

MODIFICATION MAJOR PROJECT No. 06-0243

PROPOSED MODIFICATION

OF

APPROVED PROJECT

STORMWATER PLANS

ENGINEERING REPORT

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ATTACHMENT 1 - Copy of email from Tweed Shire Council

APPENDIX B - VKL Consulting Drawing Nos. 5536-10-SW1 & 5536-10-SW2

EXECUTIVE SUMMARY

Modification of the stormwater system in the vicinity of the northern intersection to Fraser Drive from the project approved under Major Project No. 06-0243 is required to prevent adverse impacts to land east of Fraser Drive resulting from minimum design levels of Fraser Drive required by Tweed Shire Council.

The proposed changes reflected on VKL Consulting Pty Ltd Drawing Nos. 5536-10-SW1 & 5535-10-SW2 will mitigate potential stormwater drainage impacts arising as a consequence of requirements of Tweed Shire Council.

1. **INTRODUCTION**

Following the issue of the Project Approval No. 06-0243 under Section 75J of the Environmental Planning and Assessment Act 1979 further discussions have been held with Tweed Shire Council concerning the impact on stormwater drainage arising from the future levels of Fraser Drive.

Tweed Shire Council requires that the level of the traffic light controlled intersection to be constructed pursuant to Conditions B16 and B17 of the Project Approval be at an elevation that is high enough to permit Fraser Drive to be used as a means of escape should Possible Maximum Flood (PMF) event occur.

This Report addresses the potential impacts arising from Tweed Shire Council requirements and provides amended stormwater layout plans to replace the following Project Plans listed in A3 of the Project Approval.

Existing Project Drawing No.

Cardno - 7214/29/01 DA 20

Cardno - 7214/29/01 DA 21

Replacement Drawing No.

VKL Consulting Pty Ltd - 5536-10-SW1

VKL Consulting Pty Ltd - 5536-10-SW2

2. **BACKGROUND INFORMATION**

Currently there is a stormwater catchment east of Fraser Drive which drains across Fraser Drive in the vicinity of the future northern intersection via an undersized culvert into the project site. An open drain then conveys stormwater in a westerly direction through the SEPP14 wetlands.

During high intensity rainfall events stormwater from the eastern external catchment flows over land across Fraser Drive onto the project site and along the road reserve of Fraser Drive in a northerly direction.

Fraser Drive is to be part of Tweed Shire Council's road hierarchy that will be upgraded. Funding of certain aspects of the upgrading of Fraser Drive is included in the Tweed Shire Council Section 94 road contributions plan.

Fraser Drive is to be part of the escape route for existing residents from development to the north of the project site in the event of a PMF rainfall event.

The existing level of Fraser Drive in the vicinity of the northern entrance to the project site is below the level required to function as a PMF escape route.

Tweed Shire Council has determined that the road pavement levels of Fraser Drive and approaches to the northern entrance of the project is to be constructed to levels that comply with the modeled PMF escape route levels for that area.

The consequence of that requirement being imposed by Tweed Shire Council is that if the stormwater drainage system approved under Major Project No. 06-0243 was to be

constructed in conjunction with raising the levels of Fraser Drive at the northern intersection adverse impacts from stormwater drainage in significant rainfall events would occur on portion of the external catchment east of Fraser Drive as the higher levels of Fraser Drive would act as a bund and cause higher flood levels on land to the east of Fraser Drive.

Negotiations have occurred with Tweed Shire Council in regard to these matters and an amendment to the stormwater drainage system in the vicinity of the northern intersection has been agreed in principle which involves realignment of the drainage system and construction of Q100 capacity multi pipe culvert across Fraser Drive to mitigate the potential stormwater impacts that may have occurred should the approved stormwater system be constructed and if the Tweed Shire Council design levels of Fraser Drive at the northern intersection of the project were to be constructed.

Refer Attachment 1 – Copy of email from Tweed Shire Council addressing questions posed by Consultants for the development.

3. **MODIFIED STORMWATER DRAINAGE LAYOUT**

The stormwater drainage layout has been modified and provides Q100 capacity multi pipe culverts across Fraser Drive, ending within the existing Fraser Drive road reserve, layed at a level that is no higher than the existing 900mm dia pipe culvert that currently services the external catchment east of Fraser Drive.

Adjustment of some existing services in Fraser Drive will be required.

Refer Attachment 2 showing details of the amended stormwater layout.

