



INFRASTRUCTURE DESIGN MANUAL

PUBLIC CONSULTATION REPORT

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INTRODUCTION

In September 2004 the Shire of Campaspe, City of Greater Shepparton and City of Greater Bendigo joined in partnership to develop a common engineering manual documenting the infrastructure standards across the three municipalities. The outcome of this work is the Infrastructure Design Manual.

One of the many advantages of the jointly prepared Infrastructure Design Manual is that many of the Shire's developers and consultants work across the three municipalities and can therefore benefit greatly from a more consistent approach to infrastructure provision. Therefore it was important to ensure that consultants, developers and the communities within the municipalities were appropriately consulted. This Public Exhibition Report details the public consultation undertaken, the submissions made, the Councils' assessment of comments received, and the agreed outcomes.

CONSULTATION PROCESS

The draft Infrastructure Design Manual was launched across the three municipalities on the 13 and 14 December 2006 and was placed on public exhibition for a seven week period commencing on the 15 December 2006 and concluding on the 2 February 2007.

The public exhibition period was preceded with a letter sent on 4 December 2006 to 187 identified stakeholders generally comprising consultants, developers and relevant referral agencies. A copy of the initial letter and a list of stakeholders identified is included as Appendix A. These initial letters were an invitation to participate in a public consultation process for the Infrastructure Design Manual.

Because of the scope and detail of this comprehensive document the exhibition period was preceded with two public presentations on the 13 and 14 December 2006, held in Shepparton and Bendigo respectively. The presentations gave affected parties (particularly developer interest groups and consultants) the opportunity to hear an overview of the contents of the Manual together with details of the public exhibition period. The presentations were also aimed at giving sufficient appreciation of the scope and detail of this comprehensive document such that attendees could plan time to review the document and make submissions. A copy of the presentation is included as Appendix B to this report. A list of those organisations represented at the public presentations is included in Appendix B.

On the 18 December 2006, a follow-up letter was sent to all 187 stakeholders, requesting feedback to the working group for consideration. This was then reinforced by the issue of press releases in each of the municipalities. In addition to these, the Shire of Campaspe issued follow-up articles in the local newspapers, copies of which are provided as Appendix C.

The closing date for submissions was the 2 February 2007.

On the 31 January 2007 and 1 February 2007, five letters were received from consultants requesting an extension to the public exhibition period, generally on the grounds that the document was extensive and that the public exhibition period encompassed the Christmas holiday period. The request was discussed by the working group and declined on the grounds that the exhibition was well publicised by all Councils with letters, public presentations and press releases. In addition to this, a period of seven weeks was allowed for the public review, instead of the more common four week period to minimise the impact of the Christmas period. A sixth letter was received on 5 February 2007 also requesting an extension to the consultation period.

SUBMISSIONS

A total of twelve (12) written submissions were received from the following organisations:

1. Moira Shire
2. VicRoads
3. Planright Tatura
4. Chris Smith and Associates

5. ALDE representing 8 consultants some of who made individual submissions. ALDE comprises the following:
 - i. Singleton Bahen Stansfield (also made individual submission)
 - ii. Tomkinson (also made individual submission)
 - iii. Terraco(also made individual submission)
 - iv. Allied Consultants
 - v. Chris Brown and Associates
 - vi. Brian F Bartlett (also made individual submission)
 - vii. Chambers Consulting Engineering
 - viii. R J Styles and Associates (also made individual submission)
6. Singleton Bahen Stansfield
7. Tomkinson
8. Terraco
9. Brian F Bartlett
10. R J Styles
11. Representatives of the Irrigation Design industry and Government agencies associated with Whole Farm Plan approvals
12. Brendan Bartlett

Copies of incoming correspondence are found in Appendix D.

CONSIDERATION OF SUBMISSIONS

A working group was established to consider all written submissions as well as any internal comments received over two full days, the 7 February and 16 February 2007. Moira Shire had indicated its interest in also adopting the Infrastructure Design Manual as the principal engineering document within its municipality. Therefore representatives of Moira Shire were invited to join the working group in considering any submissions made.

The working group undertaking consideration of submissions comprised the following persons:

Anne Howard Design Services Manager Shire of Campaspe	Barry Carter Construction Engineer Shire of Campaspe
Peter McKinnon Team Leader Statutory Planning Shire of Campaspe	Jonathan Griffin Development Coordinator Greater Shepparton City Council
Colin Kalms Manager Planning and Development Greater Shepparton City Council	Emilie Stuber Development Engineer Greater Shepparton City Council
Brett Martini Manager Asset Planning and Design City of Greater Bendigo	Peter Brasier Subdivision Engineer City of Greater Bendigo
Ralph Kop Ralph Kop Consulting	John Dunn Rural Works P/L
Mark Foord Manager Infrastructure Planning & Assets Moira Shire	Andrew Close Team Leader Infrastructure Planning Moira Shire

The working group considered all issues raised. Some common issues were raised by more than one submitter. Because of this, the working group worked through these common issues and the outcomes are documented on the individual Assessment Sheets, see Attachment A.

The Assessment Sheets are structured as follows:

- Excerpt from the Infrastructure Design Manual (where relevant)

- Comments Received

- Working Group Assessment

- Proposed Action

It should be noted that the Infrastructure Design Manual is a 'living' document and is proposed to be the subject of review annually or as required.

Appendix A
Outgoing Correspondence

18 December 2006



Dear Sir/Madam

**DRAFT INFRASTRUCTURE DESIGN MANUAL
TIME FRAMES FOR REVIEW AND FEEDBACK TO COUNCIL**

The Greater Shepparton City Council, City of Greater Bendigo and Shire of Campaspe are delighted to announce the introduction of a Draft Infrastructure Design Manual.

The three councils have worked together to produce the draft manual which will be used to provide consultants and developers with the council's requirements in respect of planning and infrastructure needs in development.

Following the launch of the manual at meetings held in Shepparton and Bendigo consultants and developers are asked to provide feedback for consideration by the working group.

- The manual will be available on line on the Greater Shepparton City Council's website from 15 December 2006. The location is <http://www.greatershepparton.com.au/council/buildingplanning/infrastructure/designmanual/>
- Written responses to the manual will be received until 2 February 2007
- All responses should be forwarded to Anne Howard, Design Services Manager, Shire Of Campaspe, PO Box 35 Echuca, 3564.

On compilation and review of the responses received the working group will provide feedback, as necessary, to update developers and consultants. The manual will then be presented to each council for formal adoption.

Should you have any queries regarding the draft Infrastructure Design Manual please feel free to contact Jonathan Griffin on (03) 5832 9730.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Dean Rochford'.

**Dean Rochford
ACTING CHIEF EXECUTIVE OFFICER**

4 December 2006



Dear Sir/Madam

**DRAFT INFRASTRUCTURE DESIGN MANUAL
INVITATION TO PARTICIPATE IN PUBLIC CONSULTATION LAUNCH**

The Greater Shepparton City Council, City of Greater Bendigo and Shire of Campaspe are delighted to announce the introduction of a Draft Infrastructure Design Manual.

The three councils worked together to produce the draft manual which will be used to provide consultants and developers with the council's requirements in respect of planning and infrastructure needs in development.

The benefits of the manual include:

- Consistency for consultants and developers who work across borders resulting in more satisfactory development in a more timely manner
- More efficient approval processes due to less anomalies between municipalities
- Sharing of ideas and practices will assist in a consistent and best practice approach.

One of the keys to the success of the manual is consultation with stakeholders and users. The councils are holding public consultation launches to outline the background and content of the draft manual.

Public consultation launches will be held on:

- 13 December from 11.00am to 12.00pm in the Board Room, First Floor, Greater Shepparton City Council Office, 90 Welsford Street, Shepparton.
- 14 December from 10.00am to 11.00am in the Reception Room, First Floor, City of Greater Bendigo Council Office, 195 – 229 Lyttleton Terrace, Bendigo.

Please RSVP your attendance, indicating which launch you will be attending, to Janine Saxon at the Greater Shepparton City Council on (03) 5832 9730 by Monday 12 December so that sufficient catering can be arranged.

If you are unable to attend one of the launches the Draft Infrastructure Design Manual can be downloaded from the three Council websites after 13 December 2006. We welcome any written comments on the manual by Friday 2nd February 2007. Please address them to Infrastructure Design Manual, Locked Bag 1000, Shepparton, Vic, 3632 or email council@shepparton.vic.gov.au.

Should you have any queries regarding the Draft Infrastructure Design Manual please feel free to contact Jonathan Griffin on (03) 5832 9730.

Yours faithfully

A handwritten signature in black ink, appearing to read 'P. Harriott'.

**Peter Harriott
ACTING CHIEF EXECUTIVE OFFICER**

**INFRASTRUCTURE DESIGN MANUAL
PUBLIC CONSULTATION MAILING LIST**

NAME	BUSINESS NAME	ADDRESS	CITY	POSTCODE
Adrian Cummins	Adrian Cummins & Assoc. P/L	105 Williamson St	BENDIGO	3550
Adrian Hansen	Adrian Hansen Pty Ltd	PO Box 480	ECHUCA	3564
Barry Adams	Vincent Chrisp Adams Architects	221 Fryers St	SHEPPARTON	3630
Bruce Mactier	Bruce Mactier & Associates	100c Wyndham St	SHEPPARTON	3630
Melanie Dalton	Cardno Lawson Treloar	169 Burwood Road	HAWTHORN	3122
Athol Reynolds	Coliabah Investments P/L	4 Buick Close	SHEPPARTON	3630
Mark Breuer	Coomes Consulting Group	PO Box 926	SHEPPARTON	3632
Frank Dawson	Dawson Planning Services	44 Anderson Street	AVENEL	3664
Greg Harrison	Maunsell Australia	Level 9, 161 Collins Street	MELBOURNE	3000
Peter Krstic	Beveridge Williams & Co PTY LTD	Suite 6/115 Hawthorn Road	CAUFIELD NORTH	3161
	Crosby Real Estate	119a Wyndham St	SHEPPARTON	3630
	Davis Sanders Homes	5/575 Wyndham Street	SHEPPARTON	3630
	Dennis Family Corporation	374 Wyndham Street	SHEPPARTON	3630
	Dobson Real Estate	PO Box 1769	SHEPPARTON	3632
David Frazzetto	Millar & Merrigan Pty Ltd	PO Box 427	CROYDON	3136
Chris Smith	Chris Smith & Associates	Corio Street	SHEPPARTON	3632
Ed Flanagan & David Reed	Flanagan & Reed Real Estate	182 High St	SHEPPARTON	3630
	GJ Gardner	209 Wyndham Street	SHEPPARTON	3630
	G.J Lewis Homes	PO Box 2170	SHEPPARTON	3632
Kevin Sidebottom	GV Carports	7 Lockwood Rd	SHEPPARTON	3630
Colin Mintern	Hotondo Homes	10 Wyndham St	SHEPPARTON	3630
Christine Lister	Housemart	9/127 Fryers Street	SHEPPARTON	3630
	JG King	160 Vaughan Street	SHEPPARTON	3630
John Kiss	John Kiss Real Estate	54 McLennan St	MOOROOPNA	3629
Mick Toll	Land Management Surveys	PO Box 416	SHEPPARTON	3632
Len Price	Len Price & Associates	10 Fryers St	SHEPPARTON	3630
	LJ Hooker	96a Wyndham St	SHEPPARTON	3630
	M & L Nardella Home Builders	5 Gale Crt	SHEPPARTON	3630
	M & L Tricarico Builders	9 Kristen St	SHEPPARTON	3630
	Metricon Homes	8/575 Wyndham Street	SHEPPARTON	3630
Martin Ward	Monitor Survey & Irrigation	19 New Dookie Rd	SHEPPARTON	3630
Frank Moretto	Moretto Builders	PO Box 7100	SHEPPARTON	3632
	Norman Barton Builders	2 Twisden Ct	SHEPPARTON	3630
	Nichols Blake First National	66 High St	SHEPPARTON	3630
Brian Pethybridge	Peps Plan	71 Broken River Drv	SHEPPARTON	3630
Peter Finn	Architects 101	PO Box 678	SHEPPARTON	3632
Brian Harland	Planright	PO Box 586	ECHUCA	3564
	Planright	139 Hogan St	TATURA	3616
Ray White	CS & T/Ray White Architects	170 Corio St	SHEPPARTON	3630
	Rikys & Moylan Builders	PO Box 6049	SHEPPARTON	3632
Ron Popelier	Pop Design Studios	74 Wyndham Street	SHEPPARTON	3630
	Rossignoli Real Estate	115 Wyndham St	SHEPPARTON	3630
Sam Sali		PO Box 17	SHEPPARTON	3630
Sharon Clement	Sharon Clement Property & Lifestyle	142 Hogan Street	TATURA	3616
	Shepparton Real Estate	302 High St	SHEPPARTON	3630
Peter Nolan	Shepp Projects	38 Belmore Road	BALWYN	3103
	Simpson & Rickard Builders	PO Box 1586	SHEPPARTON	3632
Attn: Nejat	Sophdan Pty Ltd	84 Argle Road	KEW	3101
	Southern Vale Homes	31 Welsford Street	SHEPPARTON	3630
Noel Butler	Stockdale & Leggo	120 Wyndham St	SHEPPARTON	3630
Scott & Jason Carter	Tatura Engineering	56-62 Casey St	TATURA	3616
	Taylor's Development Strategists	2-4 Hamilton Place	MOUNT WAVERLY	3149
Andrew Telford	Telford's Building Systems	PO Box 1553	SHEPPARTON	3632
Tim Sessions	Tim Sessions Builders	PO Box 1151	SHEPPARTON	3632
Glenn Young	Youngs & Co Real Estate	123 Wyndham St	SHEPPARTON	3630
Keppel Turnour		7 Nixon Street	SHEPPARTON	3630
Mike Purcell	UrbTech Landscape	30 Trezise St	WARRANTYTE	3113
Trevor Turnbull		8-10 Chertsey Rd	SHEPPARTON	3630
Kavant Nominees	c/- Felthams	16 Fryers Street	SHEPPARTON	3630
Rober Harris	Lascorp	5th Floor, 468 St Kilda Road	MELBOURNE	3004
Ken Scott	Wilbow Corporation	PO Box 354	HAWTHORN EAST	3123
Josef Seidler	Demar	PO Box 18184	MELBOURNE	8003
Darren Trigg	TGM Group PTY LTD	1315 Sturt Street	BALLARAT	3350
Laki Papazois	DPM PTY LTD	22 Business Park Drive	NOTTING HILL	3168
Mark McNamara	Ray White Real Estate	251 Wyndham Street	SHEPPARTON	3630
Kevin Hicks	Kevin Hicks Real Estate	193A Corio Street	SHEPPARTON	3630
Glen Ryan	GMR Engineering Services	PO Box 358	Shepparton	3630
Alistair Smith		PO Box 2106	BENDIGO DELIVERY CENTRE	3554

**INFRASTRUCTURE DESIGN MANUAL
PUBLIC CONSULTATION MAILING LIST**

NAME	BUSINESS NAME	ADDRESS	CITY	POSTCODE
Alliance Building Services		28 Towers Street	BENDIGO	3550
BDA Constructions		PO Box 2481	BENDIGO DELIVERY CENTRE	3554
Bernie O'Shannessy		10 Herbert Avenue	BENDIGO	3550
BGA Architects		PO Box 1124	BENDIGO	3552
Bob Styles		11 Hallam Street	BENDIGO	3550
Brendan Bartlett		Brendan@bblarch.com.au		
Brian Bartlett		13 Jeffrey Avenue	FLORA HILL	3550
Building Issues Pty Ltd		1/60 McIvor Road, Bendigo	BENDIGO	3550
Butch Dunlop Pty Ltd		43 Jewell Court	BENDIGO	3550
C & JB Drafting Service		35 Creek Street	BENDIGO	3550
Central Building Advisors		PO Box 895	BENDIGO CENTRAL	3552
Chambers Consulting Engineer Pty		Level 2 21 View Point	BENDIGO	3550
Chris Brown & Assoc		127 Wills Street	BENDIGO	3550
Coffey Constructions		'Parkview' 1810 Calder Alt Highway	MARONG	3515
Colin Nankervis & Assoc		493 Hargreaves Street	BENDIGO	3550
Colin Stobaus		96-98 Caldwell Street	HEATHCOTE	3523
Damien Tangey - Tangey Group		PO Box 43	STRATHDALE	3550
Dennis Cosgriff		161 Upper California Gully Road	EAGLEHAWK	3556
Dennis O'Shea Design & Drafting		28 Sternberg Street	BENDIGO	3550
Executive Homes		178 McIvor Road	BENDIGO	3550
Fraser and Maher Building		52 Lawson Street	BENDIGO	3550
GA & PA Pilcher Pty Ltd		PO Box 2057	BENDIGO DELIVERY CENTRE	3554
Geoff Dawson		23 Herbert Avenue	BENDIGO	3550
Geoff Shaw & Assoc		8 Hopetoun Street	BENDIGO	3550
George Shearer		PO Box 408	BENDIGO	3552
Gerard K House Pty Ltd		41 Edwards Road	BENDIGO	3550
Glen Loddon Homes		PO Box 2501	BENDIGO DELIVERY CENTRE	3554
Glynn Lewis		38 Moon Street	EAGLEHAWK	3556
JG King Homes		17 High Street	KANGAROO FLAT	3555
Jim Ford		C/- 195 Allingham Street	KANGAROO FLAT	3555
John Buckell		6 Homebush Drive	JUNORTOUN	3551
Karoline Klein		kld@netcon.net.au		
Kevin Slater Design		103 Retreat Road	BENDIGO	3550
Kirkwood Homes		139 Charleston Road	BENDIGO	3550
Kurt Walder		154 Barnard Street	BENDIGO	3550
Liesl Malan		lmalan@gcom.net.au		
Maquarie Homes		73 High Street	KANGAROO FLAT	3555
McCarthy Homes		110 Harley Street	BENDIGO	3550
Merv Nash		60 Church Street	EAGLEHAWK	3556
Michael Hughes Design Architects		236 View Street	BENDIGO	3550
Michael McEvoy Architects		3 Albert Avenue	BENDIGO	3550
Morey & Hurford Pty Ltd		PO Box 2248	BENDIGO DELIVERY CENTRE	3554
Osborne Consulting Group		133 McCrae Street	BENDIGO	3550
Planwise Design		127 Wills Street	BENDIGO	3550
Pryda Homes		PO Box 570	BENDIGO	3552
Ranbuild		125 Breen Street	BENDIGO	3550
Ricky Jenkyn		115 Lansell Terrace	BENDIGO	3550
Robert Heath Building Surveying		29 Broad Parade	SPRING GULLY	3550
Rodney Smith Design		434 Hargreaves Street	BENDIGO	3550
Rory Costello	Villawood Pty Ltd	C/- Tomkinson	BENDIGO CENTRAL VIC	3552
Ross O'Meara		2 William Street	BENDIGO	3550
RPD Group		PO Box 2750	BENDIGO DELIVERY CENTRE	3554
Russell Parsons Builders &		172 McIvor Road	BENDIGO	3550
Shane Muir Consulting Engineers		37 Garsed Street	BENDIGO	3550
Simonds Homes		PO Box 2502	BENDIGO DELIVERY CENTRE	3554
Sinclair Knight Merz		36 Wattle Street	BENDIGO	3550
Singleton Bahen Stansfield		61 Bull Street	BENDIGO	3550
Stephen Retcher		PO Box 2226	BENDIGO DELIVERY CENTRE	3554
Spiros Kolaitis		C/- Bendigo Land P/L	BENDIGO	3550
Stuart Davey		206 Don Street	KANGAROO FLAT	3555
T & J Rowe Building Services		25 Chauncey Street	HEATHCOTE	3523
The Plan Factory		PO Box 310	CASTLEMAINE	3450
Tomkinson Pty Ltd		PO Box 421	BENDIGO CENTRAL	3552
Tony Knox		Ella Pty Ltd	SEDGWICK	3551
Toon Architects Group		7 Rowan Street	BENDIGO	3550
TR Stevens & Associates		4 Tea Tree Court	BENDIGO	3550
Walsh & O'Meara Building		5 Jarrah Court	STRATHDALE	3550
Ward Carter Art & Architecture		70 Bull Street	BENDIGO	3550

