Shepparton 3B/11P Community Surface Water Management System

Final Report - April 2007

Victoria The Place To Be

Department of Sustainability and Environment

Department of Primary Industries

Goulburn Broken Catchment Management Authority

Goulburn-Murray Water

action Salinity & Water Australia

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Picture on front cover is a length of the Shepparton 3B/11P CSWMS that was constructed in 2006 near Tallygaroopna.

This project is funded as part of the Goulburn Broken Catchment Management Authority Regional Catchment Strategy in the Shepparton Irrigation Region and is provided with support and funding from the Australian Government and Victorian Government through the National Action Plan for salinity and water quality and the Natural Heritage Trust. This project is delivered primarily through partnerships between the Department of Primary Industries, Goulburn-Murray Water, Department of Sustainability and Environment, the Goulburn Broken Catchment Management Authority and landowners.

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PREFACE

The Community Surface Water Management Program is an integral part of the Shepparton Irrigation Regional Catchment Strategy and the Department of Primary Industries Sustainable Irrigated Landscapes - Goulburn Broken (SIL-GB) group.

The SIL-GB group works across the Shepparton Irrigation Region to implement the Regional Catchment Strategy of the Goulburn Broken Catchment Management Authority. The team works in partnerships with the Shepparton Irrigation Region Implementation Committee, agencies and the community.

Surface Water Management is crucial for the successful implementation of the Regional Catchment Strategy of the Shepparton Irrigation Region. Surface water is managed, through the development of regional drainage systems, allowing the removal and reuse of irrigation induced rainfall runoff in a controlled and equitable manner.

The development of Community Surface Water Management Systems involves extensive consultation, planning and negotiating between landowners, approving government agencies, industry organisations and local water authorities.

Staff within the SIL-GB team actively facilitate the development of Community Surface Water Management Systems, using their skills in conflict resolution, negotiation, facilitation and project management.

SIL-GB staff also maximise the benefit of their dealings with landowners and groups by providing them access to related programs covering issues including Whole Farm Planning, water-use efficiency, remnant vegetation protection and waterway management.

INTRODUCTION

The Shepparton 3B/11P Community Surface Water Management System (CSWMS) completed construction in 2006. This schemes now facilitates Surface water management in a catchment that was previously undrained and had suffered from local flooding across the total area.

The catchment is located north of Tallygaroopna and extends from Zeerust School Road in the west to Edwards Road in the east and from Bunbartha Road in the north and Trewins Road in the South. The catchment boundary includes an area to the east of the Goulburn Valley Highway and outfalls to the west into the Pine Lodge Creek (Shepparton Drain 11).

Land use in the catchment is a mixture of beef, sheep and dairy cattle as well as a number of recreation blocks used to produce hay. The entire catchment is layed out to irrigation with the layout varying from fully lasered to traditional layout.

Soil types in the catchment area mainly lighter soils, with the three main soil types being Congupna Fines Sandy Loam, Congupna Loam and Zeerust Fine Sandy Loam. These soils are a light profile soil, which could be subject to ground-water recharge especially do to the flat topography offering very little surface drainage relief. There were some smaller areas of Goulburn and Congupna Clay along the drainage line.

The catchment was affected by a number of wet seasons during the 1980's with a major flooding event in 1993. A normal to wet season results in significant waterlogging in the catchment. The area east of the Goulburn Valley Highway and Railway line has had their drainage restricted by these structures. While there are pipes under the road and the railway line, they do not line up which limited their effectiveness. While the pipes under the railway line were set to high to achieve effective surface drainage for normal rainfall or irrigation runoff. The result is that Trewins Road floods regularly. While the properties between the Pine Lodge Creek and the Highway also had poor drainage as the natural drainage line in not continuous, combined with the flat topography results in localised waterlogging.

Landowners in the catchment are also concerned laser grading farm in the catchment has increased runoff, which they believed has increased the local flooding.

