



Proposed Floor and Ceilings for Grain Lines
Avon to Goomalling
Katanning to Tambellup
Kulin to Yilliminning

October 2006 Review

Document History

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1 Introduction

This document is being submitted by WestNet Rail (WNR) to the Economic Regulatory Authority (ERA) as WNR's submission on Ceilings and Floors as required by Clause 9 of the Access Code for the following grain lines:

- Avon to Goomalling;
- Katanning to Tambellup; and
- Kulin to Yilliminning.

The remaining Mullewa to Narngulu line will be submitted when a revised Modern Equivalent Asset (MEA) standard can be confirmed following commitment to rail or otherwise by emerging iron ore projects in the region.

This process has previously been undertaken by WNR and determinations of Ceilings and Floors for these lines were made by the ERA on July 8, 2004.

To calculate the Ceilings and Floors in WNR's first submission, WNR developed an Access Pricing Model (APM) based on the approved Costing Principles to undertake the complex calculations. This model was audited and accepted by the ERA. Appendix One to this document summarises the structure of the APM. An electronic version of the APM will be submitted to the ERA on a confidential basis to support this submission.

This same model has been used by WNR to undertake the calculations in this submission with one change to the model to support the direct allocation of the cost of centralised train control. Previously this cost had been allocated on the overhead allocation methodology and this issue is discussed later in the document.

This document contains sections on:

1. The process WNR has undertaken to calculate the new Ceilings and Floors;
2. The key assumptions in calculating the new Ceilings and Floors;
3. The new Ceilings and Floors;
4. A variance analysis between the new and old Ceilings (as at June 2005);
5. A variance analysis on the unit prices for capital and maintenance.

This document considers sections three and four above on a "line by line" basis.

2 Process Overview

WNR has recalculated the Floor and Ceilings by adjusting the elements of the ERA approved Access Pricing Model (APM) outlined in Appendix One of this document to reflect current costs.

2.1 Asset Capital and Maintenance base

An independent external consultant, WorleyParsons (WP), was engaged to “market test” all unit prices of capital and maintenance costs per kilometre in WNR’s asset base. This was done by WP obtaining quotes from multiple suppliers in the market and then making a recommendation as to what the current market rates are. WNR has then used the output of this report to update the unit rates for capital and maintenance in the APM. This report has been made available as a part of WNR’s non-confidential submission to the ERA.

2.2 Annual Costs

With regards to Overheads, Operating Costs and Network Management Costs WNR has used its actual board approved 2006/07 budget as the basis of its submission for these costs. This budget has been compiled using a zero-based budgeting process and reflects the costs of WNR as a standalone organization. WNR’s 2006/07 budget has been made available to the ERA on a confidential basis.

3 Key Assumptions

This section is intended to outline the key assumptions supporting the Floor and Ceiling calculations in the APM.

3.1 Capital

3.1.1 Weighted Average Cost of Capital (WACC)

The WACC determined by the ERA on July 12, 2006 of 6.7% has been used.

3.1.2 Modern Equivalent Asset (MEA)

The same MEA approved by the ERA in July 2004 has been used in the calculation of the Ceilings and Floors in this submission.

3.1.3 Gross Replacement Value

3.1.3.1 Asset Population

The same asset population approved by the ERA in July 2004 has been used in the calculation of the Ceilings and Floors in this submission.

3.1.3.2 Unit Prices

The unit prices in the WorleyParsons (WP) report have been used.

The actual cost of the centralised train control system has been updated to reflect the actual project cost.

3.1.4 Economic Lives of assets

The same economic lives of assets approved by the ERA in September 2003 have been used in the calculation of the Ceilings and Floors in this submission.

3.1.5 Remoteness Factors

The same remoteness factors approved by the ERA in September 2003 have been used in the calculation of the Ceilings and Floors in this submission.

3.1.6 Transport Costs

The transport cost approved by the ERA in September 2003 was \$0.01 per net tonne kilometre.

In this submission WNR has escalated this cost by the movement in the Transportation Index (Australian Bureau of Statistics reference 6401.0) between

December 2002 and June 2006 of 13.5%, resulting in a cost of \$0.114 per GTK (Gross Tonne Kilometre) being used in the APM.

3.1.7 Construction Costs

The same assumptions regarding design, project management, construction financing costs and construction margins that were approved by the ERA in September 2003 have been used in this submission

3.2 Operating Costs

3.2.1 Working Capital

The methodology in the current Costing Principles has been adopted by WNR in calculating the cost of working capital.

3.2.2 Overheads

WestNet has used the following per annum values for overheads in the APM;

#	Item	2003 Determination	APM – June 2005	Proposed July 2006	Allocation Methodology
1	WNR Overheads and insurance	9,648,446	10,063,433	11,701,868**	50/50 GTK / Train No
2	WNR Corporate Support Services	2,678,204	2,793,396	3,629,500	50/50 GTK / Train No
4	WestNet Group Overheads	862,158	899,240	862,158	50/50 GTK / Train No
	Total Overheads	13,188,808	13,756,069	16,193,526	

** Overheads include some costs previously captured in Network Management.

3.2.3 Gross Tonne Kilometres (GTKs) and Train Movement Numbers

GTK's and Train Movement Numbers are used to allocate overheads and operating costs on the basis indicated in the sections above and below. The APM has been updated to use the GTKs and Train Movement Numbers for 2005 calendar year.