4. **CONCLUSION**

The proposed amendment is required to meet levels that Tweed Shire Council has determined for the northern intersection of Fraser Drive and ensure that the Q100 and lower rainfall events do not adversely impact on the existing land east of Fraser Drive in the vicinity of the northern intersection required to be constructed pursuant to Condition B16 of Major Project Approval No. 06-0243.

VKL CONSULTING PTY LTD



Keith Vinnicombe B.E. (HONS)
Director

ATTACHMENT 1

Copy of email from Tweed Shire Council

VKL Consulting Pty Ltd

From: "VKL Consulting Pty Ltd" <mail@vkl.com.au>
To: "Patrick Knight" <patrickknight@tweed.nsw.gov.au>
Cc: "Warren Boyd" <WarrenB@TWEED.nsw.gov.au>; "John Zawadzki" <jzawadzki@tweed.nsw.gov.au>; "Martin Dillon" <marty@greenviewdevelopments.com.au>; "Sandra" <Sandra@daconsulting.com.au>
Sent: Friday, 31 July 2009 10:23 AM
Attach: 5536-029-l.pdf
Subject: Fraser Drive - Meeting Minutes 29 July 2009
Re: Fraser Drive Meeting Minutes TSC Greenview Development 29 July 2009

Please find attached Meeting Minutes.

Please advise if you believe these Minutes are not accurate.

Regards

Kath Vickers



15 / 7 United Road, Ashmore Qld 4214

PO Box 292, Ashmore City Qld 4214

P: 07 5510 0200

F: 07 5510 0299

E: mail@vkl.com.au

Attachment:
 5536-029-l.pdf

**MAJOR PROJECT MP No. 06-0243
GREENVIEW DEVELOPMENT PTY LTD
FRASER DRIVE TWEED HEADS SOUTH**

**MINUTES OF MEETING TWEED SHIRE COUNCIL AND
GREENVIEW DEVELOPMENTS 29th JULY 2009 10:00 am - 11:00 am**

SUBJECT MATTER:

Design Levels for Fraser Drive, Configuration of 4 Way Intersection at Northern Entrance to Development from Fraser Drive Southern Entrance to Development from Fraser Drive, Timing of Construction Staging of Construction of Fraser Drive, Impacts of Tweed Transport Contributions Plan (TRCP) and Major Drainage Issues in region of Future 4 Way Intersection on Fraser Drive.

Attendees:

Tweed Shire Council

Patrick Knight (PK)
Danny Rose (DR)
Warren Boyd (WB)
John Zawadzki (JZ)

Greenview Developments Pty Ltd

Bruce Turner (BT)
Martin Dillon (MD)
Keith Vinnicombe
(VKL Consulting) (KV)

Item No.	Discussion Point	Outcome Discussion	Action
1.	Status of Greenview Developments progress to design documentation. KV outlined that Greenview Developments were proceeding with design documentation and needed finalisation of TSC design requirements for Fraser Drive which is included in TRCP Draft centreline design levels have been provided by TSC to VKL, however Greenview Developments require confirmation from TSC of its final design controls for Fraser Drive on staged and ultimate basis.	TSC needs to determine staged or ultimate design levels for Fraser Drive at 4 way intersection. PK advised that TSC probably require construction to ultimate levels. At southern entrance TSC may initially confine construction to existing pavement levels. Extent of pavement construction to be part of consideration by TSC.	TSC Officers to consider all implications and advise position within 4 weeks (26 th August 2009)
2.	Determination of geometric configuration for the two (2) intersections from Greenview development to Fraser Drive Major Project No. 06-0243. Conditions require that Greenview Developments construct a Traffic Light controlled 4 way intersection on the northern end with provision for left turn and right turn movements from Fraser Drive into the development and a left in – left out intersection from Fraser Drive further to the south. KV provided all present with a copy of preliminary layouts for consideration. These preliminary layouts also consider how staged construction of Fraser Drive upgrade under TRCP may be approached depending upon TSC determinations.	These preliminary layouts will give TSC design staff a basis for consideration. It was noted that Greenview Development has no Consent requirements to construct right and left turn holding lanes for Pioneer Park.	TSC Officers to consider and firm up design / staging of construction and advise position within 4 weeks (26 th August 2009) KV to provide survey information that is available and .dwg files of intersection layout to TSC ASAP
3.	KV requested advice on extent of pavement and drainage works covered by TRCP provision for Fraser Drive.	PK advised that TRCP covers the construction of 2 No. additional through pavement lanes. Council Officers were unable to answer how raising of the finished level of the existing pavement lanes was to be funded. JZ advised that major Q100 drainage in the vicinity of the northern intersection would not have been included in the TRCP only minor drainage.	Council Officers to consider the issues raised and respond within 4 weeks (26 th August 2009)