SURVEY AND DESIGN DESCRIPTION

Discussions had been held with some landowners in early 1992 with initial request to GMW to define the catchment boundary and obtain initial approval for outfall. This was obtained from GMW on 27th October 1992.
After the October floods of 1993, a group of landowners meet with the then Department of Agriculture (now DPI) to discuss their options. Following another winter, there was a meeting of landowners from the catchment at Tallygaroopna in September 1994. The outcome of this meeting was that the drainage situation needed to be improved an waterlogging was a continuing problem.. This meeting also decided to form an incorporated group, and apply to the Department of Agriculture for assistance to do a Survey and Design for a Surface water management scheme in their area.

The landowners formally voted to become incorporated 1 March 1995, and tenders were advertised to do a Survey and Design. Funding approved 10 April 1995 for

$32,000. “Planright” from Tatura were the successful tenders and were appointed on 10 May 1995.
The group was incorporated as the “Shepparton Community Drain 3B/11P Group ”, No A0031238G

Planright presented the group with their proposal to divided the Shepparton 3/11P catchment into three area. With each area having its own outfall. These areas were: -

1. Shepparton 3A/11P, this was the northern part of the catchment and could be severed by a scheme, which ran alongside the Bunbartha Road.
2. Shepparton 3B/11P, this was the majority of the catchment, outfall into the Shepparton Drain 11, along a disused road.
3. A small area of land south of the 3/17 Channel. This would be drained to the south west also outfalling into Shepparton Drain11.

This proposal was accepted by the group and approved in principle by GMW on 12 October 1995.

In December 1997 “Planright” presented their first set of detail plans for approval. From this time through to when the final plans were approved by GMW in 2001 and a planning permit issued by the City of Greater Shepparton on the 4 July 2001 (Number 2001–166) the TLG worked through a number of issues as there were presented to the group.
Some of these issues were :-

- Changing the alignment to avoid the removal of native vegetation and trees
- Landowners draining into the GMW channel Number 17
- Appeals to VCAT
- Modifying the design to minimise the cost
- New landowners who had not seen the area waterlogged due to dry season in the late 1990’s
- Design standards requested by VicRoad and Victrack where the system crossed these structures.
- Landowners on smaller acres or house blocks who did not want to invest in a CSWMS.
- The existence of combined water supply and drainage easements.
- Design standard changes and the use of Preliminary Design Plans

During the late 1990’s the City of Greater Shepparton withdrew its offer to use their powers to build, maintain and to raise the landowners contribution to fund the construct CSWMS. This meant that the group could not proceed, as they did not initially have 100% landowner support to go to construction. It was not until GMW offered the service of using their power to construct, operate, maintain and funds CSWMS in 2000 that the group was able to go to the construction phase.

A vote was conducted in March 2002, for the group to proceed to construction. However, this did not achieve the required percentage. A vote was then organised for staged construction in October 2002, which was successful and then a petition to GMW followed April 2003. (The petition was sign by all but 2 landowners, however the vote achieved an acceptance of greater then 80%). This was converted to 100% acceptance by mid 2005 when all the time landowners signed there “Notice One”, as sent out by GMW.

Total length of the Shepparton 3B/11P CSWMS is 9486M of which stage one was 6602m. The system is designed to a 1:2 year Average Recurrence Interval (ARI). Ie 50mm rainfall in summer occurring in 24Hrs being removed in 5 days
The slope of the drain is between 1:800 to 1: 2500 with most of the drain at 1:2000 and 1:1350

Aboriginal Affairs Victoria (AAV) undertook a desktop study of the catchment during the survey and design. The AAV also conducted a pre construction survey and found no evidence of Aboriginal cultural materials. AAV's final approval for construction was obtained on 31 May 2004.