3.2.4 Operating Costs

WestNet has used the following per annum values for operating costs in the APM;

#	Item	2003 Determination	APM – June 2005	Proposed– July 2006	Allocation Methodology
1	Civil & C&CS Head office and Regional	5,377,680	5,608,978	6,477,000	GTK 100%
	Total Operating	5,377,680	5,608,978	6,477,000	

The Control and Signaling (C&S) Head Office and Regional administrative support is included in the July 2006 submission. The ERA's first determination excluded the C&S costs.

3.2.5 Network Management Costs

WestNet has used the following values for Network Management in the APM;

#	Item	2003 Determination	APM – June 2005	Proposed– July 2006	Allocation Methodology
1	Centralised Train Control	3,877,573	4,044,350	4,751,368	Direct allocation
2	Network Management Overhead	1,804,291	1,881,895	1,140,990**	Train numbers
	Total Network Management	5,681,864	5,926,245	5,892,358	

** Some costs reclassified to Overheads in line with WNR Budget.

Centralised Train Control has been directly allocated to the six main routes based on the number of train controller's required to manage each Route. This analysis has been undertaken by the Network Management team and is detailed in Appendix Two of this document.

The train control system which manages the entire system is allocated on route section train numbers divided by the system wide train numbers which is consistent with the ERA previous determination.

3.2.6 Maintenance

WestNet has used the following values for maintenance in the APM:

#	Line	2003 Determination Cost per km	APM – June 2005 Cost per km	Proposed– July 2006 Cost per km
1	Avon to Goomalling	4,600	4,592	5,400
2	Katanning to Tambellup	4,600	4,592	5,400
3	Kulin to Yilliminning	3,500	3,494	4,109

Maintenance includes both routine and cyclical maintenance for track, signaling and communications infrastructure. Routine maintenance is the corrective action taken as follow up to routine inspections. Cyclical maintenance represents tasks that are undertaken at regular intervals which are necessary to achieve the expected asset life. Maintenance excludes Major Periodical Maintenance (MPM) which is deemed as activities undertaken which extend the life of the asset. Maintenance activities included are consistent with those prescribed in Schedule 4 of the Railways (Access) Code 2000 and the approved Costing Principles.

4 Grain Lines Avon to Goomalling; Katanning to Tambellup and Kulin to Yilminning.

4.1 Floor and Ceilings Summary by Route Section

ERA Agreed Ceiling Calculations Grain Lines @ June 30, 2005								
Route Section	Section Length	Total Ceiling	Capital	Maintenance	Operating	Overhead	Floor	Total GRV
Avon to Goomalling	57.69	3,621,815	3,159,555	264,930	129,412	67,917	62,369	43,797,845
Katanning to Tambellup	46.712	2,661,383	2,321,254	214,516	92,563	33,050	31,206	32,133,892
Kulin to Yilminning	99.808	5,261,407	4,740,004	348,744	160,946	11,713	27,465	65,547,716
Revised Ceiling @ September 2006								
Route Section	Section Length	Total Ceiling	Capital	Maintenance	Operating	Overhead	Floor	Total GRV
Avon to Goomalling	57.69	4,385,906	3,720,733	311,526	252,143	101,504	96,253	51,500,188
Katanning to Tambellup	46.712	3,113,897	2,682,444	252,245	143,126	36,082	43,360	37,214,363
Kulin to Yilminning	99.808	6,497,751	5,844,803	410,111	222,433	20,404	37,780	80,323,583
Variance from 2005 Ceiling Increase \$								
Route Section	Section Length	Total Ceiling	Capital	Maintenance	Operating	Overhead	Floor	Total GRV
Avon to Goomalling		764,091	561,178	46,596	122,731	33,586	33,885	7,702,343
Katanning to Tambellup		452,514	361,190	37,729	50,563	3,032	12,154	5,080,471
Kulin to Yilminning		1,236,344	1,104,799	61,367	61,487	8,691	10,315	14,775,867
Ceiling Increase %		Total Ceiling	Capital	Maintenance	Operating	Overhead	Floor	Total GRV
Avon to Goomalling		21%	18%	18%	95%	49%	54%	18%
Katanning to Tambellup		17%	16%	18%	55%	9%	39%	16%
Kulin to Yilminning		23%	23%	18%	38%	74%	38%	23%

4.2 Variance Analysis

- Capital increases are attributable to increases in all unit rates as supported by the WorleyParsons Report.
- Maintenance increases are attributable to increases in the per Kilometre rate for infrastructure maintenance.
- Operating cost increased primarily resulting from the direct allocation of the train control function.
- Overheads have increased based on the WNR stand-alone budget.