**INFRASTRUCTURE DESIGN MANUAL
PUBLIC CONSULTATION MAILING LIST**

NAME	BUSINESS NAME	ADDRESS	CITY	POSTCODE
North Central Catchment		628-634 Midland Highway	HUNTLY	3551
Vic Roads		PO Box 204	BENDIGO	3552
Department of Primary Industries		PO Box 3100	BENDIGO DELIVERY CENTRE	3554
Heritage Victoria	Nauru House	Level 22, 80 Collins Street	MELBOURNE	3000
Powercor		Private Bag 8004	BENDIGO	3550
SPI Powernet	Easement Management Group	PO Box 2222, Collins Street West	MELBOURNE	8007
Coliban Region Water Authority		Box 2770	BENDIGO DELIVERY CENTRE	3554
Telstra Land Development		PO Box 61	BALLARAT	3353
TXU Australia (Gas) Pty Ltd	C/- Tenix Maintenance Services	Locked Bag 4500	SUNSHINE	3020
Country Fire Authority		45 Chapel Street	BENDIGO	3550
Neil Athorn		C/- Sandhurst Trustees Ltd	BENDIGO	3550
Environment Protection Authority		PO Box 103	BENDIGO	3550
	Abernethy Dowd	140-142 Welsford St	SHEPPARTON	3630
	Anthony Sofra	366 Wyndham St	SHEPPARTON	3630
	Camerons	2-4 Edward St	SHEPPARTON	3630
	Cassidys Pty	22 Main St	COBRAM	3644
	Dawes & Vary	5 Lake Rd	KYABRAM	3620
	Dawes & Vary	145 Hogan St	TATURA	3616
	Faram Ritchie Davies	PO Box 600	SHEPPARTON	3632
	Hadyn Brewer	"Tayside" Bridge Rd	TOOLAMBA	3614
	Marshall Richards & Assoc.	142 Welsford St	SHEPPARTON	3630
	Mary Stewart	563 Wyndham St	SHEPPARTON	3630
	Morrison & Sawers	157 Fenaughty Rd	KYABRAM	3620
	Morrissy & Deane	159 Welsford St	SHEPPARTON	3630
	Felthams & Co	16 Fryers St	SHEPPARTON	3630
	Riordan Lawyers	124 Fryers St	SHEPPARTON	3630
	Scott Thompson & Co	140 Welsford St	SHEPPARTON	3630
Operations Manager	VicRoads	PO Box 135	BENALLA	3672
Land Use Planner	Department of Sustainability and	PO Box 879	SEYMOUR	3660
Floodplain Manager	GBCMA	PO Box 1752	SHEPPARTON	3632
Manager Land & Water	Goulburn Murray Water	PO Box 165	TATURA	3616
Field Manager	Origin	PO Box 1331	SHEPPARTON	3632
Development Forecasting	Telstra	PO Box 61	BALLARAT	3353
Shepparton Custmer Service Centre	Powercor Australia	PO Box 499	SHEPPARTON	3632
Chief Executive Officer	Goulburn Valley Water	PO Box 185	SHEPPARTON	3632
Manager	EPA	PO Box 1007	WANGARRATTA	3676
Risk Manager	CFA	PO Box 932	SHEPPARTON	3632
Trevor Woodcock	Infrastructure Solutions	PO Box 1656	SHEPPARTON	3632
Ms Janita Norman	Envisage Building Design	531 High Street	ECHUCA	3564
Mr Paul Lindberg		47 Cornelia Creek Road	ECHUCA	3564
Mr Tim Davey	Davey Constructions	11 Lord Court	ECHUCA	3564
Mr Peter Sutton	Sutton Constructions	5 Lord Court	ECHUCA	3564
Mr Michael Monahan	Vincent Chrisp Adams Architects	Suite 1, 33 Nish Street	ECHUCA	3564
Mr Dale Denham	Denham Design and Drafting	186 Annesley Street	ECHUCA	3564
Mr Simon Coote	Land Management Surveys	P O Box 101	ECHUCA	3564
Mr James McLaurin	Rich River Irrigation	57 Meninya St	MOAMA	
Mr Shannon Johns	Gerard Branderick Architects	541 High Street	ECHUCA	3564
Mr David Merrett	Isis Planning	P O Box 868	ECHUCA	3564
Mr Jim Gray	Graycorp Builders	PO Box 668	ECHUCA	3564

Appendix B
Public Presentations

INFRASTRUCTURE DESIGN MANUAL

13 December 2006
Greater Shepparton City Council office

14 December 2006
City of Greater Bendigo office



What is the Manual ?

- This Infrastructure Design Manual has been prepared by the Cities of Greater Bendigo and Shepparton and the Shire of Campaspe. It is not an urban design manual or planning guide. It is the tool by which these Councils document set-out their engineering requirements as they relate to the development of infrastructure in our municipalities.
- For Councils, the manual clearly documents how engineering requirements can assist in satisfying Council policies and achieving the objectives of various Council strategies.
- For Developers, consultants and builders, it is the tool that clearly outlines how Councils' engineering requirements/conditions can be satisfied.
- The Infrastructure Design Manual is the tool by which our Councils will ensure that their direction from Council is **CLEAR** and **CONSISTENT**.

Why is it good for Developers?

The Infrastructure Design Manual offers the following benefits to Developers:

- More consistency amongst design requirements for Consultants and Developers working in the three municipalities. Now about 98% of all requirements are consistent between the three municipalities. Where there are different requirements these are shown clearly in the manual.
- A faster and more efficient approval process because all parties know what information is to be provided and at what time. Council officers will be able to respond more efficiently and clearly to engineering enquiries because we have the tool that shows how conditions are to be satisfied.
- The manual also introduces checklist and audit processes to allow for fast-tracking of approvals.

Why is it good for Council?

The Infrastructure Design Manual offers the following benefits to Councils :

- More consistency amongst design requirements for Consultants and Developers working in the three municipalities.
SAME !
- A faster and more efficient approval process because all parties know what information is to be provided and at what time.
SAME!
- Share ideas and practices will help the municipalities adopt the best practice of each.
- Works will be designed and constructed such that they will fulfil the purpose for which they are intended, and fulfil Councils' legislative obligations.

How do you access the Manual?

- The manual will be accessible to everyone via each Councils' website. This will ensure that every one has access to an up to date version and there is no need to have a paper copy that gathers dust and that you are never sure whether it is up to date.
- The electronic manual will be easier to search and will have hotlinks to other documents.
- The format of the Manual is very similar to Clause 56 of the Planning Scheme. Each section generally consists of :
 - Objectives
 - General
 - Requirements

Relationship to the Planning Scheme

- The document will be included as a reference document to the Councils' Planning Schemes.
- Reference to the document will be made in the objectives and strategies of the Councils' Municipal Strategic Statements to ensure that development achieves the design standards in the manual.
- The standards in the document complement Clause 56, in that the Rescode "objectives" are to be achieved rather than a development simply meeting the minimum requirements.
- The document provides detailed guidance on how the Council standards are to be achieved in meeting the objectives, standards and decision guidelines of Clause 56.

A clear direction at an early stage!

The Manual clearly outlines when an Outline Development Plan (ODP) will be required:

- Where the land is subject to a **Development Plan Overlay (DPO)** and/or **Incorporated Plan Overlay (IPO)**
- Multiple-staged subdivision development
- Developments where more than one landowner is potentially involved
- Single staged subdivisions with more than 10 allotments
- Where directed by Council.

The Manual also details what information will be required with the ODP submission. Better information at the time of ODP submission leads to better decisions by Council Officers and less risk to the Developers and Consultants down the track.

Pre-design inspections are recommended. Can save the Developer money in the long run, and save Council Officers heartache as well.

Clear Triggers

A **Traffic Management Strategy** that determines the road layout, road widths, functions and connectivity for all road users will be required by the following:

- Construction of a new road
- Construction of a new intersection
- Potential for further development (may need ODP to assess)
- Multiple Developers within a specific locality
- Large industry or retail/commercial development

A **Traffic Impact Assessment** may be triggered by the following:

- Where developments generate either:
- an overall increase in traffic volumes of 10% or greater, and/or
- an increase of 100 vehicles per day or greater.

Clear Triggers

A **Road Safety Audit** shall be required for all developments or designs that require a Traffic Management Strategy. They will be conducted at the detailed design stage and the requirements are outlined in the Manual.

A **Drainage Strategy** may be triggered by the following:

- Whenever an Outline Development Plan is prepared.
- Whenever there is a request to have land rezoned under the planning scheme.
- Where developments include the construction of a new retardation basin, a new treatment facility, or a new drainage outfall.
- Where there is potential for significant further development within the catchment.
- Greater than 5 lots discharging to a common drainage system/basin
- Large industry or commercial use.

New or Varied Requirements

- 12 months defects period and no maintenance period.
- Street widths that vary from ResCode.
- Requirements for footpaths and shared paths.
- 10% allowance in drainage design for future subdivision.

New or Varied Requirements cont.

- On site detention design aids.
- Maintenance of on site detention systems.
- Requirements for risk assessments of drainage structures etc.
- Stormwater treatment requirements.
- Standard of landscaping to be approved having regard to future maintenance costs.
- Street lighting requirements.

Where to from here

- Comments on the provisions of the manual will be received until 31st August.
- Comments will be assessed and a report to each of the Councils will be made.
- Council will adopt with or without modification.
- Manual to be incorporated into planning schemes as a reference document where necessary.

New or Varied Requirements cont.

Issues Council should take note of!!

- We now propose to utilise a 12 month defects period and no maintenance period for all assets.
- We are trying to make drainage for small developments easier:
 - Large estate drainage designs will allow for about 10% additional capacity in the system to allow a reasonable number of lots to be subdivided further without provision of extra on-site detention.
 - Off-the-shelf design aids for small on-site detention systems will make the process easier for small developers and for Council

Questions

INFRASTRUCTURE DESIGN MANUAL - SHEPPARTON LAUNCH - 13 DECEMBER 2006

Name	Company	Contact
Guy Tierney	CBCMA	5820 1100
Len Price	Len Price Association P/L	5822 2808
Michael Lewis	Coomes Consulting	5831 4448
Mark Breuer	Coomes Consulting	5831 4448
Michael McCarrey	Planright	58248584
David Barraclough	Planright	5824 1322
Lisa Stevens	Chris Smith & Associates	5820 7713
Mark McDonald	Chris Smith & Associates	5820 7712
Ashley Trigger	Coomes Consulting	5831 4448
Jason Moule	Coomes Consulting	5831 4448
Calyin Trewin	Goulburn Valley Water	5832 0475
Steven Nash	Goulburn Valley Water	5832 0709
Brian Pethybridge	Peps-Plans	5821 1133
Todd Durnthaler	Len Price Association P/L	5822 2808
Peter Harriott	City of Greater Shepparton	5832 9700
Jenny	City of Greater Shepparton	5832 9700
Peter Harriott	City of Greater Shepparton	5833 9700
Colin Kalms	City of Greater Shepparton	5834 9700

INFRASTRUCTURE DESIGN MANUAL - BENDIGO LAUNCH - 14 DECEMBER 2006

Name	Company	Contact
Melissa Douglas	COGB Planning Dept	
Debbie Thewlis	COGB Subdivisions	
Liz Commadeur	COGB Subdivisions	
Julian Perez	Tomkinson	jperez@tomkinson.com.au
Nathan Bawden	Tomkinson	5442 1033
Peter Seller	Tomkinson	5442 1033
Kevin Slater	Kevin Slater Design	kevdes@netcon.net.au
Glenn Eastwood	Planwise design	glen@planwisedesign.com.au
Tanya Leslie	Terry Stevens Consulting Engineers	stevens.t@impulsenet.au
Andrew Mertens	Terraco	andrew@terraco.com.au
Noel Shanahan	COGB Asset Planning & Design	
Peter Brasier	COGB Asset Planning & Design	
Dale Sampson	COGB Strategic Planning	
Chris Brown	Chris Brown & Associates	cbassos@netcon.net.au
Stephen Glenville	Chris Brown & Associates	cbassos@netcon.net.au
Janette McCallum	Shire of Campaspe	
Peter McKinnon	Shire of Campaspe	p.mckinnon@campaspe.vic.gov.au
Cameron Clarke	Singleton Bahen Stansfield	54433188
Daniel Kerr	Singleton Bahen Stansfield	54433188
Kerri Brown	Singleton Bahen Stansfield	54433188
David Rathbone	Singleton Bahen Stansfield	54433188
Jon Griffin	COGS	58329730
Colin Kalms	COGS	58329730
Brendan Bartlett	Landscape Architect	5446 3221
Brain Bartlett	Consulting Engineer	5441 2235

Appendix C
Press Releases

SHIRE OF CAMPASPE MEDIA RELEASE



21 December 2006

SHARED APPROACH TO NEW MANUAL TO ASSIST DEVELOPERS & COUNCILS ALIKE

The Shire of Campaspe has teamed with the City of Greater Bendigo and Greater Shepparton City Council to produce a reference guide on the standards and requirements for infrastructure and development in the region.

The Infrastructure Design Manual is expected to provide greater clarity and consistency for consultants, developers and residents who need to know more about the rules, regulations and standards for land developments, with public launches of the draft manual held in Shepparton and Bendigo recently.

Councillor John Elborough said the introduction of the manual would also deliver greater efficiencies to the Shire's engineering and planning departments and a better understanding for all parties.

"The Infrastructure Design Manual aims to make it easier for everyone and by providing the information in an easier to understand format that is readily available, we hope we can reduce some of the confusion that often confronts developers and consultants, as well as local residents and property owners."

Cr Elborough said the Infrastructure Design Manual has been developed over the past three years through a comprehensive array of consultation and liaison involving the three Councils, property developers, consultants and industry personnel.

"These processes have contributed much to the manual's development and ensured that the relevant policies, procedures and guidelines address the three main aims of appropriate, affordable and equitable infrastructure which will serve our community proudly."

The primary objectives of the manual include:

- * To clearly document the requirements for the design and development of infrastructure,
- * To standardise development submissions as much as possible and thereby speed up development approvals,
and
- * To ensure that minimum design criteria are met with regards to design and construction of infrastructure.

COMING UP

Thursday, 25 January
1.00 - 2.00pm

Afternoon discussion session
Rochester Customer Service Centre
Further information: Sandra Ennis

Thursday, 25 January
7.00pm

Council meeting
Echuca Civic Centre
Further information: Peter Mangan
Friday, 26 January

AUSTRALIA DAY EVENTS

Echuca

Aquatic Reserve 8:00am
Flag Raising, Award Presentations &
BBQ Breakfast
Further information: Echuca Rotary Club

Girgarre

Girgarre Park 8:00am
Flag Raising, Award Presentations &
Sausage Sizzle
Further information: Girgarre Community Group Inc.

