

STEVENS HOLDINGS
PROPOSED SERVICE CEN

LOTS 4 & 5
DP 838537
PAT O'LEARY DRIVE, KELS

CLIENT
STEVENSGROUP
SUITE 2, 257-259 CENTRAL COAST HWY P.O.BOX 3171 ERINA NSW 2250 TELEPHONE: 02 43 65 3351 FACSIMILE: 02 43 65 3750





В	16.02.10	NEW SURVEY PROVIDED BY TREHY INGOLD NEATE DATED 10.02.10
А	27.10.09	ISSUED FOR DA SUBMISSION
EV	DATE	NOTATION/AMENDMENT
		DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE.





D	16.02.10	BOUNDARY ADJUSTMENTS CO-ORDINATED WITH NEW SURVEY DATED 10.0
С	21.01.10	RE-ISSUED
В	02.11.09	RE-ISSUED
А	27.10.09	ISSUED FOR DA SUBMISSION
٧	DATE	NOTATION/AMENDMENT



KFC FLOOR PLAN









Andrews Neil UDG Pty Ltd 19-21 WATT ST PO BOX 1476 GOSFORD NSW 2250 TELEPHONE: 02 43 24 3633 FACSIMILE: 02 43 24 3771 EMAIL: info@andrewsneil.com.au Nominated Architect: Andrew Dickson

	Α	27.10.09	ISSUED FOR DA SUBMISSION			
	REV	DATE	NOTATION/AMENDMENT			
			DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE.			
FIGURED DIMENSIONS TAKE PRECEDENCE.						















STEVENS HOLDINGS PROPOSED SERVICE CENTRE

PROJECT

LOTS 4 & 5 DP 838537 PAT O'LEARY DRIVE, KELSO

LOCATION



TITLE: KFC STORE PLAN & ELEVATIONS Mc DONALDS PLAN & ELEVATIONS

DA EDITION

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STEVENSGROUP



Architecture Andrews Neil UDG Pty Ltd 19-21 WATT ST PO BOX 1476 GOSFORD NSW 2250 TELEPHONE: 02 43 24 3633 FACSIMILE: 02 43 24 3771 EMAIL: infr@andrewspeil.com au

 FACSIMILE: 02 43 24 377 1

 EMAIL: info@andrewsneil.com.au

 Nominated Architect: Andrew Dickson

 (NSW Reg. No. 7657)

В	21.01.10	RE-ISSUED FOR DA SUBMISSION
А	27.10.09	ISSUED FOR DA SUBMISSION
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		DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE.
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FIGURED DIMENSIONS TAKE PRECEDENCE.

PROJECT STEVENS HOLDINGS PROPOSED SERVICE CENTRE

LOCATION LOTS 4 & 5 DP 838537 PAT O'LEARY DRIVE, KELSO CLIENT **STEVENS**GROUP SUITE 2, 257-259 CENTRAL COAST HWY P.O.BOX 3171 ERINA NSW 2250 TELEPHONE: 02 43 65 3351 FACSIMILE: 02 43 65 3750

SERVICE STA

TITLE:

C SIDE ELEVATION







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G	17.02.10	AMENDMENTS TO GREAT WESTERN HWY AND PAT O'LEARY DRIVE AS PER TR
F	16.02.10	BOUNDARY ADJUSTMENTS , RECONFIGURED KFC SITE & INTERNAL ROAD AD
E	12.02.10	RE-ISSUED WITH BOUNDARY MODIFICATION TO SERVICE STATION AND ADDE
D	09.02.10	RE-ISSUED WITH KFC POSITION CHANGED AND ROAD WIDENING SETBACK IN
С	25.01.10	RE-ISSUED FOR DA SUBMISSION
REV	DATE	NOTATION/AMENDMENT
		DO NOT SCALE DRAWINGS, CHECK ALL DIMENSIONS ON SITE





DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.

PAT O'LEARY DRIVE, KELSO

SUITE 2, 257-259 CENTRAL COAST HWY P.O.BOX 3171 ERINA NSW 2250 TELEPHONE: 02 43 65 3351 FACSIMILE: 02 43 65 3750

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SUITE 2, 257-259 CENTRAL COAST HWY P.O.BOX 3171 ERINA NSW 2250 TELEPHONE: 02 43 65 3351 FACSIMILE: 02 43 65 3750

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DA EDITION

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Created on Wednesday, 24 March 2010 by planning



Important Notice! This map is not a precise survey document. Accurate locations can only be determined by a survey on the ground.

BATHURST

Bathurst Regional Council 158 Russell Street Bathurst NSW 2795 Telephone: 02 63336111 Facsimilie: 02 63317211 Web. www.bathurst.mw.gov.au

Bathurst Regional Council expressly disclaims all liability for errors or omissions of any kind whatsoever, or any loss, damage or other consequence which may arise from any person relying on information comprised in this Plan.

Note: The colours on this Plan do not indicate zones under the Bathurst Regional (Interim) Local Environmental Plan 2005.

True North, Grid North and Magnetic North are shown diagrammatically for the centre of the Bathurst Regional Local Government Area. Magnetic North is correct for 2001 moving easterly by 0.04° in about five years.

Important This may was produced on the GEOCENTINC DATUM OF AUSTRALIA 1994 (ACDAM), which has supersolided the Australian Geographic Datum of 1984 (ACDAM), which has supersolided the Australia Height Datum (AHD) heights. For most practical purposes CDAM coordinates and satellite derived (CPS) coordinates based on the World Geodelic Datum 1984 (WCS84) are the same.

GDA



Contour Interval: GDA 94 Zone 55 Projection: Cost: Date:

planning

Drawn By:

Wednesday, 24 March 2010

Map Scale: 1:5,820 at A4 Map Zoom: 1652 m



AUSTRALIAN RAIL TRACK CORPORATION LTD

Monday, 30 November 2009

Our Ref: 65/710/9 Your ref: DA 2010/0286

Mr Daniel Dwyer Bathurst Regional Council Private Mail Bag 17 BATHURST NSW 2795

BATHURST REGIONAL COUNCIL - 3 DEC 2009 REF.2010 0286-02 013

Dear Daniel

RE: DEVELOPMENT APPLICATION 2010/0286 PREMISES: LOTS 4 &5, DP 838537, 1 PAT O'LEARY DRIVE KELSO

Thank you for the referral of the above Development Application for our comments.

Under the Country Regional Network Management Agreement signed September 2004, Australian Rail Track Corporation (ARTC) acts as agent for the NSW Government (via Rail Infrastructure Corporation Country Division) for the management of the country branch lines in NSW.

We have reviewed the application and ask that the following issues be addressed in the conditions for this proposed development. In summary:-

- 1. Noise and vibration;
- 2. Drainage;
- 3. Fencing.

A more detailed description of the standard conditions of the above are provided on the next page.

Please send a copy of the determination and conditions of consent when available.

If you have any questions or require any further information, please contact the undersigned on 02 6939 5432 or gcotter@artc.com.au

Yours faithfi Graham Cotter

Property Officer





1. Noise and Vibration

ARTC is concerned that the future occupants of the development will encounter rail-related noise and vibration from the adjacent rail corridor. Rail noise and vibration can seriously affect residential amenity and comfort, and jeopardise the structural safety of buildings, and should be addressed early in the development process.

ARTC have published the following documents as part of a joint initiative aimed at managing rail noise and vibration impacts associated with development near the rail corridor:

Interim Guidelines for Councils – consideration of rail noise and vibration in the planning process. This aims to assist local government in considering and assessing rail noise and vibration as part of their strategic planning and development control functions.

Guidelines for Applicants – consideration of rail noise and vibration in the planning process. This aims to assist those involved in the planning and design of developments near the rail corridor.

These documents are available on www.ric.nsw.gov.au/publications.

In assessing the application, Council is encouraged to adopt the recommendations given in Part B – Development Assessment Process of the Guidelines for Councils.

Should the Development be within 60 metres of an active rail corridor, and it is Council's opinion that the development, as designed, is likely to be significantly impacted upon by Rail noise and vibration, then Rail requests the following clause be inserted in the conditions of consent.

 An acoustic assessment is to be submitted to Council prior to the issue of a construction certificate demonstrating how the proposed development will comply with ARTC Interim Guidelines for Applicants in the consideration of rail noise and vibration from the adjacent rail corridor.

Note – Section 11 of the Guidelines for Councils provides recommended conditions of consent for specific development categories such as multi-unit residential within the acoustic assessment area. Council should extract the relevant condition from this section and insert in he development consent.

2. Drainage

ARTC wishes to advise that run-off or stormwater discharge from the development site onto the Rail Corridor is unacceptable, both during and after construction and installation. Any run-off or waste arising from the development activities needs to be properly disposed of and just not be allowed to enter onto the rail corridor.

ARTC looks to Council to ensure that stormwater is not diverted onto the rail corridor as the result of the development. Alternatively, Council may choose to impose the following condition of consent:

- Given the site's location next to the rail corridor, grainage from the development must be adequately disposed of / managed and not allowed to be discharged into the corridor unless prior approval has been obtained from ARTC.
- During excavation the applicant is to observe extreme care to prevent water from collecting on or near ARTC infrastructure. It is possible that if water were to pond adjacent to the infrastructure, services could be interrupted. If this were the case, the applicant / contractor would be liable for the ARTC expenditure involved with restoring or maintaining alternative services.

3. Fencing

To ensure that unauthorised entry into the rail corridor is prevented from this development, ARTC considers it appropriate to replace the current fencing. Council shall impose the following condition of consent:

A Standard condition:

The boundary fence must be of a sufficient standard that it does not allow unauthorised entry into the rail corridor by any stock or persons, and the applicant must ensure that adequate safety measures are taken whilst work is carried out.

REGIONAL DEVELOPMENT COMMITTEE WESTERN REGION

PO Box 334 PARKES NSW 2870 Ph (02) 6861 1482 Fax (02) 6861 1414 14

BATHURST REGIONAL COUNCIL
- 4 DEC 2009
REF. 2010 0286-02 014

2 December 2009

The General Manager Bathurst Regional Council Private Mail Bag 17 BATHURST NSW 2795

Development Application 2010/0286 Proposed Bulky Goods, Retail, Service Station, Fast Food Centre Lots 4 & 5 DP 838537; 1 Pat O'Leary Drive, Kelso

Dear Sir,

I refer to letter reference DJD:AP:DA/2010/0286 received 13 November 2009 and accompanying plans for the subject development proposal. Reference is also made to earlier correspondence received from Bathurst Regional Council dated 17 February 2009, response from the Regional Development Committee Western Region (RDC) dated 19 March 2009, and the response from the Roads and Traffic Authority (RTA) dated 24 March 2009.