5 Unit Pricing Analysis

Track Cost Comparison

RowID	Category	Sub Category	CostDescription	CostID	APM Cost 2002	Worley Parsons Revised @ June 2006	Increase since determination	Source 2006 update
1	Capital	Culverts	Culvert Walls \$ per tonne	CulvWalls_CV	\$950.00	\$1,174.00	24%	WorleyParsons report
2	Capital	Structures	Fencing Cost per KM (where used)	Fence_CK	\$70,000.00	\$72,000.00	3%	WorleyParsons report
3	Capital	Structures	Signs Costs \$ per km	Signs_CK	\$2,000.00	\$2,348.00	17%	WorleyParsons report
4	Capital	Track	Ballast Cost \$ per tonne, Bunbury	Blst_Bnb	\$14.60	\$25.00	71%	WorleyParsons report
5	Capital	Track	Ballast Cost \$ per tonne, Esperance	Blst_Esp	\$14.60	\$25.50	75%	WorleyParsons report
6	Capital	Track	Ballast Cost \$ per tonne, Kalgoorlie	Blst_Kal	\$14.60	\$20.00	37%	WorleyParsons report
7	Capital	Track	Ballast Cost \$ per tonne, Kwinana	Blst_Kwi	\$14.60	\$25.00	71%	WorleyParsons report
8	Capital	Track	Ballast Cost \$ per tonne, Midland	Blst_Mid	\$14.60	\$25.00	71%	WorleyParsons report
9	Capital	Track	Cost per 41 kg/m Rail \$ per tonne	R41	\$1,138.00	\$1,600.00	41%	WorleyParsons report
10	Capital	Track	Cost per 50 kg/m Rail \$ per tonne	R50	\$1,173.20	\$1,500.00	28%	WorleyParsons report
11	Capital	Track	Cost per 60 kg/m Rail \$ per tonne	R60	\$1,101.87	\$1,440.00	31%	WorleyParsons report
12	Capital	Track	Timber sleeper cost for NG 19TAL	SLPT1_19TAL	\$89.40	\$103.00	15%	WorleyParsons report
13	Capital	Track	Steel sleeper cost for NG 19TAL	SLPS1_19TAL	\$56.00	\$65.35	17%	WorleyParsons report
14	Capital	Track	Concrete sleeper cost for NG	SLPC1	\$72.00	\$85.00	18%	WorleyParsons report
15	Capital	Track	Timber sleeper cost for SG	SLPT2	\$64.00	\$117.80	84%	WorleyParsons report
16	Capital	Track	Steel sleeper cost for SG	SLPS2	\$67.00	\$75.35	12%	WorleyParsons report
17	Capital	Track	Concrete sleeper cost for SG	SLPC2	\$81.00	\$95.00	17%	WorleyParsons report
18	Capital	Track	Timber sleeper cost for DG	SLPT3	\$71.00	\$147.20	107%	WorleyParsons report
19	Capital	Track	Steel sleeper cost for DG	SLPS3	\$74.00	\$288.50	290%	WorleyParsons report
20	Capital	Track	Concrete sleeper cost for DG	SLPC3	\$111.00	\$140.00	26%	WorleyParsons report
21	Capital	Track	Timber Bearers	Turnout47_1	\$90,000.00	\$206,418.00	129%	WorleyParsons report
22	Capital	Track	Cost per 47 kg/m Turnout for SG	Turnout47_2	\$85,000.00	\$192,872.00	127%	WorleyParsons report
23	Capital	Track	Cost per 47 kg/m Turnout for DG	Turnout47_3	\$85,000.00	\$412,726.00	386%	WorleyParsons report
24	Capital	Track	Timber Bearers	Turnout60Timber_1	\$161,200.00	\$186,000.00	15%	WorleyParsons report
25	Capital	Track	Concrete Bearers	Turnout60Concrete_1	\$168,000.00	\$207,000.00	23%	WorleyParsons report
26	Capital	Track	Timber Bearers	Turnout60Timber_2	\$162,000.00	\$173,000.00	7%	WorleyParsons report
27	Capital	Track	Concrete Bearers	Turnout60Concrete_2	\$170,000.00	\$205,000.00	21%	WorleyParsons report
28	Capital	Track	Timber Bearers	Turnout60Timber_3	\$254,150.00	\$385,000.00	51%	WorleyParsons report
29	Capital	Track	Concrete Bearers	Turnout60Concrete_3	\$280,000.00	\$454,000.00	62%	WorleyParsons report
30	Capital	Track	Catchpoint Cost \$ per item	CtchPnt_CK	\$15,000.00	\$46,000.00	207%	WorleyParsons report
31	Capital	Track	Road Access Cost \$ per km	AccRd_CK	\$5,000.00	\$5,870.00	17%	WorleyParsons report
32	Capital	Track	Shunters Path Costs \$ per km	ShntPth_CK	\$3,150.00	\$3,700.00	17%	WorleyParsons report
33	General	Null	Where Null required for matrix	Nil	\$1.00	\$1.00	0%	
59	Capital	Track	Timber sleeper cost for NG 16TAL	SLPT1_16TAL	\$49.72	\$103.00	107%	WorleyParsons report
60	Capital	Track	Steel sleeper cost for NG 16TAL	SLPS1_16TAL	\$56.00	\$65.35	17%	WorleyParsons report
61	Capital	Track	Concrete sleeper cost for NG 16TAL	SLPC1_16TAL	\$72.00	\$85.00	18%	WorleyParsons report
62	Capital	Track	Concrete sleeper cost for NG 19TAL	SLPC1_19TAL	\$72.00	\$85.00	18%	WorleyParsons report
63	Capital	Track	Curve	SLPT1_16TAL_Crv	\$86.08	\$103.00	20%	WorleyParsons report
Earthworks Cost					% of SG rate	\$250.00		per metre
			Collie East	57%	\$125,611	\$142,094	13%	WorleyParsons report
			South West Main	64%	\$141,374	\$159,925	13%	WorleyParsons report
			Grain Region	64%	\$141,374	\$159,925	13%	WorleyParsons report
			EGR Dual Gauge track	73%	\$161,500	\$182,692	13%	WorleyParsons report
			Brunswick to Worsley	87%	\$191,236	\$216,330	13%	WorleyParsons report
			EGR Avon to Kalgoorlie		\$221,000	\$250,000	13%	WorleyParsons report
			Kalgoorlie to Leonora		\$221,000	\$250,000	13%	WorleyParsons report
			Kalgoorlie to Esperance		\$221,000	\$250,000	13%	WorleyParsons report
Tracklay cost								
			Collie East		\$94,000	\$117,510	25%	WorleyParsons report
			South West Main		\$94,000	\$117,510	25%	WorleyParsons report
			Grain Region		\$93,000	\$116,260	25%	WorleyParsons report
			EGR Dual gauge track		\$126,000	\$144,300	15%	WorleyParsons report
			Brunswick to Worsley		\$94,000	\$117,510	25%	WorleyParsons report

