

# OFFICE OF THE RAIL ACCESS REGULATOR

Ref: ORAR 006

Mr Tim Ryan  
General Manager  
WestNet Rail  
GPO Box S1422

Dear Mr Ryan

## **FLOOR AND CEILING COSTS TO APPLY TO THE WORSLEY ROUTE SECTIONS**

At the request of Mr Brendan Gaynor, Commercial Administrator, Worsley Alumina Pty Ltd., and with your agreement, I have made a determination of the floor and ceiling costs to apply as from 1 July 2003 of the following nine (9) Worsley route sections:

1. Brunswick North to Brunswick East;
2. Brunswick to Brunswick East;
3. Brunswick East to Worsley;
4. Worsley to Worsley North;
5. Worsley North to Hamilton;
6. Worsley East to Worsley North;
7. Worsley to Worsley East;
8. Worsley East to Ewington Junction; and
9. Ewington Junction to Premier.

The Determination, as summarised in the attached tables, has been made after consideration of the differing needs and interests of the community, access seekers and WestNet Rail (WNR) as required under Section 20(4) of the *Railways (Access) Act 1998*. It is also consistent with my Costing Principles Determination dated 27 September 2002, and my Floor and Ceiling Costs Determination dated 24 September 2003.

Similar adjustments have been made to the floor and ceiling costs in this Determination as those in the 24 September 2003 Determination as the cost estimates for the Worsley route sections and the nominated route sections under the Clause 9 review were provided to my Office at about the same time. The reasons behind these adjustments to the proposed floor and ceiling costs have not been restated here as these were extensively discussed in my 24 September 2003 Determination.

There are, however, several added considerations in this Determination that should be noted. These are as follows.



### 1. *Formation Height*

The Regulator's engineer has advised that building to an average of 1.5m from Worsley to Hamilton and Worsley to Premier (for the purpose of this Determination, also include the route section Worsley East to Worsley North) does not appear necessary as the undulating nature of the corridor means that a high formation is not required to accommodate the drainage structures since a significant proportion of the drainage structures are located in depressions. Consistent with the approach taken for the Kwinana to Bunbury Inner Harbour railway line (SWM), I have accepted this recommendation and the approved MEA standard for formation height will be 1.0m on the route sections from Worsley to Hamilton and Worsley to Premier. On the remaining sections from Brunswick to Worsley (for the purpose of this Determination, also include the route section Brunswick North to Brunswick East), the approved MEA standard for formation height will remain at 1.5m.

### 2. *Ballast Depth*

For the Brunswick to Worsley route sections that are concrete sleepers, the approved MEA standard will be 250mm. Again, this is consistent with the approved ballast depth for the SWM. As it is my understanding that the current ballast depth is 150mm on the route sections that are timbered sleepers, that being from Worsley to Hamilton and Worsley to Premier, the 150mm ballast depth will be the approved MEA standard for those sections of the line.

### 3. *Train Speed*

WNR has proposed an MEA standard of 90/90kph on concrete sleepers from Brunswick to Worsley and 50/70kph on timber sleepers from Worsley to Hamilton and Worsley to Premier. As 90/90kph is not being achieved on any existing Worsley concrete sections, and since WNR has no current proposal to improve the horizontal track geometry on the Brunswick to Worsley route sections, a 50/70kph train speed will be assumed for all the route sections. It should be noted that a corresponding timber sleeper assumption for the entire route will not be made since the route sections from Brunswick to Worsley are concrete sleepers, and because such an assumption would generate a slightly higher ceiling cost due to the shorter economic life of timber sleepers.

### 4. *Cost of Earthworks*

The Regulator's engineer has noted that a high level of cut to fill can be used for 85% of the fill at \$7.00 per m<sup>3</sup>, and adding the cost of imported fill on the remaining 15% at \$16.50 per m<sup>3</sup> plus capping layer cost of \$35.00 per m<sup>3</sup> yields a total cost of approximately \$14.00 per m<sup>3</sup>. I have accepted this recommendation on the unit rate for earthworks, including the capping layer, to be costed at \$14.00 per m<sup>3</sup>.