Catchment Area (ha) (Shepparton 3B/11P)	***Landowner in Catchment (Including House blocks)***	***Area in stage One (ha)***	***Landowner contributing to Stage One***	***Max Design Flow***	***Length Stage 1***
523.7	28	430	16	14 ML/d	6.6Km

Survey and Design Cost of Shepparton 3B/11P CSWMS	*Contribution $(Exc GST)*
Government contribution	$38,122.12
Landowner contribution	$4235.78
TOTAL	**$42357.90**

(Insert Picture)
New outfall incorporating floodway

CONSTRUCTION DESCRIPTION

The CSWMS was constructed by GMW using its powers under the "Water Act".

GVIS, was awarded the Project Management tender, with A&J Wright. being the Construction Contractor. The Fencing contract was completed by Milroy Fencing Contractors.

The construction commenced in January 2006 and was certified practically complete on the 19th June 2006 and finalised on the July 2006. The total cost of construction was $358,693.79. Due to some issues that not foreseen until during construction Surface Water Working Group agreed to fund some structures 100%.

The split of construction contributions between the parties is shown in the table below.

Financial contributors to construction of Shepparton 3B/11P CSWMS	*Contribution ($)*
Government contribution	$193377.70
Landowner contribution	$147,452.29
City of Greater Shepparton contribution	$15,460.41
GMW	$2,403.39
TOTAL	**$358,693.79**

Please refer to Appendices II & III for location maps and cross section design of this CSWMS.

ENVIRONMENTAL CONSIDERATIONS

The Department of Primary Industries (ex Department of Conservation and Natural Resources) completed a "Preliminary Environmental Assessment" (EA) on 5 July 1994. Andrea Keleher Dept of Conservation and Natural Resources completed the "Detailed Environmental Assessment" of the Shepparton Drain 3/11P catchment in August 1996.

Environmental Features

Remnant stands of native vegetation are scattered throughout the catchment area. The EA identified a number of areas with remnant/habitat valves in the catchment. Stands of Grey Box and Yellow box Tree's are the predominate over-store species with many of the mature trees contained well-formed hollows

Observation of these stands of box tree on Montgomery and J Wisely showed sign of stress due to prolonged inundation and the CSWMS is expected to benefit these area greatly by reducing the incidence of waterlogging.

Numerous fauna species were observed during the assessment. The wetland species observed were mainly on farm dams. The avifauna sighted were dominated by Granivores, including Common Starlings, House Sparrows, Pied Butcherbirds and Noisy Miners.

Wetlands

No significant existing natural wetland were identified within the catchment. Examination of the soil maps showing mainly light soils indicated to no significant wetland had existed in the past.

Native Vegetation Removal

Only two Box Trees were removed during construction even thought the original plans allowed for three trees to be removed. This was achieved by a small detour, which while increase the fencing and the area within the drainage alignment the outcome appears successful. The group had worked carefully with the designer and the department to minimise the potential removal or disturbance of existing vegetation by relocating the route of the drain. Example of this are (1) The location of the drain in Montgomery's was moved away from this boundary which caused an area to be isolated. This will now be used for the environment. (2) The location of the crossing under the Railway line was moved slighting off the natural drainage line to avoid disturbing two mature tree in Lohuse's. In E Wisely's the drain was moved away from the boundary to avoid existing tree and make room for a new plantation.

Tree Grants

Since the design of the system was started, one property has planed a tree belt to fit in with the system when constructed while a number of other properties have made allowances for trees. There were two properties in the catchment that had done some tree planing before to the CSWMS started. Since the construction was completed four landownesr have applied for additional or extra rows of trees. (S Montgomery, E Weisel, B Rogers and Cammerons)
In addition to landowner planting, the City of Greater Shepparton has included the rest of the area in the disused road reserve from the Shepparton Drain 11 to the Zeerust School Road as part of their Tree Planting Program for 2007.
The scheme design also allowed for rows of existing tree to be included in the drainage "reserve" to help protect them into the future (see photo on front page)

Drainage Outfall

The Shepparton 3B/11P outfall into the Shepparton Drain 11. This is constructed along the Pine Lodge Creek depression. A structure has been incorporated in this CSWMS to prevent water from backing up the CSWMS from the arterial drain in periods when significant rain falls in the upper part of the Shepparton Drain 11 catchment.