Communications Unit Rates Comparison

CostCode	Category	Subcategory	Name	Price	Worley Parsons Revised @ June 2006	Percent Increase from base 2002	Source 2006 update
Coms1	Cables	Internal	2 pairs	\$0.30	\$0.35	16.66%	WorleyParsons report
Coms10	Cables	External	20 pairs	\$4.00	\$4.67	16.66%	WorleyParsons report
Coms11	Cables	External	50 pairs	\$10.00	\$11.67	16.66%	WorleyParsons report
Coms12	Cables	External	Carrier cable SQC	\$4.00	\$4.67	16.66%	WorleyParsons report
Coms13	Ducts & Pits	Ducts	Ducts	\$30.00	\$35.00	16.66%	WorleyParsons report
Coms14	Ducts & Pits	Pits	Pits	\$450.00	\$524.96	16.66%	WorleyParsons report
Coms15	Cables	Install	DirectBury	\$15.00	\$17.50	16.66%	WorleyParsons report
Coms16	Cables	Install	Ducts and cables	\$25.00	\$29.16	16.66%	WorleyParsons report
Coms17	Carrier Equip	Carrier Equip	Terminal	\$40,000.00	\$46,662.84	16.66%	WorleyParsons report
Coms18	Carrier Equip	Carrier Equip	Repeater	\$4,500.00	\$5,249.57	16.66%	WorleyParsons report
Coms19	Phones	Phones	300 ext PABX	\$110,000.00	\$128,322.81	16.66%	WorleyParsons report
Coms2	Cables	Internal	6 pairs	\$0.70	\$0.82	16.66%	WorleyParsons report
Coms20	Phones	Phones	100ext PABX	\$50,000.00	\$58,328.55	16.66%	WorleyParsons report
Coms21	Phones	Phones	Phones	\$300.00	\$349.97	16.66%	WorleyParsons report
Coms22	Phones	Trackside	Trackside	\$2,500.00	\$2,916.43	16.66%	WorleyParsons report
Coms23	MDF systems	Major	Major	\$20,000.00	\$23,331.42	16.66%	WorleyParsons report
Coms24	MDF systems	Minor	Minor	\$7,500.00	\$8,749.28	16.66%	WorleyParsons report
Coms25	Radio	Radio	Base stations	\$30,000.00	\$34,997.13	16.66%	WorleyParsons report
Coms26	Radio	Radio	ControlEquip	\$50,000.00	\$58,328.55	16.66%	WorleyParsons report
Coms27	Radio	Radio	Tower	\$40,000.00	\$46,662.84	16.66%	WorleyParsons report
Coms28	Power	Major	Dual rectifier and Batteries	\$25,000.00	\$29,164.28	16.66%	WorleyParsons report
Coms29	Power	Minro	Single rectifier and batteries	\$12,000.00	\$13,998.85	16.66%	WorleyParsons report
Coms3	Cables	Internal	10 pairs	\$1.00	\$1.17	16.66%	WorleyParsons report
Coms30	Radio	terminals	Microwave terminals	\$120,000.00	\$139,988.52	16.66%	WorleyParsons report
Coms31	Radio	UHFlink terminals	UHFlink terminals	\$20,000.00	\$23,331.42	16.66%	WorleyParsons report
Coms32	Radio	Radio building	Radio building	\$45,000.00	\$52,495.70	16.66%	WorleyParsons report
Coms33	Train Order	Cabin	Per building	\$6,765.00	\$7,891.85	16.66%	WorleyParsons report
Coms34	Radio	GrainLine	Allowance	\$4,994.00	\$5,825.86	16.66%	WorleyParsons report
Coms4	Cables	Internal	20 pairs	\$2.00	\$2.33	16.66%	WorleyParsons report
Coms5	Cables	Internal	50 pairs	\$4.00	\$4.67	16.66%	WorleyParsons report
Coms6	Cables	Internal	category 5/type 1	\$1.00	\$1.17	16.66%	WorleyParsons report
Coms7	Cables	External	2 pairs	\$1.00	\$1.17	16.66%	WorleyParsons report
Coms8	Cables	External	6 pairs	\$2.50	\$2.92	16.66%	WorleyParsons report
Coms9	Cables	External	10 pairs	\$3.00	\$3.50	16.66%	WorleyParsons report

