Catchment Programs - Tatura

Shepparton Irrigation Region Catchment Strategy

Key Performance Indicators

for the

Public Salinity Control Pump Program

FINAL

Goulburn-Murray Water

Annual Report for period ending 30th June 2005

GOULBURN-MURRAY WATER

GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY

NORTH CENTRAL CATCHMENT MANAGEMENT AUTHORITY

action Salinity & Water AUSTRALIA

Our Water Our Future

Hyder Consulting

The pictures on the cover display an example of the salinity impacts currently experienced within the Shepparton Irrigation Region, juxtaposed against a public groundwater pump offering salinity protection for productive pasture farmland.

Shepparton Irrigation Region Catchment Strategy

Key Performance Indicators

for the

Public Salinity Control Pump Program

FINAL

G-MW Project Manager

Terry Hunter

Funded By

The Victorian Government
and
The National Action Plan for Salinity and Water Quality

G-MW File No. 2002/2683/1
G-MW Docs No. 1825922

Shepparton Irrigation Region Catchment Strategy

The Shepparton Irrigation Region Catchment Strategy (SIRCS) has evolved from the Shepparton Irrigation Region Land and Water Salinity Management Plan which was endorsed in 1990. The Sub-Surface Drainage Program (SSDP) is one of the core programs within the SIRCS. The core programs include:

- The Sub-Surface Drainage Program
- The Farm and Environment Program
- The Surface Water Management Program
- The Waterways Program.

The SSDP employs private and public groundwater pumping to manage groundwater levels for salinity control and salt disposal within the region. Public Salinity Control Groundwater Pumps are installed where:

- Private groundwater pumping is not feasible
- The area is affected by high watertables, and
- There is sufficient landholder support.

The feasibility investigations and capital costs for new Public Salinity Control Groundwater Pumps are jointly funded by the Victorian Government and the National Action Plan through the sub-surface drainage component of the SIRCS. Operating and maintenance costs of the Public Salinity Control Groundwater Pumps are met by the direct and indirect beneficiaries of the scheme – landowners and local government.

Key Performance Indicators

Goulburn-Murray Water is responsible for implementing the Public Salinity Control Groundwater Pumping Program. Key Performance Indicators were developed for the program in response to a need for regular program reporting to key stakeholders.

A more general set of Performance Indicators have been developed for the Sub-Surface Drainage Program.

SIRCS MER Strategy

The SIRCS Monitoring, Evaluation and Reporting (MER) Strategy was developed to draw together aspects of natural resource monitoring in the Goulburn-Broken region at a strategic level that are relevant to the practices, policies and activities of the Regional Catchment Strategy.

This SSDP Performance Report is one of many reports detailing monitoring, evaluation and reporting within the Goulburn-Broken region, and is consistent with the principles and objectives of the MER strategy.

Further Information

Requests for further information and comments can be directed to:

Mr Terry Hunter
Manager Subsurface Drainage
Goulburn-Murray Water
PO Box 165 Tatura Victoria 3616

Glossary

Term	Description
CGS	Capital Grant Scheme
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
FEDS	Farm Exploratory Drilling Scheme
GBCMA	Goulburn-Broken Catchment Management Authority
G-MW	Goulburn-Murray Rural Water Authority
KPI	Key Performance Indicator
MDBC	Murray-Darling Basin Commission
NAP	National Action Plan
NHT	Natural Heritage Trust
Private Bore	Private Irrigation Bore, also known as a Private Groundwater Pump
Program Development	Component of the SSDP related to development. Includes research and investigation
Program Implementation	Component of the SSDP related to implementation. Includes all on-ground works (including the CGS, FEDS and Public Pump Program)
Program Monitoring and Reporting	Component of the SSDP related to monitoring and reporting. Includes biophysical and program (KPI) reporting
Program Support	Component of the SSDP related to support. Includes committee meetings, coordination, program management, extension and capacity building
Public Salinity Control Pump	A Public Pump design to manage salinity levels in the root zone
Public Watertable Control Pump	A public pump designed to manage high watertables
SIRCS	Shepparton Irrigation Region Catchment Strategy (formerly known as the Shepparton Irrigation Region Land and Water Salinity Management Plan or SIRLWSMP)
SIRGMP	Shepparton Irrigation Region Groundwater Management Plan
SIRIC	Shepparton Irrigation Region Implementation Committee
SPB	Salinity Plan Bore
SSDP	Sub-surface Drainage Program

Contents

Introduction

Key Performance Indicators have been developed for the Public Salinity Control Pumping Program in order to provide a standard method for evaluating and reporting important aspects of program performance to key stakeholders, including government funding bodies, statutory and regulatory agencies, and community organisations and groups. The relationships between key stakeholders is presented in **Figure 1**.

A map showing the Shepparton Irrigation Region has been included as **Figure 2**.

The indicators provide concise at-a-glance reporting on important monitored parameters, allowing ready evaluation of enterprise or program performance and ensuring that key information and trends are more easily absorbed and understood by the stakeholders.

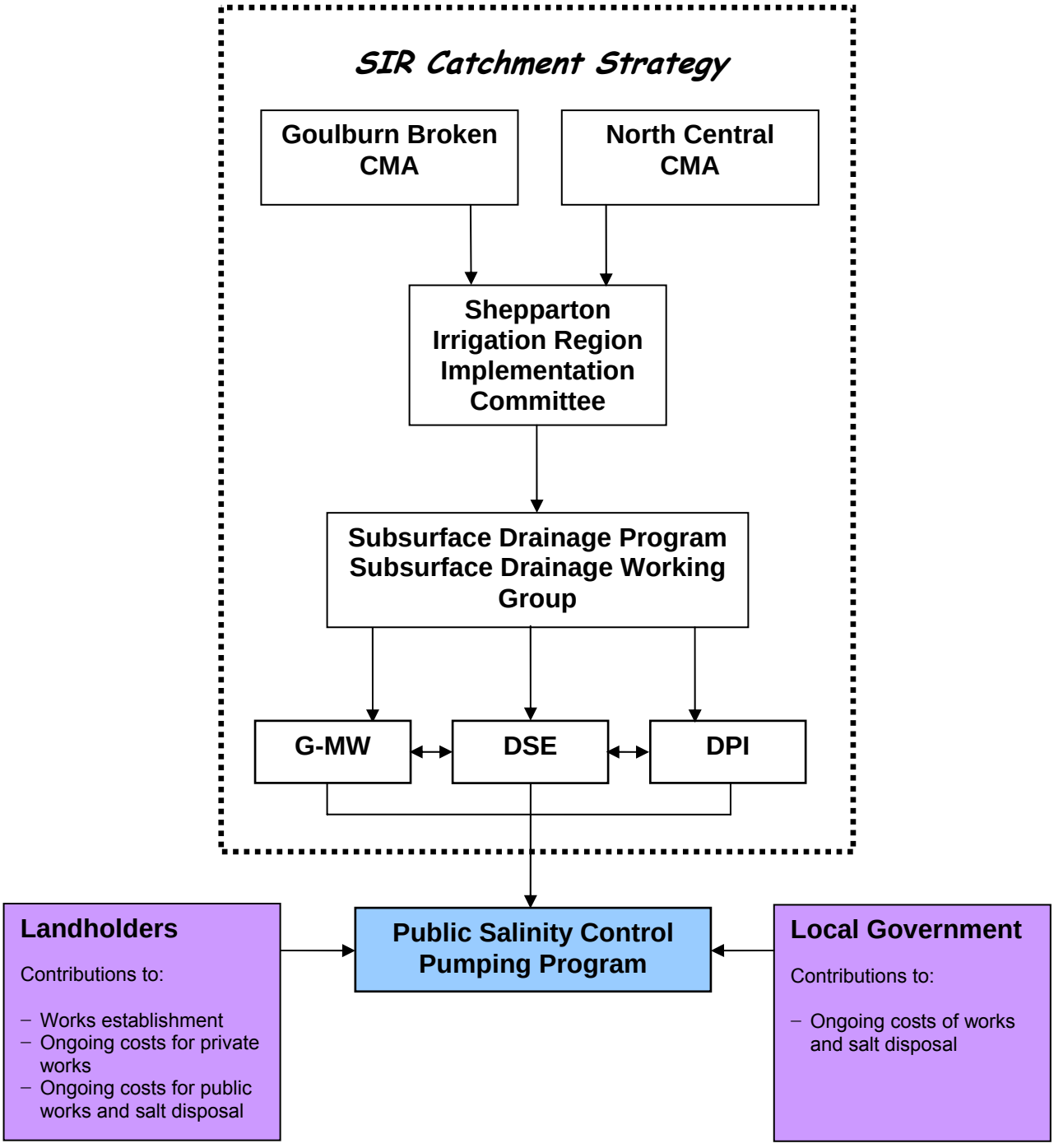
Combined graphical and numerical indication is a key feature of the reporting, enabling comparison against previous periods and visual trend recognition whilst retaining the raw data. Targets and benchmarks have been included where available to assist in evaluating the program. Past averages are calculated where appropriate and where there is enough data. These averages are calculated for the 2001/2 to 2003/4 period.