Environmental Outcomes

The system was constructed along the proposed route with minimal disturbance to any natural vegetation.

It was suggested in the detailed environmental assessment that the present poor health of some of the over-storey was due to inappropriate inundation and that this may be improved by the new system. Evidence of this improved health can be seen in the photos on the next page. However the district has not experienced any prolonged wet periods since the drain was constructed and it has not been possible to test this assumption.

Four large Grey Box trees were protected from stock by the addition of the drainage fencing.

Remodelled drain allows trees to be saved.

CATCHMENT DEVELOPMENT

A majority of the catchment has had Whole Farm Plans completed, with one property also having received a grant for a reuse system.

ON-GOING MAINTENANCE

This system has been built under the G-MW Management Option. Therefore the ongoing maintenance will be the responsibility of G-MW and will be done as part of their maintenance program.
Maintenance costs will be recovered through the annual rates and charges using G-MW's normal rate collection methodology for the Community Surface Water Management Program.

CONCLUSION

This community group has successfully worked through a range of issues over a number of years to see their drain come to be constructed. While the scheme has had only stage one completed, this is providing benefits to almost 80% of the catchment.

Pat Carrol held the position of chairman for most of the period of survey and design. Special credit must be given to him for his determination and foresight, to the countless discussion he had with landowners in the catchment to allow this system to achieve the cooperation of all the landowners on the first stage.

Driving through the catchment seeing the improved health and regeneration of trees, has shown this system to be a success story.

The staff of the Department of Primary Industries through its SIL-GB team has assisted this catchment to protect of 430 ha of the Shepparton Irrigation Region from waterlogging and salinity effects through the construction of 6.6Km of a Community Surface Water Management System. They have also assisted the catchment develop whole farm plans, reuse systems and conduct environmental protection works throughout the catchment.

ACKNOWLEDGMENTS

Pat Carroll	Technical Liaison Group Member and Group Chairman
John Wallace	Technical Liaison Group Member and Group Sectary / Treasurer
Barry Roger's	Technical Liaison Group Member
Erick Wisely	Technical Liaison Group Member
Jack Wisely	Technical Liaison Group Member
John Bourchier	Technical Liaison Group Member - DPI
Neil Mcleod	Technical Liaison Group Member - DPI
Daryl Eaton	Technical Liaison Group Member - G-MW
Glen Collins	Project Supervisor (Construction) - GMW
Planright	Survey and Designer
Goulburn Valley Irrigation Services	Project Managers
A & J Wright / Bruce Fuller	Construction Contractor/ Sub Contractor
Milroy Fencing Contractors	Fencing Contractor

Other DPI staffs to work on this system are Jason Frost, Sandra Schroen, & Veronique Froelich

Article in the Shepparton News – 10 July 2006.

Visit By the Minister for primary Industries, Mr Bob Cameron to mark the completion of the construction of the Shepparton 3B/11P CSWMS

COUNTRY NEWS

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www.countrynews.com.au JULY 10 - 16, 2006. 36 PAGES

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Vine disease outbreak

Where to now for the lower Goulburn

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Better drainage ... (from left) Bev Montgomery, Neville Montgomery, Kyle Montgomery, John Wallace and Darnley Montgomery (front) at a section of a new surface water drain near Tallygaroopna. Victorian Agriculture Minister Bob Cameron last week launched the drain, which was built with the co-operation of 17 landowners. Read more on page three.

Drain complete

By **Nonie Stava**

It did not look all that shiny and clean, but the new surface water drain officially opened near Tallygaroopna last week, will go a long way to improving land health in the area.

Victorian Water Minister Bob Cameron said the 6.3 km drain would provide benefits to agricultural land in the region by reducing waterlogging and salinity.

Seventeen families and the Victorian Government funded the $320 000 project — the latest stage of the Shepparton Community Surface Water Management System.