Signalling Unit Rates Comparison

ID	category	item	APM Cost 2002	Worley Parsons Revised @ June 2006	Percent Increase from base 2002	Source
SP1	Cables	Conduits, cables and trenching	\$72.00	\$83.99	16.66%	WorleyParsons report
SP10	Interlocking	Microlok EOS	\$41,628.00	\$48,562.02	16.66%	WorleyParsons report
SP11	Interlocking	Microlok Large	\$53,378.00	\$62,269.23	16.66%	WorleyParsons report
SP12	Interlocking	Microlok Small	\$41,628.00	\$48,562.02	16.66%	WorleyParsons report
SP13	Misc	Slot interface	\$34,000.00	\$39,663.41	16.66%	WorleyParsons report
SP14	Misc	Gantries	\$25,000.00	\$29,164.28	16.66%	WorleyParsons report
SP15	Misc	Installation labour	\$564.00	\$657.95	16.66%	WorleyParsons report
SP16	Misc	Insulated Joints	\$5,000.00	\$5,832.86	16.66%	WorleyParsons report
SP17	Misc	Mounting rack	\$1,400.00	\$1,633.20	16.66%	WorleyParsons report
SP18	Misc	Out Of Gauge Equipment	\$30,000.00	\$34,997.13	16.66%	WorleyParsons report
SP19	Points	Points with rodding	\$18,380.00	\$21,441.57	16.66%	WorleyParsons report
SP2	Cables	OF cable 12core	\$4.00	\$4.67	16.66%	WorleyParsons report
SP20	Power	Power connection	\$4,500.00	\$5,249.57	16.66%	WorleyParsons report
SP21	Power	Power supply1	\$9,865.00	\$11,508.22	16.66%	WorleyParsons report
SP22	Power	Power supply2	\$8,740.00	\$10,195.83	16.66%	WorleyParsons report
SP23	Power	Solar power supply	\$18,500.00	\$21,581.56	16.66%	WorleyParsons report
SP24	Relays	Interface Relays	\$583.00	\$680.11	16.66%	WorleyParsons report
SP25	Signals	Additional route Indicator	\$3,250.00	\$3,791.36	16.66%	WorleyParsons report
SP26	Signals	Signals ground shunt 2 aspect	\$4,230.00	\$4,934.60	16.66%	WorleyParsons report
SP27	Signals	Signals ground shunt 3 aspect	\$7,650.00	\$8,924.27	16.66%	WorleyParsons report
SP28	Signals	Signals Mast 2 aspect	\$7,070.00	\$8,247.66	16.66%	WorleyParsons report
SP29	Signals	Signals shunt subsidiary	\$2,000.00	\$2,333.14	16.66%	WorleyParsons report
SP3	Cables	Pits	\$480.00	\$559.95	16.66%	WorleyParsons report
SP30	Signals	Signals standard	\$8,090.00	\$9,437.56	16.66%	WorleyParsons report
SP31	Signals	Signals with route indicator	\$11,340.00	\$13,228.92	16.66%	WorleyParsons report
SP32	Signals	Standby plant & control system1	\$28,800.00	\$33,597.24	16.66%	WorleyParsons report
SP33	Signals	Standby plant & control system2	\$36,900.00	\$43,046.47	16.66%	WorleyParsons report
SP34	Signals	Switchlock with rodding	\$17,000.00	\$19,831.71	16.66%	WorleyParsons report
SP35	Signals	Telemetry equipment	\$2,300.00	\$2,683.11	16.66%	WorleyParsons report
SP36	Structures	Fencing	\$3,400.00	\$3,966.34	16.66%	WorleyParsons report
SP37	Structures	Location cases and terminals1	\$6,415.00	\$7,483.55	16.66%	WorleyParsons report
SP38	Structures	Location cases and terminals2	\$6,620.00	\$7,722.70	16.66%	WorleyParsons report
SP39	Structures	Signals equipment room	\$31,240.00	\$36,443.68	16.66%	WorleyParsons report
SP4	Cables	TDB's	\$220.00	\$256.65	16.66%	WorleyParsons report
SP40	Structures	Standby Hut	\$12,000.00	\$13,998.85	16.66%	WorleyParsons report
SP41	Track Circuits	Track circuit Coded	\$13,714.00	\$15,998.35	16.66%	WorleyParsons report
SP42	Track Circuits	Track circuits AF	\$6,822.00	\$7,958.35	16.66%	WorleyParsons report
SP43	Track Circuits	Track circuits dc	\$2,382.00	\$2,778.77	16.66%	WorleyParsons report
SP44	Crossings	Crossing1	\$176,763.00	\$206,206.59	16.66%	WorleyParsons report
SP45	Crossings	Crossing2	\$175,743.00	\$205,016.69	16.66%	WorleyParsons report
SP46	Crossings	Crossing3	\$142,045.00	\$165,705.58	16.66%	WorleyParsons report
SP47	Crossings	Crossing4	\$141,025.00	\$164,515.68	16.66%	WorleyParsons report
SP48	Crossings	Crossing5	\$129,878.00	\$151,511.91	16.66%	WorleyParsons report
SP49	Crossings	Crossing6	\$86,000.00	\$100,325.11	16.66%	WorleyParsons report
SP5	Cables	Undertrack crossings	\$2,750.00	\$3,208.07	16.66%	WorleyParsons report
SP50	Interlocking	Microtrax EOS unit	\$34,568.00	\$40,326.03	16.66%	WorleyParsons report
SP51	Interlocking	Microtrax Repeater	\$23,834.00	\$27,804.05	16.66%	WorleyParsons report
SP52	misc	Invertor	\$1,850.00	\$2,158.16	16.66%	WorleyParsons report
SP53	Misc	Misc control equipment	\$2,500.00	\$2,916.43	16.66%	WorleyParsons report
SP54	misc	Plant	\$774.00	\$902.93	16.66%	WorleyParsons report