Item No.	Discussion Point	Outcome Discussion	Action
4.	Major drainage for Q100 at northern intersection. VKL provided alternate layout for drainage across intersection to Pioneer Park and requested whether there was a potential to vary the layout from the Major Project drawings submitted by Cardno and adopted in the Major Project Approval.	<p>DR advised that at the time there was considerable correspondence on the matter and he needed to refresh his understanding however he thought that TSC had suggested a similar arrangement as shown on VKL intersection option.</p> <p>There may have been constraints such as Bill Sullivan not wanting to have pit in his property and 600 dia watermain. DR to revisit matter and advise.</p> <p>PK acknowledged that alternate proposed would be more efficient and reduce asset maintenance.</p> <p>DR advised that TSC wanted to preserve the Q100 overland flow path which existing easement provided and therefore replacement alternate was required.</p> <p>KV requested advice on how TSC envisaged Q100 flow would be directed to the overland flow path particularly if the pit arrangement was constructed as per Major Project Approval and intersection constructed 700mm above existing pavement level. Water would have to flood across Fraser Drive which is contrary to TSC position put to DOP.</p>	DR to review and advise.
5.	Q100 stormwater system. KV put the position that with both Q100 pipe system plus overland flow path with Q100 capacity there was in fact a double imposition. Would TSC consider Q100 pipe system across Fraser Drive with surge pit discharge to overland flow path and reduced pipe size down the northern entry road to take minor flows.	<p>PK recalled that TSC originally proposed this system but Planners (Conics) were against because of entrance landscape and lower land to the north.</p> <p>BT confirmed land to the north has now been filled to RL2.6 AHD.</p> <p>PK indicated that if the alternate could be shown to work it is quite probable that TSC would agree subject to review of past documentation as this approach is normally used by TSC in other circumstances.</p>	DR to check past correspondence and advise.
6.	Bus Stops KV advised that 2 bus stops were required, one south of the northern intersection and one further to the south near the future park. Construction of these would interfere with existing table drain.	<p>PK indicated that TSC would probably require these be built at existing pavement levels and temporary pipes constructed as dictated by existing table drains.</p> <p>This would be considered in response by TSC to Greenview Developments.</p>	TSC to advise requirements within 4 weeks (26 th August 2009)

Item No.	Discussion Point	Outcome of Discussion	Action
7.	Major Project requirement to provide for local shop. KV provided concept layout for discussion with 5 lots proposed to be set aside for local shop(s) – Report indicates that 200m2 GFA would be marginally viable.	Information provided for use in overall intersection considerations by TSC. KV advised that it was a small shopping centre NOT as part of this project, a separate DA would be required and traffic considerations determined at that time. JZ outlined normal delivery truck requirements under DCP. Issue of left in left out entry from Fraser Drive discussed including existing precedent at shopping centre corner Fraser Drive and Leisure Drive.	No action required NOTED
8.	Acoustic Barrier A revised Cardno Report indicates that up to 8m high acoustic barrier would be required to mitigate sound to levels nominated by DOP for 'greenfields' site. Greenview Developments believe it is an infill site with existing residential on 3 sides and an existing road on the other side which is noise source. Greenview Developments intends to go back to DOP and put the case that a better visual outcome can be achieved by a combination of lower acoustic barrier combined with appropriate use of architectural treatments for the acoustic levels to be calculated on a suitable standard applicable to infill development. Greenview Developments is having a new report prepared and would seek TSC support in submission to DOP.	General discussion that acoustic barriers up to 8m in height is not desirable. Significant potential for graffiti problem. Other sections of Fraser Drive / Leisure Drive do not have acoustic treatments to this height. PK advised he would support the Greenview Development position but it was a matter for the Director responsible for Planning. Submission should be directed to that Department.	Greenview Developments to complete revised Acoustic Report and forward request for support to TSC prior to approaching DOP. KV to provide a copy of wall heights as projected by Cardno revised heights based on current DOP requirements.
9.	Communication	PK confirmed that KV can communicate with Council Officers, DR, WB & JZ directly to assist where possible in TSC finalisation of responses to issues raised.	NOTED
	MEETING CLOSED 11:00 am		