### 5. *Maintenance Rates*

A benchmark rate of \$15,000 per km will apply from Brunswick to Worsley. This is the same benchmark rate that has been applied to the SWM. For the timber sleeper sections from Worsley to Hamilton and Worsley to Premier, with annual tonnages ranging from 1.2 to 3.6 million gross tonnes (mgt) depending on the route section, a benchmark rate of \$8,000 per km is to be adopted. For comparative purposes, the Regulator's engineer has provided the following actual average maintenance costs on other currently operating lines:

- Queensland Rail's (QR) average maintenance cost (excluding MPM) is just over \$6,000/km on 16/19tal branch lines with annual tonnages of less than 1mgt, between \$7,000-\$9,000/km on 19tal lines where annual tonnages are in the range of 1 to 3mgt, and between \$8,000-\$11,000/km on 19/21tal lines where annual tonnages are in the range of 3 to 6mgt, depending on terrain and location;
- QR's Moura coal line on both timber & concrete sleepers is \$12,200/km (excluding MPM) for 8mgt/annum; and
- Australian Rail Track Corporation's maintenance cost (including MPM) on timber sleepers averages \$10,000/km on its mainlines. Without MPM, the figure would be less than \$10,000/km.

#### 6. *Operating and Overhead Costs*

Allocation of operating costs will be based on train movements, whereas allocation of overhead costs will be based on 50% train movements and 50% gross tonnes kilometres (GTKs). 8% of total WNR's train movements and 2% of total WNR's GTKs are allocated to the Worsley route.

The table below summarises the percentage change to the corrected levels of floor and ceiling costs proposed by WNR in this Determination.

Change arising from Regulator's Determination as at January 2003		Change including WACC and CPI-X adjustments to July 2003	
Ceiling Cost (%)	Floor Cost (%)	Ceiling Cost (%)	Floor Cost (%)
(16.3)	(12.9)	(20.6)	(12.0)

Note: Numbers in brackets represent reductions.

Your cooperation in this Determination is very much appreciated.

Yours sincerely

Dr Ken Michael  
ACTING RAIL ACCESS REGULATOR

15 October 2003

- cc. Mr B Gaynor, Commercial Administrator, Worsley Alumina Pty Ltd.  
Mr M Flender, Commercial Manager, Iluka Resources Ltd.  
Mr A Ballantyne, Manager, Western Power  
Mr E Dardengo, Superintendent, TiWest  
Mr D Mackle, Quarry Superintendent, Cockburn Cement Ltd.

**Table 1 – Brunswick to Worsley – Summary as of 1 July 2003**

Route Sections	Gross Replacement Value	Ceiling Price	Floor Price
Brunswick North to Brunswick East	956,195	172,111	25,375
Brunswick to Brunswick East	2,167,187	468,083	83,365
Brunswick East to Worsley	21,119,671	2,236,723	127,907
Worsley to Worsley North	2,362,025	446,340	69,641
Worsley North to Hamilton	5,970,741	782,183	78,129
Worsley East to Worsley North	917,875	140,163	11,706
Worsley to Worsley East	1,131,250	140,587	14,890
Worsley East to Ewington Junction	21,146,266	2,105,149	81,403
Ewington Junction to Premier	3,080,220	365,941	26,296
Total	58,851,430	6,857,280	518,712

General Route Section Information	Route Section Lengths in Km	Track Distance Lengths in Km	Number of Level Crossings	Gross Tonnes Km '000 (actual 2002)	Train Movements (actual 2002)
Brunswick North to Brunswick East	0.9	0.9	-	199,180	4,994
Brunswick to Brunswick East	1.0	1.0	3		
Brunswick East to Worsley	20.6	22.0	15	112,376	6,109
Worsley to Worsley North	2.3	2.3	-		
Worsley North to Hamilton	8.6	8.6	5		
Worsley East to Worsley North	1.1	1.1	-	94,824	5,155
Worsley to Worsley East	1.0	1.9	-		
Worsley East to Ewington Junction	27.1	28.2	24		
Ewington Junction to Premier	2.4	2.4	2	2,857	806

Level of Service Indicators	MEA Specifications	Level of Service Indicators	MEA Specifications
Rail gauge	narrow	Axle load freight (tal) and max operating speed freight (kph) [loaded/empty]	21 50/70
Rail weight (kg)	50	Max operating speed passenger (kph)	Not applicable
Sleeper type	Concrete (Brunswick to Worsley <sup>①</sup> ) and timber (Worsley to Hamilton, Worsley to Premier <sup>②</sup> )	Average formation height (m)	1.5 (Brunswick to Worsley <sup>①</sup> ) and 1.0 (Worsley to Hamilton, Worsley to Premier <sup>②</sup> )
Average number of sleepers per kilometre	1,500 (Brunswick to Worsley <sup>①</sup> ) and 1,470 (Worsley to Hamilton, Worsley to Premier <sup>②</sup> )	Ballast depth (mm)	250 (Brunswick to Worsley <sup>①</sup> ) and 150 (Worsley to Hamilton, Worsley to Premier <sup>②</sup> )

① For the purpose of this Determination, also include the route section Brunswick North to Brunswick East