Humes
Material
Price 2006

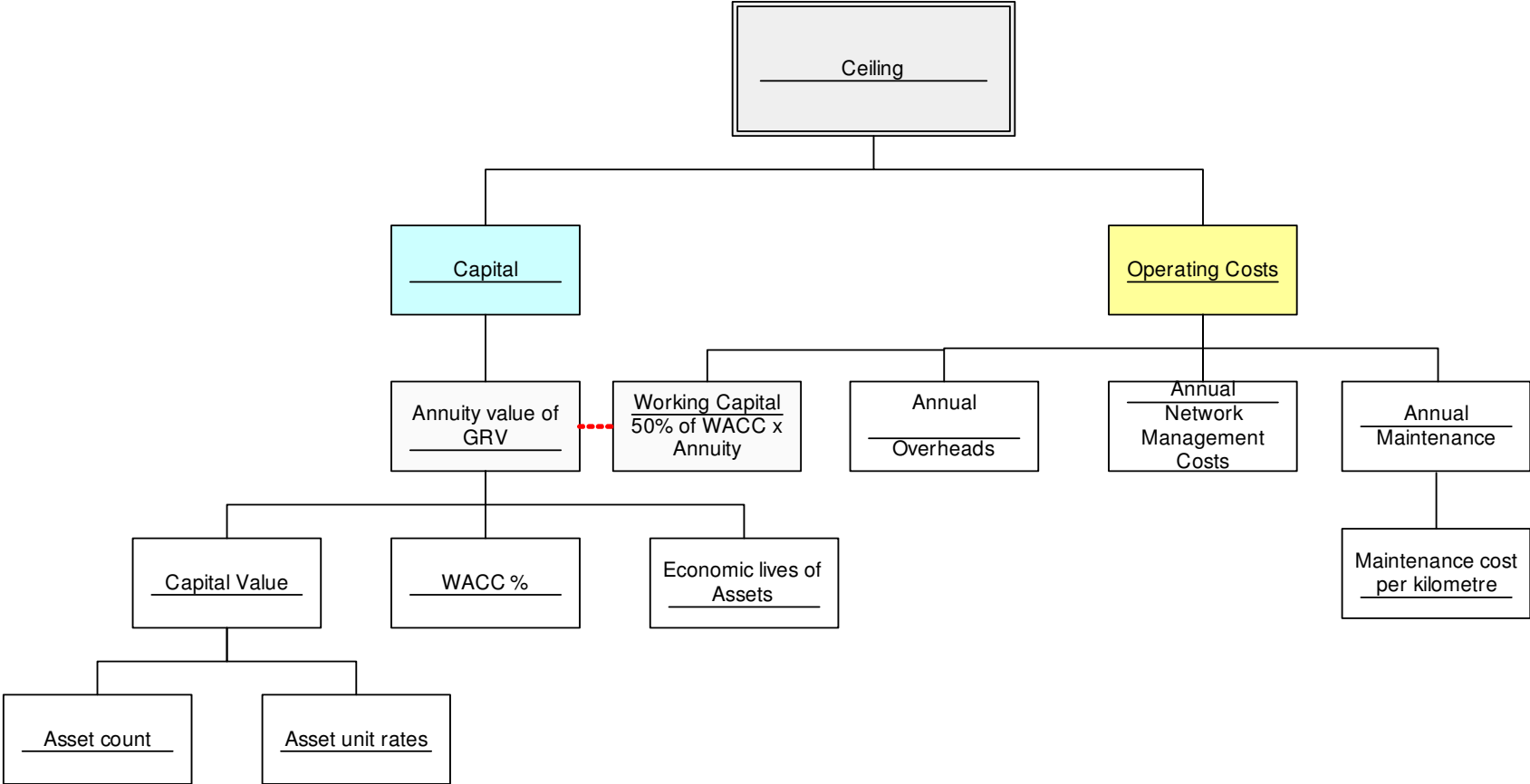
Culvert Unit rates Comparison

ID	Type	StandardSize	MatCost	InstallCost	Worley Parsons Revised @ June 2006	Worley Parsons Revised @ June 2006	Percent Increase from base 2002	Source
					MatCost	InstallCost		
1	RCB	300X150	\$107.26	\$85.81	\$117.45	\$93.96	10%	WorleyParsons report
2	RCB	375X225	\$133.00	\$106.40	\$145.64	\$116.51	9%	WorleyParsons report
3	RCB	450X150	\$149.15	\$119.32	\$163.32	\$130.66	10%	WorleyParsons report
4	RCB	450X225	\$156.75	\$125.40	\$171.64	\$137.31	10%	WorleyParsons report
5	RCB	450X300	\$170.05	\$136.04	\$186.20	\$148.96	10%	WorleyParsons report
6	RCB	450X450	\$189.05	\$151.24	\$207.01	\$165.61	10%	WorleyParsons report
7	RCB	600X225	\$183.35	\$146.68	\$200.77	\$160.61	10%	WorleyParsons report
8	RCB	600X300	\$196.65	\$157.32	\$215.33	\$172.27	10%	WorleyParsons report
9	RCB	600X375	\$205.20	\$164.16	\$224.69	\$179.76	10%	WorleyParsons report
10	RCB	600X450	\$215.65	\$172.52	\$236.14	\$188.91	10%	WorleyParsons report
11	RCB	600X600	\$233.70	\$186.96	\$255.90	\$204.72	10%	WorleyParsons report
12	RCB	750X300	\$324.58	\$259.67	\$355.42	\$284.34	10%	WorleyParsons report
13	RCB	750X375	\$332.50	\$266.00	\$364.09	\$291.27	10%	WorleyParsons report
14	RCB	750X450	\$340.42	\$272.33	\$372.76	\$298.21	10%	WorleyParsons report
15	RCB	750X600	\$354.67	\$283.73	\$388.36	\$310.69	9%	WorleyParsons report
16	RCB	900X300	\$609.58	\$487.67	\$520.80	\$416.64	-15%	WorleyParsons report
17	RCB	900X375	\$617.50	\$494.00	\$676.16	\$540.93	10%	WorleyParsons report
18	RCB	900X450	\$625.42	\$500.33	\$665.00	\$532.00	6%	WorleyParsons report
19	RCB	900X600	\$639.67	\$511.73	\$690.00	\$552.00	8%	WorleyParsons report
20	RCB	900X750	\$657.08	\$525.67	\$575.00	\$460.00	-12%	WorleyParsons report
21	RCB	900X900	\$672.92	\$538.33	\$600.00	\$480.00	-11%	WorleyParsons report
22	RCB	1200X300	\$1,076.67	\$861.33	\$1,178.95	\$943.16	10%	WorleyParsons report
23	RCB	1200X375	\$1,092.50	\$874.00	\$1,196.29	\$957.03	10%	WorleyParsons report
24	RCB	1200X450	\$1,104.38	\$883.50	\$766.60	\$613.28	-31%	WorleyParsons report