VKL Consulting Pty Ltd

From: "Keith Vinnicombe" <kvinnicombe@vkl.com.au>
To: <mail@vkl.com.au>
Sent: Friday, 16 April 2010 9:59 AM
Attach: VKL Logo.bmp; da07_0589_vkl reply 0809_fraser_ths.doc
Subject: FW: Major Project No. MP06-0243 Council Responses to Requests for Detailed Design Requirements
 Fraser Drive Tweed Heads South Greenview Developments

From: Danny Rose [mailto:DRose@tweed.nsw.gov.au]
Sent: Tuesday, 1 September 2009 8:15 AM
To: kvinnicombe@vkl.com.au
Subject: RE: Major Project No. MP06-0243 Council Responses to Requests for Detailed Design Requirements Fraser Drive Tweed Heads South Greenview Developments

Keith,

The information was posted last Friday. Please find attached an electronic version. Apologies for the delay.

Regards

Danny Rose
 Planning & Infrastructure Engineer
 TWEED SHIRE COUNCIL
 PO Box 816
 Murwillumbah 2484
 Ph: (02) 6670 2476
 Fax: (02) 6672 7513

From: kvinnicombe@vkl.com.au [mailto:kvinnicombe@vkl.com.au]
Sent: Monday, 31 August 2009 3:43 PM
To: Danny Rose
Cc: 'Martin Dillon'
Subject: Major Project No. MP06-0243 Council Responses to Requests for Detailed Design Requirements Fraser Drive Tweed Heads South Greenview Developments

Hi Danny

This is a follow-up regarding the requested information which Patrick Knight indicated would be provided to us on the 26th August 2009 and subsequently changed to the 28th August 2009. You during our telephone discussion on Monday 24th August 2009.

Unfortunately no information has been received to date

Your urgent advice is requested as lack of the requested information is adversely affecting completion of CC documentation

Regards
 Keith Vinnicombe



15/7 United Road, Ashmore
PO BOX 292, Ashmore City, QLD 4214
P: 07 55 100 200
F: 07 55 100 299
M: 0418 768 520
E: kvinnicombe@vkl.com.au

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Please Quote
Council Ref: DA07/0589

Your Ref No: MP06_0243

For Enquiries
Please Contact: Mr Danny Rose

Telephone Direct (02) 6670 2476

[eltr]

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28 August 2009

Keith Vinnicombe
VKL Consulting
PO Box 292
ASHMORE CITY QLD 4214

Dear Keith,

Greenview Development MP06_0243 Fraser Drive Topped Head South

As discussed at our meeting held 29 July 2009 regarding the subject subdivision development, Council has reviewed your draft designs for upgrading works on Fraser Drive, specifically at the two intersections with internal subdivision roads.

Responses to the issues raised in your minutes of this meeting are as follows:

Item No.	Summary of Discussion	TSC Action
1.	Greenview requests TSC review of staged / ultimate design levels for the 4 way intersection and the southern entrance to the subdivision on Fraser Drive	<p>Council's Senior Design Engineer provides the following comments on the submitted plans:</p> <p>a) Road centreline to have minimum 0.5% longitudinal grade.</p> <p>b) The intersection should be constructed to ultimate levels up to Ch 955.000, instead of Ch 935.579. This will result in a changed end point from Ch 990.208 to Ch 1012.500.</p> <p>c) Construct concrete median on north end only to where road is built to ultimate levels. Remainder of median is to be painted.</p> <p>Subject to these amendments, the submitted road raising / widening plans are acceptable to Council for further detailed design.</p>
2.	Greenview requests TSC review preliminary layouts of the two intersections, and confirm staging requirements	Council confirms that the left turn lane into Pioneer Park, and the acceleration lane out of Pioneer Park are not required to be constructed by Greenview. The right turn lane into Pioneer Park must be