The Western Region Development Committee met in Dubbo on 30 November 2009 to consider the proposed 5 Lot Subdivision and construction of retail outlets in the context of the recent traffic report. It was noted that the information in the traffic report failed to provide sufficient data to make an adequate assessment of the impact of the proposed development on the adjacent road network. In particular, the traffic report fails to include approved but unconstructed major development(s) to the east of the site, and it does not project medium term growth on the Great Western Highway. These requirements were specifically stated in the letters from the RTA and the RDC in March 2009. For these reasons, the efficacy of an access treatment or design is little more than speculation, and the Regional Development Committee Western Region <u>opposes the</u> current development application on the grounds that it fails to adequately assess the impact of the proposed development on the surrounding road network.

Additional comments and recommendations noted during the RDC assessment are as follows:

- 1. The application proposes a 5 Lot subdivision, potentially with various landholders requiring free access through other landholder's Lots;
- 2. The proposal does not address traffic or access with the development on the northern side of the Great Western Highway with access opposite Pat O'Leary Drive;
- 3. Swept paths are not demonstrated for vehicles accessing the site, travelling through the site, or accessing loading docks;
- 4. The number of parking bays shown on Drawing No 09159/DA/A/02 Revision A is less than the number stated in the traffic report;
- 5. Speed of vehicles through the site needs to be controlled by physical traffic calming means to enhance safety for pedestrians;
- 6. Pedestrian paths are provided in front of Bulky Goods A, B, and C, however consideration should be given to providing pedestrian linkages between A and B, and between B and C;

- 7. Consideration should be given to removing the service access roads between Bulky Goods stores A and B, and between B and C, to reduce service use of the public parking area and access roads;
- 8. The western KFC access is too close to the internal roundabout and should be closed;
- 9. The shape of the northern KFC egress suggests it is left out only;
- 10. It is unclear how the offset accesses between KFC and McDonalds will operate safely;
- 11. It is unclear what purpose of the 'roundabout' inside McDonalds achieves;
- 12. McDonalds parking bays 13-17 are accessed by travelling against the flow of vehicles exiting the drive through;
- 13. The McDonalds service vehicle is required to reverse within the parking area and potentially encroach upon customer parking bays, this proves an unacceptable risk to public vehicles and pedestrians, service vehicles should enter and exit in a forward movement;
- 14. The proposed painted median on the Great Western Highway opposite the service station access (Stage 1) is not adequate, a physical barrier needs to be proposed to prevent restricted turning movements;
- 15. It will be necessary to provide bicycle access and secure parking at strategic locations within the site;
- 16. All signage that regulates, warns, or guides traffic, including pedestrians, is to be manufactured and installed to the relevant RTA Technical Direction or Standard, or AS1742 where no specific RTA standard exists;
- 17. Kerb ramps should be installed where pedestrians are expected to cross the kerb, and be constructed in accordance with current RTA Technical Directions;
- 18. Landscaping is to be of a type that does not create a hazard in itself through the dropping of slippery berries, nuts, or leaves, and be planted and maintained to prevent restricting driver and pedestrian sight lines;
- 19. Advertising signage should be contained wholly within the site and not be a distraction to motorists or replicate a traffic sign through design or colour;
- 20. The parking and pedestrian areas should be lit to Australian Standard AS1158;
- 21. Lighting of the site and/or signage should not be a distraction to drivers on public roads or attempting to negotiate the parking areas.

Despite any Conditions of Development Consent, the installation of prescribed traffic control devices is governed by Acts other than the Environmental Planning and Assessment Act, and must be undertaken in accordance with the 'Delegation to Councils for the Regulation of Traffic', copy and guide of which are available on the RTA web site. Furthermore, any works and traffic control devices within the Great Western Highway road reserve may only be removed, modified, or installed with the consent of the RTA.

The Regional Development Committee Western Region does not oppose the concept of the development; however, as stated above, the Committee does oppose the current proposal due to insufficient assessment of the road safety and traffic impacts on the surrounding road network. This situation can be rectified by updating the traffic report in accordance with the RDC and RTA letters of March 2009; that is, including projected traffic generated due to other approved developments on the road network, and project traffic growth over a 10 year period based on historic growth rates.

Yours faithfully

W H Hazelton Chairperson Regional Development Committee Western Region



30.5395 99/2-2; C09/1413

The General Manager Bathurst Regional Council Private Mail Bag 17 BATHURST NSW 2795



Dear Sir

DA 2010/0286 Lots 4 & 5, DP 838537, 1 Pat O'Leary Drive, Kelso Bulky Goods Retail, Fast Food Outlets, Service Station and Five Lot Subdivision

I refer to your letter (ref DJD:AD:DA/2010/0286) received 18 November 2009 concerning the above development application referral. The documentation submitted has been examined and the Roads and Traffic Authority (RTA) objects to the proposed development and concurs with the 'additional comments and recommendations' proposed by the Regional Development Committee Western Region in letter to Council dated 2 December 2009.

The issues raised in the Committee's letter are strongly supported and should be addressed by the developer including the updating of the Traffic Report to reflect the significant development which has occurred and is proposed in the area in particular near the intersection of Pat O'Leary Drive and the Great Western Highway.

It should also be noted that the RTA is investigating options to widen the Great Western Highway through Kelso. It is proposed to build a 4 lane divided carriageway similar to that existing within the Bathurst City Area and that acquisition of land may be required from the road frontage in the vicinity of the proposed development to accommodate the road widening. As part of the Kelso project, the RTA is considering relocating the access to the Devro factory to a location with access onto Pat O'Leary Drive.

Due to the number of issues raised, it is requested that a meeting between the RTA, Bathurst Regional Council and the developer's consultant is organised. This meeting should be held after a satisfactory traffic study is provided to the RTA for assessment.

Should you have any further enquiries please contact Fiona Francis on 02 68611688.

Yours faithfully

Hendry

Tony Hendry Road Safety and Traffic Manager Western



4 DFC 2009

Roads and Traffic Authority ABN 64 480 155 255

51-55 Currajong Street Parkes NSW 2870 PO Box 334 Parkes NSW 2870 DX20256 www.rta.nsw.gov.au | 13 17 82

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BATHURST REGIONAL COUNCIL

2 2 MAR 2010 REF 2010/0286-04-101



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30.5395 99/2-2; C09/1413

The General Manager Bathurst Regional Council Private Mail Bag 17 BATHURST NSW 2795

Dear Sir

DA 2010/0286 1 Pat O'Leary Drive, Kelso

I refer to email correspondence from Richard Denyer received 25 February 2010 concerning the above development application referral.

The documentation submitted has been examined and it is noted that:

- The revised plans have incorporated Roads and Traffic Authority (RTA) comments from the meeting held on 3 February 2010 relating to property setbacks for the proposed upgrade of the Great Western Highway through Kelso.
- The concept layout provided is generally satisfactory. However, acceptance of the layouts for Stage 1 and Stage 2 intersections will be subject to final design checking and approval as part of the Works Authorisation Deed process.
- The advertising signage will be subject to a separate application which will require referral to the RTA in accordance with *State Environmental Planning Policy No 64 Advertising and Signage*.

The RTA will not object to the proposed development subject to the following:

Stage 1 intersection treatment:

- For Stage I of the development based on the traffic generation figures provided, the intersection of Pat O'Leary Drive and the Great Western Highway is to provide opposing channelised right turns, left turn into Pat O'Leary Drive and a deceleration lane for traffic turning left into the service station. The intersection design is to be in accordance with the RTA Road Design Guide.
- The minimum separation between Pat O'Leary Drive and the start of the diverge taper for the deceleration lane into the service station is to be 20m.
- The intersection works for Stage 1 are to be completed prior to any physical work being undertaken at the proposed development.

Stage 2 intersection treatment:

• Based on the traffic generation figures provided, the intersection of Pat O'Leary Drive and the Great Western Highway is to be upgraded to provide a signalised intersection for Stage 2 of the development. The intersection design is to be in accordance with the RTA Traffic Signal Design Manual and RTA Road Design Guide. The intersection treatment for Stage 2 is to be completed prior to occupation of the premises.

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General:

- A copy of construction plans for the proposed roadworks is to be submitted to the RTA for approval. As the works are located on a highway, the developer is required to enter into a Works Authorisation Deed (WAD) with the RTA in order to carry out the proposed work. Any new pavement forming part of or joining the highway is subject to RTA approval which will form part of the WAD.
- The intersection treatment for Stage | and 2 is required to cater for the turning paths of the largest vehicle anticipated to access the site; this is to be demonstrated on design plans.
- The intersection treatment for Stage 1 and 2 is to retain a minimum width of 6.5m on the Highway for traffic to manoeuvre around a vehicle waiting to turn right into property accesses.
- Pedestrian facilities are to be located within the road reserve, not within private property.
- Road Safety Audits are to be conducted at the design and pre-opening stages in accordance with *Austroads (2009) Guide to Road Safety Part 6: Road Safety Audit.* The developer is responsible for mitigating deficiencies identified within the audit report.
- The application provides turning paths for a 12.5m rigid as the largest class of vehicle to service the McDonalds development, therefore access by vehicles larger than 12.5m will not be permitted.
- Any proposed landscaping, signage and fencing are not to impede sight lines of traffic and/or pedestrians within the development, or when entering and leaving the development.
- All activities including loading and unloading of goods associated with the development must be carried out on site. All vehicles including delivery vehicles are to enter and exit the site in a forward direction.
- Environmental Assessment of roadworks required as a result of the development will be required to be included in the Part 4 assessment by Bathurst Regional Council.
- A Road Occupancy Licence is required prior to any works commencing within 3m of the travel lanes of the Great Western Highway. This can be obtained by contacting Mr Paul Maloney on (02) 6861 1686. Submission of a traffic control plan is required as part of this licence.
- All works associated with the development are to be at no cost to the RTA.