② For the purpose of this Determination, also include the route section Worsley East to Worsley North

**Table 2 – ROUTE SECTION: Brunswick North to Brunswick East  
ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	316,118	316,118	316,118		
Communications cost	13,577	13,577	13,577		
Track cost	599,936	660,688	626,500		
Total	929,631	990,383	956,195		
Progressive percentage change		6.5	(3.5)		
<b>Ceiling Price Schedule</b>					
Capital cost	80,010	83,365	80,777		
Maintenance cost	21,554	21,502	16,795		
Cost of Working Capital	3,120	3,251	3,150		
Operating cost	35,179	35,179	35,179		
Overhead cost	78,995	81,658	41,537		
Total	218,858	224,955	177,438	170,458	172,111
Progressive percentage change		2.8	(21.1)	(3.9)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		1,438	1,123		
Operating cost		24,008	24,008		
Total	36,601	25,446	25,131	25,131	25,375
Progressive percentage change		(30.5)	(1.2)	0	1.0

15 October 2003

**Table 3 – ROUTE SECTION: Brunswick to Brunswick East**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	860,245	860,245	860,245		
Communications cost	62,638	62,638	62,638		
Track cost	1,212,262	1,287,635	1,244,304		
Total	2,135,145	2,210,518	2,167,187		
Progressive percentage change		3.5	(2.0)		
<b>Ceiling Price Schedule</b>					
Capital cost	200,408	206,298	203,007		
Maintenance cost	72,206	73,136	57,145		
Cost of Working Capital	7,816	8,046	7,918		
Operating cost	95,731	95,731	95,731		
Overhead cost	214,968	222,213	114,377		
Total	591,129	605,424	478,178	463,586	468,083
Progressive percentage change		2.4	(21.0)	(3.1)	1.0
<b>Floor Price Schedule</b>					
Capital cost		10,698	10,698		
Maintenance cost		8,055	6,316		
Operating cost		65,332	65,332		
Total	113,816	84,085	82,346	82,564	83,365
Progressive percentage change		(26.1)	(2.1)	0.3	1.0

15 October 2003

**Table 4 – ROUTE SECTION: Brunswick East to Worsley**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	2,865,925	2,865,925	2,865,925		
Communications cost	1,260,158	1,260,158	1,260,158		
Track cost	16,590,270	17,855,892	16,993,588		
Total	20,716,353	21,981,975	21,119,671		
Progressive percentage change		6.1	(3.9)		
<b>Ceiling Price Schedule</b>					
Capital cost	1,712,444	1,813,133	1,747,841		
Maintenance cost	351,722	364,684	285,096		
Cost of Working Capital	66,785	70,712	68,166		
Operating cost	95,732	95,732	95,732		
Overhead cost	214,968	222,213	176,904		
Total	2,441,651	2,566,474	2,373,739	2,215,235	2,236,723
Progressive percentage change		5.1	(7.5)	(6.7)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		78,198	61,346		
Operating cost		65,332	65,332		
Total	164,795	143,530	126,678	126,678	127,907
Progressive percentage change		(12.9)	(11.7)	0	1.0

15 October 2003

**Table 5 – ROUTE SECTION: Worsley to Worsley North**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	690,471	690,471	690,471		
Communications cost	142,652	142,652	142,652		
Track cost	1,841,473	1,788,721	1,528,902		
Total	2,674,596	2,621,844	2,362,025		
Progressive percentage change		(2.0)	(9.9)		
<b>Ceiling Price Schedule</b>					
Capital cost	225,067	224,836	205,792		
Maintenance cost	63,568	64,425	31,414		
Cost of Working Capital	8,778	8,769	8,026		
Operating cost	95,387	95,387	95,387		
Overhead cost	214,195	221,414	118,155		
Total	606,995	614,831	458,774	442,052	446,340
Progressive percentage change		1.3	(25.4)	(3.6)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		7,916	3,875		
Operating cost		65,097	65,097		
Total	102,792	73,013	68,972	68,972	69,641
Progressive percentage change		(29.0)	(5.5)	0	1.0

15 October 2003



**Table 6 – ROUTE SECTION: Worsley North to Hamilton**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	690,471	690,471	690,471		
Communications cost	473,629	473,629	473,629		
Track cost	5,693,516	5,769,311	4,806,641		
Total	6,857,616	6,933,411	5,970,741		
Progressive percentage change		1.1	(13.9)		
<b>Ceiling Price Schedule</b>					
Capital cost	561,741	567,591	497,019		
Maintenance cost	145,900	148,591	72,473		
Cost of Working Capital	21,908	22,136	19,384		
Operating cost	95,387	95,387	95,387		
Overhead cost	214,915	221,414	135,436		
Total	1,039,131	1,055,119	819,699	774,669	782,183
Progressive percentage change		1.5	(22.3)	(5.5)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		25,077	12,281		
Operating cost		65,097	65,097		
Total	118,469	90,174	77,378	77,378	78,129
Progressive percentage change		(23.9)	(14.2)	0	1.0