25	RCB	1200X600	\$1,137.63	\$910.10	\$812.50	\$650.00	-29%	WorleyParsons report
26	RCB	1200X750	\$1,159.79	\$927.83	\$1,000.00	\$800.00	-14%	WorleyParsons report
27	RCB	1200X900	\$1,204.13	\$963.30	\$887.50	\$710.00	-26%	WorleyParsons report
28	RCB	1200X1050	\$1,211.25	\$969.00	\$1,150.00	\$920.00	-5%	WorleyParsons report
29	RCB	1200X1200	\$1,219.17	\$975.33	\$1,240.00	\$992.00	2%	WorleyParsons report
30	RCB	1500X900	\$1,188.29	\$950.63	\$1,220.00	\$976.00	3%	WorleyParsons report
31	RCB	1500X1200	\$1,258.75	\$1,007.00	\$1,370.00	\$1,096.00	9%	WorleyParsons report
32	RCB	1500X1500	\$1,335.54	\$1,068.43	\$1,540.00	\$1,232.00	15%	WorleyParsons report
33	RCB	1800X900	\$1,256.38	\$1,005.10	\$1,510.00	\$1,208.00	20%	WorleyParsons report
34	RCB	1800X1200	\$1,325.25	\$1,060.20	\$1,530.00	\$1,224.00	15%	WorleyParsons report
35	RCB	1800X1500	\$1,374.33	\$1,099.47	\$1,700.00	\$1,360.00	24%	WorleyParsons report
36	RCB	1800X1800	\$1,459.04	\$1,167.23	\$1,860.00	\$1,488.00	27%	WorleyParsons report
37	RCB	2100X1200	\$1,491.50	\$1,193.20	\$1,940.00	\$1,552.00	30%	WorleyParsons report
38	RCB	2100X1500	\$1,565.13	\$1,252.10	\$2,140.00	\$1,712.00	37%	WorleyParsons report
39	RCB	2100X1800	\$1,658.54	\$1,326.83	\$2,330.00	\$1,864.00	40%	WorleyParsons report
40	RCB	2100X2100	\$1,748.79	\$1,399.03	\$2,530.00	\$2,024.00	45%	WorleyParsons report
41	RCB	2400X1200	\$1,618.96	\$1,295.17	\$2,090.00	\$1,672.00	29%	WorleyParsons report
42	RCB	2400X1500	\$1,700.50	\$1,360.40	\$2,280.00	\$1,824.00	34%	WorleyParsons report
43	RCB	2400X1800	\$1,794.71	\$1,435.77	\$2,480.00	\$1,984.00	38%	WorleyParsons report
44	RCB	2400X2100	\$1,875.46	\$1,500.37	\$2,680.00	\$2,144.00	43%	WorleyParsons report
45	RCB	2400X2400	\$1,962.54	\$1,570.03	\$2,890.00	\$2,312.00	47%	WorleyParsons report
46	RCB	2700X1500	\$1,797.88	\$1,438.30	\$2,420.00	\$1,936.00	35%	WorleyParsons report
47	RCB	2700X1800	\$1,872.29	\$1,497.83	\$2,620.00	\$2,096.00	40%	WorleyParsons report
48	RCB	2700X2100	\$1,979.17	\$1,583.33	\$2,820.00	\$2,256.00	42%	WorleyParsons report