Please forward a copy of Council's determination on the proposal (conditions of consent if approved) to the RTA at the same time it is sent to the developer.

Should you have any further enquiries please contact Fiona Francis on 02 68611688.

Yours faithfully

Adendary

Tony Hendry Road Safety and Traffic Manager Western

1 9 MAR 2010

File 30.5395 99/2-2

Geoff Hush Capex / Facilities Manager Devro Pty Ltd PO Box 659 BATHURST NSW 2795

Dear Geoff

	BATHURST REGIONAL COUNCIL
	1 2 FEB 2019
L	REF 2009 0394 023

R T A

DA 2009/0394 Proposed bulky goods outlet, Pat O'Leary Drive Kelso

CO

I refer to your letter dated 15 January 2010 to Richard Denyer of Bathurst Regional Council. A copy was also sent to Tony Hendry of the Roads and Traffic Authority (RTA) at the Parkes Regional Office. You raised a number of issues regarding the proposed development adjacent to your western boundary. Of particular concern to you is your access to the Great Western Highway.

The RTA is investigating a project to upgrade the Great Western Highway in the vicinity of your property at Kelso. Currently this project is not funded for construction however, the RTA is developing concept plans to be in a position to provide adequate advice to adjoining developers and to proceed to construction quickly once funding is secured. The RTA has not specifically investigated the impacts that this project might have on the access to Devro and has not discussed this issue with any other party.

In our letter to council concerning the proposed bulky goods development, the RTA included comment relating to your access and its possible relocation. The intent of this comment was to identify and notify council of issues relating to land that the RTA may require in the future and to ensure that the RTA is included in further discussions regarding the proposed development. The RTA will not be in a position to determine if this land is required until options have been developed and consultation has been carried out with Devro and other stakeholders. The RTA does not intend to discuss the issue of your access at any meetings with the adjacent developers or any other external party not directly involved with the proposed highway upgrading. The RTA will seek to preserve options for possible future acquisition of land at a number of locations within the proposed development site that may potentially be required by any future highway upgrade.

I wish to assure you that the RTA will consult with Devro and all other stakeholders once adequate options have been developed. If at any stage you have any questions or would like to discuss anything associated with this project please feel free to contact me on phone (02) 6861 1654 or mobile 0417 585 816.

A copy of this letter has been sent to Richard Denyer of Bathurst Regional Council for council's information,

Yours sincerely

/Doug Moore Assistant Development Planner Western

10 FEB 2010

Roads and Traffic Authority 118616-480 (55 255

51-55 Currajong Street PARKES NSW 2870 PO Box 334 PARKES NSW 2870 DX 20256 www.rta.nsw.gov.au | 13 17 32

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Attention: Richard Denyer Bathurst Regional Council

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Roads and Traffic Authority ABN 64 480 155 255

51-55 Currajong Street PARKES NSW 2870 PO Box 334 PARKES NSW 2870 DX 20256 www.rta.nsw.gov.au | 13 17 82

RTA

For your information - copy of letter sent. Regards

Mayor DEPB

LM

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ĺ	BATHURST REGIONAL COUNCIL
	1 5 DEC 2009
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8th December 2009

Mr D Shaw Director Environmental Planning & Building Services Bathurst Regional Council

Dear Mr Shaw,

<u>Re: Development Application 2010/0286</u> <u>Premises: Lots 4 and 5, DP 838537 -1 Pat O'Leary Drive Kelso</u>

The aforementioned Development Application is being referred back to Council following the below listed guidelines as per "Safer by Design" information. The Crime Prevention Officer has made relevant comments regarding some safety and security issues.

The following information is supplied with the basic application floor plans and written specifications suppled by Bathurst Regional Council, used as a resource for advice given.

As the Crime Prevention Officer I am available for consultation during the construction process for any issues that may arise in relation to Crime Prevention.

DISCLAIMER

New South Wales (NSWP) has a vital interest in ensuring the safety of members of the community and their property. By using the recommendations contained in this evaluation, any person who does so acknowledges that:

- 1. It is not possible to make areas evaluated by NSWP absolutely safe for members of the community or their property.
- 2. It is based upon information provided to NSWP at the time the evaluation was made.
- 3. The evaluation is a confidential document and is for the use by the consent authority or organisation referred to on page 1(one) only.
- 4. The contents of this evaluation/report are not to be copied or circulated than for the purposes of the consent authority/organisation referred to on page 1(one).

NSW Police hopes that by using the recommendations contained in this document criminal activity will be reduced and the safety of the community and their property will be increased. However, it does not guarantee that all risks have been identified, or that the area evaluated will be free from criminal activity if its recommendations are followed.

In April 2001 the NSW Minister for Planning introduced Crime Prevention guidelines to Section 79C of the Environmental Planning and Assessment Act, 1979. These guidelines require consent authorities to ensure that development provides safety and security to users and the community. 'If a development presents a crime risk, the guidelines can be used to justify modification of the development to minimise crime risk, or, refusal of the development on the grounds that crime risk cannot be appropriately minimised'.

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The NSW Police Safer by Design Crime Risk Evaluation process is based upon the Australian and New Zealand Risk Management Standard ANZS4360:19999. It is a contextually flexible, transparent process that identifies and quantifies crime hazards and location risks. Evaluation measures include crime likelihood (statistical probability), consequence (crime outcome), and distribution of reported crime (hotspot analysis), socio-economic conditions (relative disadvantage) situational hazards and crime opportunity.

Crime Prevention through Environmental Design (CPTED)

Crime Prevention through Environmental Design (CPTED) is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients from intersecting in time and space.

Predatory offenders often make cost-benefit assessments of potential victims and locations before committing crimes. CPTED aims to create the reality (or perception) that the costs of committing crimes are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

- Maximise risk to offenders (increasing the likelihood of detection, challenge and apprehension).
- Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime).
- Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards) and
- Minimise excuse making opportunities (removing conditions that encourage/facilitate rationalisation of inappropriate behaviour).

CPTED employs four key strategies. These are surveillance, access control, territorial reinforcement and space/activity management.

Site Description

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The proposed development is a retail development comprising a Service Station, KFC and McDonald's food outlet, bulky goods retailing and car parking spaces. The development is the property of Paul's Retail Property Pty Ltd. The development will be located within an area of medium density residential to the north, comprising public and private housing. Bulky goods and retail are located to the western and eastern area of the proposed development. The development will be located on the site of a disused plant hire facility and other small buildings which will be demolished to make way for the development. It is proposed that KFC and McDonald's will open for 24 hour trading.

Site Risk Rating

After conducting a safer by Design Evaluation for this development the crime risk rating has been identified on a sliding scale of low, moderate and high. The rating for this development has been identified as **High Crime Risk**

With this in mind the following Crime Prevention Through Environmental Design (CPTED) treatments should be considered for the development in order to reduce opportunities for crime. The following issues have been identified and are listed under the following headings:

<u>Territorial Reinforcement</u> <u>Environmental Maintenance</u> <u>Activity/Space Management</u> <u>Access Control</u>

Under each heading will be suggested treatments/considerations and recommendations where appropriate.

1.Surveillance

Natural surveillance is achieved when normal space users can see and be seen by others. This highlights the importance of building layout, orientation and location; the strategic use of design, landscaping and lighting. Natural surveillance is a by product of well planned m, well-designed and well- used space. Technical/mechanical surveillance is achieved through mechanic/ electronic measures such as CCTV, help points and mirrored building panels. Technical/mechanical surveillance is commonly used as a "patch" to supervise isolated, higher risk locations. Formal (or organised) surveillance is achieved through the tactical positioning of guardians. The example would be the use of on-site supervisors at higher risk locations.

General comments in Design for surveillance.

- Buildings facing 'outwards' towards public and semi public areas provide natural surveillance and informal supervision.
- Entry points should be designed so as to maximise surveillance opportunities to and from these areas from both inside and as well as outside.
- The placement and orientation of common entry areas should maximise opportunities for natural supervision by staff and patrons.
- Laminated glass walls and windows facilitate supervision of common entry areas.

Concealment Opportunities: The following are identified areas with the potential for concealment/criminal activity:

- The perimeter/boundary of the site to the east, south and west.
- On the northern boundary wall, designated as vehicle delivery egress.
- Throughout the car park, particularly to the south, this would not have the natural surveillance after dark.
- The rear of the Service Station in the north- west corner.

<u> Treatment – Surveillance.</u>

- Surveillance equipment can enhance the physical security of the commercial site and assist in the identification of people involved in anti-social or criminal behaviour.
- CCTV cameras should be strategically located around the restaurant areas.
- CCTV cameras to the south east of the car park area due to minimal natural surveillance by staff.
- CCTV cameras should also be strategically placed around the Service Station and other retail outlets.
- Consideration should be given to ensuring adequate security personnel are employment to conduct patrols and ensure coverage, especially during the busier periods of Friday and Saturday nights.

Lighting and Technical Supervision.

There is a proven correlation between poor lighting, fear of crime, the avoidance of public places and crime opportunity (Painter 1997). Good lighting can assist in increasing usage of an area. There is no information with the plans, which were reviewed to indicate the lighting proposals for the development.

General comments in design for lighting.

• Lighting should meet the minimum Australian and New Zealand Lighting standard 1158.1requires lighting engineers and designers to consider crime risk and fear when selecting lamps and lighting levels for public streets, car parks and pedestrian access.

<u> Treatment - Lighting.</u>

- It is recommended that pathways, car parks and other related areas be appropriately lit.
- Lighting in the drive way and parking areas should be sufficient to enable sight lines for pedestrian and vehicles.
- Lights should be vandal resistant and projected away from buildings towards pathways and gates not towards windows and doors.
- Illumination of signage particulary noting public access areas at night time.
- Luminaries(light covers) should be vandal resistant
- Appropriate and adequate lighting should be considered in conjunction with CCTV cameras.
- Lighting should be included at locations along the heavy vehicle access road.
- A lighting maintenance policy should be established for the entire complex including outdoor areas, where vehicle and pedestrian access is indicated. Damaged or vandalised lights should be repaired/replaced within 24-48 hours of notification of damage.