Lockington

Apex/Lions Park
Flag Raising & Breakfast 8:30am
Certificate Presentation 10:30am
Lockington Channel 1-4pm
Fishing Competition for kids
Further information: Action & Lions Cubs

Kyabram

Memorial Gardens 7-9:30am
Flag Raising, Award Presentations,
BBQ Breakfast & Entertainment
Further information: Kyabram Rotary Club

Kyvalley

Ky Valley Community Park & Ky
Valley Pool 12:00 noon
Flag Raising, free BBQ & swimming
Further information: Ky Valley Community Park and Pool Committee

Miloo

Miloo Hall 7:00pm
Family Tea & Guest Speaker
Further information: CWA

Rochester

Rochester Lions Park 7:00am
BBQ Breakfast
Further information: Rochester Lions Club Inc
RSL Memorial Hall 9:30am
Flag Raising
Rochester Bowls Club 10:00am
Function
Rochester Bowling Club 6:30pm
Dinner
Further information: Rochester Australia Day Committee

Stanhope

Memorial Hall 9:30am
Flag raising & morning tea
Further information: McEwen CWA

Tongala

Shire Service Centre & Shire Hall
11:00am
Flag Raising, Award Presentation &
BBQ

Rushworth

Further information: Tongala Australia Day Committee
Band Rotunda 6:30pm
Sausage Sizzle, Ceremony & Award
Presentations and Entertainment
Further information: Rushworth Australia Day Committee

Tooleen

Tooleen Recreation Reserve 11:00am
Flag Raising, Presentations & Free
Lunch

Gunbower

Further information: Recreation Reserve Committee
Gunbower Recreation Reserve
7:30am Breakfast
Further information: Gunbower Angling Club
Memorial Hall 10:00am
Flag Raising, Poster Competition &
Refreshments
Further information: Gunbower CWA

From the Mayor

Last week, together with councillors Riley, Maddison and McDonald, I met with acting Premier and Minister for Water, Environment and Climate Change, John Thwaites to inspect the massive pumping project works currently underway at Waranga Basin.

This \$4.3 million project will provide about 86,000 megalitres of much needed water to irrigators on the Goulburn system by accessing water below the Waranga Basin's outlets that cannot be released by gravity.

We are grateful for the government's funding of this important project and for the support of Goulburn-Murray Water. Accessing this volume of water provides seven per cent of the 24 per cent allocation to our struggling farmers, from February 9

when the pumps are due to be switched on, through to the close of the irrigation season on April 15.

Once again, I invite all residents to be part of Australia Day celebrations across our region this Friday, January 26. A wide range of activities and events are planned as part of 12 official celebrations throughout the day, including the announcement of Australia Day award winners and the overall Shire of Campaspe Award Winners.

Attending these events is a great way to show our appreciation to these community members who contribute so much to the community and make our Shire such a great place to live and work.

CR JOHN ELBOROUGH



Works Update

Gravel Road Resheeting, Shire wide – Stage 3 of the annual resheeting program continues.

Town Hall Refurbishment, Kyabram – Refurbishment works continue. Project cost \$200,000 over 3 years.

Parks and Gardens, Shire Wide – Regular maintenance Parks & Gardens program continues, with additional upkeep of Shire facilities required due to tourist visitors and local public events.

Building Refurbishments, Shire Wide – Refurbishment of Rushworth Council Chambers / Service Centre; Tongala Hall; Rochester Hall, Kyabram Town Hall and Rochester Child Care continue.

Rochester Pre-School – Extensions to the pre-school commenced late December and due for completion 9 February 2007.

Girgarre Community Hall – Joint Community and Shire project for refurbishment of Girgarre Hall commenced on 8 January 2007. External repainting of the hall and supper room and installation of new spouts and downpipes to the hall has been completed. Strengthening of roof to toilet block for solar panels has commenced.

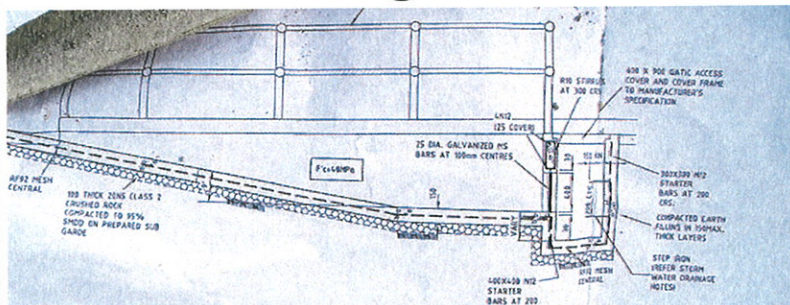
Rochester Hall – External painting has commenced and will be completed by 24 January 2007.

Northern Highway Service Road, Echuca – Construction of service road continues, the drainage has been completed and sub-grade is underway.

West Strathallan Bridge Upgrade – Works continue on the bridge upgrade. Project cost \$170,000.

Aquatic Reserve Shared Path, Echuca – Construction of bitumen shared path is underway. Project Cost \$179,448.

Comment Sought On New Design Manual



The Shire of Campaspe continues to seek feedback and public comment on its draft Infrastructure Design Manual, a guide to the various standards and requirements for development in the region. The draft manual was placed on public exhibition during December to allow the community to have its say on this important document, which is expected to provide greater clarity and consistency for consultants, developers, planners

and residents alike. The Infrastructure Design Manual provides information in an easier to understand format that is readily available and which should reduce some of the confusion that often confronts developers and consultants, as well as local residents and property owners. The Manual has been developed over the past three years through a comprehensive array of consultation and liaison also involving the City

of Greater Bendigo and Greater Shepparton Council, property developers, consultants and industry personnel. Design Services Manager Anne Howard has led the development of the draft manual. The Infrastructure Design Manual will remain on display for public comment and review at campaspe.vic.gov.au and at all service centres. Written submissions and comments should be sent to Ms Howard by February 2.

EMPLOYMENT OPPORTUNITIES

A summary of current employment opportunities with the Shire of Campaspe appear below. Please note that full details are available on our website, from the customer call centre or by contacting Human Resources Officer,

Natalie Cox on 5481 2237
(email: n.cox@campaspe.vic.gov.au).

Unit Leader Construction, Full Time PUBLIC WORKS DEPARTMENT

(Band 5 \$44,164 - \$51,501 per annum plus Super)

The Unit Leader Construction will be part of the Shire of Campaspe's Construction Unit and will be responsible for works undertaken by the Three (3) Construction Teams, which involves both maintenance of existing infrastructure and construction of new assets. Applicants should have sound leadership and communication skills and the ability to promote a positive image and deliver a high level of customer service to the community. The position will be based at the Tongala Service Centre.

The successful applicant will also possess a current driver's licence, experience / competency in operating construction plant and have good computer operation skills. Previous experience with road maintenance and construction is desirable.

The remuneration for this position is Band 5 (\$44,194 - \$51,501) in line with the Local Authorities Award 2001 and Council's Enterprise Agreement 2004, plus superannuation.

You can obtain a position description from Council's website www.campaspe.vic.gov.au or by contacting Council's call centre on 1300 666 535 or by emailing Natalie Cox at n.cox@campaspe.vic.gov.au.

Further enquiries for this position may be forwarded to Nathan Grigg on (03) 5859 3600.

Applications close 4.00pm Friday February 9th, 2007

"Confidential - Unit Leader Construction"

Natalie Cox, Human Resources Officer, Shire of Campaspe, PO Box 35, Echuca 3564
Or email to: n.cox@campaspe.vic.gov.au

Campaspe is an equal employment opportunity employer.

TENDERS

The Shire of Campaspe invites tenders for the following:

CONTRACT 2349

Scobie Road Blacklength Roadworks Project

The Shire of Campaspe invites tenders for the Scobie Road Blacklength Roadworks Project.

Tenders close 12 noon Thursday, 15 February 2007 at the Echuca Office.

A copy of the specifications can be obtained by contacting Freya Fidge on 5481 2209.

IMMUNISATION SESSIONS

Available for adults, children and infants as follows:

Thursday, 1 February

Echuca Civic Centre Function Room
9-10:30am

Rochester Council Chambers

12-12:30pm
Colbinabbin Maternal & Child Health Centre
2-2:30pm

Monday, 5 February

Senior Citizens Clubrooms, Lake Road,
Kyabram

9:30-10:30am

Stanhope Community Health Centre

11:30-12:00pm

Thursday, 15 February

Lockington Bush Nursing Centre

10-10:30am

Echuca Civic Centre Function Room

6-7:00pm

Monday, 19 February

Tongala Maternal & Child Health Centre

10-10:30am

Rushworth Maternal & Child Health Centre

11:45-12:15pm

Girgarre Maternal & Child Health Centre

1-1:30pm

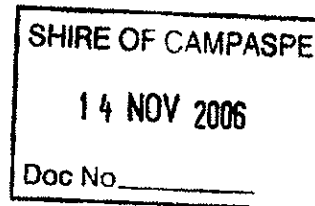
Appendix D
Incoming Documents

File No:120.05.0001
Corresp:



13 November 2006

Anne Howard
Design Services Manager
Shire of Campaspe
PO Box 35
ECHUCA 3564



Moirra Shire Council
44 Station Street
Cobram Vic 3644

P.O. Box 578
Cobram Vic 3643

DX 37801
Cobram

Tel 03 5871 9222
1300 36 9966

Fax 03 5872 1567
TTY 03 5871 2262

webmaster@moira.vic.gov.au
www.moira.vic.gov.au

ABN 20 538 141 700

Dear Anne,

Infrastructure Design Manual

Thank you for inviting Andrew Close and me to your session on development of the Infrastructure Design Manual, held 31 October 2006 attended by representatives of the municipalities of Shepparton, Campaspe, and Bendigo, together with consultants involved in the development of the Manual.

Moirra Shire is very interested in adopting the Manual and would welcome an opportunity to become involved in it's future development. I understand that there has been discussion amongst those responsible for development, that Moirra Shire could utilise the manual subject to the following conditions;

- Contributing \$4,000 to assist with defraying costs already incurred in developing the Manual
- Contributing \$1,000 annually to assist with development of the Manual, as well as costs associated with keeping the current version on the Shepparton website
- Adopting the Manual in it's entirety, with minor changes only
- Continuing provision of assistance with development of the Manual by providing staff time and resources as necessary
- The arrangement be formalised by signing a memorandum of understanding

Council would be pleased to contribute \$4000 to assist with defraying costs already incurred in developing the manual together with an annual maintenance cost of \$1000 per annum.

We have made a list of the additions that Moirra Shire would like to make to the Infrastructure Design Manual. We understand these additions are minor and predominately refer to the stipulation of options provided within the manual.

We have also made a suggestion how the document might be altered to track changes between versions and to cater for particular Council variations as the number of Councils participating increases. This can be viewed as a long term change which would be the subject of future discussion.

With regard to the need to formalise arrangements between participating Councils, we would be pleased to discuss developing a suitable agreement and have it signed by Senior Council Officers.

At the meeting you indicated that invitations for the information sessions being held on the 13th and 14th of December are to be posted out next week. We would like to ensure that the consultants who work in the Shire are also included and would appreciate a copy of this documentation.

Our Chief Executive Officer is aware of the proposal to adopt the Infrastructure Design Manual and has suggested that we present it at a Council briefing after all the consultation is finalised. It should be noted that we have already started using the document on a daily basis and intend to reference it in conditions on Town Planning permits to be issued in the near future.

A copy of the additions and comments that Moira Shire is seeking are attached and if you have any questions regarding these, please call Andrew Close or myself on 5871 9222, with regard to payment, could you please provide Council with an invoice and I will organise payment to be made as soon as practical.

Yours faithfully



Mark Foord
Manager Infrastructure Planning

Moira additions to Infrastructure Design Manual

Page 2

2 Definitions

Councils Engineering Department

Moira Shire

Infrastructure planning ✓

Page 18

6.3.5 Drawing Numbers

The City of Greater Shepparton **and Moira Shire** do not allocate drawing Numbers

Page 33

Table 1

Note – Access lanes do not necessarily have to have kerb and channel on each side. They can have a concrete pavement with a central channel or can be formed in a V shape that drains to grated pit, especially if there is no room for SM2 kerb and channel.

Page 36

Paragraph 1

Editorial comment -to be calculated along the outer kerb.....

Page 36

12.3.8 Kerb Grading

Within the Shire of Campaspe, the City of Greater Shepparton **and Moira Shire**, kerb and channel grades shall.....

Page 38

Paragraph 4

Editorial comment – Footpaths shall be 300mm **maximum** offset from property boundaries in **existing** new developments and 50mm **maximum** from property boundaries in new developments

Page 39

12.3.11 Kerb and channel

5) Within the City of Greater Shepparton **and Moira Shire** subsoil drainage shall.....

Page 41

Table 5

Add **Moira Shire** to Shire of Campaspe and the City of Greater Shepparton

Page 41

Table 5 Note 1

.....within the Shire of Campaspe, the City of Greater Shepparton **and Moira Shire**, where waste collection.....

Page 51

12.10 Dust Suppression

12.10.1 Shire of Campaspe and Moira Shire

Page 52

Suggest add

12.11 Where a subdivision is being developed on a roadway that is not constructed, the developer shall be required to construct the road to the nearest intersection with an existing constructed roadway.

Page 60

16.2 General

Paragraph 1

.....within the Shire of Campaspe, the City of Greater Shepparton and **Moira Shire**, shall be.....

Page 61

16.4 Hydrology

Paragraph 2

.....within the Shire of Campaspe, the City of Greater Shepparton and **Moira Shire**, stormwater runoff.....

Page 63

16.8 Hydraulic design

Paragraph 1

.....within the Shire of Campaspe, the City of Greater Shepparton and **Moira Shire**, stormwater hydraulic.....

Page 64

16.8.2 Minimum pipe grades

Paragraph 1

.....for the Shire of Campaspe, the City of Greater Shepparton and **Moira Shire**, however.....

Page 74

17.4 Minor drainage

2)

.....for Shire of Campaspe, the City of Greater Shepparton and **Moira Shire**, and.....

Page 74

Table 9

Add **Moira** to 1 in 10 ARI

Page 79

18.3.6 Depth of retardation basins

Para 1

.....areas of the Municipalities of Campaspe, Shepparton and **Moira** are subject.....

General comments

The document may need a simple method for tracking changes that have been made between successive versions. The easiest method might be the one used in the BCA where there is a margin down the edge of the page where a notation can be made depending upon which version was responsible for the change. This can also aid in providing a summary of the changes made with any new version.

This might also be useful if an increasing number of councils coming on board wish to increase the variation with the standard text. The method adopted in the BCA for handling State variations might be a useful means for handling these differences as well. If the variations between Councils become too great then a notation in the margin would point the reader to a clause in the particular Council appendix.

Therefore all a Council wishing to adopt the document would need to do is provide their appendix and pay their money. The body of the document would only need to be upgraded by margin notes

Example in body of text

Moira	24.3.13 Soft Landscaping Min 100mm (imported) approved top soil.....
Version 2	24.3.14 Hard Landscaping

And in the Moira appendix

24.3.13 Soft Landscaping In addition to the requirements of 24.3.13. in the body of the document The Moira Shire Council will accept 'hydromulch', 'hydroseal' or equivalent over the whole area
--

And in the Version 2 summary of changes table

24.3.14 Hard Landscaping	What the change was.
--------------------------	----------------------

From: <Jim.Mensforth@roads.vic.gov.au>
To: <a.howard@campaspe.vic.gov.au>
Date: 02/02/2007 12:04:18 pm
Subject: Infrastructure Design Manual - submission

Anne,

We have read through (not thoroughly) the document that is out seeking public comment by 2nd february, 2007.

Front Cover.... suggest Infrastructure Design Manual be renamed
Infrastructure Design Manual - Municipal Roads & Subdividable Land.

Page i) of ix) 5.8.2 suggest remaming the Preliminary Design Submission as Functional Layout Design Submission. Functional Layout terminology is consistently used by local governments and VicRoads. Why introduce a new term? If adopt this suggestion will need to change frequently throughout the document and attachments.

Page iv) Of ix) 12.6 Traffic Calming change to "Traffic Calming in urban environs."

Page 1 At end of 5th dot point insert on "Municipal and private land roads."

Page 3. under 3.1 fourth paragraph insert after Council staff "and where appropriate, referral authorities such as VicRoads, "

Page 7. First paragraph, extend first sentence after meeting "and where appropriate, VicRoads and DSE."

Page 7 second hollow dot point "motilities" suspect misplelt mobilities.

Page 8. Make a 3rd dot point after the 2nd as;" Identification of Public transport requirements."

Page 8. 5th existing dot point, question use of the term ARTERIAL as RMA refers to arterials as Declared Roads under responsibility of VicRoads. Is it better to refer to Municipal Arterials as Major Roads or something similar?

Page 8. In existing 10th dot point after radius insert "and sightlines"

Page 15 after 5.8.2 and also after 5.5.3 insert " Co-ordinate with VicRoads where appropriate"

Page 15 after your last paragraph insert, " The issue of a Planning Permit and Final Design approvals does not constitute consent to undertake works within existing road reserves under the management responsibility of Council or VicRoads"

Page 16. additional 4th dot point suggest; "To provide documentation of installation dates of any Major Traffic Control Items to Council"

Page 16 under 6.2 insert; "The Engineering Department of each Council requires the installation dates of any approved Major Control Item to enable advice to be forwarded to VicRoads within 30 Calendar days of enacting the VicRoads delegation."

Page 20 under 7.2 why is there a 1) shown?

Page 20 under 7.2 fifth line; change with to "within".

Page 22 under last paragraph; insert "Council's Planning Department shall seek, where appropriate, VicRoads and other referral authorities confirmation of there being no objections to the issue of Statement of Compliance."

Page 25 under 9.2 at end of 1st paragraph add "and where relevant, VicRoads"

Page 25 1st dot point insert after Report "(TIAR)"

Page 25 under 9.2 second last paragraph after shall not, delete the word BE.

Page 30 first paragraph after shall not, delete the word BE.