		<p>provided however, to maintain the existing property access at this intersection.</p> <p>Subject to these amendments, the submitted intersection plans are acceptable to Council for further detailed design.</p>
3.	Greenview requests advice on extent of works on Fraser Drive that come under the works program for Contribution Plan No.4 (TRCP)	Council confirms that the TRCP only provides for the upgrading of two of four traffic lanes, and does not include major drainage provision.
4.	Greenview requests advice as to the requirements for east-west drainage from Sullivans Land, across Fraser Drive and through the subdivision to the wetland / discharge point. Will council consider variations to the drainage layout shown on the approved plans?	<p>The original subdivision application provided a Q100 piped drainage system on the western side of Fraser Drive only. This system accepts flows from the catchment east of Fraser Dr via a 900mm culvert and overland flow across the road. Council requested that this service be realigned, so that the inlet would be located on the eastern side of Fraser Dr, however this required separate owner's consent to carry out works on private land, and may conflict with a water main, so was not considered feasible by the applicant at that time. It remains Council's preferred approach to east-west drainage across Fraser Dr, and considering the road raising associated with the intersection works is now essential to maintaining the local hydraulic regime.</p> <p>The reliance on a wholly piped Q100 drainage system through the subdivision was not supported by Council, as it was not considered to be equivalent to an existing 5m wide Council drainage easement through the site, which was to be extinguished. To provide equivalency, the applicant provided the additional overland flow path from the entry point through to the wetland, but maintained the Q100 piped system as well.</p> <p>As such, Council's recommended approach is as follows:</p> <p>a) Provide a Q100 culvert crossing underneath Fraser Drive, after obtaining owner's consent from Sullivans for any works required on their land.</p>
5.	Greenview requests advice as to Council requirements for Q100 drainage systems along the main subdivision entrance road.	

		<p>b) Provide a piped minor drainage system (min Q5) along the main entry road to the subdivision, discharging to the wetland (no treatment necessary if only catering for the external catchment).</p> <p>c) Provide an ancillary Q100 overland flow path parallel to the main entry road to cater for surcharge flows from the minor system (a surcharge pit near the entry intersection is acceptable), and convey these flows through to the wetland.</p> <p>Once a design is agreed, Department of Planning should be consulted to ensure these amendments are consistent with the Major Project approval.</p>
6.	Greenview requests advice as to Council requirements for the provision of bus stops on Fraser Drive, with potential for conflict with future road widening and raising, and existing road drainage.	Council advises that the bus stops may be located at practical locations on the current road alignment and level. Should these bus stop locations conflict with road drainage (or other services), alternate provision must be made, such as culverts underneath the base slab.
7.	Greenview tabled a proposed location for a local shop, as per the subdivision approval	No action required.
8.	Greenview asked if Council would support a reduction in the proposed 8m high acoustic barriers along Fraser Drive.	Council will consider the request when additional acoustic report and review of wall heights received. Note that this would be assessed by Council's Planning & Regulations Division, not Engineering & Operations Division.
9.	VKL Consulting to consult directly with Council officers as necessary to finalise above matters	Council encourages direct communication on matters relating to Fraser Drive and associated engineering matters.

I trust that this allows VKL Consulting to progress with the design work for the subdivision, as it relates to Fraser Drive. Please contact the undersigned if you have any questions or would like to arrange a follow up meeting with Council officers.

Yours faithfully

Da ☐ ☐ ☐ ☐ **Ro** ☐ ☐

PLANNING ☐ **INFRASTRUCTURE ENGINEER**

ATTACHMENT 2

*VKL Consulting Drawing Nos.
5536-10-SW1 & 5536-10-SW2*



LEGEND

PROPOSED STORMWATER

PROPOSED BYPASS CULVERTS

DESIGN SURFACE CONTOURS (5.0m INTERVAL)

Existing Surface Contours (5.0m INTERVAL)