3. Territorial Re-enforcement

Criminals rarely commit crime in areas where the risk of detection and challenge are high. People who have guardianship or ownership of areas are more likely to provide effective supervision and to intervene in crime than passing strangers. Effective guardians are often ordinary people who are spatially "connected" to a place and feel an association with, or responsible for it. Territorial enforcement uses actual and symbolic boundary markers, spatial legibility and environmental cues to 'connect 'people with space, to encourage communal responsibility for public and facilities, and to communicate to people where they should/ should not be and what activities are appropriate.

General comments in design for Territorial re-enforcement.

• The boundaries of the development are reasonably well defined and re-enforced with a landscape design depicting the boundaries of the proposed development.

<u> Treatment – Territorial Re-enforcement.</u>

Signage:

- Consider signage that clearly depicts way finding for pedestrians. Pedestrian crossings/access appear to be adequately defined.
- Gates to all loading docks should be locked when not in use.
- Consider "Trespassers will be prosecuted" signage clearly visible around entrance/exit ways.
- Speed limit signage within the heavy vehicle access route must be clearly defined.
- All entry and exits points for all businesses must be clearly visible throughout.

- Clearly define pedestrian access/and road markings.
- Large signage to indicate entry/exit points.
- No rollerblading, skateboarding, bicycles signage.
- "One way" signage where appropriate.
- "Lock it or lose it" signage in car park.

4. Environmental Maintenance.

All space, even well planned and well-designed areas need to be effectively used and managed to maximise community safety. Places that are infrequently used are commonly abused. There is a high correlation between urban decay and the fear of crime. Research indicates that run-down areas impact perceptions of fear within the community, community confidence to use public space and ultimately, crime opportunity. Vandalism can induce fear, particularly amongst women and the elderly.

<u>Treatment – Environmental Maintenance.</u>

A maintenance policy needs to include:

• A graffiti management plan needs to be incorporated in the maintenance plan for the development. Research has shown that the most effective strategy for reducing graffiti attacks is the quick removal of such material generally within a 24 hour period. Graffiti resistant materials should be used throughout the complex.

The maintenance plan should also include the following:

- Lighting.
- Vandalism.
- Landscaping.
- Rubbish bins.

Landscaping can be used to enhance the appearance of the development and assist in reducing opportunities for vandalism. However, landscaping can provide concealment and entrapment areas for people involvement in criminal behaviour. Plants that block natural sight lines lessen natural surveillance.

In regards to the treatment options for landscaping the following should be considered.

- Consider mature vegetation of such types as to reduce concealment around walkways and entrance points to the buildings.
- When selecting and maintaining vegetation, consideration should be given to the possibility of areas becoming entrapment sites on the maturity of the vegetation.
- A safety convention is to have 3-5 metres of cleared space on either side of paths. Pedestrians generally feel safer on wider pathways.
- Shrubs on average should not be above 900mm in height.
- The maintenance program should be developed to reduce the likelihood of landscaped areas becoming overgrown and unkempt in appearance.

5. Activity and Space Management.

Space/activity management strategies are important ways to develop and maintain natural community control. Space management involves the formal supervision, control and care of the development. All space, even well planned and well-designed areas need to be effectively used and maintained to maximise community safety. Places that are infrequently used are commonly abused. There is a high correlation between urban decay, fear of crime and avoidance behaviour.

This development site is located in a predominately Department of Housing area interspersed with private residential dwellings. The nearest licensed premises is the Kelso Hotel situated approximately one kilometre west of the development at the corner of Boyd Street and Sydney Road Kelso. The area

in general has a relatively high crime risk rating. Such incidents as malicious damage to property, break and enter and anti social behaviour are common occurrences in the nearby vicinity of Sydney Road Kelso and north to Bannerman Crescent Kelso. Over time several incidences of steal motor vehicle have been reported in this area and the adjoining industrial sites. The risk of increased criminal activity such as vandalism to motor vehicles and stealing must be acknowledged.

<u> Treatment – Activity/Space Management.</u>

At present the only commercial/retail activity operating on a 24 hour basis in the near vicinity is the Go 24 service station located one kilometre to the west of the proposed development. Historically there have been incidences of armed robberies and stealing at these premises.

There is considerable activity in the Kelso housing estate at night time and consideration should be given to an increase in criminal activity within the area. Such premises encourage persons to be within the area during hours of darkness, which will be greatly increased with the "typical" congregation of pedestrians and vehicles which tend to congregate about McDonalds Restaurants.

Going 24 hours encourages meeting place mentality of both local residents and those cruising the suburbs. This will increase criminal activity and anti-social behaviour.

- Consideration should be given for sufficient security personnel if such application is granted.
- It is advised that regular security patrols be implemented and particular attention be given to the patrol of the car park at the rear of the premises.

6.Access Control

There is limited information to indicate the access control treatments in and around the development.

Access control treatments restrict, channel and encourage people and vehicles into, out of and around the development. Way-finding, desire-lines and formal/informal routes are important crime prevention considerations.

Barriers help to restrict, channel and encourage the movement of people and vehicles into, and out of designated areas. Therefore increasing the time and effort required to commit criminal activity. Natural access controls include the tactical use of landforms and waterway features, design measures including building configuration: formal and informal pathways, landscaping, fencing and gardening. Technical/mechanical access control includes the employment of security hardware and formal (or organised) access control includes on-site guardians such as employed security officers.

<u>Treatment – Access Control.</u>

- A maintenance program that trims tree branches/hedges so that natural ladders to the Commercial premises are minimised and sightlines are preserved.
- Speed bumps and corrugations introduced into car parks/access ways reduce the likelihood of attracting bike riders and skateboarders also reducing vehicle speed and access.
- Consider blocking off the roadway access to McDonalds and KFC after trading hours to minimise vehicular access throughout the car park where surveillance is limited.
- Consider using polycarbonate/impact resistant films to all glass areas. This will greatly reduce the opportunity for smash and grabs and malicious damage to the retail/food outlets.
- Fire exit doors to the development should also be fitted with single cylinder locksets (Australia and New Zealand standard) to restrict unauthorised access to the properties.
- Ensure all gates to loading docks on the premises are locked. This prevents unauthorised access.

- Ensure all garbage bins, including the car parks are contained and secured so that they cannot be damaged or used as projectiles to damage other property.
- Bollards or barriers can be installed to reduce the opportunity for ram-raid attacks.
- Counters should be designed to reduce the opportunity for assault of staff and unauthorised access. Signage should be considered and clearly displayed to restrict access to areas behind the counter.
- Make sure staff have adequate sightlines throughout the restaurant areas.
- Limit the number of entry and exit points to restrict unauthorised access.
- Ensure all staff are trained in OH&S and emergency procedures such as armed hold-ups to minimise impact on employees.

<u>Noise</u>

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Potential for excessive noise from intercom, beeping horns, engine and exhaust noise of cars queuing at the site and when leaving may develop and cause residents concern in a 24 hour operation.

Traffic Flow

It is noted that access and egress roadways will be shared by vehicles and heavy haulage carriers servicing the site.

• Ensure vehicular access is available for emergency service vehicles.

It is recommended that this Development Application be referred to the Bathurst Regional Council Traffic Committee for consideration and comment, if not already approved by that Body.

Conclusion.

The purpose of this assessment is to enhance the safety of members of the community and their property with consideration of preventing and/ or minimising any conflict between proposed users and surrounding landholders.

Should the DA proposal be approved by Bathurst Regional Council, further consideration should be given to including the NSW Police assessment suggestions.

The desired outcome is improved safety for patrons and staff and the protection of property. Where possible the perspective of building design, including interior and exterior layout, security measures, lighting and landscape should all be considered.

Information from other Commands shows that there is a marked increased risk of robbery and other violent offences occurring with the operation of 24 hour fast food restaurants. Historically offences such as anti-social behaviour, offensive conduct and assaults are common place at venues of this nature.

In considering the approval of this Development Application, Council may wish to place a condition on "24 hour trading" "That 24 hour trading be reviewed every 6 months to gauge and monitor any increase in criminal activity/anti social behaviour in the area." Local Police and Council may then review and address these issues at their bi-monthly Crime Prevention Committee Meeting.

We would like to thank you for the opportunity of inspecting the plans for this development and should you require further information on the subjects mentioned with this report feel free to contact Senior Constable Sue Rose, Crime Prevention Officer, Chifley LAC, Phone 02- 63328699.

We would also appreciate feedback from our recommendations outlined in this assessment and whether any of our recommendations were implemented.

bre Sue Rose

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Senior Constable Crime Prevention Officer Chifley Local Area Command.





CHIFLEY LOCAL AREA COMMANDER'S OFFICE

Bathurst Police Station 139 Rankin Street Bathurst NSW 2795 6332.86.9.9. Tel: (02) 6332 6677 75620 Fax: (02) 6332 6611 75617 6332.8676

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EV#RC Devro Pty Ltd

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ABN: 70 050 095 755 P.O Box 659, Bathurst NSW 2795 Tel: (02) 6330 8200 Fax: (02) 6330 8261

15th January 2010

The Town Planner Bathurst Regional Council Corner Russell & William Streets Bathurst NSW 2795 Attention: Mr Richard Denyer

BATHURST REGIONAL COUNCIL 1 8 JAN 2010 REF 2010 /2086-02/c

Reference: DA 2009/0394 Proposed Bulky Goods Outlet, Pat O'Leary Drive Kelso

Dear Richard,

This letter follows verbal communications in December, to raise our concerns about the traffic impacts of the development.

Also, we have received a copy of an RTA letter dated 4th December 2009 authored by Tony Hendry, Road Safety and Traffic Manager, Western. I would like to express our extreme concern at the following statement:

"As part of the Kelso project, the RTA is considering relocating the access to the Devro factory to a location with access onto Pat O'Leary Drive."

Devro's position is that we will object to any plans for access relocation in the strongest possible manner.

We believe that the direct access to the Great Western Highway from both the east and western approaches is critical to our business, and without it future plans for our own development would be compromised. We also believe that any change would adversely impact upon the value of our property and hinder our day-to-day operations.

The fact that this is even being discussed without involvement or consultation with Devro Pty Ltd is a major cause for concern. We request that Devro be involved in any future discussions concerning our highway access.

Can you please forward our point of view when meeting with the Developer and the RTA.