Page 31. 12.3 after requirements of, delete the word THE.

Page 34. under 12.3.3 after but may, delete the word BE.

Page 34. under 12.3.4 will not need any amendment if adopt suggestion on page 8 but if you still refer to local road arterials as arterials then could insert STATE in front of the arterial roads in this paragraph.

Page 35. under 12.3.5 add onto the paragraph , "and Austroads Guides to Traffic Engineering Practice (namely Intersections at Grade and also Roundabouts)."

Page 36. 1st paragraph after calculated change long to "ALONG".

Page 38. 4th Paragraph change 300m to 300mM.

Page 42. section 12.4.6 after 15% delete "IN".

Page 43. 2nd last paragraph after treatment insert "requiring VicRoads or VicRoads delegated Council approval,"

Page 44. end of 1st paragraph replace at 70 degrees or greater with "between 70 degrees and 110 degees".

Page 44. section 12.5.2 at end of last paragraph add "Roundabouts are Major Traffic Control Items requiring VicRoads approval. On Municipal Roads, VicRoads has delegated such approval to Councils under a number of conditions, one such condition relates to reporting back to VicRoads."

Page 44. section 12.5.4 In between the two paragraphs include; "Intersection spacing on State Arterials requires VicRoads approval. Access to State Arterials will be in accordance with Access Management Policies (AMP's) that may apply. Developers are encouraged to discuss access to State Aterrial roads early in the Town Planning application process."

Page 45. section 12.6. Change the title from Traffic Calming to "Traffic Calming in urban environs."

Also between the first two paragraphs insert "It should be noted that road humps are Major Traffic Control Items requiring special approval. Refer to Appendix ??? (suggest include Table 2.1 from TEM vol 1). May be able to also revise the note suggested under 12.5.2

Page 45. under dot point Control of Vehicle speeds. The last paragraph is inconsistent with 12.4.4. Could reduce this inconsistency by perhaps adding on the end of the paragraph "consistent with the likely operating speed applying to the road."

Page 46. 2nd Dot point. insert "MTCI requires approval -Refer to Appendix"

Page 426.3rd Dot point after heading insert "(MTCI requires approval - Refer to Appendix??)"

Page 48 under section 12.8 " Major Traffic Control Items require special approval, refer to Appendix???"

Page 50 under 12.9.1 fourth paragraph change 6 to 9metres as this is what the City Of Greater Bendigo Local Law states. Also suggest insert "(property title line)" after the word reserves. Also suggest add onto the end of this paragraph " and 1m clear of drainage pits"

Page 53 last paragraph. Question I have. Is restrictive use of TGSIs in accordance with Disability Discrimination Act - 1992 provisions?

Page 108 under 26.2.1.1 Obviously using the term Arterial in context of State Arterial. Need to use consistent terminology as per earlier comment for Page 8.

Checklist #D5 include a line for the 3rd line of "MTCI approvals checked and installation dates provided.

That is about the end of my submission but make sure if make changes as suggested that you also make the changes in Appendices and other attachments. For example Preliminary to Functional Layout.

Trust the comments are of assistance.

Regards,

Jim Mensforth
Team Leader - Road Safety & Traffic Management
VicRoads Northern Region
tel; 54 345 050
mob; 0400 087 697

DISCLAIMER

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CC: <Lloyd.Rowe@roads.vic.gov.au>, <Anton.Newton@roads.vic.gov.au>,
<Ian.Holmes@roads.vic.gov.au>

Shire Of Campaspe, City Of Greater Shepparton, City Of Greater Bendigo
Infrastructure Design Manual

Planright Comments on Public draft

General Comments

Overall, the manual seems to be in a good state. The level of detail is about right, spelling out items particular to the relevant councils without regurgitating the associated Australian standards etc.

The checklists included seem comprehensive without being laboriously long and may well supercede our own (trial will determine this).

One area of concern is in the structure of design phases for submittal of plans. Our thoughts are that Approval in principle should be overall layouts and design concepts. Once these are approved, detailed design may then proceed without the risk of having to scrap everything due to a basic layout problem. The level of detail asked for at the "Approval In Principle" stage in the manual however is far beyond this and requires a fair amount of detailed design.

What scope is there for council staff to insist upon standards / details not listed or covered within this manual? If something is listed within the manual are we able to assume council cannot insist upon changes?

Item Specific Comments:

Item	Comment
7.4	Hold Points. While the listed hold points (council inspections) are desirable, this may result in a large workload for council staff (and potential hold-ups for contractors). In respect to backfill of stormwater drains, is it intended for all lengths of drain to be inspected? This would prove impractical as often drains <u>are laid and backfilled in short lengths</u>
8.3	According to AS2124 & AS4000 (Clause 35) defect liability shall commence on date of practical completion (Acceptance of work). If works are OK at "Acceptance of works" meeting, why does the contractor have to wait the <u>additional time to commence defects liability period?</u>
8.5	Terminology - first mention of bond, previously it's been guarantee. Could include <u>Bond & Guarantee in #2 - Definitions</u>
12.9	Are vehicle crossings and laybacks required for modified semi-mountable kerb?
12.9	Not a new problem, but if vehicle crossings are provided and the footpaths are subsequently made thinner, who is responsible for breakage from <u>builders?</u>
13.3	Is it intended for TGSI's to be installed everywhere? (City of Shepp have <u>narrowed it down to CBD</u>)
15.3	Minimum grade of 1:200. Is this necessary in rural residential? In flat areas this can result in extensive earthworks with fill depths up to 4-500mm over large areas for very little benefit. A nominal 200mm may be more suitable for <u>these style developments</u>
20.2	Is an Environmental specialist required for all projects or will council specify <u>the requirement in the planning permit?</u>

22	Comments from contractors indicate there is very little control over silt resulting from housing construction. In staged developments, civil contractors <u>wear the cost of cleaning up sediment originating from builders.</u>
12.3.9	600mm clearance to swept path can result in a significant increase in pavement over wheel paths. This can also result in more open intersections <u>that encourage faster turning movements for cars.</u>
12.3.9	It would make more sense for turning movements to be submitted with prelim design rather than aproval in principal which only requires conceptual <u>intersection designs.</u>
12.3.9	Any requirement for B-Doubles in industrial areas?
12.4.6	I don't recall a single instance (In the Goulburn-Murray Valleys at least) where we have been able to achieve a grade of 0.5% on open drains. Most are <u>graded at 0.2% and many have been required to be 0.1%</u>
12.9.2	When shallow swales are used, are culverts required when we can concrete the invert of the swale as this often this provides a better visual finish. This is <u>of course provided flow depths aren't too deep.</u>
16.12 / 20.3	When selecting GPT's we need council's desired cleaning frequency.
19.3.2.1	Kerbs of not less than 150mm. Quite a lot of unit systems require only a low kerb, and putting in a substantial kerb of 150mm can create aesthetic problems. Provided freeboard is maintained to floor levels why the <u>requirement for a minimum height?</u>
5.8.2 / 12.7.2	Is a pavement design required for minor works? (eg: road widening for short lengths) if so geotech investigation could become more expensive than putting in a conservative pavement depth. Could a minimum pavement be <u>suggested for these style of works?</u>
9.2.2	No problem provided council provide traffic counts of existing road network in order to determine a %age increase in traffic volumes to determine if we need <u>a TIAR</u>
	Checklist requires subcatchment data for approval in principle. This can and does alter with detailed road design (vertical grading). When added to full turning movements for intersections it seems approval in principle is almost full design. I would have thought this submission would be to determine requirements / confirm overall layouts in order to prevent unnecessary design work, but with the level of detail being asked for this is not the case.

Shire Of Campaspe, City Of Greater Shepparton, City Of Greater Bendigo
Infrastructure Design Manual

Comments for Our Attention

Item	Comment
6.3.3	Minimum of 2 PSM's to be referenced on plans
5.8.1	Additional stage for submission of plans - Approval in principle (25% design stage). A3 plans.
5.8	Plans to be submitted electronically (DWF) as well as hard copies (2 A1 hard copies for prelim design and 3 for final design).
6.5	Need to update hold points in our spec to match.
12.6	Do we have Austroads part 11 - Local Area Traffic Management? <i>NO Part 11 = Parking.</i>
12.7.8	Ascon dwgs to show all reworked soft spots in subgrade and treatment taken. ✓
12.7.9	Industrial roads to be Type H hotmix - 40mm depth. <i>stiffer & larger amount of material come</i>
16.6	Roof time (initial time of concentration) to be 6min. <i>aggregates then 60% N</i>
16.7	10% to be added to co-eff in low-density residential (normal urban) to allow for future resubdivision <i>relieve T.</i>
16.8.5	Max spacing of pits on stormwater to be 80m
16.10.1	375mm min. pipe size under pavement, 300mm ok elsewhere.
16.14	Stormwater pump stations require probes on outlet to switch off if outfall drain is running full.
16.14	List of cabinet requirements to be included in our drawings.
18.3.9	All drainage structures, including basins, are to have a risk assessment done. (refer to section in manual)
	Stormwater to be designed to meet the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999) as amended.

Chris Smith

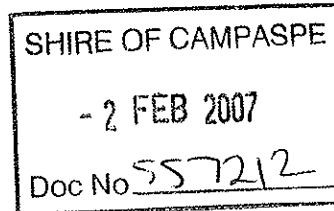
SPECIALISING IN SUBDIVISION PROJECT MANAGEMENT AND DESIGN

atf Subdivision Management & Design Unit Trust
116 Corio Street, Shepparton, Vic, 3630
Phone (03) 5820 7700 Fax (03) 5822 4878

1 February 2007

Design Services Manager
Shire of Campaspe
P.O. Box 35
Echuca 3564

Attn: Anne Howard



Dear Anne,

Draft Infrastructure Design Manual

We thank you for your letter dated 18th December 2006 regarding the opportunity for review and feedback to Council's Draft Infrastructure Design Manual.

Please find a copy of our comments enclosed for your consideration in updating the draft manual for formal adoption.

If you have any queries in regards to our comments please contact Lisa Stevens of our office on direct dial 5820 7713 or alternatively the undersigned.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Chris Smith".

Chris Smith
DIRECTOR

chris.smith@csmith.com.au
Direct: (03) 5820 7708

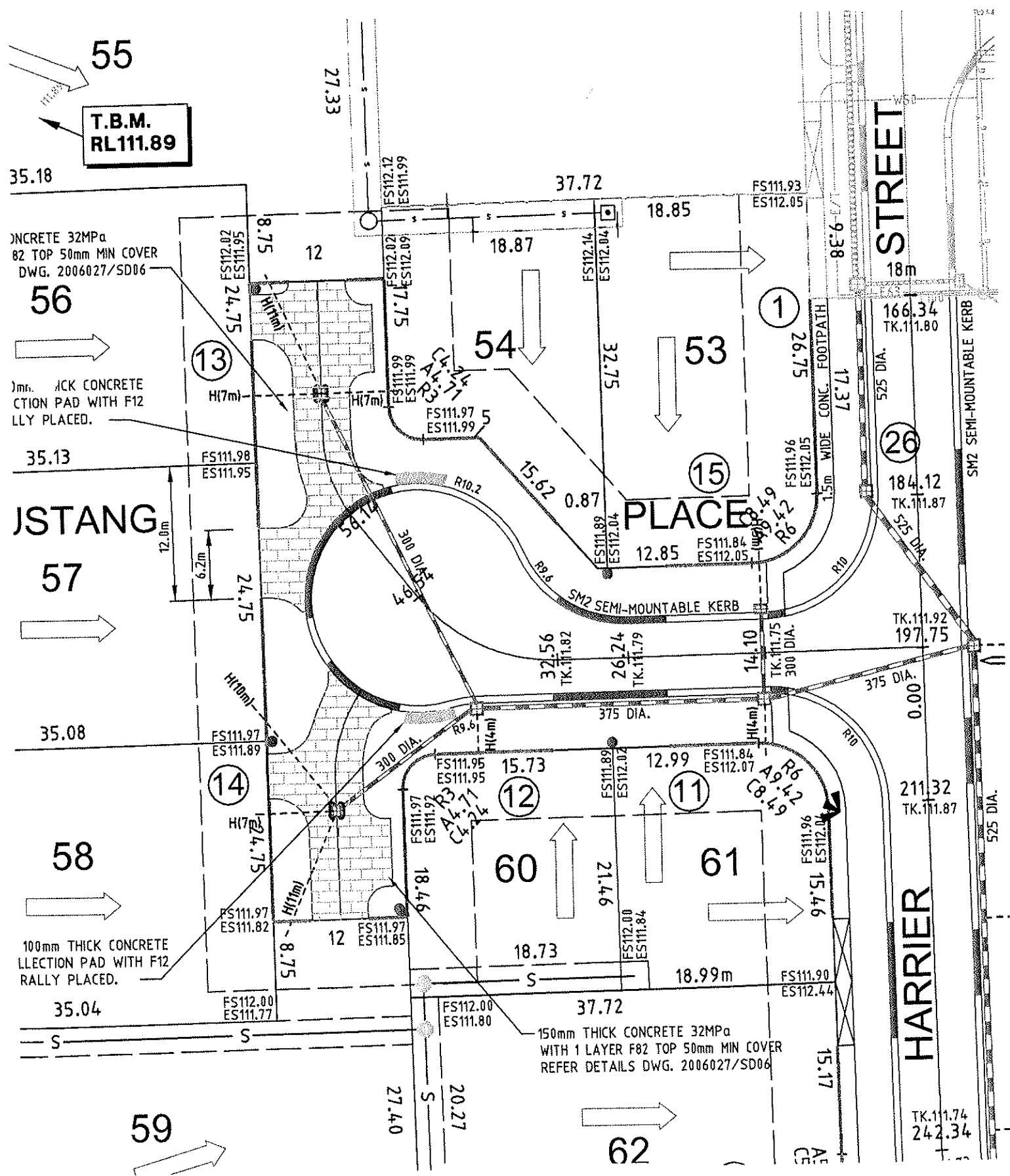
Doc No.: Infrastructure Development Manual

No.	Topic	Sub Topic	Clause No.	Other	Response
1.	Outline Development Plans	General Requirements	4.2 4.3	General	Sections 4.2 & 4.3 make numerous references to ResCode and various sub-clauses of Clause 56. We note that development also includes industrial, commercial and other developments as well as rural subdivisions, which are not subject to the provisions of Clause 56. We suggest that the Manual be amended to include (as appropriate) or similar after any reference to ResCode or Clause 56 and that reference is made to the appropriate development guidelines (eg: the Greater Shepparton Industrial Development Guidelines), where they exist.
2.	Outline Development Plans	Requirements	4.3	1 st dot point	At sections 3.2 and 4.3 the Manual states that application documents for developments which include the construction of engineering works should include plans of existing site conditions showing, among other things, existing surface contours and natural and constructed drainage flow paths. We note that a vast majority of developable land within the Greater Shepparton and Campaspe municipalities are very flat and have long since been cleared of all natural features to facilitate agricultural activities. Accordingly, in the past there has been no need to show existing surface level contours on our ODP's. Will there now be a requirement to undertake a full feature and level survey at this early stage of the development process?
3.	Outline Development Plans	Requirements	4.3	3 rd dot point	Proposed surface level contours would require some fairly extensive design time to produce at a time when Council's opinion on the estate is unknown. How do you propose that both existing contours and proposed contours be shown clearly on the same plan? Would direction of flow arrows be sufficient to indicate proposed overland flow paths rather than contours?
4.	Outline Development Plans	Requirements	4.3	15 th dot point	Cul-de-sacs shall be shown with court bowl ends. Hammerhead or T heads are not permitted. Does this apply to nooks? Where there is insufficient area of land available to provide a court bowl with a turning circle, a short nook which provides a shared driveway style design enables access to two or three allotments. Garbage pads are then provided on the through road at the intersection of the nook so that garbage trucks do not have to enter the nook. Refer to examples 1.1 – 1.4 provided of recently constructed local subdivisions.
5.	Design requirements	Final Design Submission	5.8.3	2 nd paragraph	We query the need for (3) hardcopies to be forwarded to Council on completion of the final design, in an effort to conserve paper we suggest that one copy be forwarded to Council until the time of endorsement.
6.	Construction Phase	Construction Supervision for Developers	7.4	Referring back to 5.4	The intention of these clauses seems to be that Council will not be responsible for supervision of the works, but will conduct inspections at nominated "hold points" in Appendix F – List of Council Inspections. Current construction processes with laying of pipes generally has trenches being backfilled soon after excavation to accord with OH&S regulations and "safe working practices." Similarly subsoil drainage and footpath bedding are prepared in "day lots". These construction practices would require daily visits by Council for a period of some weeks to view the hold points. A workable situation would be to have the construction engineer "certify" on behalf of Council with random visits by Council officers to audit the certification process.