DPI catchment and agricultural services officer John Bourchier said physical work started on the drain last December, but the base design took about three years to plan.

"Some landowners said yes straight away, but because of the drought and other holdups, it took a bit longer to get them all on board," Mr Bourchier said.

"Once the drain goes in we find that's a catalyst for other water savings.

"This gives them the confidence to go out and do that laser grading work, which they might not do without good drainage."

He said little pockets dedicated to environmental space had resulted from the drain.

"Instead of fencing off just the drain, they've fenced an area," Mr Bourchier said.

"There's three spots in the drain where we've ended up cutting off corners for biodiversity."

Neville Montgomery, who leases his uncle's property, said the drain would not have a huge effect on his property, but could see how it would benefit his neighbours.

"You can't just hang onto your own little plot and pretend that the rest of the world doesn't matter," Mr Montgomery said.

Neighbour John Wallace said the drain would finally give the entire area proper drainage.

"When it was the shire and city council they went in and cut it up," Mr Wallace said.

"We paid for proper drainage, but we didn't get it.

"I look at it as being beneficial to the whole area."

The new drain finishes at Shepparton drain 11, one of Goulburn-Murray Water's primary drainage systems.

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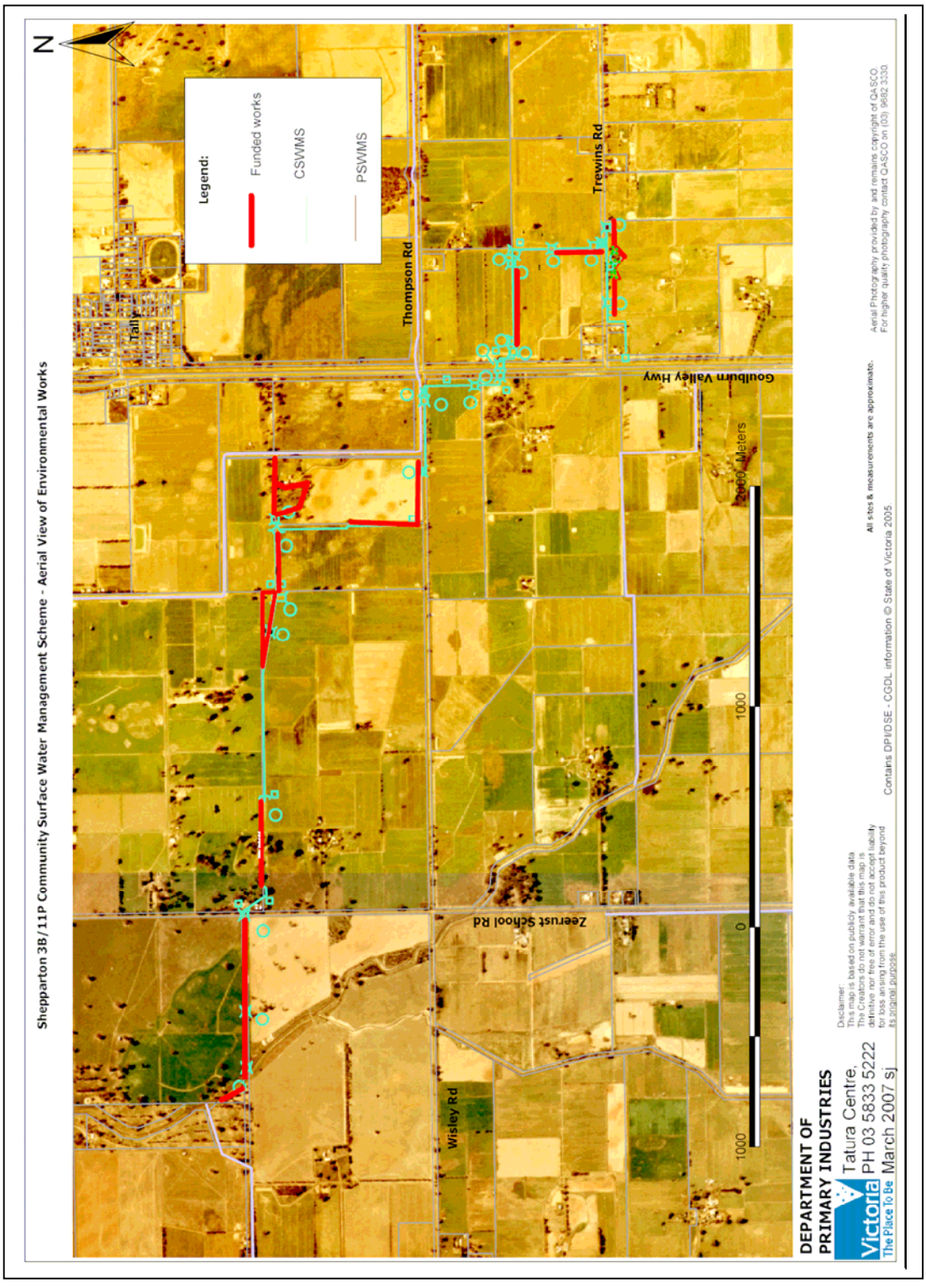
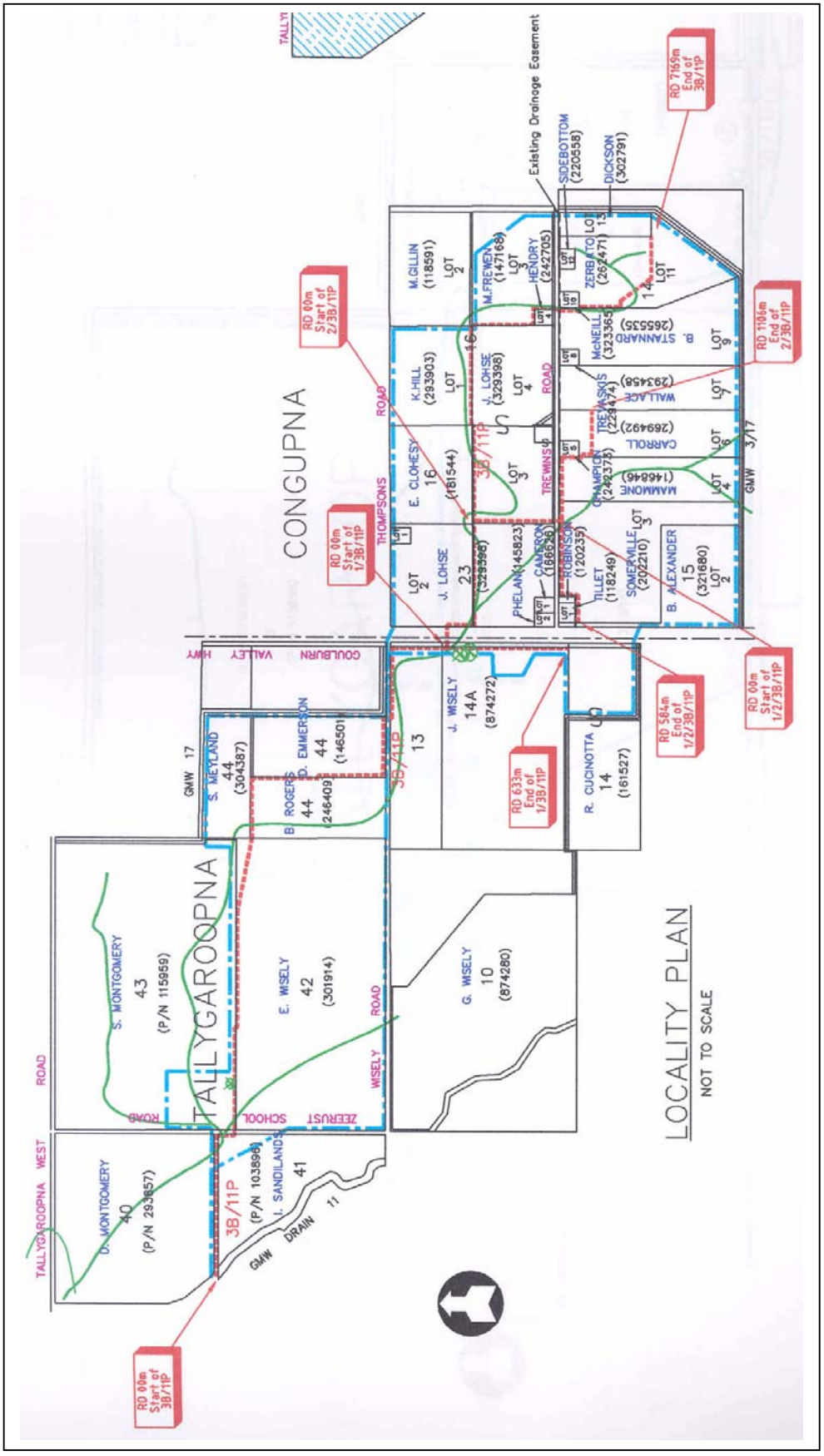
APPENDIX I