Yours faithfully,

Geoff Hush Capex / Facilities Manager Cc Devro: G McGilchrist, C Faulkner, RTA: T Hendry



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With compliments

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Geoff Hush Capex/Facilities Manager

Devro Pty Ltd 139 Sydney Road PO Box 659 Bathurst NSW 2795 Australia Phone: +61 (0)2 6330 8200 Fax: +61 (0)2 6330 8261 Mobile: +61 (0)427 205 204 geoff.husn@devro-casings.com

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NSW Office of Water

BATHURST REGIONAL COUNCIL
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Contact: Melissa Orr Phone: (02) 6841 7416 Fax: (02) 6884 0096 Email: <u>melissa.orr@dnr.nsw.gov.au</u>

File: DA2010/0286

Daniel Dwyer Bathurst Regional Council Private Mail Bag 17 Bathurst NSW 2795

7th December 2009

Dear Daniel

Subject: Development Application 2010/0286 – Service Centre Lots 4 & 5 DP838537, 1 Pat O'Leary Drive, Kelso

I refer to the Development Application received by the NSW Office of Water (NOW) on the 13th November 2009. NOW has examined the proposal and it has been decided that additional information is required to determine if General Terms of Approval will be issued. Council is requested to stop the clock. The following comments and request for additional information are provided:

COMMENTS

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- Enclosed please find departmental guidelines for controlled activities in relation to 'Riparian corridors', Outlet structures' and 'In-stream works'. Further information on the Departments guidelines for controlled activities can be obtained from the departments website <u>http://www.naturalresources.nsw.gov.au/water/controlled_activity.shtml</u>
- The guidelines provide for the design and construction of any works within a watercourse to be as natural as possible and to provide for minimal disturbance within the riparian corridor. The Department is of the opinion that the works proposed under the development application present a greater than acceptable risk to the hydrologic, hydraulic and geomorphic function of the watercourse.
- The Department acknowledges that rehabilitation of the watercourse will be beneficial and supports the method of cutting and painting weed species with herbicide. The Department does not support the removal of weed infestations by machine or hand removal where there is a potential for soil disturbance and bank instability.
- The department has concerns about the proposal to reconstruct the banks of the watercourse with fill and battering. The department is aware of the already existing erosion problems adjacent to and downstream of the proposed site and believes that

NSW Office of Water

Department of Environment, Climate Change and Water 209 Cobra Street Dubbo NSW 2830 P O Box 717 Dubbo NSW 2830 Telephone: (02) 68842560 International: +61 2 68842560 Facsimile: (02) 68840096 reconstruction works poses a greater risk to these already degradated areas. Rehabilitation and stabilisation of the existing bank through bank erosion control works and re-vegetation is recommended for the proposal. Rehabilitation should only propose to restore the creek to its natural profile.

- The subject watercourse is classified as a 3rd order or greater watercourse under the Strahler System of stream ordering. Departmental guidelines recommend a Core Riparian Zone (CRZ) width of 20 40 metres measured from the top of the high bank. The CRZ width is determined based on a merit assessment of the functionality of the watercourse. The subject site has little existing native vegetation and the site has been classified under the lowest priority of Category 3: Bank Stability and Water Quality (Riparian Corridor Management Studies) on the basis of its relative importance and future function within the catchment. The department therefore recommends a minimum CRZ width of 10 metres measured from the top of the high bank as identified in Appendix 4 of the Statement of Environmental Effects Site Survey Plan. This distance is required to protect the bank stability and water quality within the watercourse. Re-vegetation of this area with endemic native vegetation (including groundcovers, shrubs and trees) will be a condition of any approval if granted. No buildings or infrastructure will be permitted within this area.
- It is noted that the proposal includes landforming modifications within 40 metres of the creek. This has the potential to impact on floodplain flows and therefore the department seeks further information on landforming pre and post development. Any landforming changes within 40 metres should address pre and post construction hydraulic conditions to identify any impacts the proposal will have upstream and downstream of the proposal.
- The Department has concerns over any existing or potential impact the existing contamination may have on groundwater and surface water systems in the area. It also has concerns over the potential future contamination issues associated with the proposal to locate a service station in close proximity to the creek. It is recommended that monitoring bores be constructed to identify any existing contamination and for the purpose of future monitoring of the site. One monitoring bore should be constructed above the site of contamination and monitoring bores should be placed between the site of contamination and the creek at the rate of one per 100 metres along the length of the creek. All bores should be constructed to a depth of 10 12 metres. Please be advised that bore licences will be required prior to construction of the monitoring bores.
- Any discharge into the creek is to be through an outlet structure designed in accordance with Department guidelines and details of this design should form part of the proposal.
- The proposal mentions the irrigation of plantings under the vegetation management plan. Further information on the source of the proposed water supply should be provided.
- Discharge of on site water into the creek will require the appropriate permit from the Environment Protection Agency (EPA).
- Council should ensure that the proponent is consistant with Department of Environment, Climate Change and Water guidelines for Contaminated Lands <u>http://www.environment.nsw.gov.au/clm/index.htm</u>, and Underground Petroleum Storage Systems <u>http://www.environment.nsw.gov.au/clm/upss.htm</u>.

NSW Office of Water Department of Environment, Climate Change and Water 209 Cobra Street Dubbo NSW 2830 P O Box 717 Dubbo NSW 2830 Telephone: (02) 68842560 International: +61 2 68842560 Facsimile: (02) 68840096

Further requirements

- The Department recommends that the proposal be amended to incorporate the recommendations of the Department and supply to the Department information on:-
 - > A revised weed removal process,
 - Identify areas of erosion and proposed rehabilitation and stabilisation through bank erosion control works and re-vegetation to restore the creek to its natural profile,
 - Supply amended plans that provide for a 10 metre CRZ measured from the top of the high bank and showing that no infrastructure is located within the CRZ,
 - Provide details of landforming requirements within 40m of the creek. This is to include pre and post landform grades and example cross-sections,
 - Identification of the 1 in 100 year flood levels,
 - Pre and post assessment of the impact the proposed landforming will have on the distribution of overland flows and floodwaters,
- Supply storm water outlet design plan and details including intended scour protection,
- Details of contruction details of monitoring bores and results of water quality analysis to identify any groundwater contamination issues,
- Details of water supply for irrigation of vegetated buffer.

Should further information or clarification be required please do not hesitate to contact myself on (02) 6841 7416.

Yours sincerely

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Melissa Orr Licensing Officer Licensing North

NSW Office of Water Department of Environment, Climate Change and Water 209 Cobra Street Dubbo NSW 2830 P O Box 717 Dubbo NSW 2830 Telephone: (02) 68842560 International: +61 2 68842560 Facsimile: (02) 68840096

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February 2008

Guidelines for controlled activities **Outlet structures**

This guideline relates to the design of stormwater outlets and spillways from infrastructure (including roads, buildings, constructed basins/wetlands, swales or other drainage works) into a watercourse or waterfront land.

Controlled activities carried out in, on or under waterfront land are now regulated by the *Water Management Act 2000* (WMA). The Department of Water and Energy is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, ie the bed and a distance inland of 40 metres from a river, lake or estuary.

This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

The design and construction of stormwater outlets should aim to be 'natural', yet provide a stable transition from a constructed drainage system to a natural flow regime (see Figure 1). The design and construction footprint and extent of disturbances within the riparian corridor should be minimised while still achieving the intended discharge function (refer to the Department's *Guidelines for controlled activities – Riparian corridors*).

All ancillary drainage infrastructure, such as oil/grease interceptors, sediment & litter traps, constructed wetlands and detention basins, should be located outside the riparian corridor. Run-off should be of appropriate water quality and quantity before discharging into a riparian corridor or watercourse. Appropriate rehabilitation of disturbed areas following the installation of outlet structures should adequately restore the integrity of the riparian corridor.



Figure 1. 'Natural' outlet structure.



The design and construction of outlet structures should consider, but not be limited to, the following design principles.

- Define the infrastructure route and identify the specific point of discharge. Ideally select a route along an existing cleared or disturbed area that avoids trees (preferably beyond their drip line).
- Choose a stable section of the stream for the discharge point, preferably mid-way between bends. Alternatively, if appropriate, incorporate outlet discharge points into disturbed/eroded areas which are to be stabilised or rehabilitated.
- Minimise construction footprint and ensure that disturbance to soil and vegetation within the riparian corridor is kept to the minimum extent required.
- Assess changes to the hydrology of the receiving watercourse to demonstrate that there is no detrimental impact on discharge volumes and channel velocities. Discharge velocities and flow rates should mimic 'natural' flows and not initiate erosion.
- Discharge from an outlet should not cause bed or bank instability.
- Protect the bed of the watercourse below the outlet, if not bedrock, or if bed scour is likely. Consider bank material and outlet 'jet' effect and protect the opposite streambank if required.
- Point outlet structure and direct discharge downstream.
- The outlet should not protrude beyond the streambank but tie-in with the adjoining bank alignment.
- Calculate tractive stresses generated from outlet discharges and from bank full discharges to determine rock size requirements for the structure.
- Rock rip-rap is the preferred material to provide a 'natural' outlet. Rip-rap should extend for the full
 extent of the design scour apron and adjoining flanks/streambank. Rip-rap should be appropriately
 keyed in and cut-off trenches provided.
- Rip-rap should consist of durable, angular run-of-quarry rock placed over a bedding layer of angular cobbles over geotextile. Where possible, incorporate vegetation, eg. sedges and rushes, into scour management (Figure 1).
- Grade the scour apron to the bed level of the watercourse, or just below any permanent water created by any stable feature, eg. a rock bar, within the watercourse.
- Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation/regeneration, mulching, weed control and maintenance.

Figure 2. Rip-rap outlet structure with vegetation growing in voids between rocks.


When seeking approval to construct outlet structures, information detailing the above is required for the Department to assess the works.

Additional information will generally also be required and may include but not be limited to:

- · detailed design drawings of outlet structures
- · cross-sections and long-section of the stream
- hydrology report detailing pre and post construction hydrology of the channel
- a Vegetation Management Plan (VMP) prepared in accordance with the Department's Guidelines for controlled activities Vegetation Management Plans
- a Site Management Plan incorporating the schedule, sequence and duration of works, erosion and sediment controls, etc.
- costing of all works (ie. materials, labour) and stages of works (eg. outlet structure installation, rehabilitation).