No.	Topic	Sub Topic	Clause No.	Other	Response
7.	Design of roads	Cross Section Profiles	12.3.10	5 th paragraph	Central spoon drains in the pavement are undesirable. Would fully concreted pavements with a cross fall to the centre of the road with centrally placed grated pits be permitted?
8.	Design of roads	Vehicular Access	12.9	3 rd paragraph	Vehicle crossings shall be constructed in accordance with the Standard Drawings. The industrial vehicle crossing Standard Drawing needs to be included.
9.	Urban Drainage	Average Recurrence Interval	16.6	2 nd paragraph	The initial time of concentration shall be six (6) minutes. Generally 6 min is considered a reasonable assumption for impervious areas but would lead to a conservative drainage design if adopted for the entire site.
10.	Urban Drainage	Structures	16.11.2	Minimum drops at pits	We do not support the introduction of this theory. It so happens that in a lot of instances where we do not have a free falling outfall condition our drainage is required to work under surcharge, hence drops through pits become immaterial and only add to increased depth of trenching. However the design practice is supported where there is a free flowing outfall and undulating terrain. Difficult to achieve in flat terrain and current practice in the Shepparton area has been to accept pits without any drop at all.
11.	Appendix E Information to be Shown on Plans	Road Longitudinal Plans		4 th dot point	Plot of each proposed top of kerb and existing surface level on title boundaries. The need for this information is supported for design in existing built up areas, but not for new greenfield sites.
12.	Appendix E Information to be Shown on Plans	Road Longitudinal Plans		10 th & 11 th dot point	Kerb levels shown on returns at quarter points and kerb return grading into adjoining streets. We believe that this information that may have been useful in the past for set out purposes is no longer required. We note that the intersection details are to include this information also. If you see that it is important to include this information would it be OK if it was shown on the intersection details only?
13.	Appendix E Information to be Shown on Plans	Drainage Layout Plans		8 th dot point	We do not agree with the need for dimensions from title boundaries to pipe centreline to be shown on the plans as it is a function of the contractors bucket width and the clearance required behind back of kerb that will determine the pipe offset.

Site plan showing building layout with various rooms and dimensions. The plan includes a central corridor (25) and several rooms (44, 45, 46, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100). The plan also shows a CAMARO NOOK (9) and a T.E. RL. (43.01). Dimensions are provided for various areas, including a 100mm thick concrete collection pad with F12 trally placed. The plan includes a scale bar (0 to 125.04) and a north arrow.

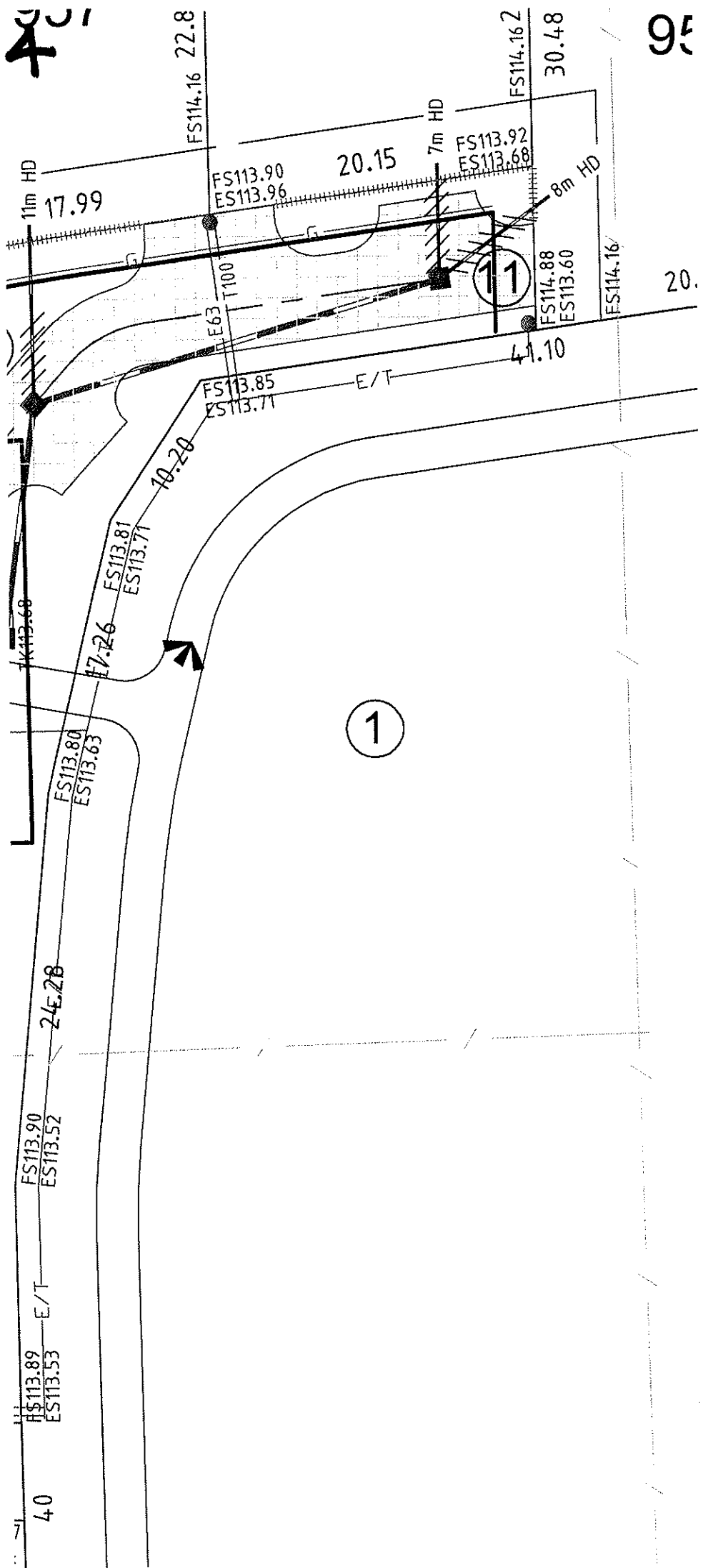
example 1.2

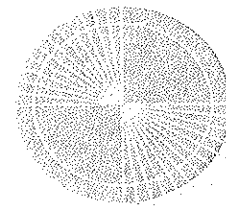


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ALDE

Anne Howard
Design Services Manager
Shire of Campaspe
PO Box 35, Echuca 3564

Our Reference: 07005
Your Reference:
2nd February 2007

Dear Anne,

**Re: INFRASTRUCTURE DESIGN MANUAL
– DRAFT FOR PUBLIC COMMENT Issue date 18-Dec-06**

The comments below have been developed by and are submitted on behalf of the following development industry consultants.

Singleton Bahen Stansfield

Tomkinson

Terraco

Allied Consultants (Colin M Nankervis)

Chris Brown & Associates

Brian F Bartlett

Chambers Consulting Engineers

R J Styles & Associates

Note that excerpts from the manual are shown in *smaller italic font*, and our comments are in normal font.

3 SUBDIVISIONS AND PLANNING PERMIT APPLICATIONS

3.2 Information to be submitted.

- ~ Existing surface contours (generally at 100 mm intervals) and clear identification of both natural and constructed drainage flowpaths;

This should just specify "at an interval sufficient to clearly identify natural and constructed flow paths. 100mm is completely unnecessary for all but the flattest sites. In many cases existing topographic maps will provide sufficient detail to show flowpaths and drainage areas.

There is no differentiation between large and small developments. For example, a 2 lot subdivision with a requirement for a small drainage extension and provision of services should require significantly less detail than a 200 lot development. Perhaps there should be simpler checklists for small jobs.

3.5 Development Contributions

Development Contributions shall be generally controlled by the use of Section 173 agreements, planning permit conditions and/or Development Contributions Plans. Development contributions may be required for roadworks, drainage, public open space, traffic management works, community development or other works that benefit the Developer and/or others. The City of Greater Shepparton has developed procedures for the management of Development Contributions within its municipality. This document "Undertaking Works & Payment of Development Contributions" can be found on the City of Greater Shepparton's web-site.

Any contribution from Council shall be made in accordance with Council's relevant policies, copies of which are available on Council's web-sites. Because such works will be 'Capital Works' or new assets, Councils must make provision within their approved budgets. Accordingly Developers must submit plans and documents detailing any request for a contribution prior to January each year. In all instances the allocation of Council funding cannot be guaranteed for the following financial year. Supporting documents shall include plans, specifications and a detailed Engineer's Estimate. The estimate should detail the contribution of all benefiting parties and the date or trigger for the amount expected from Council.

There is no mention of drainage levies, principals for funding of GPTs, main drains, outfall works etc from levies.

The timing of applications for funds would in many cases be unworkable. Application of drainage levies towards outfall works including construction of GPTs etc should be able to be made at the time of payment of the levies for example. Drainage levies paid would be reduced by the cost of the main drainage works.

4 OUTLINE DEVELOPMENT PLANS

4.3 Requirements

- Cul-de-sacs shall be shown with court bowl ends. Hammerhead or 'T' heads are not permitted.

This is not consistent with clause 56 of the planning scheme. The reference to the Coroners finding in the PRINCIPAL section is misleading. The case referred too involved a truck backing a considerable distance down a street because it couldn't turn at all. It did not involve a 3-point turn.

3-point turns are often required in bowls, for example when one or more vehicles are parked in the bowl area. Provision of circular bowls rather than other shapes at the end of cul-de-sacs does not ensure that reverse movements will not occur. In some infill sites, provision of round court bowl areas may not be suitable or even possible, whereas alternative treatments may work. Proper engineering consideration should be given to the design of cul-de-sac ends, rather than a prescriptive requirement for round bowls only.

- Road reserve widths must be adequate for the intended road type, and should comply with Section 12.3.2 of this manual. The Outline Development Plan should include a typical cross-section of differing road types, detailing the intended function of the road, e.g. bike lanes, drainage, landscaping.
- Proposed street names shall conform to the Street Naming Guidelines.

This is a lot of detail required for road x-sections etc. for an ODP

5.3 Checklists and AUDITING

The detailed checklists appended to this manual provide designers with documentation to demonstrate that the requirements of the Council have been satisfied. Designers are required to sign off the relevant checklists, to verify that the specified criteria have been met.

For Developers, these checklists form an integral part of each submission of documentation, and provide the basis for fast-tracking approvals. Councils, to check authenticity, will randomly undertake audits of submitted checklists. Consultants providing reliable checklists will be ranked accordingly and attract less auditing. Others may experience delays in the approval process due to increased rates of auditing.

Where Developer's submissions are accompanied by completed checklists, Council's engineering department will not spend time checking quality or minor documentation details, and will therefore be able to review documentation in a significantly shorter time.

Where Developer's submissions are not accompanied by completed checklists, or where auditing has shown that previous checklists have not been reliably completed, Council's engineering department will be required to review the submission in greater detail. This may include a check design details and quality of documentation against the checklists. As a result, responses or approvals of submitted documents shall not be able to be fast-tracked.

The time frame for approval of engineering plans under the Subdivision Act is 28 days. Therefore, the total time that Council should take to approve all 3 stages (Approval In Principle, Preliminary Design Submission and Final Design Submission) should be 28 days maximum, regardless of whether completed checklists are submitted with the plans. It is worth noting that Council intends to charge a Plan Checking fee, but only intends to randomly audit checklists.

5.8.1 Approval in Principle Submission

There is no differentiation between large and small developments. For example, a 2 lot subdivision with a requirement for a small drainage extension and provision of services should require significantly less detail than a 200 lot development. Perhaps there should be simpler checklists for small jobs.

Road Design: The submission shall include one hardcopy set (A3 plans) of road layout and parking plans showing:

- i. Layout of roads and allotments with nominated carriageway widths (between invert of kerbs) and nominated road reserve widths;
- ii. Layout of road hierarchy and estimated traffic volumes;
- iii. Typical road reserve cross-sections;
- iv. Conceptual layout of proposed intersections internal and external to the development;
- v. Carparking layout plan as per this manual. Where requirements are not detailed herein the parking proposal shall comply with ResCode;
- vi. Vehicle turning movement plan (refer Section 12.3.9); and
- vii. Details of any staging of the development and impact on the road network.

Drainage Design: The submission shall include one hardcopy set (A3 plans) of the overall drainage strategy showing:

- i. Total catchment area, nominated sub-catchment areas and co-efficient of runoff for each sub-catchment;
- ii. Layout of proposed drainage systems with approximate sizes;

- iii. *Natural surface contour lines to the AHD;*
- iv. *1 in 100 year ARI flood levels where applicable;*
- v. *Preliminary design contour lines to AHD;*
- vi. *Nominated overland flow path for 1 in 100 year ARI storm events;*
- vii. *Nominated drainage discharge point and any treatment concepts;*
- viii. *Existing drainage services and proposed connection points to both existing and future developments; and*
- ix. *Details of any staging of the development and impact on the drainage network.*

The amount of detail required seems excessive for approval of the in principle design. Vehicle turning plans, Sub catchment areas, runoff coeffs, approximate pipe sizes are all detailed design issues. To go to this degree of design at the "in principle" stage is absurd. Design contours may be appropriate if significant reshaping is proposed, but for most developments would be unnecessary, and would require the design to be fully completed in order to generate them.

5.8.2 Preliminary Design Submission

Once approval in principle has been received, design work should be carried through to a near-to-complete stage. This work should then be submitted to Council's engineering department for review of the design and documentation. It is intended that submission as preliminary design shall negate the need to produce excessive numbers of copies should further amendment be needed. Preliminary design approval may be granted subject to minor amendments. Should significant amendments be required, documents shall be required to be resubmitted for preliminary design approval.

Preliminary design documentation shall be prepared on the basis of this manual in accordance with general engineering principles, the planning permit conditions and all other information collated from the site, service authorities and the like.

*Two (2) hardcopy sets and one (1) electronic copy of draft plans and specifications are to be submitted to Council for comment, prior to lodging final design plans and specifications for approval. Completed checklists as found in **Appendix D Checklists and Forms for Developer's Representatives** shall accompany this submission.*

*Documentation shall be prepared in accordance with **Appendix E Information to be shown on Plans**, and will include a master services plan. The master services plan shall show the overall layout of all services within the limit of works and shall include both existing and proposed services. The purpose of the plan is to enable clashes of services to be clearly identified and to demonstrate that appropriate clearances are achieved. Individual cables are not required for electrical, telecommunication and similar services, but may instead be shown as a single line representing the alignment of trenches. The location of street lights, sub stations, pump stations, etc shall be shown on the master services plan, as shall major landscaping features.*

Producing a Services masterplan can be problematic. Usually at this stage of the design process some service authority designs are not complete. Power and Telstra designs are not completed until the road and drainage design and plans are complete. The location of street lights in particular would never be known at this stage. A plan showing preliminary, proposed offsets, and which side of the road services are required could be produced, but the same information could be provided in a simple service offset table, listing Road name, service and kerb offsets. Alternatively, typical cross sections for each street showing proposed service offsets could be provided.

Even after the designs for power and Telstra have been produced, there is a danger of transposing information incorrectly to an overall services masterplan. There is also a quality control issue of ensuring that any design changes made by the power designer or Telstra are updated on the services masterplan if it is included in the design drawings.

6.3 PLANS

When requesting preliminary design approval or final design approval, or providing as constructed information, plans shall be submitted on A1 sheets with the following scales:

Layout Plans	1:500
Longitudinal Sections	Horiz 1:500 Vert 1:50
Intersection Plans	1:200 or 1:100
Details	1:10 or 1:25

A1 plans are difficult to use in the field. Contractors prefer plans in A3 sized booklet form, as they are easier to use, and are less prone to being damaged, pages being lost etc. A3 plan sets are also easier to control from a quality assurance point of view (maintaining controlled copy status and keeping updated with any amendments). When subdivision road and drainage plans are produced in A1 size to satisfy the requirements of some Councils, the final construction sets are almost always reduced copies, at A3 size. Reduction can sometimes make some of the detail difficult to read. If the original plans are produced in the size and scale required the problems associated with reduction are removed. It is often helpful to provide A1 plans of the layout showing overall areas to assist the checking process, but they are unnecessary for final construction drawings as long as suitable overall layout or 'key' plans are included in the final drawings. Council should note that VicRoads use A3 plans for most of their projects, including major urban roadworks.

The scale of various types of drawings should be dependant on the amount of detail to be shown, rather than arbitrarily fixed for all projects. For example, longitudinal sections are usually quite clear at 1:1000/1:100 unless the alignment is unusually complex. Layout plans for rural residential subdivisions can often be drawn at 1:1000 rather than 1:500. Intersection details can often be shown at 1:250, but do sometimes need a greater scale to show the required detail.

The scales shown in the manual should be indicative, rather than prescriptive. There should be a note or statement to the effect that the drawings should be drawn at appropriate scales to clearly show the required information, and that the scales shown in the manual are indicative. Choice of sheet size should be left to the consultant who produces the plans.

6.3.3 Datum

All levels shall be to Australian Height Datum (AHD). Plans shall nominate a minimum of two (2) permanent survey marks (PSM's) and their respective numbers/identification, and any temporary benchmarks (TBM's) relevant to the works.

AHD is not always available or necessary for rural jobs.

Although generally good practice, it is not always practical or necessary to connect to more than one PSM.

7.4 CONSTRUCTION SUPERVISION FOR DEVELOPERS

As described in Section 5.4, all subdivision road and drainage construction supervision shall be undertaken by the Construction Engineer appointed by the Developer. Neither the Manager of Council's engineering department, nor any member of that department, is responsible for carrying out the functions of the 'Superintendent' as defined in the General Conditions of Contract – AS 2124 or AS4000. The Construction Engineer, or some other person appointed by the Developer, is required to carry out this function. The function shall not be deemed to be completed until the Developer is released from the Defects Liability Period, and correspondence during the defects liability period shall be directed to the Construction Engineer or Superintendent as nominated by the Developer.

A nominated Council Officer shall inspect the works at critical milestones to ensure that the works are constructed in accordance with Council requirements and the approved plan. The Construction Engineer shall be responsible for contacting the Council's engineering department to arrange for joint inspections at each hold point relating to road

and drainage construction as detailed in Appendix F List of Council Inspections, and shall be present at all joint inspections. It is not the role of Council to give a Contractor a direct instruction regarding the works, however as much guidance and assistance as possible will be given on site to assist the construction program. Generally a minimum of 48 hours notice should be given when requesting a Council Officer to attend a construction inspection, unless noted otherwise within this Manual.

It seems unnecessary for the Construction Engineer to be present for drainage pipe inspections, when council's officer will only be ensuring that the bedding and jointing has been carried out correctly. Past experience suggests that it is also unlikely that Council staff will ever inspect any drains except for major ones.