The Indicators are grouped into a range of categories that extend beyond purely financial and economic aspects to include program efficiency, communication, and environmental impacts/benefits.

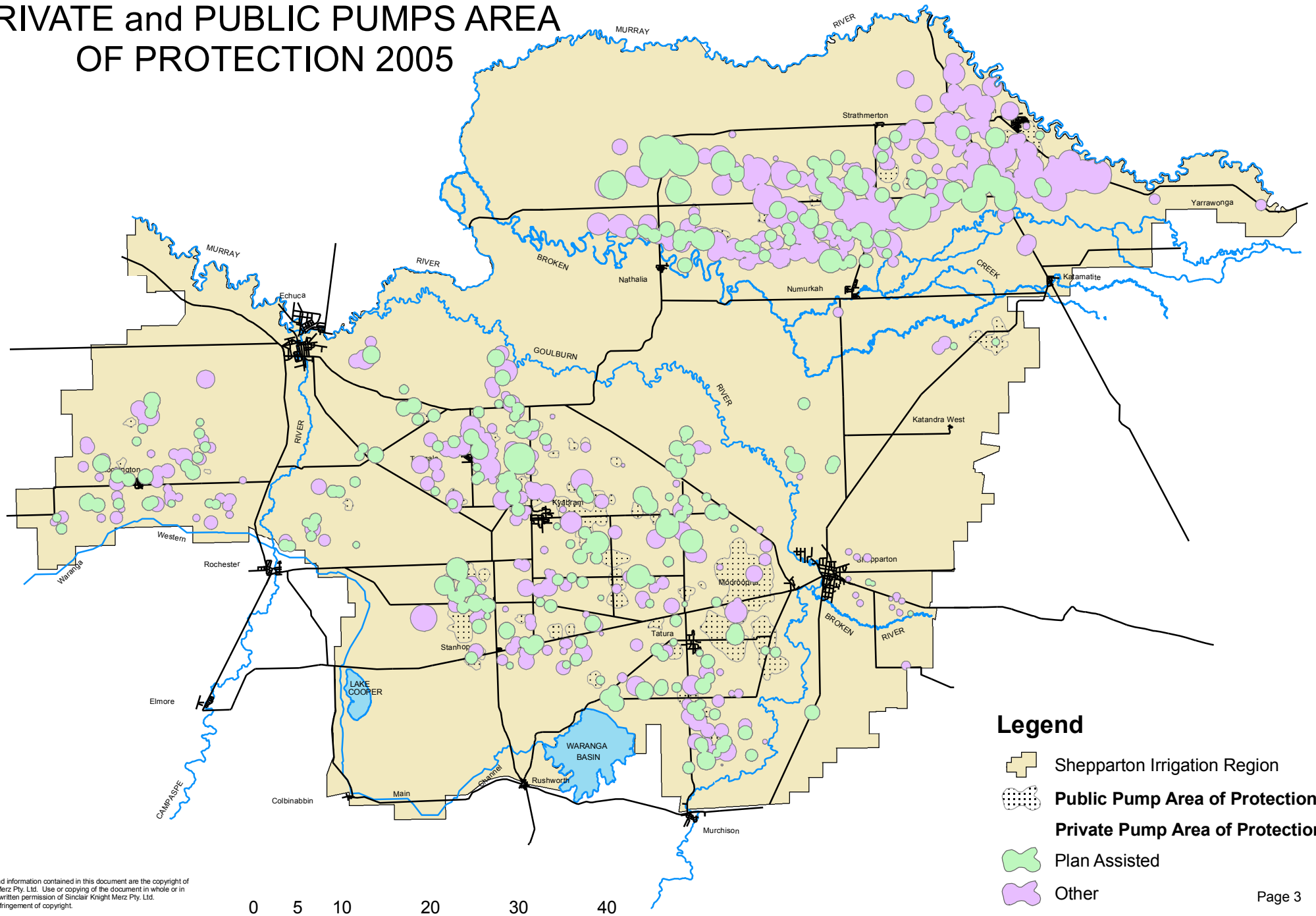
A set of headline indicators has been developed to give an overall indication of the performance of the Public Pump Program. This diagrammatic representation is presented as **Figure 3**.

Brief interpretation notes for the indicators are provided at the end of this document.

Figure 1: Stakeholder Relationships



SHEPPARTON IRRIGATION REGION PRIVATE and PUBLIC PUMPS AREA OF PROTECTION 2005



Legend

- Shepparton Irrigation Region
- **Public Pump Area of Protection**
- **Private Pump Area of Protection**
- Plan Assisted
- Other

NOTE: Private pump area based on licenced volume

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Figure 3

SIRCS - Public Pump Program
Headline Indicator Summary

2004-2005 Performance Report

GOULBURN-MURRAY WATER

KPI	Category	Reports On	Outcome	Comment
P1-1	Work Task Indicators	Cumulative number of public pumps completed versus plan targets	⚠↓	Public pump completion well below target figure
P3-1	Operational Task Indicators	Annual volume pumped	✓	Pumped figure in line with design result given climatic conditions limited disposal opportunities
P3-3	Operational Task Indicators	Estimated salt tonnage removed at pump sites	✓↑	Amount of salt disposed through the public pump program continues to increase
F1-1	Program Cost Indicators	Annual program budget compared against expenditure	⚠↓	Expenditure was nearly half that of the original budget
F1-2	Program Cost Indicators	Cost per hectare for new pump sites	✓↓	Costs per hectare well down on previous years and the past average
F2-2	Pump Site Costs	Design costs for new pump sites	≈	New pump site design costs were above benchmark figures
F2-2	Pump Site Costs	Construction costs for new public pump sites	⚠↑	Construction costs were significantly greater than the benchmark figure
B1-1	Economic Indicators	Actual benefit/cost ratio versus predicted benefit cost ratio	✓↑	Actual benefit/cost ratio was greater than predicted
		Overall Rating	✓	A smaller than usual program still delivered good outputs