Further information

If you require more information about controlled activity approvals please contact your local Departmental office or visit our website www.dwe.nsw.gov.au

Important notes

DWE has prepared these guidelines in good faith. In the case of any inconsistency between the guidelines and the controlled activity approval or legislation, the controlled activity approval or legislation will prevail to the extent of that inconsistency.

Nothing in these guidelines is taken to authorise a controlled activity. These guidelines are designed to provide information to assist in the design of any development or work that constitutes a controlled activity and the preparation of an application for a controlled activity approval. Users are advised to seek professional advice and to refer to the legislation and any relevant approvals, as necessary, before taking action in relation to any matters covered by the guidelines.

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Water Management Act 2000

Guidelines for controlled activities **Riparian corridors**

Controlled activities carried out in, on or under waterfront land are now regulated by the *Water Management Act 2000* (WMA). The Department of Water and Energy is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, ie. the bed and a distance inland of 40 metres from a river, lake or estuary.

This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. Riparian corridors:

- provide bed and bank stability and reduce bank and channel erosion
- protect water quality by trapping sediment, nutrients and other contaminants
- provide a diversity of habitat for terrestrial, riparian and aquatic flora and fauna species
- provide connectivity between wildlife habitats
- allow for conveyance of flood flows and control the direction of flood flows
- provide an interface between developments and waterways.

The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions in normal seasons and also in extreme events.

When determining an appropriate width for a riparian corridor and how much riparian vegetation should be protected or re-established on a site, the following three riparian corridor zones (Figure 1) should be considered.

- 1. A **Core Riparian Zone** (CRZ) is the land contained within and adjacent to the channel. The Department wil seek to ensure that the CRZ remains, or becomes vegetated, with fully structured native vegetation (including groundcovers, shrubs and trees). The width of the CRZ from the banks of the stream is determined by assessing the importance and riparian functionality of the watercourse (Table 1), merits of the site and long-term use of the land. There should be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the CRZ.
- A Vegetated Buffer (VB) protects the environmental integrity of the CRZ from weed invasion, micro-climate changes, litter, trampling and pollution. There should be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the VB. The recommended width of the VB is 10 metres but this depends on merit issues.
- 3. An Asset Protection Zone (APZ) is a requirement of the NSW Rural Fire Service and is designed to protect assets (houses, buildings, etc.) from potential bushfire damage. The APZ is measured from the asset to the outer edge of the vegetated buffer (VB). The APZ should contain cleared land which means that it can not be part of the CRZ or VB. The APZ must not result in clearing of the CRZ or VB. Infrastructure such as roads, drainage, stormwater structures, services, etc. can be located within APZs.





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The Department recommends that a vegetated CRZ width based on watercourse order¹ be considered in the design of any controlled activity (see Table 1). However, the final CRZ width will be determined after a merit assessment of the site and consideration of any impacts of the proposed activity. CRZ widths should be measured from the top of the highest bank and on both sides of the watercourse.

Types of watercourses	CRZ width
any first order ¹ watercourse and where there is a defined channel where water flows intermittently	10 metres
 any permanently flowing first order watercourse, or any second order¹ watercourse and where there is a defined channel where water flows intermittently or permanently 	20 metres
any third order ¹ or greater watercourse and where there is a defined channel where water flows intermittently or permanently. Includes estuaries, wetlands and any parts of rivers influenced by tidal waters.	20 – 40 metres²

Table 1. Recommended CRZ widths.

¹ as classified under the Strahler System of ordering watercourses and based on current 1:25 000 topographic maps ² merit assessment based on riparian functionality of the river, lake or estuary, the site and long-term land use.

Further information

If you require more information about controlled activity approvals please contact your local DWE office or visit our website www.dwe.nsw.gov.au

Important notes

DWE has prepared these guidelines in good faith. In the case of any inconsistency between the guidelines and the controlled activity approval or legislation, the controlled activity approval or legislation will prevail to the extent of that inconsistency.

Nothing in these guidelines is taken to authorise a controlled activity. These guidelines are designed to provide information to assist in the design of any development or work that constitutes a controlled activity and the preparation of an application for a controlled activity approval. Users are advised to seek professional advice and to refer to the legislation and any relevant approvals, as necessary, before taking action in relation to any matters covered by the guidelines.

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Guidelines for controlled activities In-stream works

This guideline relates to the design and construction of works within a watercourse and/or riparian corridor. Such works may include enhancements of the watercourse, rehabilitation, channel modifications, bed controls, pipe and cable trenching and laying, etc.

Controlled activities carried out in, on or under waterfront land are now regulated by the *Water Management Act 2000* (WMA). The Department of Water and Energy is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, ie the bed and a distance inland of 40 metres from a river, lake or estuary.

This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

The design and construction of works and activities within a watercourse and/or the adjoining riparian corridor should aim to be as 'natural' as possible. A watercourse 'rehabilitation' design philosophy rather than a 'construction' philosophy should be applied.

Consultation with relevant government agencies at the concept stage (of development) and during the design phase is recommended so that good outcomes can be identified, planned for and achieved.

The design and construction footprint, and the extent of disturbances within the riparian corridor, should be minimised while achieving the desired function and outcome. All ancillary infrastructure such as asset protection zones (APZ), utility easements, detention basins and water quality control structures, roads, paths/cycle ways, etc. should be located outside of any riparian corridor. Runoff should be of appropriate water quality and quantity before discharging into a riparian corridor or watercourse. Appropriate rehabilitation of disturbed areas following the works should restore the integrity of the watercourse and riparian corridor.

In order to minimise the impacts of in-stream works on the hydrologic, hydraulic and geomorphic functions on a watercourse, all works and activities should be designed and constructed to maintain the integrity of the existing channel, as well as being sympathetic with the ecological values of the watercourse and its riparian corridor.

The design and construction of in-stream works should consider, but not be limited to, the following design principles:

- Identify the appropriate width of the riparian corridor in accordance with the Department's Guidelines for controlled activities Riparian corridors.
- The design and construction of in-stream works should consider the full width of the riparian corridor and riparian functions, including accommodating fully structured native vegetation.
- Identify options for works and show rationale for the selection of preferred options.
- The design and construction footprint and the proposed extent of disturbances to soil and vegetation within the riparian corridor should be minimised.
- Maintain or mimic existing or natural hydraulic, hydrologic, geomorphic and ecological functions of the watercourse. Demonstrate that the in-stream works will not have a detrimental effect on these functions.



- Maintain natural geomorphic processes; that is:
 - accommodate natural watercourse functions
 - establish natural bed and bank profiles, eg. meanders, chains of ponds, surface water pools and riffles, bed controls, etc.
 - allow for the movement of sediment and woody debris
 - do not increase scour and erosion of the watercourse bed or banks in any storm events
 - avoid locating works or structures on bends in the channel unless they are structures to restore stability
 - where existing bed degradation occurs, address bed degradation to protect structure and restore channel bed stability.
- Maintain natural hydrological regimes; that is:
 - accommodate site hydrological conditions, eg. maintain low flows
 - do not alter natural bank full or floodplain flows. Modifications to watercourses should be based on roughness coefficients that represent the 'natural' state including fully structured mature riparian vegetation.
 - do not change the gradient of the bed (except to address existing bed and bank degradation).
 - do not increase velocities by constricting flows.
- Protect against scour by designing and providing any necessary scour protection, eg. rock rip-rap and vegetation.
- Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation, mulching, weed control and maintenance in order to adequately restore the integrity of the riparian corridor.
- Monitor and maintain all in-stream works until suitably stabilised.

When seeking approval to construct in-stream works, information detailing the above is required for the Department to assess the works and authorise the activity if acceptable. Details of all in-stream works/ activities should be designed by suitably qualified persons.

Additional information will generally also be required and may include but not be limited to:

- Detailed design drawings of proposed works. Engineering certification may be required.
- Detailed design drawings which include a surveyed plan, cross sections (across the watercourse) and a long section of the watercourse, showing the proposed works relative to existing and proposed bed and bank profiles and water levels. The cross section is to extend to the landward limit of the identified riparian corridor.
- Report detailing pre and post construction hydraulic conditions. The report should address, bank full discharge, velocity, tractive force or sheer stress, afflux (Modified RTA method is acceptable), Froude and Manning 'n', relative to the proposed structure.
- Plans showing extent and designs of permanent bed and bank stabilisation works necessary for scour protection.
- Photographs of the site should be supplied and photo points should be identified for future monitoring and reporting purposes. The photo points should be identified by GPS coordinates or by survey particularly for large scale earthworks or extractive industries.
- A Vegetation Management Plan prepared in accordance with the Department's Guidelines for controlled activities – Vegetation Management Plans.
- A Site Management plan incorporating the schedule, sequence and duration of works, erosion and sediment controls, monitoring and reporting, etc.
- Costing of all works (ie materials, labour) and stages of works (eg. channel stabilisation, rehabilitation)
- Provide for a maintenance period of a minimum of two years after practical completion of each stage, depending on the extent and risk of the works or until suitably stable. Maintenance should include sediment and erosion control, replacement of any works/areas damaged or destroyed by flows and flooding or vandalism, and any other requirements necessary to ensure a naturalised stable watercourse system is functioning by the end of the maintenance period.
- Other relevant approvals eg development consent.

Further information

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If you require more information about controlled activity approvals please contact your local DWE office or visit our website www.dwe.nsw.gov.au

Important notes

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Nothing in these guidelines is taken to authorise a controlled activity. These guidelines are designed to provide information to assist in the design of any development or work that constitutes a controlled activity and the preparation of an application for a controlled activity approval. Users are advised to seek professional advice and to refer to the legislation and any relevant approvals, as necessary, before taking action in relation to any matters covered by the guidelines.

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The General Manager Bathurst Regional Council PMB 17 Bathurst NSW 2795 Contact: Jeanette Nestor Phone: 02 6841 7447 Fax: 02 6884 0096 Email: Jeanette.Nestor@dnr.nsw.gov.au

Our ref: 80 ERM2009/1190 Our file: 9052816 Your ref: DA2010/0286

Attention: Daniel Dwyer

Attention:

Dear Sir

24 March 2010

Re: Integrated Development Referral – General Terms of Approval DA2010/0286 - Service Station, Bulky Goods and food outlets Lots 4 & 5 DP838537, 1 Pat O'Leary Drive, Kelso

I refer to your recent letter regarding an Integrated Development Application (DA) proposal for the subject property. Attached, please find the NSW Office of Water's General Terms of Approval (GTA) for 'works' requiring a Controlled Activity Approval under the *Water Management Act 2000* (WMA), as detailed in the subject DA.