48 hours notice is not always possible. Council should be flexible in this regard.

We note that the manual clearly states that councils officers will not carry out the role of the Superintendent (ie, manage and supervise the works). Council's representatives will carry out a number of inspections, but will not supervise the works.

Supervision can be defined as follows:

Collins Compact Australian Dictionary: Supervise: 1. to direct the performance or operation of (an activity or a process). 2. to watch over (people) so as to ensure appropriate behaviour.

It is clear that the developer's Superintendent is responsible for supervision (which includes the management of the works), and council is very clear that they do not carry out this role.

We suggest that council is therefore not within its rights under the subdivision act to charge the prescribed fee for supervision, when they clearly do not supervise the works (refer Subdivision Act 1998, section 17(2)(a) & (b).)

We also note that section 17(6) of the Act, states that council may make a charge for an engineering plan it prepares. It does not state that council may make a charge for checking plans prepared by others.

We would be interested to see justification for the plan checking and supervisions fees which are charged by council.

8.5 DEFECTIVE ITEMS

Defective items becoming apparent during the Defects Liability Period will be referred to the Developer's Representative for remedial action by the Developer. Failure by the Developer to comply with such instruction to rectify works shall result in forfeiture of the part or all of the bond, as required, for the Council to undertake remedial/maintenance works required by the order. Similarly if the required works are of an emergency nature, rectification works will be undertaken or arranged by the Council at the Developer's expense. The Letter of Release referred to in Section 8.6 will not be issued until payment for such repairs has been received. It must be noted that during the Defects Liability Period the Developer no longer has possession of site, and an 'Occupation of a Road for Works' permit or equivalent shall be required for any works undertaken in the road reserve.

8.6 RELEASE FROM DEFECTS LIABILITY

Shortly before the end of the Defects Liability Period, the Developer's Representative shall arrange for a joint inspection of the works to be made, together with the Council's representative and the Contractor. The Developer should be invited to attend. The purpose of the visit shall be to determine if there are any defective items requiring rectification by the Developer. Council requires one week's notice for this inspection. Following this inspection, and after rectification of defective items, the Council shall forward the 'Letter of Release' to the Developer's Representative to release the Developer from any further defects liability.

It is important to note that the 12 months defects liability period is to ensure that the work is free from defects. Maintenance and damage is clearly Councils responsibility. As the manual states,

the Developer no longer has possession of site. Reference to "maintenance" should be removed.

Any damage caused by others including builders is an issue for Council, and does not in itself indicate any defect in the works. Broken footpaths, blocked pits and drains, wheel ruts in nature strips etc are not defects and should not be treated as such. This should be made clear in this section of the manual.

9 TRAFFIC MANAGEMENT STRATEGY

9.1 OBJECTIVES

The objective of the Traffic Management Strategy within the development and surrounds is to provide efficient traffic flow and a safe road environment for all users.

9.2 GENERAL

The Developer may be required to provide new roads as part of their development and/or upgrade existing roads. The Design Engineer shall identify the impact of the development upon the existing road network and the assessment of the impact. Mitigating works shall be provided to the satisfaction of the Council.

A suitably qualified and experienced Traffic Engineer shall prepare the Traffic Management Strategy. Council may request information regarding the proposed consultant's experience prior to approving the Traffic Management Strategy.

A Traffic Management Strategy may compromise one or both of the following:

- Traffic Management Assessment Report that determines the road layout, road widths, functions and connectivity for all road users and/or
- Traffic Impact Assessment Report to determine impact on external road network and identify appropriate mitigating works.

Some developments that do not create new roads or intersections may still generate sufficient traffic volume or traffic movement to warrant a traffic management assessment e.g. supermarket. Such a development may also require a Traffic Impact Assessment.

Where a Traffic Management Assessment Report is required to be prepared as a condition of the Planning Permit, the submitted plans shall not be receive endorsement until the traffic control requirements are approved in principle by the Council's Engineering Department.

The provisions of this section apply to development carried out by Council.

9.2.1 Traffic Management Assessment Report

The need for the Traffic Management Assessment Report (TMAR) shall generally be determined at the time of issue of the planning permit, or before, and may be triggered by the following:

- Construction of a new road;
- Construction of a new intersection;
- Potential for further development (may need ODP to assess);
- Multiple Developers within a specific locality; and
- Large industry or retail/commercial development

9.2.2 Traffic Impact Assessment Report

The need for the Traffic Impact Assessment Report (TIAR) shall generally be determined at the time of issue of the planning permit, or before, and may be triggered by the following:

- Where developments generate either :
 - ~ an overall increase in traffic volumes of 10% or greater, and/or
 - ~ an increase of 100 vehicles per day or greater.

Where VicRoads require a TIAR as well as the Council then the one report shall be prepared meeting the requirements of both organisations.

TIAR shall generally meet the requirements of any guidelines prepared by VicRoads for the preparation of such reports.

10 ROAD SAFETY AUDITS

10.1 OBJECTIVES

The objective of road safety audit of development infrastructure is to provide the safest outcome for a project/development for the resources available.

10.2 GENERAL

Road safety should be considered throughout all phases of road upgrade or construction. For developments within the municipality traffic safety shall be formally considered at both design and construction stages of road development. By conducting road safety audits at the design stage before a road is built provides the most cost-effective outcomes.

The provisions of this section apply to development carried out by Council.

10.3 REQUIREMENTS

Road Safety Audits shall be required for all development designs that require a Traffic Management Strategy (refer to Section 9) and shall be conducted at the detailed design stage.

Audits shall be conducted by a VicRoads Accredited Road Safety Auditor, other than the road designer, and shall be carried out in accordance with the guidelines outlined in Road Safety Audit, Austroads Second Edition 2002.

Audit teams should involve two or more experienced or qualified people with at least one Senior Road Safety Auditor on the team. When selecting the audit team that Design Engineer shall be responsible for determining that the Senior Road Safety Auditor has suitable experience for the type of works proposed, or that such experience is incorporated into the audit team. Council should be advised of the nominated audit team at the time of request for Approval in Principle.

The Design Engineer shall be responsible for deciding on the action required in response to the audit report and its recommendations, however consultation with Council is encouraged if recommendations are complicated or require community involvement. A copy of the road safety audit report, with documented responses to recommendations, shall be provided to Council with the Preliminary Design documentation.

Any development involving any roadworks requires a Traffic Management Strategy.

Road Safety Audits shall be required for all development designs that require a Traffic Management Strategy.

This means that every development that involves any roadworks, no matter how minor, will require a complete formal road safety audit.

A road safety audit carried out by an audit team, comprising two or more experienced people including one senior road safety auditor, seems an expensive and unnecessary requirement for most subdivisional developments. The requirements of sections 9 and 10 are excessive for the vast majority of subdivisional developments.

12.3.2

Road classifications and widths.

The argument that "areas outside of metropolitan areas" are different and therefore require different road classifications, widths etc to those specified in clause 56 has previously been shown to be flawed. The City of Greater Bendigo's previous attempt to introduce standards which differ from clause 56 was abandoned when the panel looking into a proposed planning scheme amendment recommended that the amendment not proceed. The manual should not contradict the planning scheme.

Reference to SM2 kerb and channel is misleading. City of Greater Bendigo for example uses a modified SM2 profile, which is a 'rollover' type, which doesn't require vehicle laybacks. The standard SM2 is too severe for vehicle crossings without provision of a driveway layback.

The Industrial road widths have increased significantly from the standards currently in use in Bendigo. 12.5m invert to invert (currently 10.4m) 6m nature strips (currently 3m) 25m road reserve width (currently 18m). The current standard works very well, and we see no reason to change it.

13.2.4 road geometry- no T or Y heads

See previous comments above.

12.3.7 Max road grade 15%, not always achievable. Grades of up to 20% can work over relatively short distances. The CFA requirement is that average maximum grade must not exceed 1 in 7, with a maximum of 1 in 5 for no more than 50 metres.

12.3.9 Turning movements.

The use of templates is different to austroads guide.

It is inappropriate and unnecessary to specify different requirements. Providing 600mm clearance to the swept path is unnecessary for example. Clearance from the swept path to road furniture is required, but not for the pavement area.

Table 4, note b)

A "service vehicle" is a standard design vehicle, with turning templates provided in the Austroads guide. It is not appropriate to differentiate between 'fire appliance' and 'waste vehicle'. This is confusing and misleading.

12.4 Rural Roads.

Generally agree with widths in table 5, however note that current Bendigo standard for minor rural roads has been 6m seal with 0.3m unsealed shoulders. The 6.2 seal with 1.5 shoulders will cause additional impact on native vegetation when construction in existing road reserves is carried out. Variations to widths in the table may be required in some circumstances.

12.7 Pavement design

We note that "SR41-A structural design guide for flexible residential street pavements" provides a simpler design process than "A guide to Structural Design of Road Pavements – 2006" and is often still used by Geotechnical engineers for the design of residential street pavements. Perhaps reference to this document could be included, or the requirement could be simply to provide a road pavement design to councils satisfaction etc.

It seems unreasonable to specify a minimum pavement depth of 250mm regardless of pavement design. The current standard pavement depth of 230mm in Bendigo should be retained.

12.7.7 Compaction Requirements

Depending on traffic volumes and actual pavement design, compaction will be in accordance with VicRoads standard Specifications for Roadworks and Bridgeworks (Clause 304.07). A Dynamic Cone Penetrometer may be used to verify compaction of trimmed and prepared subgrade material. Compaction testing of base and sub-base material must be carried out by a NATA approved laboratory or by calibrated nuclear densometer test to the relevant Australian Standard. Tests should be taken at $\frac{2}{3}$ depth of the pavement where possible. Copies of all geotechnical results are to be submitted to Council.

Compaction testing and proof-rolling shall be undertaken on the same day.

Sub-Grade

The subgrade shall be compacted to 98% standard compaction with all building sites compacted to 95% standard compaction, or in accordance with the Construction Specification and/or AS 3798.

Sub-Base

The typical flexible pavement sub-base shall be compacted in accordance with Scale C in VicRoads Table 304.071 using fine crushed rock.

The number of tests to be undertaken shall as specified in Table 6.

Base

The typical flexible pavement base shall be compacted to the average mean 100% minimum modified dry density

(MMDD) with test locations to be approximately one (1) metre offset from the kerb or edge of seal and measured at 2/3rd the depth of the layer.

The number of tests to be undertaken shall as specified in Table 6.

Table 6 Location and Number of Compaction Tests

Location	Urban	Rural
Court bowls	3 No	3 No
Intersections	2 No	2 No
Straights	2 per 50m	1 per 100m

Tests shall be taken on alternate sides of the road and be evenly spaced.

Proof-rolling

Proof rolling of the sub-base and base shall be undertaken at the expense of the contractor, in accordance with AS 3798. The subgrade shall not deflect more than 2 mm vertically within 300 mm of the test roller in isolated locations. If deflection of the subgrade is found in more than 20% of the project area then the total area shall be reworked. There must be no visible deformation or cracking of the pavement during a sub-base or base proof roll. Areas that fail a proof roll test are the responsibility of the contractor to rectify. Adequate notice must be given to Council's representatives for attendance of proof-rolling inspections, refer to Section 7.4 7.4 Construction supervision for Developers. If the proof-rolling test fails due to excessive moisture etc. then another Council inspection is required and appropriate notice should be given.

The number of tests for pavement compaction is excessive, and far exceeds the current requirements. 3 compaction tests in a court bowl, and 2 per 50m along the roadway as well as proof rolling is totally unnecessary.

12.7.8 Soft Areas in Pavements

Where unsuitable material exists or develops during construction, it must be rectified to the satisfaction of the Council. Possible treatment methods include cement and/or lime stabilisation, replacement of the underlying material with pavement, the use of geotextiles and/or the lowering of sub-surface drainage to below the level of the area to be rectified. Rectified pavements must achieve the required levels of compaction as specified above. 'As Constructed' drawings or quality documentation must show the extent of all reworked soft areas and any form of treatment taken.

This seems an onerous requirement and we question its value.

12.9.2 Rural Vehicle Crossings

Roads should be located and designed such that vehicular access can be readily obtained at every allotment of a subdivision. Where the natural surface slopes steeply to or from the road, the access to each lot should be given special consideration. The locating of an access is to be avoided if effect to the vertical alignment of the road will occur.

All rural vehicle access crossings shall include a culvert unless the location of the access at an obvious high point. The minimum width of culvert shall be 4.88 metres (refer to **Appendix E (Information to be shown on plans)**). All culverts shall have an endwall at each end of the pipe. Trafficable endwalls shall be used wherever the culvert/endwall is located within the clear zone (refer to VicRoads Standard Drawings SD019 and SD020). The minimum pipe size is Ø375 in rural and rural living zones, and pipes shall be laid such that the pipe invert is 150mm lower than the invert of the table drain.

We question whether 375mm as a minimum is required, and whether the invert should be below the table drain level.

13.3 Footpaths

Footpaths shall slope away from the property boundary, and be elevated above the adjacent nature strip. In general, reverse fall on nature strips is undesirable and shall only be approved where no other practical alternative is available. Where reverse fall on footpaths results in spoon drains adjacent to footpath, these drains shall be constructed in a contrasting colour.

This seems an excessive requirement. We note that the City of Greater Bendigo has installed many metres of footpath drain over the past few years, and we are unaware of any being constructed using contrasting coloured concrete.

Details of service pits to be located within the footpath or pedestrian areas are to be provided to Council for approval with the request for Approval in Principle.

At the "approval in principal" stage, the location of most pits in the footpath (Telstra and Powercor) is not known. On the rare occasion that other pits, such as drainage junction pits or sewer manholes need to be within the footpath area it is also unlikely that this will be known at the "in principal" design stage.

15 Earthworks and Lot Filling

- *Where the depth of fill is greater than 300 mm lotfilling must be compacted to 97% MMDD and trimmed and shaped to match existing site levels, except in areas nominated for soft landscaping.*

Previous requirement for lot filling has been 95% Standard MDD. An increase to 97% Modified MDD is unnecessary.

DRAINAGE

For underground drainage systems the following average recurrence intervals shall be adopted:

In some cases 1 in 2 yr ARI may be appropriate, depending on factors such as existing downstream drainage capacity. Perhaps it should say "shall generally be adopted".

16.8 Hydraulic design

It is unnecessary to specify that Manning's Formula be used for pipes designed to be flowing full but not under pressure. It is more appropriate to use the Colbrook-White formula for all cases. Most systems will include some pipes that are under pressure, and others that are running part full. Using different formulas for different sections of the same drainage system is unnecessarily complicated, and will not affect the final design.

It is ridiculous to specify that "true" diameters be used in any formula. Variations between nominal and true diameters are quite small, and the effect on hydraulic calculations is minimal, particularly when considering the large degree of uncertainty involved in the estimation of the required capacities. In addition, different pipe manufacturer's pipes have slightly different true diameters, and it is rarely known which manufacturer's pipes will be used for construction when the design is being done.

It is unclear for which pipes a k value of 0.15 should be used in Bendigo. Appropriate k values should be used for design and are dependant on the pipe material selected.

16.10.1 Pipe size and joints

The minimum pipe size for property connections in easements is Ø150 for PVC pipes and Ø225 for all non-PVC pipes where the pipe serves a maximum of two properties.

Pipes that are part of Councils' assets are to have spigot-socket rubber ring joints unless specific approval given by Council's engineering department. The City of Greater Bendigo shall approve butt-joint pipes where grades are greater than 1:200.

Pipes located under road pavements shall be 375 diameter or greater to minimise the risk of blockage. Elsewhere the minimum pipe size for maintenance purposes is to be 300 diameter.

This is quite a departure from the accepted practise over the past 20 or 30 years in Bendigo. Pipe sizes should be determined from hydraulic calculations, and the number of allotments

should not be specified. Minimum pipe size for drains accepting runoff from roadways has always been 300mm, and we see no reason to change this.

16.11.5 Pit covers

Pit covers shall have a clear opening of sufficient dimension and orientation to comply with OH&S and confined space entry requirements.

Heavy duty lids or plastic lock-down lids may be required in high risk areas such as public open spaces, recreation reserves, school areas etc. Elsewhere covers are to be installed with class rating in accordance with potential traffic loadings.

Trafficable gatic, or approved equivalent, load bearing covers are to be provided on all side entry pits located in exposed kerb areas, e.g. at intersections. The drainage network should be designed to locate pits away from these areas wherever possible.

Trafficable gatic, or approved equivalent, load bearing covers are to be provided on all pits in industrial developments.

We question what is the definition of exposed kerb areas. For example, is a side entry pit located on or near the TP of a kerb return an exposed area?

16.12 LITTER COLLECTION PITS

Approved litter collection pits shall be provided towards the end of any drainage line that discharges to a watercourse and/or drainage basin. The pit must be located such that comfortable access by maintenance vehicles is achieved. Access shall be in a forward only direction where the pit is located in road reserves, drainage reserves or other areas with public access.

Reference should be made to the cost being funded by Council from drainage levies.

16.19 DRAINAGE RESERVES

Where drainage reserves are incorporated into developments the minimum reserve width shall generally be 10 metres. Reserve widths shall accommodate a drain with sufficient capacity to cater for a 100 year ARI storm event. All-weather access tracks may be required on both sides of the drains with batter greater than 1:8 grade. Pump stations, electrical supplies, water-quality treatment infrastructure shall be sited with sufficient room for construction and maintenance vehicle turning at an appropriate location, refer to Section 18.3.8. Drainage reserves should generally be sited to abut Public Open Space areas wherever possible, but will not contribute to the provision of Public Open Space. Consideration should be given to increasing reserve width for conservation and landscaping purposes.