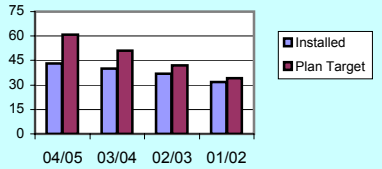
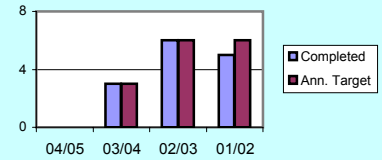
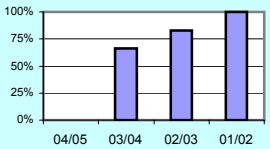
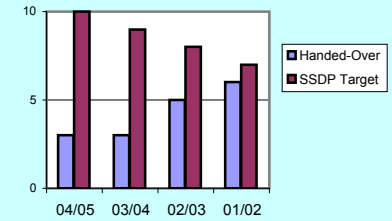
Legend

⚠↑ ⚠↓	Result unsatisfactory or away from target	• • •	Insufficient data to assess
✓ ✓↑ ✓↓	Performance Satisfactory or in direction of target	≈	Borderline result

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P1: *Work Tasks Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P1-1	Cumulative number of pump sites commissioned -v- Plan targets[1]	**43** **-v-** **61**	40 **-v-** 51	37 **-v-** 42	32 **-v-** 34	36.3 46.5	+3.0 n/a	
P1-2	Annual number of pump site feasibility investigations completed -v- annual targets[2]	**0** **-v-** **0**	3 **-v-** 3	6 **-v-** 6	5 **-v-** 6	4.7 4.5	-3 n/a	
P1-3	Percentage of pump site feasibility investigations that were successful	**NA**	66%	83%	100%	83.0%		
P1-4	Annual number of sites handed-over -v- targets SSDP target[1] Annual target	**3** **-v-** **10** **3**	3 **-v-** 9 3	5 **-v-** 8 5	6 **-v-** 7 6	4.7 8.0 4.7	0 n/a	

[1] Based on second five year review - Future Works Program plan targets

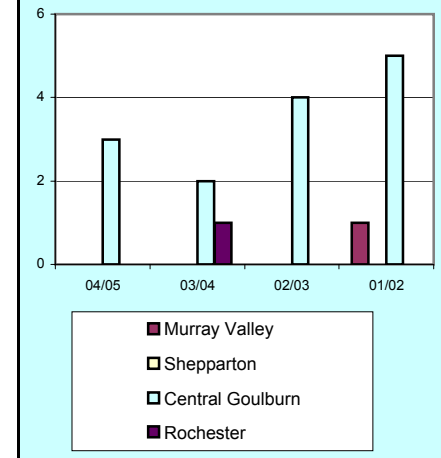
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P1: *Work Tasks Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Cumulative	Current Period	Previous Periods			Change +/-	Comparison
			04/05	03/04	02/03	01/02		
P1-1a	Total number of sites handed over to date for each irrigation area within the SIRCS area **Irrigation Area**							
	Murray Valley	**5**	**0**	0	0	1	0	
	Shepparton	**0**	**0**	0	0	0	0	
	Central Goulburn	**33**	**3**	2	4	5	+1.0	
	Rochester	**5**	**0**	1	0	0	-1	

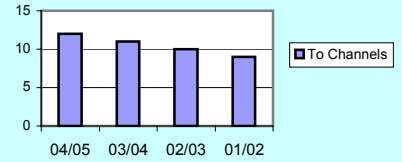
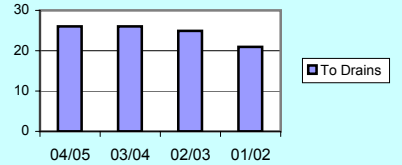
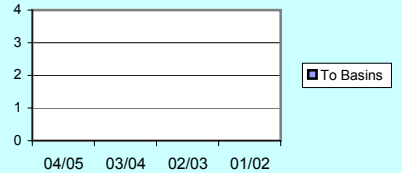
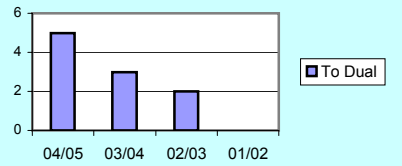
Sites Commissioned



Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P1: *Work Tasks Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period[1]	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P1-1b	Cumulative number of pump sites commissioned that dispose to channels	**12**	11	10	9	10	+1	
P1-1c	Cumulative number of pump sites commissioned that dispose to drains	**26**	26	25	21	24	0	
P1-1d	Cumulative number of pump sites commissioned that dispose to evaporation basins	**0**	0	0	0	0	0	
P1-1e	Cumulative number of pump sites commissioned with dual disposal	**5**	3	2	0	2	+2	

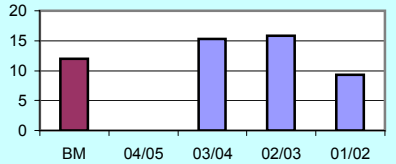
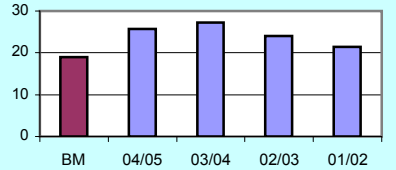
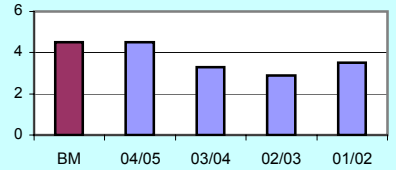
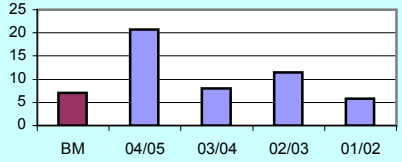
[1] Updated in 2004/5 based upon new data

For a full description of key performance indicators, their calculation and reporting requirements refer to 'Development of Key Performance Indicators for the Public Salinity Control Pump Program' (Nolan-ITU, 2001)

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P1: *Work Tasks Indicators*)