Although the Department is willing to issue GTA for the proposal, please note that the NSW Office of Water does not accept the proposed method of discharging stormwater to Raglan Creek. Specifically, the proposed 'dispersed overland flow' of water discharging from the settling basin and from the south-western diversion channel which does not provide a suitably controlled flow, and presents risk of erosion of the creek bank. The use of level spreaders in this case is not considered acceptable given the discharge of water to Raglan Creek. Alternatively, the Department would consider a piped outlet more appropriate, incorporating a geotextile and rip-rap bed prior to discharge into the creek (similar to the proposed outlet structure for the main overflow from diversion channel). Refer to the attached Guidelines for Controlled Activities – Outlet Structures for further information. It is noted that the proponent will be required to submit a revised design when applying for the Controlled Activity Approval.

Regarding the weed removal process, although removal of plants is not considered ideal if bank instability is caused, the proposed hand removal of some weeds as per the VMP will be considered acceptable by the Department provided that areas subject to manual weed removal are stabilised (eg with geotextile, jute mesh etc) by the end of each working day. Mechanical removal should be avoided. In addition, sediment fencing must be installed on the high bank of the creek and the lowest edge of the regeneration areas prior to weeding to ensure displaced topsoil and weed fragments are not washed into the creek during rainfall events. Sediment fencing must be maintained until the site is fully stabilised. The proponent will be required to provide an Erosion and Sediment Control Plan with the Controlled Activity Application, incorporating these measures. The Erosion and Sediment Control Plan is to be prepared in accordance with Landcom (2004) Soils and Construction, Volume 1 (4th edition).

Please note Council's statutory obligations under section 91A(3) of the *Environmental Planning and Assessment Act, 1979* (EPAA) which requires a consent, granted by a consent authority, to be consistent with the GTA proposed to be granted by the approval body.

www.water.nsw.gov.au | NSW office of Water is a separate office within the Department of Environment, Climate Change and Water 209 Cobra Street Dubbo NSW 2830 PO Box 717 Dubbo NSW 2830 Australia Tel (02) 68842560 Int + 61 2 68842560 Fax (02) 68840096 | www.water.nsw.gov.au | ABN 47 661 556 763

If the proposed development is approved by Council, the NSW Office of Water requests that these GTA be included (in their entirety) in Council's development consent. Please also note the following:

- The NSW Office of Water should be notified if any plans or documents are amended and these amendments significantly change the proposed development or result in additional 'works' on waterfront land (ie in or within 40 metres from top of highest bank of a watercourse, foreshore, or lake). Once notified, the NSW Office of Water will ascertain if the amended plans require review or variation/s to the GTA. This requirement applies even if the proposed 'works' are part of Council's proposed consent conditions and the 'works' do not appear in the original documentation.
- The NSW Office of Water should be notified if Council receives an application to modify the consent conditions. **Failure to notify may render the consent invalid.**
- The NSW Office of Water requests notification of any legal challenge to the consent.

Under Section 91A(6) of the EPAA, Council must provide the NSW Office of Water with a copy of any determination/s including refusals.

As a controlled activity (ie the 'works') cannot commence before the applicant obtains a Controlled Activity Approval, the NSW Office of Water recommends that the following condition be included in the development consent:

"The Construction Certificate will not be issued over any part of the site requiring a Controlled Activity Approval until a copy of the Approval has been provided to Council".

The attached GTA are not the Controlled Activity Approval. The applicant must apply (to the NSW Office of Water) for a Controlled Activity Approval after consent has been issued by Council but before the commencement of any 'works'.

Finalisation of a Controlled Activity Approval can take up to 8 weeks <u>from the date the NSW</u> <u>Office of Water receives all documentation (to its satisfaction)</u>. Applicants must complete and submit (to the undersigned) an application form together with any required plans, documents, the appropriate fee and security (ie bond, if applicable) and proof of Council's development consent.

Application forms for the Controlled Activity Approval are available from the undersigned or from the NSW Office of Water's website http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx

The NSW Office of Water requests that Council provide a copy of this letter to the applicant.

Yours Sincerely

MANStas

Jeanette Nestor Licensing Officer **NSW Office of Water** Licensing North



General Terms of Approval – for works requiring a Controlled Activity Approval under the Water Management Act 2000

Our Reference		80 ERM2009/1190	File No:	9052816		
Site Address		1 Pat O'Leary Drive, Kelso				
DA Number LGA		DA2010/0286 Bathurst Regional Council				
						Number
Plans, st	andards and guidel	ines				
1		Ferms of Approval (GTA) only appl documentation relating to DA2010/				
	(i) Site pl	an, map and/or surveys				
	(ii) Structu	ral design and specifications				
	(iii) Vegeta	ation Management Plan				
	(iv) Erosion and Sediment Control Plan					
	If the proposed of	s or modifications to the proposed controlled activities are amended on ny variations to these GTA will be r	r modified the NSW Off			
2	Prior to the commencement of any controlled activity (works) on waterfront land, the consent holder must obtain a Controlled Activity Approval (CAA) under the Water Management Act from the NSW Office of Water. Waterfront land for the purposes of this DA is land and material in or within 40 metres of the top of the bank or shore of the river identified.					
3	The consent hold	The consent holder must prepare or commission the preparation of:				
	(i) Amendments to Plans – Vegetation Management Plan, Erosion and Sediment Control Plan and Stormwater Discharge Design.					
4	All plans must be prepared by a suitably qualified person and submitted to the NSW Office of Water for approval prior to any controlled activity commencing. The following plans must be prepared in accordance with the NSW Office of Water guidelines located at www.dwe.nsw.gov.au/water_trade/rights_controlled.shtml					
		the NSW Office of Water guideline	s located at	nust be prepared in		
	www.dwe.nsw.go	the NSW Office of Water guideline	s located at	nust be prepared in		
	www.dwe.nsw.go (i) Vegeta	the NSW Office of Water guideline ov.au/water_trade/rights_controlled	s located at	nust be prepared in		
	www.dwe.nsw.go (i) Vegeta (ii) Riparia	the NSW Office of Water guideline ov.au/water_trade/rights_controlled tion Management Plans	s located at	nust be prepared in		

www.water.nsw.gov.au | NSW office of Water is a separate office within the Department of Environment, Climate Change and Water 209 Cobra Street Dubbo NSW 2830 PO Box 717 Dubbo NSW 2830 Australia Tel (02) 68842560 Int + 61 2 68842560 Fax (02) 68840096 | www.water.nsw.gov.au | ABN 47 661 556 763

Our Refer	ence	80 ERM2009/1190	File No:	9052816
Site Address DA Number LGA Number Condition		1 Pat O'Leary Drive, Kelso		
		DA2010/0286		
		Bathurst Regional Council		
Rehabilitat	ation and maintenance			
6	The consent holder must carry out a maintenance period of two (2) years after practical completion of all controlled activities, rehabilitation and vegetation management in accordance with a plan approved by the NSW Office of Water.			
7	The consent holder must reinstate waterfront land affected by the carrying out of any controlled activit in accordance with a plan or design approved by the NSW Office of Water.			
Reporting	requirements			
8	The consent holder must use a suitably qualified person to monitor the progress, completion, performance of works, rehabilitation and maintenance and report to the NSW Office of Water as required.			
Security de	posits			
9	The consent holder must provide a security deposit (bank guarantee or cash bond) - equal to of the cost of complying with the obligations under any approval - to the NSW Office of Water a when required.			
Access-wa	ys			
10	N/A			
11	The consent holder must not locate ramps, stairs, access ways, cycle paths, pedestrian paths or any other non-vehicular form of access way in a riparian corridor other than in accordance with a plan approved by the NSW Office of Water.			
Bridge, cau	seway, culvert	s, and crossing		
12	N/A			
13	N/A			
Disposal	I			
14	wash into the	older must ensure that no materials water body, or (iii) cause damage to ith a plan approved by the NSW Offic	river banks; are left on w	
Drainage an	d Stormwater			
15	flood flows to l	older is to ensure that all drainage w ow flow water level in accordance w ruct the flow of water other than in a	th a plan approved by th	ne NSW Office of Water; and
16		older must stabilise drain discharge ne NSW Office of Water.	points to prevent erosior	n in accordance with a plan
Erosion con	trol			
17	structures in a structures mus	older must establish all erosion and s ccordance with a plan approved by the st be inspected and maintained throu as been fully stabilised.	ne NSW Office of Water	. These works and

Our Reference		80 ERM2009/1190	File No:	9052816
Site Address		1 Pat O'Leary Drive, Kelso		
DA Number		DA2010/0286		
LGA		Bathurst Regional Council		
Number	Condition			
Excavatio	n			
18		lder must ensure that no excavation is undertaken on waterfront land other than in a plan approved by the NSW Office of Water.		
19	The consent holder must ensure that any excavation does not result in (i) diversion of any river (ii) bed or bank instability or (iii) damage to native vegetation within the area where a controlled activity has been authorised, other than in accordance with a plan approved by the NSW Office of Water.			
Maintainin	g river			
20	any controlled an hydraulic and ge	nsent holder must ensure that (i) river diversion, realignment or alteration does not result from trolled activity work and (ii) bank control or protection works maintain the existing river ic and geomorphic functions, and (iii) bed control structures do not result in river degradation an in accordance with a plan approved by the NSW Office of Water.		
21	N/A			
River bed	and bank protection	on		
22	The consent holder must clearly mark (with stakes using a GPS or peg out survey), protect and maintain a riparian corridor with a width of 10 metres measured horizontally landward from the highest bank of the river for the length of the site directly affected by the controlled activity in accordance with a plan approved by the NSW Office of Water.			
23	N/A			
Plans, star	dards and guideli	nes		
24	N/A			
25	N/A			
26	N/A			
27	N/A			
	ONDITIONS			



Guidelines for controlled activities Outlet structures

This guideline relates to the design of stormwater outlets and spillways from infrastructure (including roads, buildings, constructed basins/wetlands, swales or other drainage works) into a watercourse or waterfront land.