Where drainage infrastructure within the drainage reserve does not comply with standards for public access, the reserve shall be fenced to prohibit public access. A landscaping plan and fencing details shall be provided to the Council for approval. Fencing and landscaping shall be completed at the full cost of the Developer.

We make the point that reserves narrower than 10m may be appropriate in some cases.

We also question why drainage reserves will not contribute towards public open space. If the reserve cannot be utilised for public open space (eg a fenced retention basin) then this is reasonable. However, if the reserve serves as a walkway, or is designed as passive open space it should definitely be included in the public open space contribution. The fact that the reserve serves a drainage function in addition to a public open space function should not effect its public open space value, unless the drainage function regularly compromises the open space use. Roadways occasionally functioning as overland flow paths aren't considered not to be roads as a result of their overland flow drainage function.

21.3 STORMWATER DISCHARGE POINT - REQUIREMENTS

Applications for nomination of point of discharge for dwellings should include the following information:

- *Plan showing the proposed development including the pervious and impervious areas.*
- *Existing and proposed surface levels at an interval not exceeding 10 metres.*

We assume this is meant to read 100 mm, and probably should read “existing and proposed surface levels with sufficient detail to determine the point of discharge.”

24 LANDSCAPING AND ROAD FURNITURE

OBJECTIVES

The general objectives for landscaping requirements are as follows:

- *All landscaping shall be suitable for the proposed use of the land on which it is located;*
- *Encourage the development of quality landscapes;*
- *The landscaping shall be able to be effectively and economically maintained;*
- *The landscaping shall be compatible with the urban character of the area and with any structure plans, outline development plans and urban design guidelines;*
- *To specify the standard of infrastructure to be provided for landscape works;*
- *Consider and minimise the risk to the public from any landscaping on public lands or lands maintained by Council;*
- *Ensure that landscaping complies with the requirements of Disability and Discrimination legislation;*
- *To provide open space which will encourage usage by providing a relaxing, aesthetically enjoyable environment;*
- *All landscaping is to incorporate best practice design and environmental principles; and*
- *Identify a selection of plant species for planting in landscapes having regard to indigenous species where practical.*

We have a number of concerns regarding this section of the manual and would like the opportunity to meet with Councils officers to discuss these issues.

PUBLIC LIGHTING

26.2.1.4 Unique Applications

Lodge with the Council prior to the issue of the Statement of Compliance for the development, a non - refundable fee for each non - standard pole and lamp proposed for the estate of 20% of the purchase price of poles, lamps and fittings.

Hold in stock a minimum of 2 identical spares of the non – standard poles, lamps and light fittings used within the subdivision from the state of statement of compliance for a period of not less than twelve months

The assumption that there is some significant additional cost the council for future maintenance and replacement of non-standard fittings has not been supported by any facts.

Provision of a 20% payment for all non standard poles etc could only be justified if almost 1 in 5 light poles required replacement (apart from the normal replacement of lamps and photo-electric fittings which is carried out and paid for by Powercor anyway). We are unaware of Council ever having to replace non-standard lighting. It seems completely unreasonable to charge such a large contribution towards a cost that basically does not exist.

Similarly, requiring spares to be kept “in stock” is also unreasonable. We are unaware of any poles ever having to be replaced in the 12 month period following the issue of the statement of compliance. We question if Council has considered the cost and logistics of storing these spares?

CHECKLISTS

The design checklists are too complicated, particularly for in principle designs. For example, showing all sub-catchments, pipe sizes, pipe materials etc on an "in principle" design is not necessary. These are detailed design items. In principle designs should show general layouts, overall catchments boundaries and proposed outfall points. Much of the detail required by the "in principle" checklist would require detailed design.

PLAN REQUIREMENTS

We generally support the detail required, however some items seem unnecessary, and depending on the design software used by various consultants, may be difficult and time consuming to add to plans that are otherwise automatically produced by the design package. For example, origin/destination pits for inlets and outlets is not shown automatically by most design software, and would have to be added by CAD drafting. The drainage layout including where pits inlets and outlets go is clearly indicated on layout plans and drainage longitudinal sections, and shouldn't be required on pit schedules. Pit schedules should assist the contractor to price and build the works, and the origin/destination information is irrelevant.

Similarly, detailed information on kerb returns is generally unnecessary on road longitudinal sections, and is provided on the intersection detail plans. Design levels at 10m intervals within vertical curves is a good idea on road longitudinal sections, but 20m intervals between cross sections is usually sufficient for most jobs.

SUMMARY

We are concerned that Council has indicated that the review of public submissions including any amendment to the document will be completed within 2 weeks, and the document be presented to Council meetings in the second week of March.

It appears that although the development of the manual to a "draft for public comment" stage has taken over 12 months, the public comment and review is a very short part of the process. It appears that this part of the process is being "seen to be done" rather than a genuine attempt to gain valuable feedback from the development industry, who after all will be the main users of the manual.

We provide the above comments as positive suggestions to improve the manual, which once complete will provide clear guidance to developers, consultants and council officers as to the required standards for infrastructure works within the Bendigo, Campaspe and Shepparton municipal areas.

Any queries regarding the content of this submission should be directed to the author, Andrew Mertens (Engineering Manager, Terraco Pty Ltd, 5442 5799, andrew@terraco.com.au)

Yours faithfully,

Brett Bahen
MIEAust CPEng
ALDE



**SINGLETON
BAHEN STANSFIELD**

2 February 2007

Anne Howard
Design Services Manager
Shire of Campaspe
PO Box 35
ECHUCA VIC 3564

**SURVEYORS
ENGINEERS
PLANNERS**

Reply to: P.O. Box 1064
Bendigo, Vic. 3552

Dear Anne:

Re: Response to Infrastructure Design Manual

The following comments have been prepared by Singleton Bahen Stansfield in response to the draft Infrastructure Design Manual prepared jointly between The City of Greater Bendigo, The City of Greater Shepparton and the Shire of Campaspe.

Singleton Bahen Stansfield supports the comments prepared by Terraco Pty Ltd and the following comments are in addition to those. Singleton Bahen Stansfield would like the opportunity to further discuss and expand on the following comments at a later date.

Yours faithfully

Brett Bahen
Principal Consultant

Encl

CC: Peter Brasier

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RESPONSE TO INFRASTRUCTURE DESIGN MANUAL

By Singleton Bahen Stansfield

CLAUSE 3: SUBDIVISIONS AND PLANNING PERMIT APPLICATIONS

Clause 3.2: Information to be Submitted

"Drainage master plan and computation to be submitted at planning application stage."

Comment: This level of detail is normally submitted at the design stage and would be unnecessary for the majority of applications.

Clause: 3.5 Development Contribution

"Council's funding or contribution to works cannot be guaranteed for the following financial year".

Comment: Council receives a considerable amount of funding from developer levies including drainage levies. This reserve of funds should be made more readily available rather than the developer shouldering Council's costs for 12 months or more. In some instance, Council contribution can be offset by developer levies at the time of the works.

CLAUSE 5: DESIGN REQUIREMENTS

Clause 5: Design Requirements

The design approval process appears to make no differentiation between developments of varying sizes.

Smaller subdivisions should not require the same amount of submissions as for a major residential development, but the manual implies that a two lot subdivision will follow the same steps as a 200 lot subdivision.

Clause 5.3

No definite timeframes for the checking and review of plans by Council is stated, only that plans submitted with checklists will be 'fast tracked'. We are concerned that the time taken by Council to process additional information prescribed in the manual will significantly lengthen the approval process, despite the Council's stated objective of ensuring expediency for developers.

Clause 5.8.2

The submission of pavement design computations and CBR results from a laboratory have not been proved necessary for each and every project involving road construction in Bendigo. We submit that this requirement is appropriate to the Shire of Campaspe and Greater Shepparton only and that the need for design computations and CBR results be assessed on a case by case basis in Bendigo, rather than as a matter of course.

CLAUSE 12: DESIGN OF ROADS

Clause 12.3.2

Table 1

The radius (back of kerb to back of kerb) of residential court bowl was previously 8.0m then it was increased to 9.0m in recent times and now Council want to further increase it to a 9.7m radius (back of kerb to back of kerb)

Clause 12.3.3

A landscaping plan shall be provided to Council for all proposed bicycle/pedestrian reserves.

This seems excessive in the case where the reserve is purely a linking walkway between roads or allotments.

Clause 12.3.4

T or Y cul-de-sac heads are not permitted at all. In some instances it is not possible or practice to provide a bowl. Providing a bowl will not ensure that vehicles travel in a forward direction. When cars are parked around the bowl which happens regularly, cars are forced to perform a 3 point turn.

Clause 12.3.7

Table 3

The absolute maximum grade for a longitudinal road of 15% is not always possible. Grades of 20% can and have been used in the past.

Clause 12.3.10:

Residential driveway slopes to be a maximum of 1 in 10. Currently the COGB standard is 1 in 8 and on some occasions we have used 1 in 7 in areas where this has been unavoidable. We have had no issues with this.

CLAUSE 15: EARTHWORKS AND LOTFILLING

Clause 15.3: Earthworks

It is not practical in all instances to have no filling imported onto any development site. Good clean filling introduced to a site should not be a problem particularly if it is covered with filling from the site.

CLAUSE 16: URBAN DRAINAGE

Clause 16.6

Average recurrence interval of 1 in 5 for Urban drainage. Sometimes less or more is appropriate depending on situation. For example a reduced recurrence interval is sensible for drainage discharging into existing network that is under capacity.

Clause 16.7

Runoff co-efficient of 0.50 for low density residential and 0.6 for Units. Seems a bit high for low density as VicRoads suggests a value of 0.4 for 20 houses per hectare (500m² per lot). Similarly might be a little low for units as VicRoads suggests a value of 0.5 to 0.8 for town houses.

Clause 16.10.2

150mm & 225mm PVC pipes to service maximum of two properties. Should be designed to suit. Four 400m² properties may be served by a 150mm PVC while a single 2500m² property might require a larger pipe.

Pipes under roads to be a minimum of 375mm. Practice has been for 300mm, which has proven to be adequate. Why the change?

Clause 16.18

Minimum bed width of channels to be 2.5m. This would make smaller steep drains have minimal depth and make it difficult for them to be recognised as drains and hence increase the chance of them being filled in.

Clause 16.19

Minimum reserve width of 10m. Smaller drains can comfortably fit within smaller reserves. Previously 3m wide reserves have been used quite effectively.

CLAUSE 19: SMALL DETENTION SYSTEMS

Clause 19.3.2.3

Section 173 Agreements currently prepared and requested by Council's Solicitors cost about \$1,200.00 plus there is going to be an annual inspection fee. A more cost effective way of preparing and requesting these agreements should be investigated.

APPENDIX E: INFORMATION TO BE SHOWN ON PLANS

Existing and finished levels to be shown at 20m spacings. Drawings show the existing and design surface with levels shown at pits. Surely this is sufficient.

Council to allocate pit numbers. Easier for us to allocate them while we are undertaking the design. Painful to go back and change drawings after design finalised (and hence number of pits known) to put in pit numbers.

The long section to show street names, lot numbers or reserves. This information is shown on the plans with the pit numbers. Surely putting it on the long sections is overkill.

Appendix E – Information to be shown on Plans

Queries:

Road layout Plan

- Kerb radii and kerb type
Normally shown on intersection plans, are we duplicating information on multiple plans?
makes plans harder to read

Road Cross-Section plans

- Existing buildings on adjacent allotments abutting streets including floor levels
? Is there going to be a minimum setback distance where we will have to show this or a maximum setback where we don't have to show this, ie if house is 10m back and we are not doing any grading into their lots or altering anything on the property. Access issues to get this information

Typical Road Cross sections

- Quite a lot of these details will be under the varies category/or not applicable on most cross sections, is this just a rough guide for council to see what might be in the road reserve?

From: Brendan Bartlett <brendan@bblarch.com.au>
To: <a.howard@campaspe.vic.gov.au>
Date: 05/02/2007 8:51:44 am
Subject: Infrastructure Design Manual

Anne,

*

Re. Draft Infrastructure Design Manual*

I am aware that the period for comments on the Infrastructure Design Manual has ended, but I hope you would consider the following amendment with regard to landscaping plans (Section 24.2, page 94).

'Landscape plans should be prepared by a suitably qualified and experienced landscape architect or landscape professional'.

In the past, I have seen too many landscape plans prepared by building designers, clients themselves, or generally un-qualified people. These plans are often un-practical, un-constructible, difficult to maintain, and quite un-complementary to the surrounding landscape and the development in general. The plans are often submitted for town planning approval, without any real intention to undertake landscaping according to the plans.

A qualified and experienced landscape architect will push the agenda of sustainability, practicality, constructability, and will develop a landscape character that complements and enhances the surrounding landscape, and the municipality as a whole.

If you have any further queries regarding these comments, I can be contacted on (03) 5446 3221.

Yours Sincerely,

Brendan Bartlett
Landscape Architect

--

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Date: 31st Jan 2006

Anne Howard
Design Services Manager
Shire of Campaspe
PO Box 35,
ECHUCA VIC 3564

Dear Anne,

RE: Infrastructure Design Manual

We have perused the Draft Infrastructure Design Manual and request a review of the following items.

Information to be submitted

- 100mm contour intervals are unnecessary in Bendigo unless in flat areas such as Huntly, Epsom etc.
- Street lighting detail maybe cost dependant and these details have generally not been provided at this time.
- MUSIC analysis for WSUD should not be necessary at this preliminary stage.

Outline Development Plans

- The level of information seems to be more in keeping with that which is supplied at the detailed design stage. Some of the information would not be available without undertaking detailed design which should not be necessary at this early stage.
- How has the Park area of 0.75Ha been determined?

Design Requirements

- The City of Greater Bendigo specifically changed back to full Council supervision a number of years ago. Why has this requirement changed?
- We do not see that it is necessary for a three stage design documentation process. An approval in principle & final documentation should be adequate for the majority of projects.
- A pre-design site inspection should not be necessary for every development & the manual should be amended accordingly. In most cases the design engineer will arrange for a meeting at the functional design stage to discuss any issues. This proposal ahs the potential to increase the design phase by approximately eight weeks.
- Are two (2) sets of preliminary plans necessary?
- A master services plan is unnecessary. Some but not all of this information is generally included on the layout plan and is unavailable until the final design has been completed.
- CBR testing has not been required in Bendigo due to the stable nature of the soils. A 200mm FCR depth is generally sufficient in most areas. In suspect areas lab soaked CBR's may be necessary to determine pavement depth.



- Is an estimate of the works required at the final design stage. Bendigo has always had a policy of being provided with the supervision / checking fee at a later point when the successful contractor has been appointed in order to get the fee correct & eliminate for additional paperwork to either provide more fees or reimbursement.

Documentation

- AHD is generally not available or required in rural areas

Construction Phase

- If the Councils will not be supervising the works, we expect that the 2.50% supervision will not be applicable
- If the consultant is required to provide certification of the constructed works, we expect that the 2.50% supervision will not be applicable.

Defects Liability Period

- How does Council propose to protect the developer & contractor from the damage caused by a third party during the 12 month maintenance period? It is our experience that most damage is caused by others and not from defective work during this period.
- The Section 173 Agreement mentioned in Section 8.3 does not seem necessary.

Traffic Management Strategy

- This section requires further assessment. In short a traffic study would be required for 90% of developments which is unnecessary. This requirement should be left to the discretion of Councils traffic engineer
- Road Safety Audits (as above)

Design of Roads

- Access Place – why does the carriageway and reserve widths vary from Clause 56?
- Access Street – why does the carriageway and reserve widths vary from Clause 56?
- Collector Street – why does the carriageway and reserve widths vary from Clause 56?
- Residential Court Bowl – why has the carriageway and reserve widths been increased?
- Industrial Street & Court Bowl – why has the carriageway and reserve widths been increased? Why is a footpath required on both sides of the road reserve?
- At the end of a stage which connects to a property not owned by the developer & is in accordance with an ODP, we have used driveways for the turning of vehicles. Section 12.3.9 requires review.
- Rural Roads – consideration should be given to 0.30m wide shoulders similar to Council Govt roads due to excessive vegetation removal.
- Compaction tests – the number of compaction tests is excessive. Proof rolling provides the best method of determining the compaction of a pavement. In-situ tests are required only as confirmation that the density of the pavement meets the minimum standards. Why are soft areas required on the 'As Constructed' drawings?

- Rural Vehicle Crossings – The general minimum culvert diameter in the City of Greater Bendigo has been 300 dia. Why has the minimum been increased to 375 dia?

The Rescode requirements have been determined with to control speed without the need for speed control devices which seems to be contrary to earlier advice in the manual

Mobility & Access Provisions

- Can the offset of footpaths be varied on written request. At times existing services may dictate the final alignment of the footpath and Councils need to be flexible in this regard.
- It seems totally unnecessary to construct a spoon drain along a reverse fall footpath in a contrasting color.
- Generally all electricity service pits are constructed in the footpath as there is insufficient room between the title boundary and the Building line. Powercor have minimum tolerance standards of 5mm in this regard and seems unnecessary for Council to approve as well

Earthworks & Lot filling

- Filling standards for lots is 95% whilst the manual requests 97% This seems unnecessary
- One compaction test per allotment is excessive and we request a review of this condition.

Urban Drainage

- Within the City of Bendigo where grades tend to be much steeper, pipe sizes should be determined by drainage calculations and not the number of allotments and we request a review of this condition.
- Minimum pipes diameters under roads in the City of Greater Bendigo have been 300 dia Why has the minimum been increased to 375 dia? We request a review of this condition.
- The manual does not mention the issue of drainage levies for Bendigo We request the preparation of a drainage levy strategy for review.
- There is little mention of what WSUD specifications are to be met

Landscaping

- Refer to our email of the 31st Jan 2007

Would you please advise if the document is to be incorporated into the Planning Scheme and whether or not a panel hearing will be held if we still object to some items following your response.