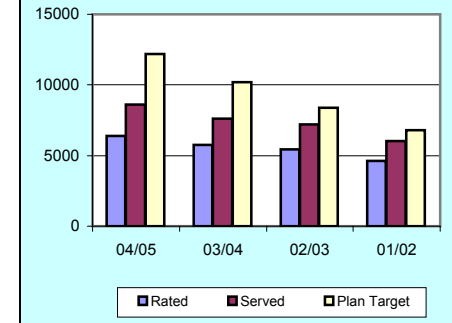
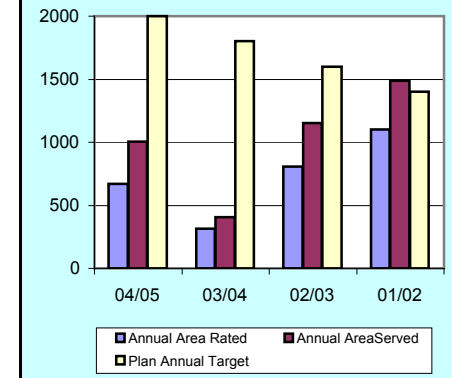
Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P1-5	Average time (months) for pump site feasibility investigations completed in the reporting period -v- benchmark	**NA** **-v-** **12**	15	16	9	13		
P1-6	Average time (months) for pump site completion to hand over (following successful feasibility investigation) in the reporting period -v- benchmark	**26** **-v-** **19**	27	24	22	24	-1.6	
P1-6a	Average time (months) for pump site design during the reporting period (from work request to G-MW approval of design) -v- benchmark	**5** **-v-** **5**	3	3	4	3	+1.2	
P1-6b	Average time (months) for pump sites to be constructed during the reporting period (from G-MW design approval to start of site commissioning) -v- benchmark	**21** **-v-** **7**	8	12	6	8	+12.7	

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P2: *Area Protection Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

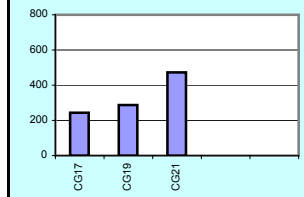
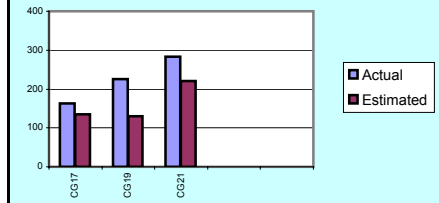
KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P2-1	Total area rated to date Cumulative (hectares)	**6406**	5734	5417	4609	n/a	+672	
	Total area served to date Cumulative (hectares)	**8600**	7596	7192	6042	n/a	+1,004	
	Plan target protected area[1] Cumulative (hectares)	**12200**	10200	8400	6800	n/a	+2,000	
P2-2	Area rated by pump sites completed during the year Annual increase (hectares)	**672**	317	808	1104	743	+355	
	Area served by pump sites completed during the year Annual increase (hectares)	**1004**	404	1150	1485	1013	+600	
	Plan annual target area[1] to be served by new pump sites completed during the reporting year	**2000**	1800	1600	1400	n/a	+200	

[1] Based on revised data from second 5 year program review

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P2: *Area Protection Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

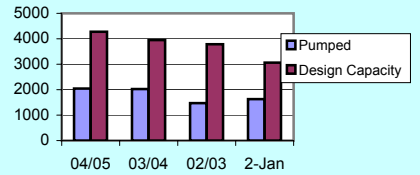
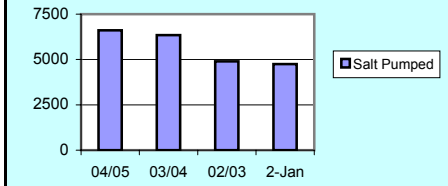
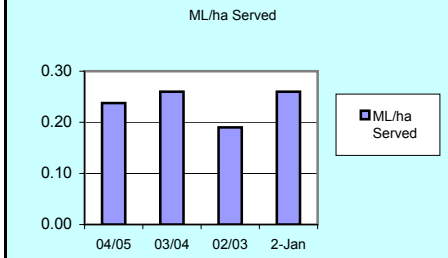
KPI		Site						Comparison
		CG17	CG19	CG21			Average	
P2-3 Actual area served and rated for pump sites completed during the year, compared with feasibility investigation estimates								**Pump Sites Served Area**
Served Area (ha)	**Actual**	**244**	**286**	**474**			335	
Rated Area (ha)	**Actual**	**163**	**226**	**283**			224	**Pump Sites Rated Area**
	Estimated	**135**	**130**	**220**			162	
	Difference[1]	**+28**	**+96**	**+63**			+62	

[1] Difference between estimated rated area (from feasibility investigation) and actual rated area

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P3: *Operational Task Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P3-1	Annual volume pumped -v- total design capacity (megalitres)	**2043** **-v-** **4278**	2026 -v- 3949	1472 -v- 3788	1626 -v- 3060	1708 3868.5	+17 +329	
P3-3	Estimated total salt tonnage removed at pump sites by pumping (tonnes)	**6606**	6343	4897	4750	5330	+263	
P3-6	Volume of water pumped per hectare served[1] (megalitres)	**0.24**	0.26	0.19	0.26	0.24	-0.02	

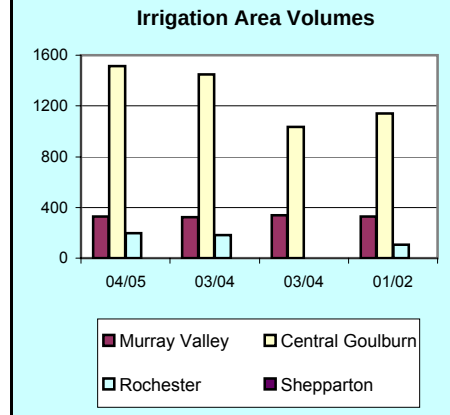
[1] Not all pumps operated to design capacity for the period reported

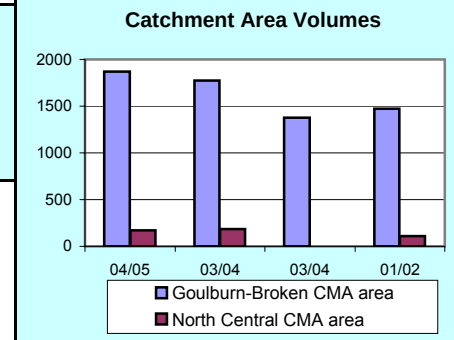
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P3: *Operational Task Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	03/04	01/02			
P3-1a	Annual volume pumped for each irrigation area within the SIRCS area (megalitres) **Irrigation Area**							
	Murray Valley	**328**	323	340	330	331	+5	
	Central Goulburn	**1516**	1451	1035	1143	1210	+66	
	Rochester	**199**	183	0	107	97	+16	
	Shepparton	**0**	0	0	0	0	0	
	Total	**2043**	1956	1375	1580	1637	+87	
P3-1b	Annual volume pumped for each catchment area within the SIRCS area (megalitres) **Catchment**							
	Goulburn-Broken CMA area	**1871**	1774	1375	1473	1540	+97	
	North Central CMA area	**173**	183	0	107	97	-10	





kpi-P3 04-05 P3-1a,b

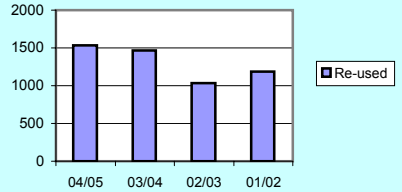
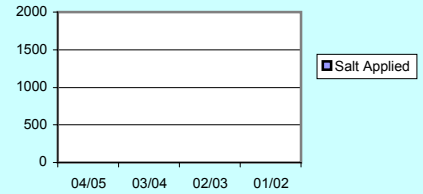
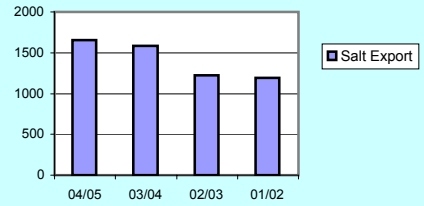
For a full description of key performance indicators, their calculation and reporting requirements refer to 'Development of Key Performance Indicators for the Public Salinity Control Pump Program' (Nolan-ITU, 2001)