Tree growing grants and areas of significant vegetation within the Shepparton 3B/11P Community Surface Water Management System.



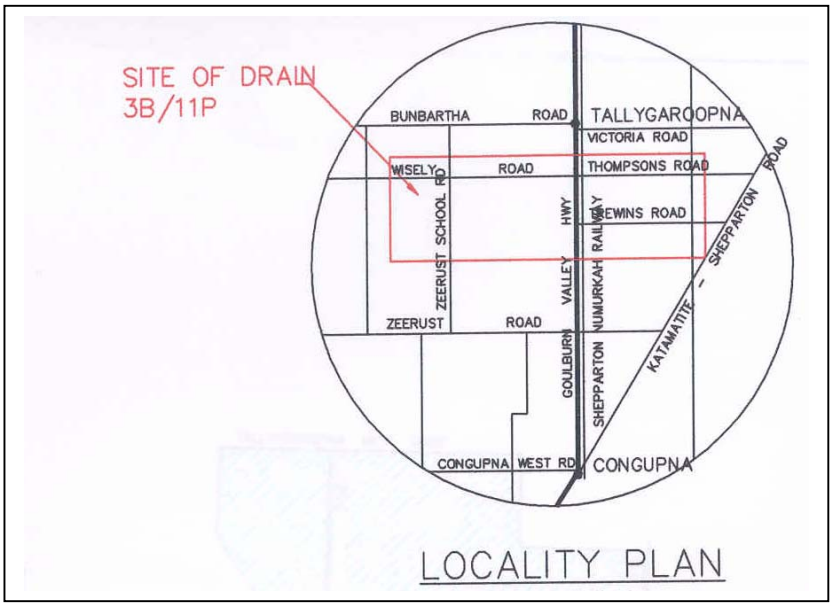
APPENDIX II

Location drawing of
Shepparton 3B/11P Community Surface Water Management System

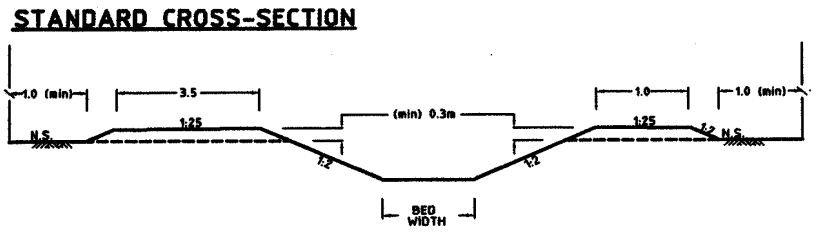


APPENDIX III

Location of Shepparton 3B/11P Community Surface Water Management System



APPENDIX IV Typical Cross Section of drain



APPENDIX V Whole Farm Plans in Catchment