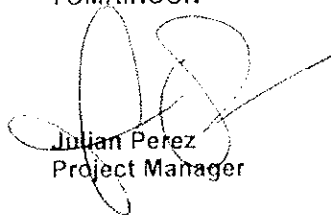
Whilst we applaud Councils commitment to instigate the Infrastructure Design Manual, we are concerned that once the manual is adopted Council will become too rigid in their application of the document with no opportunity to seek common sense solutions when the need arises from time to time

As consultants our job is to provide more livable precincts for residents, but with the affordability of housing becoming an increasing issue within all Municipalities', many of our concerns relate directly to items which increase overall development costs whilst not necessarily providing a better product for the end user.

As the manual stands and reads there is a significant increase of consultancy work required which would be in the order of a 20% increase and even beyond 50% increases in some cases. Construction costs of developments will also increase in a similar order. Consideration to this must be a major priority when addressing our concerns.

We look forward to your response.

Yours faithfully
TOMKINSON



Julian Perez
Project Manager

**CITY OF GREATER BENDIGO
INFRASTRUCTURE DESIGN MANUAL**

24.1 Item 10 – *Identify a selection of plant species for planting in landscapes having regard to indigenous species where practical* – **Is there a list of preferred species available ?**

24.2 – *Landscape works shall not commence until the landscape plans submitted have been approved* – **Does council have a recommended time for approval i.e. 2 weeks.**

Table 12 *minimum provisions* – **Are there indicative sizes for the different park types e.g. Local Park up to 2000 square meters, Large Park up to 5000 sqm etc.**

Table 13 *Maintenance requirements* – **Bendigo doesn't show mowing frequency.**

24.3.2 – *The use of locally indigenous species close to waterways and streams*
Is there a distance from these features that determines close?

24.3.3 – *Use of mulch to improve water efficiency and reduce weed competition.*
Should mention benefit of mulch in relation to salinity.

24.35 Plant selection – *Tree selection shall be in accordance with council's street tree policy* – **Suggestions on how to get this policy would be helpful, is there a different policy for each district?**

This section also mentions precinct brochures being considered when determining tree species. A "one stop" guide encompassing all three districts and their planting requirements will be very handy.

24.3.9 *Clear zones* – **pictures would clarify this item.**

24.3.11 *Maintenance responsibility – a defects period of 12 months shall apply & council will be responsible for the maintenance of the landscaping works.* **Shouldn't this be the developer's responsibility?**

Irrigation systems – **can these be solar powered?**

24.3.12 *Referred documents* – **where are these available?**

24.3.13 *No landscaping other than lawn shall be permitted on nature strips*
Very strange requirement under stage 4 restrictions. Perhaps a list of approved alternatives such as granitic sand or 20mm pebble etc. could be included.

24.3.14 *soft landscaping* – **refers to Shepparton's 2 grass policy – Where is this policy available from?**

24.3.17 *other matters – Urban art and information boards are to be provided to encourage use of public open spaces* – **Can these be located on nature strips?**



Anne Howard
Design Services Manager
Shire of Campaspe
PO Box 35, Echuca 3564

Our Reference: 07005
Your Reference:
2nd February 2007

Dear Anne,

**Re: INFRASTRUCTURE DESIGN MANUAL
– DRAFT FOR PUBLIC COMMENT Issue date 18-Dec-06**

Thank you for the opportunity to submit a written response to the above mentioned design manual.

As you are aware, we have been involved in the development of a joint submission on behalf of a number of consultants in the Bendigo area. Please refer to that document for our detailed comments on the manual.

We would like to make some general points in addition to the detailed comments in the joint submission.

Firstly, we believe that the manual will be a good tool to assist the development industry and council to facilitate the provision of works required in relation to development within the 3 municipalities.

We do however believe that there are a number of important issues which require additional consideration and refinement prior to the manual being adopted. These issues have been discussed in detail in the joint submission.

We make the general comment that the manual is unnecessarily complex in many areas, and requires excessive detail in support of the submission of designs, particularly at the "in principal" approval stage.

It also has a number of requirements which contradict accepted standards, particularly clause 56 of the Planning Schemes. We would submit that it is inappropriate to adopt a design manual which clearly contradicts the Planning Scheme. The manual should be amended to agree with Clause 56, or the Planning Scheme should be amended to reflect Councils preferred road classification standards.

We are concerned that Council has indicated that the review of public submissions including any amendment to the document will be completed within 2 weeks, and the document be presented to Council meetings in the second week of March. Considering that the development of the manual to a "draft for public comment" stage has taken over 12 months, it seems unlikely that this review process will result in any significant amendment of the manual. This review process should be completed properly, taking into account the views and suggestions of a very experienced group of professional engineers, and sufficient time should be allowed for this to occur.

Yours faithfully,

Andrew Mertens
MIEAust CPEng
Terraco Pty Ltd
Engineering Manager

Cc Mr. Peter Brasier
Development Engineer
City of Greater Bendigo

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2/2/07

Design Services Manager
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ECHUCA
Vic 3564

Attention : Anne Howard

Dear Anne,

Re : Infrastructure Design Manual Draft
for Public Comment
Issue Date 20th January 2007

I would like to make the following comments regarding the content of the 20th January 2007 issue date of the Infrastructure Design Manual.

Item 1. P11 5.4 Developer's Representatives. The manual states that the "Developer shall ensure that these persons do not have a pecuniary interest with either the Developer, or in the due completion of the works, and in particular that any such person is not responsible for the supervision and control of labour and material inputs into the development".

It is a restriction of trade on an Engineer to not permit him to design and project manage / supervise the construction of roads and drainage infrastructure for private land development that he may have a financial interest in. I do agree however, that the Engineer should not be acting as the contractor / constructor for works he is project managing / supervising.

The design / project manage process of a development is taken through a thorough checking control process by Council. Council accepts a 3¼% of works value fee for plan checking and supervision fee to ensure this checking is carried out through the development process.

A list of required inspections to be carried out by the Council is stated in the draft, Appendix F, representing 13 No. minimum hold points. In addition, the maintenance on constructed works is to be extended to 12 months.

The checking process by Council is thorough to ensure that at the end of the 12 month period, the Council asset at handover is to a proper standard to meet the required Council standards and objectives. It is not possible for an Engineer to reduce the standards through such a process for his own financial gain. The Building Control Commission allow a registered builder to build a spec home for the builders profit. There are thorough checks through the process to ensure adequate standards are complied with.

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- Item 2 P33 & P53 Table on P33 indicates footpath to be 1.5m width both sides and also fully around court bowls. Footpath both sides of higher volume roads is agreed, but for lower trafficked roads, eg cul-de-sacs, footpath both sides should not be required where crossing the road to the footpath on one side is not hazardous. Footpath fully around a court bowl seems unnecessary and particularly expensive, given the increased width and 125mm concrete thickness.
- Item 3 P33 Table indicates Industrial Street to be 12.5m width invert to invert, plus 6m width nature strip both sides. The present City of Bendigo standard is 10.4m invert to invert and 3m to 4m width nature strip. This works well in Bendigo, with Council themselves constructing industrial roads to this standard. The additional width requirements both in road width and nature strip width is unnecessary and a waste of scarce industrial land in Bendigo.
- Item 4 P15 & 47 Manual asks for CBR tests / pavement designs yet on P47 states minimum pavement depth of 250mm. Present City of Bendigo standard of 200mm + seal / 30mm asphalt for residential has worked well and I cannot see the reason to increase, except if poor subgrade is encountered.
- The manual requires 100% modified compaction standard on pavement base, when 98% modified present standard is considered satisfactory.
- The manual required pavement test numbers are excessive. 3 No. in bowls, 2 No. @ intersections, 2 No. per 50m straights. All in addition to proof roll which in itself is the best and most thorough test
- Item 5 P 54 The manual requires constructing colour for spoon drains adjacent footpath. Would be a very high cost given 2 construction pours are required, at little benefit.
- Item 6 P59 The manual requires V.C. for K & C grade change of 0.5%. Normal practice has been for 1% grade change. Also, if 0.5% change on crest with V.C. would result in flat K & C.
- Item 7 P11 The manual requires K value of 0.15mm for Bendigo. This to my knowledge is for PVC. Concrete spun pipes K=0.6mm.
- Item 8 P12 The manual requires 375mm minimum diam for pipes under road. 300mm diam has been accepted standard in Bendigo and is considered satisfactory.
- Item 9 P13 The manual requires 100mm depth topsoil. Current standard being 75mm considered satisfactory. Topsoil is not in abundant supply in most of Bendigo Area.
- Item 10 P14 Preliminary design plans – the manual requires natural surface and finished surface contours at 50mm intervals on lot fill plans. This is considered excessive intervals for the Bendigo area.
- Item 11 Checklists for approval in principal ask for excessive information. Perhaps ok for larger subdivisions. Maybe consider a lesser checklist for smaller scale developments.

...3.

...3...

- Item 12 Traffic management reports and road safety audits required if a new road is constructed. Considered unnecessary except for larger developments.
- Item 13 P8 States no 'hammerhead' or 'T' heads. Properly constructed 'T' heads that allow for a 3 point turn of a garbage truck should be allowable. A court bowl only needs one car parked in it to require a multi-point turn of a garbage truck anyway.
- 'T' heads not built to a reasonable standard in the past have given this access method a bad name. 'T' heads at least 18m across work fine for a 3 point turn. I agree garbage trucks should not have to fully back down a court but a 3 point turn should be acceptable and is difficult to avoid even with a court bowl.
- Item 14 P8 & P72 The manual states surface flow paths should not be directed through property easements, but through drainage easements? I assume this is meant to be drainage reserves. Also Page 72 asks for a minimum 10m width drainage reserve. This would seem excessive in many cases.
- Item 15 P59 The manual states 97% MMDD? Present standard being 95% standard compaction for fill on lots which seems adequate.
- Item 16 Drainage levy principles applied by Council need to be clearly outlined. Little or no mention is made of drainage levies in the manual.
- Item 17 P67 The manual asks for trafficable grated load bearing covers on all side entry pits located in exposed areas, eg intersections. Seems excessive as many pits are located at TP's of intersections and would add greatly to drainage costs. Perhaps gatic covers required if pit is located around kerb return where it has a higher chance of being loaded.
- Item 18 The manual asks for a minimum requirement on all plans including
- Signed Design Certification by a Qualified Civil Engineer
 - Signed Checking Certification by a Qualified Civil Engineer.
- I am assuming this means a second checking Engineer.
- In a small consulting firm such as mine, where I am the only qualified Engineer, it is not practical to ask for a second Engineer to carry out the checking certification.

I trust the comments made are constructive and will be considered on their merit and I support you in your effort to produce a workable document.

Yours faithfully

Brian F Bartlett

R. J. STYLES & ASSOCIATES

Consulting Civil & Structural Engineers

Ms Anne Howard
Design Services Manager
Shire of Campaspe
P.O.Box 35 Echuca 3564.

Re: DRAFT INFRASTRUCTURE DESIGN MANUAL.

With respect to the above I Should firstly state that the concept of a uniform infrastructure design manual is commendable and that there is much in the draft of significant value.

Nevertheless there are a number of areas which I believe require amendment by virtue of the requirements being either excessive, too restrictive/prescriptive or applicable at an inappropriate time in the design phase of the development.

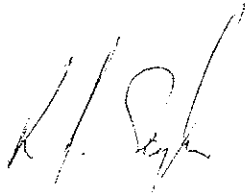
It is also emphasised that the draft is an extensive document and given the timing of its release for comment, i.e. just prior to X-mas I believe there has been insufficient time provided for a proper perusal and consideration of the implications of all aspects of the manual. Even so the following comments are made: -

1. The implied requirement for 100mm contours at the planning application stage is considered excessive and will place a substantial cost burden on the developer at the very outset of any venture. Whilst in some rare instances 100mm contours might be necessary generally they are not, except in very flat terrain.
2. T head courts when designed correctly can be a very useful design concept and facilitate the more economic development of available land. Too eliminate this concept from the designers repertoire will unnecessarily limit development.
3. The inclusion of typical x-sections at the ODP stage can be difficult, particularly in steep country where a detail consideration of all aspects may dictate a very different x-section to that initially envisaged.
4. The amount of drainage detail required at the ODP stage is excessive and an unnecessary cost burden to the developer. Most of the requirements are detail design requirements. A generalised and to some extent flexible layout plan together with the catchment area should be all that is required.
5. AHD datums should not be necessary for rural work but preferred only.
6. The defects liability issues require extensive consideration especially in regard to what constitutes a defect, versus damage caused by third parties.
7. It is implied that all new roads will require a traffic management strategy prepared by an experienced traffic engineer. This will normally require the engagement of Melbourne based consultants as few accredited traffic engineers exist in rural Victoria. This requirement is considered by this office to generally be an unwarranted burden upon the developer especially in the case of small infill developments.

8. Road gradients of up to 1 in 6 are not unreasonable if restricted to short distances. Even steeper gradients have been workable with due care to other access problems and length of gradient.
9. The proposed use of contrasting colours for spoon drains is dubious and possibly impractical in terms of cost effectiveness. Such work will require the use of expensive masking and topping mixes or separation of the pours.
10. Whilst 150Ø pvc pipes are accepted as a minimum property drain, the number of properties served should be dictated by the hydrology and hydraulics not an arbitrary 2 sites (of what size?).
11. 300mmØ has for many many years been the accepted minimum diameter for under road culverts by Vic Roads & the City of Bendigo.

The above is a list of concerns following only a cursory perusal of the document. It is presumed that upon a more detailed consideration other issues may evolve.

Yours Faithfully.



R.J. STYLES
A.D.C.E. M.I.E. AUST
CHARTERED ENGINEER

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From: Brendan Bartlett <brendan@bblarch.com.au>
To: <a.howard@campaspe.vic.gov.au>
Date: 05/02/2007 8:51:44 am
Subject: Infrastructure Design Manual

Anne,
*

Re. Draft Infrastructure Design Manual*

I am aware that the period for comments on the Infrastructure Design Manual has ended, but I hope you would consider the following amendment with regard to landscaping plans (Section 24.2, page 94).

'Landscape plans should be prepared by a suitably qualified and experienced landscape architect or landscape professional'.

In the past, I have seen too many landscape plans prepared by building designers, clients themselves, or generally un-qualified people. These plans are often un-practical, un-constructible, difficult to maintain, and quite un-complementary to the surrounding landscape and the development in general. The plans are often submitted for town planning approval, without any real intention to undertake landscaping according to the plans.

A qualified and experienced landscape architect will push the agenda of sustainability, practicality, constructability, and will develop a landscape character that complements and enhances the surrounding landscape, and the municipality as a whole.

If you have any further queries regarding these comments, I can be contacted on (03) 5446 3221.

Yours Sincerely,

Brendan Bartlett
Landscape Architect

--

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Mr Jonathan Griffin
Development Co-ordinator
Greater Shepparton City Council

**Re:
Developer Submission Checklists
(Whole Farm Plans)**

Dear Jonathon,

Please find following some of the points of concern raised by members of the Irrigation Surveyors and Designers Group regarding the Draft proposal for Whole Farm Plan checklists.

Existing Features:

Fencing: Due to the poor condition of most fencing and or the likelihood of the fencing remaining as part of the new development it is not feasible to pick up and show on the feature survey said fencing. (If required then the Landowner would have to be charged an additional fee.)

Also what designates a fence. (Single wire electric, five wire post and dropper, seven wire etc.)

Any fencing that will remain as part of the development will be shown.

Drains: As with the fencing most existing drains end up being filled in as part of any new development. (Most existing drains are inadequate hence the requirement of a new design of on farm drainage.)

Any drain that will remain as part of the development will be shown but cross-sections would be considered to be pointless as on farm drains are usually shallow and only carry low flows.

Culverts: Most existing culverts are usually undersized and are also located where they will be removed or replaced as part of the new development.

Drainage Lines: The relevant referral authorities (CMA's, G-MW etc.) are the ones who make the final decision on what is allowable regarding works within drainage lines and the current liaison process between Designers and these authorities has been working effectively for some time and the status quo should remain.

Soil Types: As not all of the Irrigation areas have been mapped, in some cases no soil map will be provided on the plans.



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Proposed Features:

Staging of proposed works: This would be an impossibility to ascertain due to the large scale of works that are being dealt with as part of Whole Farm Plan development.

Factors such as the landowners financial situation determine what part of the development that they would undertake first up and also making a decision on which area of the farm to take out so as they do not adversely affect their production is a major consideration for them to take into account.

There are a myriad of other factors that make this an unrealistic request as works most often take place over an extended period of time. (Up to 10 years is not unrealistic.)

Structures: What constitutes sufficient detail. (What is currently provided is all that is required to be compliant with RWC Farm Design for Border Check Irrigation – Volume II – Design Plans.)

The final statement regarding signing off on the checklist has been seen by members of our Group to be shifting the responsibility of Council and the referral authorities onto the Designer.

It is generally thought that the referral process was introduced to make sure that all proposals were thoroughly checked and that best practice was achieved as a result.

It should be noted that the development of Whole Farm Plans from their inception to the present day has been a collaboration between all interested parties (IS&DG, DPI, G-MW, Shires, CMA's etc.)

The Irrigation Surveyors and Designers Group have played a large part in developing best practice in Whole Farm Planning and we would suggest that a meeting be arranged prior to this draft proposal being adopted between all of the above interested parties.

Your's truly,

David Lee
President

Cc: Mr Chris Nicholson (D.P.I.)