19/01/2006

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category P3: *Operational Task Indicators*)

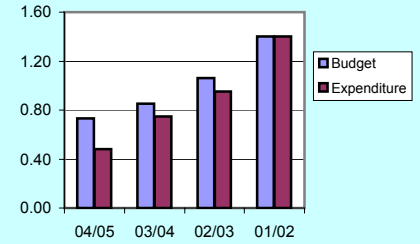
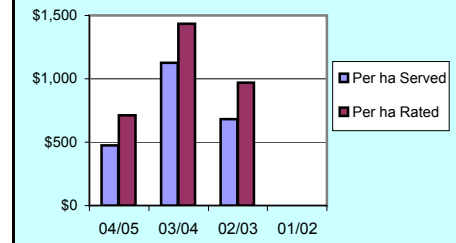
Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
P3-2	Estimated total pumped volume re-used for irrigation (includes on-farm re-use, and re-use from channels and drains) (megalitres)	**1532**	1467	1031	1185	1228	+65	
P3-4	Estimated total salt tonnage applied by irrigation to areas served (tonnes)	Data Not Available						
P3-5	Estimated net salt tonnage removed from the SIRCS area by the Public Pumping Program (tonnes)	**1651**	1586	1225	1190	1334	+65	

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F1: *Program Cost Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
F1-1	Annual program budget compared against expenditure ($millions) **Budget**	**0.73**	0.85	1.06	1.40	1.10	-0.12	
		-v-	**-v-**	**-v-**	**-v-**			
	Expenditure	**0.48**	0.75	0.95	1.40	1.03	-0.27	
F1-2	Cost per hectare served for new pumpsites [1]	**$477**	$1,124	$680	n/a	$902	-647	
	Cost per hectare rated for new pumpsites [1]	**$713**	$1,433	$968	n/a	$1,201	-720	

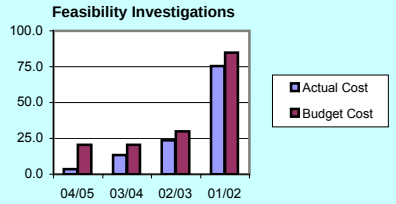
[1] Data based on pumpsites completed during the reporting year - includes construction and design costs
Excludes feasibility investigation costs

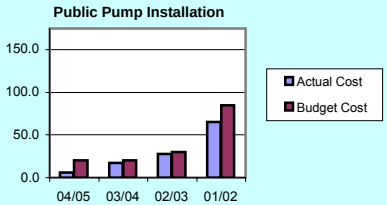
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F1: *Program Cost Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description		Current Period	Previous Periods			Past Average	Change +/-	Comparison
			04/05	03/04	02/03	01/02			
F1-3	Project Management costs compared to budget costs ($K)								
Area	**Breakdown**	**Item**							
Feasibility Investigations	**G-MW**	Actual Cost	**0.1**	0.76	2.4	26.0	9.7	-1.6	
	Consultants	Actual Cost	**3.5**	12.8	21.3	49.4	27.8	-8.5	
	Totals	Actual Cost	**3.6**	13.6	23.7	75.4	37.6	-10.1	
		Budget Cost	**20.5**	20.5	30.0	85.0	45.2	-9.5	
Public Pump Installation	**G-MW**	Actual Cost	**0.3**	0.5	5.5	24.0	10.0	-5.0	
	Consultants	Actual Cost	**5.7**	16.6	22.2	41.6	26.8	-5.6	
	Totals	Actual Cost	**6.1**	17.07	27.7	65.6	36.8	-10.6	
		Budget Cost	**20.5**	20.5	30.0	85.0	45.2	-9.5	



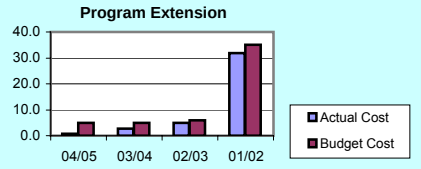


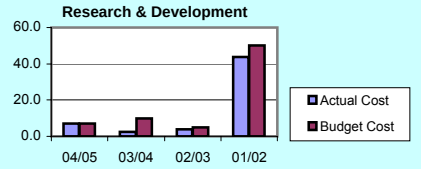
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

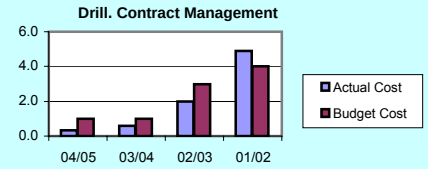
Key Performance Indicators (Category F1: *Program Cost Indicators*)

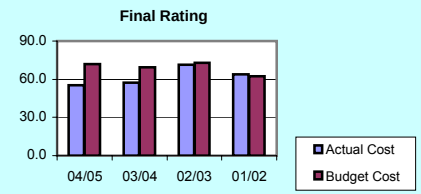
Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description		Current Period	Previous Periods			Past Average	Change +/-	Comparison
			04/05	03/04	02/03	01/02			
F1-3	Program activity costs compared to budget costs (x 1000 $)								
	Activity	**Item**							
	Program Extension	Actual Cost	**0.7**	2.7	4.9	31.9	13.2	-2.0	
		Budget Cost	**5.0**	5.0	6.0	35.0	15.3	0.0	
	Research & Development	Actual Cost	**7.2**	2.3	4.0	43.6	16.6	+4.9	
		Budget Cost	**7.0**	10.0	5.0	50.0	21.7	-3.0	
	Drilling Contract Management	Actual Cost	**0.3**	0.6	2.0	4.9	2.5	-0.3	
		Budget Cost	**1.0**	1.0	3.0	4.0	2.7	0.0	
	Final Rating of New Pump Sites	Actual Cost	**55.2**	57.1	71.6	63.7	64.1	-1.9	
		Budget Cost	**72.0**	69.5	73.0	62.5	68.3	+2.5	







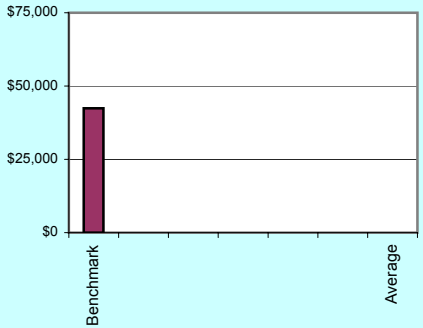


Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F2: *Pump Site Costs*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Benchmark	Site					Average	Comparison
F2-1 Feasibility Investigation [1] D484A Costs- Successful Sites								**Total Feasibility Investigation Costs**
Design Rated Area (ha)	-	None Completed During Reporting Period						**Successful Sites**
Number of Bores Drilled (successful sites <100 ha)	**15**							
Number of Bores Drilled (successful sites >100 ha)	**18**							
Drilling Costs	**$16,000**							
Consultant Services	**$24,500**							
Management Services (G-MW)	**$1,900**							
Other Costs (distributed non-allocated costs)	-							
Total Feasibility Investigation Costs (successful) (excludes "Other Costs")	**$42,400**						#DIV/0!	