Controlled activities carried out in, on or under waterfront land are now regulated by the *Water Management Act 2000* (WMA). The Department of Water and Energy is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, ie the bed and a distance inland of 40 metres from a river, lake or estuary.

This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

The design and construction of stormwater outlets should aim to be 'natural', yet provide a stable transition from a constructed drainage system to a natural flow regime (see Figure 1). The design and construction footprint and extent of disturbances within the riparian corridor should be minimised while still achieving the intended discharge function (refer to the Department's *Guidelines for controlled activities – Riparian corridors*).

All ancillary drainage infrastructure, such as oil/grease interceptors, sediment & litter traps, constructed wetlands and detention basins, should be located outside the riparian corridor. Run-off should be of appropriate water quality and quantity before discharging into a riparian corridor or watercourse. Appropriate rehabilitation of disturbed areas following the installation of outlet structures should adequately restore the integrity of the riparian corridor.

Figure 1. 'Natural' outlet structure.





The design and construction of outlet structures should consider, but not be limited to, the following design principles.

- Define the infrastructure route and identify the specific point of discharge. Ideally select a route along an existing cleared or disturbed area that avoids trees (preferably beyond their drip line).
- Choose a stable section of the stream for the discharge point, preferably mid-way between bends. Alternatively, if appropriate, incorporate outlet discharge points into disturbed/eroded areas which are to be stabilised or rehabilitated.
- Minimise construction footprint and ensure that disturbance to soil and vegetation within the riparian corridor is kept to the minimum extent required.
- Assess changes to the hydrology of the receiving watercourse to demonstrate that there is no detrimental impact on discharge volumes and channel velocities. Discharge velocities and flow rates should mimic 'natural' flows and not initiate erosion.
- Discharge from an outlet should not cause bed or bank instability.
- Protect the bed of the watercourse below the outlet, if not bedrock, or if bed scour is likely. Consider bank material and outlet 'jet' effect and protect the opposite streambank if required.
- Point outlet structure and direct discharge downstream.
- The outlet should not protrude beyond the streambank but tie-in with the adjoining bank alignment.
- Calculate tractive stresses generated from outlet discharges and from bank full discharges to determine rock size requirements for the structure.
- Rock rip-rap is the preferred material to provide a 'natural' outlet. Rip-rap should extend for the full
 extent of the design scour apron and adjoining flanks/streambank. Rip-rap should be appropriately
 keyed in and cut-off trenches provided.
- Rip-rap should consist of durable, angular run-of-quarry rock placed over a bedding layer of angular cobbles over geotextile. Where possible, incorporate vegetation, eg. sedges and rushes, into scour management (Figure 1).
- Grade the scour apron to the bed level of the watercourse, or just below any permanent water created by any stable feature, eg. a rock bar, within the watercourse.
- Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation/regeneration, mulching, weed control and maintenance.

Figure 2. Rip-rap outlet structure with vegetation growing in voids between rocks.



2

When seeking approval to construct outlet structures, information detailing the above is required for the Department to assess the works.

Additional information will generally also be required and may include but not be limited to:

- detailed design drawings of outlet structures
- cross-sections and long-section of the stream
- · hydrology report detailing pre and post construction hydrology of the channel
- a Vegetation Management Plan (VMP) prepared in accordance with the Department's Guidelines for controlled activities Vegetation Management Plans
- a Site Management Plan incorporating the schedule, sequence and duration of works, erosion and sediment controls, etc.
- costing of all works (ie. materials, labour) and stages of works (eg. outlet structure installation, rehabilitation).

Further information

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Important notes

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3 NSW Department of Water and Energy, February 2008



Guidelines for controlled activities **Riparian corridors**

Controlled activities carried out in, on or under waterfront land are now regulated by the *Water Management Act 2000* (WMA). The Department of Water and Energy is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, ie. the bed and a distance inland of 40 metres from a river, lake or estuary.

This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. Riparian corridors:

- provide bed and bank stability and reduce bank and channel erosion
- protect water quality by trapping sediment, nutrients and other contaminants
- provide a diversity of habitat for terrestrial, riparian and aquatic flora and fauna species
- provide connectivity between wildlife habitats
- · allow for conveyance of flood flows and control the direction of flood flows
- · provide an interface between developments and waterways.

The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions in normal seasons and also in extreme events.

When determining an appropriate width for a riparian corridor and how much riparian vegetation should be protected or re-established on a site, the following three riparian corridor zones (Figure 1) should be considered.

- A Core Riparian Zone (CRZ) is the land contained within and adjacent to the channel. The Department wil seek to ensure that the CRZ remains, or becomes vegetated, with fully structured native vegetation (including groundcovers, shrubs and trees). The width of the CRZ from the banks of the stream is determined by assessing the importance and riparian functionality of the watercourse (Table 1), merits of the site and long-term use of the land. There should be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the CRZ.
- A Vegetated Buffer (VB) protects the environmental integrity of the CRZ from weed invasion, micro-climate changes, litter, trampling and pollution. There should be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the VB. The recommended width of the VB is 10 metres but this depends on merit issues.
- 3. An Asset Protection Zone (APZ) is a requirement of the NSW Rural Fire Service and is designed to protect assets (houses, buildings, etc.) from potential bushfire damage. The APZ is measured from the asset to the outer edge of the vegetated buffer (VB). The APZ should contain cleared land which means that it can not be part of the CRZ or VB. The APZ must not result in clearing of the CRZ or VB. Infrastructure such as roads, drainage, stormwater structures, services, etc. can be located within APZs.



Figure 1. Riparian corridor zones.



The Department recommends that a vegetated CRZ width based on watercourse order¹ be considered in the design of any controlled activity (see Table 1). However, the final CRZ width will be determined after a merit assessment of the site and consideration of any impacts of the proposed activity. CRZ widths should be measured from the top of the highest bank and on both sides of the watercourse.

Types of watercourses	CRZ width
any first order ¹ watercourse and where there is a defined channel where water flows intermittently	10 metres
 any permanently flowing first order watercourse, or any second order¹ watercourse and where there is a defined channel where water flows intermittently or permanently 	20 metres
any third order ¹ or greater watercourse and where there is a defined channel where water flows intermittently or permanently. Includes estuaries, wetlands and any parts of rivers influenced by tidal waters.	20 – 40 metres²

Table 1. Recommended CRZ widths.

¹ as classified under the Strahler System of ordering watercourses and based on current 1:25 000 topographic maps ² merit assessment based on riparian functionality of the river, lake or estuary, the site and long-term land use.

Further information

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Important notes

2

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NSW Department of Water and Energy, February 2008



Guidelines for controlled activities Vegetation Management Plans

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This means that a controlled activity approval must be obtained from the Department prior to carrying out a controlled activity.

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions in normal seasons and also in extreme events.

A Vegetation Management Plan (VMP) which outlines the criteria for the establishment and management of a riparian corridor may be required to be prepared and submitted to the Department for assessment and approval prior to the issuing of a controlled activity approval for works in or within 40 metres of a river, lake or estuary.

The objective of a VMP is to provide for a stable watercourse and riparian corridor which emulates the native vegetation communities in the area. Figure 1 illustrates a typical riparian cross section.



Figure 1. Typical riparian cross section

Adapted from *Rivercare: Guidelines for Ecological Sustainable Management of Rivers and Riparian Vegetation:* Raine, A.W & Gardiner, J.N, (1995), LWRRDC, Canberra.



Department of Water & Energy

A VMP should be prepared by a suitably qualified person and should consider but not be limited to the following criteria:

- An appropriate width for the riparian corridor should be identified in accordance with the Department's Guidelines for controlled activities - Riparian corridors. The VMP should consider the full width of the riparian corridor and its functions including accommodating fully structured native vegetation.
- The location of the bed and banks or foreshore of waterfront land and the footprint of the riparian corridor should be clearly identified.
- Measures for controlling access and encroachments (bollards, fences, etc.) into the riparian corridor should be identified.
- Vegetation species composition, planting layout and densities should be identified. Plantings should emulate the ecotone of vegetation naturally or previously occurring along the waterfront land. Mature vegetation communities are generally well structured, comprising trees, shrubs and groundcover species. The required mix of these species relates to the actual community to be emulated and the size of the area/s to be rehabilitated. Planting densities should achieve quick vegetative cover and root mass to maximise bed and bank stability along the subject watercourse.
- Seed/plant sources should be identified and where possible native plants and seed sources of local provenance should be utilised.
- Exotic vegetation should be avoided. Use of exotic species for the purposes of temporary soil stabilisation is permitted provided they are sterile, non-invasive and easily eradicated when permanent vegetation is established.
- Details of the planting program, rehabilitation methods and staging should be provided. Other revegetation techniques such as hydro-seeding, direct seeding, brush matting or assisted natural regeneration may be considered.
- · Maintenance requirements should extend for a minimum of two years after the completion of works or until such time as a minimum 80% survival rate for all plantings and a maximum five percent (5%) weed cover for the treated riparian corridor (controlled activity) is achieved.
- · Project tasks should be defined and described, including a schedule detailing the sequence and duration of works necessary for the implementation of the VMP.
- Maps or diagrams which identify the proposed riparian area, existing vegetation, vegetation to be retained, vegetation to be cleared, footprint of construction activities, areas of proposed revegetation etc should be prepared.
- · Photographs of the site should be supplied and photo points should be identified for future monitoring and reporting purposes. The photo points should be identified by GPS coordinates or by survey particularly for large scale earthworks or extractive industries.
- Costings for the implementation of all components and stages of the work including materials, labour, watering, maintenance, monitoring and reporting, etc should be prepared.
- · Processes for monitoring and review, including a method of performance evaluation, should be identified. This should include assessing the need for replacing plant losses, addressing deficiencies, problems, climatic conditions, successful completion of works, etc.

Further information

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DWE has prepared these guidelines in good faith. In the case of any inconsistency between the guidelines and the controlled activity approval or legislation, the controlled activity approval or legislation will prevail to the extent of that inconsistency.

Nothing in these guidelines is taken to authorise a controlled activity. These guidelines are designed to provide information to assist in the design of any development or work that constitutes a controlled activity and the preparation of an application for a controlled activity approval. Users are advised to seek professional advice and to refer to the legislation and any relevant approvals, as necessary, before taking action in relation to any matters covered by the guidelines.

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