.1
 Culvert installation 1.1
 Culvert End treatment 1.1

Worsley’s recent experience indicates that such factors would be unjustified for work on the Brunswick Junction to Bunbury Inner Harbour sections. Furthermore WNR provides no evidence to support the Factors.

Worsley’s rates quoted above are all based on works within the Bunbury region and therefore inclusive of any ‘Remoteness

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