15 October 2003

**Table 7 – ROUTE SECTION: Worsley East to Worsley North**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	65,348	65,348	65,348		
Communications cost	239,680	239,680	239,680		
Track cost	708,938	732,728	612,847		
Total	1,013,966	1,037,756	917,875		
Progressive percentage change		2.3	(11.6)		
<b>Ceiling Price Schedule</b>					
Capital cost	88,055	89,846	81,059		
Maintenance cost	29,740	30,008	14,624		
Cost of Working Capital	3,434	3,504	3,161		
Operating cost	15,753	15,753	15,753		
Overhead cost	35,373	36,564	30,797		
Total	172,355	175,675	145,394	138,817	140,163
Progressive percentage change		1.9	(17.2)	(4.5)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		1,733	844		
Operating cost		10,750	10,750		
Total	17,304	12,483	11,594	11,594	11,706
Progressive percentage change		(27.9)	(7.1)	0	1.0

15 October 2003

**Table 8 – ROUTE SECTION: Worsley to Worsley East**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	81,638	81,638	81,638		
Communications cost	5,878	5,878	5,878		
Track cost	1,254,845	1,254,845	1,043,734		
Total	1,342,361	1,342,361	1,131,250		
Progressive percentage change		0	(15.7)		
<b>Ceiling Price Schedule</b>					
Capital cost	106,918	106,969	91,494		
Maintenance cost	20,885	20,895	10,183		
Cost of Working Capital	4,170	4,172	3,568		
Operating cost	19,679	19,679	19,679		
Overhead cost	44,190	45,679	23,146		
Total	195,842	197,394	148,070	139,236	140,587
Progressive percentage change		0.8	(25.0)	(5.9)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		2,702	1,317		
Operating cost		13,430	13,430		
Total	22,371	16,132	14,747	14,747	14,890
Progressive percentage change		(27.9)	(8.6)	0	1.0

15 October 2003

**Table 9 – ROUTE SECTION: Worsley East to Ewington Junction**  
**ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	1,248,365	1,248,365	1,248,365		
Communications cost	888,359	888,359	888,359		
Track cost	21,902,304	22,203,298	19,009,542		
Total	24,039,028	24,340,022	21,146,266		
Progressive percentage change		1.3	(13.1)		
<b>Ceiling Price Schedule</b>					
Capital cost	1,985,882	2,009,170	1,775,021		
Maintenance cost	391,392	425,437	207,429		
Cost of Working Capital	77,449	78,358	69,226		
Operating cost	67,304	67,304	67,304		
Overhead cost	151,132	156,226	124,498		
Total	2,673,159	2,736,495	2,243,478	2,084,925	2,105,149
Progressive percentage change		2.4	(18.0)	(7.1)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		70,982	34,690		
Operating cost		45,931	45,931		
Total	131,236	116,913	80,621	80,621	81,403
Progressive percentage change		(10.9)	(31.0)	0	1.0

15 October 2003

**Table 10 – ROUTE SECTION: Ewington Junction to Premier  
ROUTE: Brunswick to Worsley**

	WNR proposed levels dated 13 January 2003	Adjustments to correct errors found in the APM	Determined by Regulator as at January 2003	Adjustment with 30 June 2003 WACC	CPI-X adjustment to 1 July 2003
<b>GRV (dollars)</b>					
Signalling cost	1,716,667	1,716,667	1,716,667		
Communications cost	32,914	32,914	32,914		
Track cost	1,597,844	1,597,844	1,330,639		
Total	3,347,425	3,347,425	3,080,220		
Progressive percentage change		0	(8.0)		
<b>Ceiling Price Schedule</b>					
Capital cost	293,929	293,994	274,406		
Maintenance cost	40,365	40,406	19,693		
Cost of Working Capital	11,463	11,466	10,702		
Operating cost	35,501	35,501	35,501		
Overhead cost	79,717	82,404	42,920		
Total	460,975	463,771	383,222	362,426	365,941
Progressive percentage change		0.6	(17.4)	(5.4)	1.0
<b>Floor Price Schedule</b>					
Capital cost		0	0		
Maintenance cost		3,723	1,816		
Operating cost		24,227	24,227		
Total	39,183	27,950	26,043	26,043	26,296
Progressive percentage change		(28.7)	(6.8)	0	1.0

15 October 2003