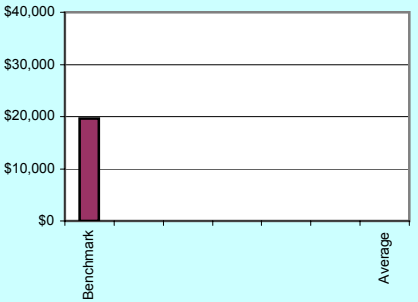
[1] For feasibility investigations completed in: 2004/2005

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F2: *Pump Site Costs*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Benchmark	Site					Average	Comparison
F2-1 Feasibility Investigation [1] DB484A Costs- Unsuccessful Sites								**Total Feasibility Investigation Costs**
Design Area of Influence	-	None Completed During Reporting Period					N/A	
Number of Bores Drilled	**16**						N/A	**Unsuccessful Sites**
Drilling Costs	**$9,000**						N/A	
Consultant Services	**$9,700**						N/A	
Management Services (G-MW)	**$900**						N/A	
Other Costs (distributed non-allocated costs)	-						N/A	
Total Feasibility Investigation Costs (excludes "Other Costs")	**$19,600**						N/A	



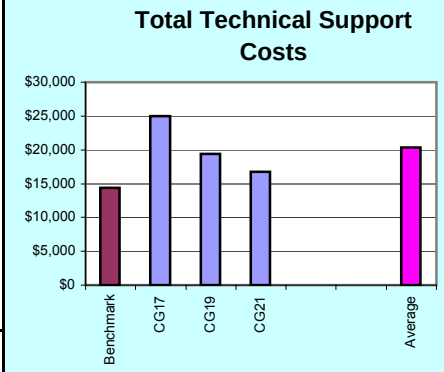
[1] For Feasibility Investigations completed in: 2004/2005

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F2: *Pump Site Costs*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Benchmark	Site						Comparison
		CG17	CG19	CG21			Average	
F2-2 (Pg 1 of 3) **D484B Costs (Technical Support)**		163 ha	226 ha	283 ha			224 ha	
Hydrogeological Input	**$2,600**	$3,439	$2,124	$1,396			$2,319	
Design	**$6,000**	$13,831	$8,374	$7,023			$9,743	
Construction Support	**$950**	$1,992	$2,468	$1,647			$2,035	
Documentation[2]	**$4,800**	$5,691	$6,462	$6,701			$6,285	
Sites where Unplanned Works Exceeded $500 (avge cost & no.)	**-**							
Total Design Cost[1]	**$14,350**	$24,952	$19,427	$16,767			$20,382	



[1] Benchmark value excludes unplanned works costs, includes post-construction reporting costs.

[2] Documentation costs include actual costs to date +/- allowance for consistency with Post Construction Reporting

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category F2: *Pump Site Costs*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

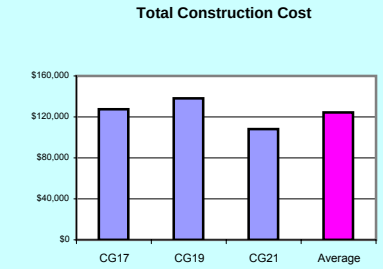
KPI	Benchmark	Site						Comparison
		CG17	CG19	CG21			Average	
F2-2 (Pg 2 of 3) **D484B Costs (Site Costs)**		163 ha	226 ha	283 ha			224 ha	
Land Acquistion	**$1,500**	$2,987	$2,456	$2,297			$2,580	
Survey	**$3,000**	$9,753	$9,699	$6,092			$8,515	
General Site Services	**$12,000**	$15,949	$12,908	$13,841			$14,233	
Wet Weather / Travel Time	**$1,000**	$0	$0	$0			$0	
Access Track cost/m length sites >100m only	**$35/m**	$1,063 <100m	$9,592 $30/m	$17,752 $31/m			$9,469 $30/m	
Farm Works	**$2,700**	$544	$440	$551			$512	
Commissioning	**$1,250**	$427	$291	$234			$317	
Pump Station Costs	**$15,000**	$20,872	$15,374	$16,061			$17,436	

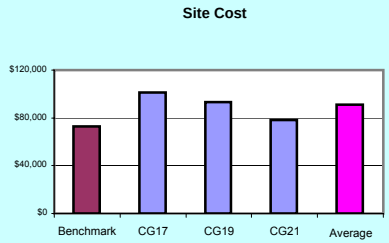
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

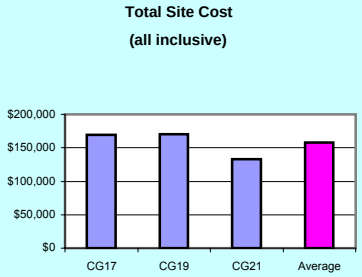
Key Performance Indicators (Category F2: *Pump Site Costs*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Benchmark	Site						Comparison
		CG17	CG19	CG21			Average	
F2-2 (Pg 3 of 3) **D484B Costs (Site Costs)**		163 ha	226 ha	283 ha			224 ha	
Header Line	**$4,500**	$5,257	$8,731	$4,076			$6,021	
Discharge Line cost/m length sites >100m only	**$30/m**	$66,241 $52/m	$58,675 $66/m	$25,238 $45/m			$50,051 $54/m	
Electrical Works	**$15,800**	$15,669	$24,147	$18,464			$19,427	
Powercor[1]	-	$1,342	$8,128	$12,010			$7,160	
Unplanned Drilling[1]	**$0**	$3,934	$0	$0			$1,311	
Technical Support[2]	**$15,000**	$24,952	$19,427	$16,767			$20,382	
Project Management (ENR)	**$1,100**	$711	$0	$0			$237	
Site Cost (excludes discharge line, access track & Powercor)[3]	**$72,850**	$101,055	$93,473	$78,383			$90,970	
Total Site Cost (all inclusive)		$169,701	$169,868	$133,383			$157,651	







[1] Benchmark to be set when sufficient data available

[2] Technical Support Costs are broken down in Table F2-2 (Page 1 of 3)

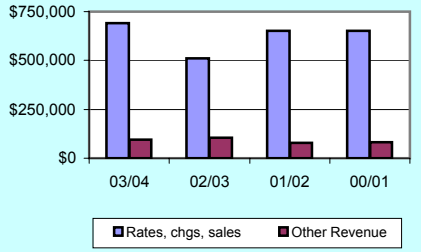
[3] Excluded because discharge line, access track and Powercor costs vary widely according to length

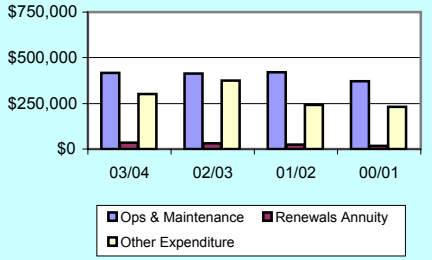
Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