Bridge cost per metre squared comparison

				17.4%
BridgeTypeCode	Bridgecostperm2	Worley Parsons Revised @ June 2006	Source	Percent Increase from base 2002
Complex_DT	\$3,300.00	\$3,874.20	WorleyParsons report	17.4%
Complex_NG	\$3,200.00	\$3,756.80	WorleyParsons report	17.4%
Complex_ST	\$3,400.00	\$3,991.60	WorleyParsons report	17.4%
Footbridge	\$1,800.00	\$2,113.20	WorleyParsons report	17.4%
Medium_DT	\$2,700.00	\$3,169.80	WorleyParsons report	17.4%
Medium_NG	\$2,600.00	\$3,052.40	WorleyParsons report	17.4%
Medium_ST	\$2,800.00	\$3,287.20	WorleyParsons report	17.4%
Simple_DT	\$2,200.00	\$2,582.80	WorleyParsons report	17.4%
Simple_NG	\$2,200.00	\$2,582.80	WorleyParsons report	17.4%
Simple_ST	\$2,300.00	\$2,700.20	WorleyParsons report	17.4%

6 Appendix 1 – APM structure



7 Appendix Two – Centralised Train Control – cost allocation

WestNet Centralised Train Control Function

	\$	FTE's
Approved Budget 2006/07	4,751,368	37
Total	4,751,368	
Average per FTE	128,415	

Region	FTE's	Resource Budget	APM Route							Grain 4 line determined	Balance of grain	Perenjori Geraldton	Total	check
			SWM	Terminals	Worsley	EGR	K-L	K-E						
South West	4.6	593,921	92%	8%										100%
Picton	4.6	593,921	83%	7%	10%									100%
Central (Miling)	4.6	593,921				90%			10%					100%
Great Southern & MR	4.6	593,921							10%					100%
Mid West	4.6	593,921								90%		70%		100%
Central (Goomalling branches)	4.6	593,921				65%			10%	25%				100%
Merredin EGR East	4.6	593,921				90%			10%					100%
Leonora to Esperance	4.6	593,921						25%	75%					100%
Total Centralised Train Control	37	4,751,368												

Budget Allocation

Region	FTE's	Resource Budget	APM Route							Grain 4 line determined	Balance of grain	Perenjori Geraldton	Total
			SWM	Terminals	Worsley	EGR	K-L	K-E					
South West	4.6	593,921	546,407	47,514	-	-	-	-	-	-	-	-	593,921
Picton	4.6	593,921	492,954	41,574	59,392	-	-	-	-	-	-	-	593,921
Central (Miling)	4.6	593,921	-	-	-	534,529	-	-	-	59,392	-	-	593,921
Great Southern & MR	4.6	593,921	-	-	-	-	-	-	-	59,392	534,529	-	593,921
Mid West	4.6	593,921	-	-	-	-	-	-	-	-	178,176	415,745	593,921
Central (Goomalling branches)	4.6	593,921	-	-	-	386,049	-	-	-	59,392	148,480	-	593,921
Merredin EGR East	4.6	593,921	-	-	-	534,529	-	-	-	59,392	-	-	593,921
Leonora to Esperance	4.6	593,921	-	-	-	-	148,480	445,441	-	-	-	-	593,921
Total Centralised Train Control	37	4,751,368	1,039,362	89,088	59,392	1,455,106	148,480	445,441	237,568	861,185	415,745	4,751,368	

Train Control Function

SWM	1,039,362
Terminal	89,088
Worsley	59,392
EGR	1,455,106
K-L	148,480
K-E	445,441
Grain 4 line determined	237,568
Balance of grain	861,185
Perenjori Geraldton	415,745
Total train control allocation	4,751,368

Note