Existing Stormwater Road Culverts

PROPOSED BYPASS CHANNEL

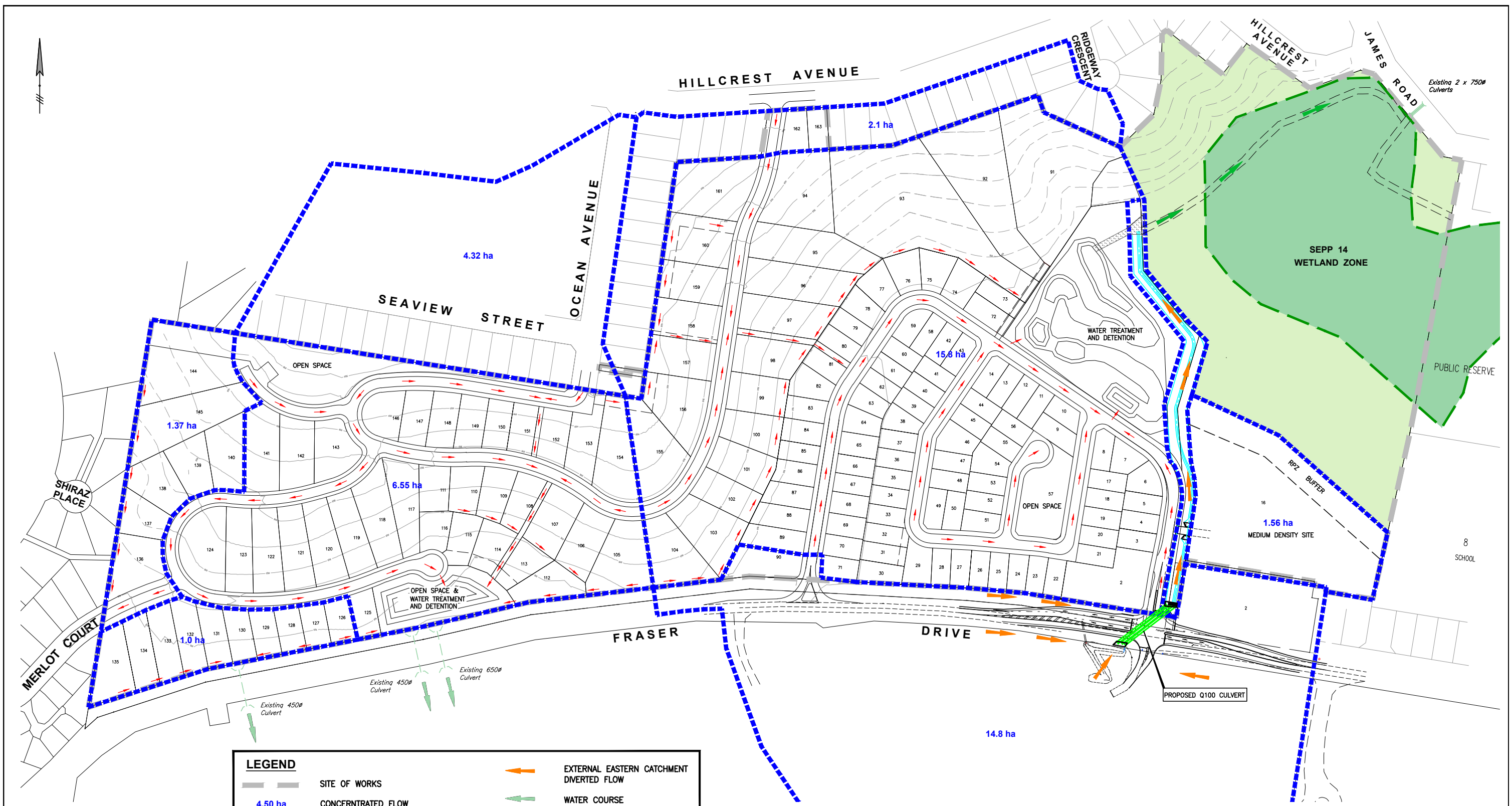
Existing Open Channel

SITE OF WORKS

SEPP 14 WETLAND AREA

SEPP 14 WETLAND BUFFER

AMD	DATE	DESCRIPTION	SCALE	DRAWING TITLE	DESIGNED	 INFRASTRUCTURE ENGINEERING ABN: 55 114 638 934	P.O. BOX 292 ASHMORE CITY QLD. 4214 TEL : (07) 5510 0200 FAX : (07) 5510 0299 EMAIL : mail@vkl.com.au	 DEVELOPMENTS	PROJECT	DRAWING No.
			 1:1500 at A1 1:3000 at A3	POST DEVELOPMENT STORMWATER NETWORK	DRAWN		FRASER DRIVE SUBDIVISION		5536 - 10 - SW1	
				CHECKED			TWEED HEADS SOUTH			
				APPROVED						



LEGEND

SITE OF WORKS

4.50 ha

CONCERNTRATED FLOW

POST DEVELOPMENT CATCHMENT AREA

DESIGN SURFACE CONTOURS (5.0m INTERVAL)

Existing Surface Contours (5.0m INTERVAL)

EXTERNAL EASTERN CATCHMENT DIVERTED FLOW

WATER COURSE

Existing Stormwater Road Culverts

Existing Open Channel

PROPOSED BYPASS CHANNEL

SEPP 14 WETLAND AREA

SEPP 14 WETLAND BUFFER