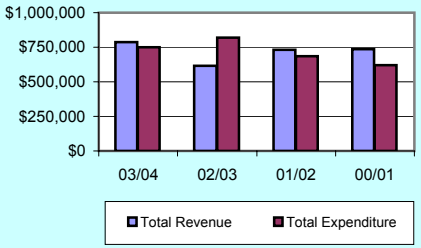
Key Performance Indicators (Category F3: *Profit and Loss Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2003/2004	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods[1]			Past Average	Change +/-	Comparison
		03/04	02/03	01/02	00/01			
F3-1	**Revenue**							
	Rates, charges, sales, consumptive charges	$692,300	$510,700	$653,000	$653,000	$605,567	+181,600	
	Other revenue	$94,200	$106,400	$79,500	$80,900	$88,933	-12,200	
	Total Revenue	**$786,500**	**$617,100**	**$732,500**	**$733,900**	**$694,500**	+169,400	
F3-2	**Expenditure**							
	Operations and maintenance costs	$416,000	$413,200	$421,500	$371,400	$402,033	+2,800	
	Renewals annuity	$34,600	$31,800	$22,900	$17,000	$23,900	+2,800	
	Other expenditure	$299,900	$374,500	$242,700	$230,600	$282,600	-74,600	
	Total expenditure	**$750,500**	**$819,500**	**$687,100**	**$619,000**	**$708,533**	-69,000	
F3-3	**Surplus (Deficit)**							
	Revenue - Expenditure	$36,000	($202,400)	$45,400	$114,900	($14,033)	+238,400	
	% of revenue base	5%	33%	6%	16%	11%	22%	







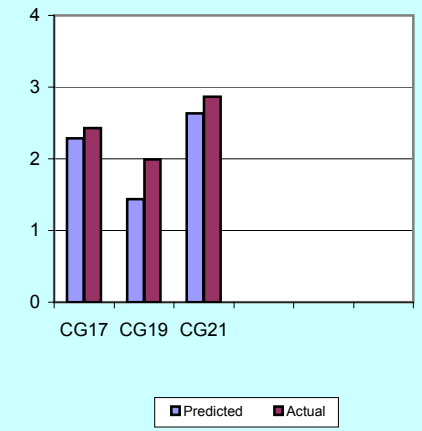
[1] Note: Profit and Loss data for current period not reported - refer to interpretation notes for explanation

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category B1: *Economic Benefit Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period 04/05						Comparison
B1-1	Predicted -v- actual benefit cost ratio for individual pump sites completed during the year							**Benefit Cost Ratio**
	Pump Site	**Predicted B.C.Ratio**	**Actual B.C.Ratio**					
	CG17	**2.29**	**2.43**					
	CG19	**1.44**	**1.99**					
	CG21	**2.63**	**2.87**					
	Mean benefit cost ratio for all pump sites handed-over during the year	**2.12**	**2.43**					

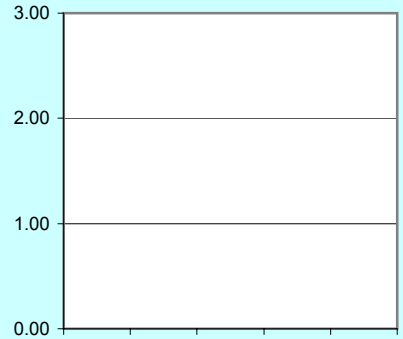


Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category B1: *Economic Benefit Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period				Comparison
		04/05				
B1-2	Benefit cost ratio for individual feasibility investigations (successful) completed during the year [1]	**Predicted Benefits**	**Predicted Costs**	**Predicted B.C.Ratio**	**Comments**	**Benefit Cost Ratio**
	Investigation Site					
	None Completed for the period					
	Overall					

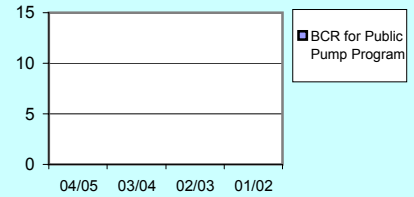
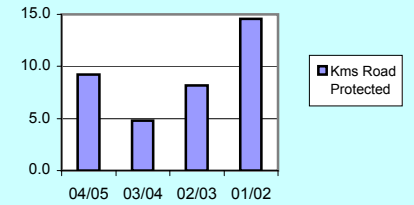


[1] Predicted BCR for pump sites does not include cost of the feasibility investigation

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category B1: *Economic Benefit Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

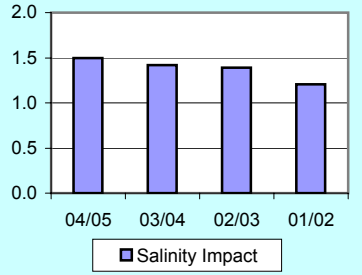
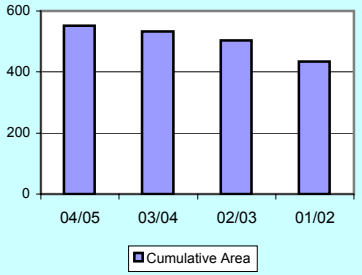
KPI	Description	Current Period	Previous Periods			Past Average	Change +/-	Comparison
		04/05	03/04	02/03	01/02			
B1-3	Estimated benefit cost ratio for the entire Public Pumping Program	Data Not Available						
B1-4	Non-agricultural benefits. Number of kilometres of roads within areas served by pump sites completed during the year[1]	**9.25**	4.81	8.20	14.6	9.20	4.44	

[1] Benefit refers to maintenance reduction for non-salt affected roads

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category E1: *Environmental Benefit Indicators*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

KPI	Description	Current Period	Previous Periods			Past Average	Change[1] +/-	Comparison
		04/05	03/04	02/03	01/02			
E1-1	Salinity impact on River Murray. Change in salinity at Morgan S.A. (EC units) [2]	**1.494**	1.415	1.388	1.204	1.336	+0.08	
E1-2	Annual area of environmental features served. For public pump sites completed during the reporting year (hectares)[3]	**19**	29	68	37	45	-10	
	Total area of environmental features served. Program total for all public pump sites completed to date (hectares)[3]	**551**	532	503	435	490	+19	

[1] Compares the current period with the previous period where applicable

[2] Allocated SDA salinity impact. Assumes 6000 tonnes salt = 1 EC, and pumping to achieve design capacity.

[3] Environmental features include remnant vegetation, wetlands, streams and other areas of ecological significance

Public Salinity Control Pumping Program - SIRCS - Projects D484A and D484B

Key Performance Indicators (Category T1: *Soil Salinity Measurement*)

Reporting Period:	Annual	**Report Date:**	July 2005
Financial Period:	2004/2005	**Reporting Office:**	G-MW ENR Tatura
Data Grouping:	SIR	**Program Manager:**	T. Hunter

GOULBURN-MURRAY WATER

	Indicator	Current Period	Previous Periods				Past Average	Change +/-	Trend	Comparison
		04/05	03/04	02/03	01/02	00/01				
T1	[1]Average rootzone soil salinity for indicator public pump (dS/m)	**2.70**	NA	NA	NA	3.64	NA	-0.94	-26%	

[1] Based on results for Public Pump Ro107

Interpretation Notes for 2004/2005 Indicators

Works Task and Area Protection Indicators

The impetus for pump site selection is largely community driven, and following indication of interest for potential sites, Goulburn-Murray Water prioritises these for program inclusion. This process looks at factors such as salinity risk, disposal options, hydrogeological conditions and whole farm planning issues. If the indications are positive then a feasibility investigation may be carried out.

Accordingly, achievement of works targets is influenced by community interest as well as available budget for feasibility investigations and pump site construction. Community interest in turn can be affected by a range of factors including prevailing climatic conditions (for instance drought, or extended drier conditions).

Community interest in the Public Pump Program has been lower than normal due to continued drier than normal conditions decreasing the perceived salinity risk of high water tables, as well as low commodity prices (i.e. low milk process at the farm gate) limiting the funding farmers have to commit to groundwater control infrastructure. The SSDP has therefore increased focus on the Private Pump Program as interest has been high due to low surface water allocations. Continued focus on the private pumping component of the program rather than the Public Pump Program has led to a decrease in the works implemented through the Public Pump Program. However, of the three new public pumps commissioned and handed over in the reporting period (which equaled the annual target that was set at the beginning of the reporting period), the area protected and benefit cost ratios exceeded the amount estimated in the design stage.

Operational Task Indicators

Public Salinity Control Groundwater Pumps in the SIR typically operate for 120 days per year, comprising a 60 day pumping period during the irrigation season (summer), and a 60 day pumping period during the winter/spring (subject to sufficient dilution flows in the River Murray). Groundwater can be discharged to irrigation channels, drains, or evaporation basins, and a Salt Disposal Allocation is assigned to individual pump sites from the regional Salt Disposal Entitlement.

A large proportion of summer pumping to drains and channels (approximately 75%) is reused within the SIR by irrigators.

Winter/spring disposal pumping has not been conducted in recent years due to insufficient dilution flows in the River Murray (largely a response to extended dry conditions during the past few years). However, volumes pumped and salt load exported continue to increase gradually as expected with the commissioning of new public pumps.

Program Cost and Pump Site Cost Indicators

These indicators are derived largely from Goulburn-Murray Water budget documentation for SIRCS projects D484A (recurrent expenditure) and D484B (capital expenditure). Recurrent expenditure includes feasibility investigations, as well as overall program management, technical development, program extension and final rating of pump sites. Capital expenditure covers pump site installation including design, land acquisition, construction (pump sites, pipelines and access tracks) and commissioning of pump sites.

Budgets have continued to decrease through the last five years reflecting the priority given to the private pump program. Expenditure was also down against the budget, a reflection of the continued dry conditions through 2004/5.

Pump sites costs per hectare served for the public pumps commissioned in the reporting period were significantly less than the previous reporting period and lower than the five year average. This is probably a reflection of most of the design and construction costs being borne in previous years, as well as the larger than expected area served by each pump.

No feasibility assessments were completed in the reporting period as planned at the beginning of the financial year period.

Pump site costs for the three pumps completed during the reporting period were generally higher than the benchmark figures. These figures have been effected by placement issues with CG17 which led to the pump being re-designed (basically from scratch). This also impacted on the average time to complete the design and construction of the new pumps which were also well above benchmark figures.

Profit and Loss Indicators

Data for these indicators are derived from Goulburn-Murray Water annual Water Services profit and loss statements and balance sheets which detail revenue and expense streams for sub-surface drainage within the SIR. Publication of future Key Performance Indicator reports will occur shortly after the end of the financial year, and current year Profit and Loss data will not be available for inclusion in those reports. Because of this, and to keep this report in step with future reports, data for the previous period (2003/2004) has been used for indicators F3-1, 2 and 3.

Importantly, it should be noted that the operation, maintenance, replacement, and contribution to operation of downstream salt-interception works are fully funded by the local community. This occurs through a rating scheme and charges that apply to the direct and indirect beneficiaries of the scheme – landowners and local government.

The profit and loss indicators show that a surplus was achieved after the previous reporting periods deficit. The last five years of data indicate that the profit and loss indicators have basically balanced over the last five years.

Economic Benefit Indicators

The estimated Benefit Cost Ratio (BCR) for a proposed pump site is made at the feasibility investigation stage to help assess the viability of the site, and is detailed in the pump site feasibility investigation report. The calculations are made with the assistance of the MDBC Drainage Evaluation Spreadsheet Model and consider the productivity gains (benefits) against the costs (dis-benefits) which include power, operating/maintenance, other ongoing costs, depreciation and Salt Disposal Allocation (SDA) costs.

Another BCR investigation is performed after installation, based on actual costs and final determination of pump site area of influence. The results are reported in the pump site post-construction report. Differences between pre- and post-installation BCR can occur for a range of reasons, including differences in actual rated area, salinity and yield, when compared to feasibility investigation estimates.

The three public pumps commissioned during the reporting period had an average benefit cost ratio of 2.43.

Environmental Benefit Indicators

KPI E1-1 shows the calculated salinity impact on the River Murray in terms of salinity change downstream at Morgan S.A. SDA are determined on the following assumptions:

- That 6000 tonnes of salt disposed to the River Murray by the Public Salinity Control Pump Program is equivalent to 1 EC unit increase in salinity at Morgan
- That the pumps operate to their full design capacity
- That 25% of the volume pumped during the 60 day summer operation period reaches the river
- That 100% of the volume pumped during the 60 day winter/spring operation period reaches the river.

During the winter/spring of 2005 there was no disposal opportunity for Public Salinity Control Pumps due to low flows in the River Murray. Therefore, the actual salinity impact in the river due to operation of the pumps would have been much less than the SDAs committed to those pumps.

Soil Salinity Measurements

Soil salinity measurement have been implemented to determine the impact of Salinity Control Public Pumps on soil salinity within the root zone, and to compare the effectiveness of different techniques for measuring the salinity change.

A key assumption of the Sub-surface Drainage Program is that lowering the pressure level in aquifers (ie. lowering the watertable) promotes leaching of salt from the root zone. This assumption is based on a significant body of scientific work conducted in the region from the 1960's to the 1990's and numerous on-ground examples/observed behaviours.

This KPI Category uses a limited number of representative sites to confirm the effectiveness of the Program in promoting leaching and therefore managing root zone salinity, and subsequently protecting agricultural productivity.

Initial investigations were carried out in 2002/3 on two Salinity Control Public Pumps. From these investigations, Ro107 was assessed as suitable for further investigations and baseline conditions established through electromagnetic surveys (EM38) and soil salinity surveys. Further EM38 and soil salinity measurements were then earmarked for 2004/5 (ie. two year reporting period) to enable an assessment of soil salinity changes.

Five other public pump sites were investigated for potential ongoing soil salinity monitoring but none were found to be suitable.

Soil salinities recorded in the rootzone for Public Pump Ro107 showed a 26% decrease in average soil salinities. This result may also have been influenced by continuing dry conditions through the study period and lowering watertables.

Un-Presented Indicators

Planned Key Performance Indicators that are not presented at this time are detailed below:

KPI	Description	Reason not Reported
P3-4	Salt tonnage applied by irrigation to served areas	Data not currently collected
P4-1	Number of pumps that exceed benchmark power consumption by >10%	Data not currently collected
P4-2	Power consumption per volume pumped	Data not currently collected
P4-3	Comparison of volume pumped during the irrigation period to the volume of irrigation water used over the served area	Data not currently collected
E1-3	Site environmental monitoring	Project under establishment
E1-4	Downstream environmental reporting	This process now being captured by other programs
C1-1	Number of issues referred to tribunals, number of complaints received	Data not available at present
B1-3	Estimated BCR for the entire Public Pump Program	Data not available at present