WELLINGTON
SHIRE COUNCIL
The Heart of Gippsland

Council Meeting Agenda

Meeting to be held at

Port of Sale Business Centre

Foster Street, Sale

Tuesday 20 September 2016, commencing at 6pm

or join Wellington on the Web:
www.wellington.vic.gov.au

ORDINARY MEETING OF COUNCIL – 20 SEPTEMBER 2016

AGENDA & TABLE OF CONTENTS

Council Meeting Information

Members of the Public Gallery should note that the Council records and publishes Council meetings via Webcast to enhance the accessibility of Council meetings to the broader Wellington community. These recordings are also archived and may be published on Council's Website for viewing by the public or used for publicity or information purposes. At the appropriate times during the meeting, members of the gallery may address the Council at which time their image, comments or submissions will be recorded.

Members of the public who are not in attendance at the Council meeting but who wish to communicate with the Council via the webcasting chat room should lodge their questions or comments early in the meeting to ensure that their submissions can be dealt with at the end of the meeting.

Please could gallery visitors and Councillors ensure that mobile phones and other electronic devices are turned off or in silent mode for the duration of the meeting.

A - PROCEDURAL

STATEMENT OF ACKNOWLEDGEMENT

"We acknowledge the traditional custodians
of this land the Gunaikurnai people,
and pay respects to their elders past and present"

PRAYER

"Almighty God, we ask your blessing upon the Wellington
Shire Council, its Councillors, officers, staff and their families.
We pray for your guidance in our decisions so that the
true good of the Wellington Shire Council may result to
the benefit of all residents and community groups."
Amen

A - PROCEDURAL

A4 CONFIRMATION OF MINUTES OF PREVIOUS COUNCIL MEETING/S

ITEM A4 **ADOPTION OF MINUTES OF PREVIOUS MEETING/S**

ACTION OFFICER: GENERAL MANAGER CORPORATE SERVICES

DATE: 20 SEPTEMBER 2016

OBJECTIVE

To adopt the minutes of the Ordinary Council Meeting of 6 September 2016 as tabled.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That Council adopt the minutes and resolutions of the Ordinary Council Meeting of 6 September 2016 as tabled.

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this report have declared a Conflict of Interest.

A - PROCEDURAL

A5 BUSINESS ARISING FROM PREVIOUS MEETING/S

A - PROCEDURAL

A6 ACCEPTANCE OF LATE ITEMS

A - PROCEDURAL

A7 NOTICE/S OF MOTION

ITEM A7(1) **NOTICE OF MOTION**

OFFICER: COUNCILLOR SCOTT ROSSETTI

DATE: 20 SEPTEMBER 2016

I, Councillor Scott Rossetti, hereby give of my intention to move the following motion at the Ordinary Meeting of Council on 20 September 2016:

That the Council write to all local Members of Parliament and Scott Morris MP – Chairman of the Economic and Infrastructure Upper House Committee - supporting an Upper House Committee review of the proposed legislation regarding dog breeding so the issues can be properly considered and so we can get the best outcome for animal welfare in Victoria without penalising reputable professional breeding businesses.

COUNCILLOR SCOTT ROSSETTI
Dated: 13 September 2016

A - PROCEDURAL

A8 RECEIVING OF PETITIONS OR JOINT LETTERS

ITEM A8(1) **OUTSTANDING PETITIONS**

ACTION OFFICER GOVERNANCE

DATE: 20 SEPTEMBER 2016

ITEM	FROM MEETING	COMMENTS	ACTION BY
Removal of Handrail On Gangway Next to Mcloughlin's Beach Boat Ramp	16 August 2016	Item to lay on the table until further notice	General Manager Built & Natural Environment

ITEM A8(2) RECEIPT OF PETITION TO STOP BAND PRACTICE AT 322-324 YORK STREET SALE

ACTION OFFICER GOVERNANCE

DATE: 20 SEPTEMBER 2016

Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
		✓							

OBJECTIVE

To present Council with a petition in relation to band practice at 322-324 York Street Sale.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That Council receive the attached petition in relation to band practice at 322-324 York Street Sale.

BACKGROUND

A petition containing 8 signatures has been received by Council.

A copy of the petition is attached for Council information.

LEGISLATIVE IMPACT

Section L6.59 of Wellington Shire Council Processes of Municipal Government (Meetings and Common Seal) Local Law No 1 provides for petitions and joint letters:

"A petition or joint letter presented to the Council must lay on the table for a period determined by the Council but not exceeding the next two Council Meetings. No motion, other than to receive the petition or joint letter may be accepted by the Chairperson, unless the Council unanimously agrees to deal with it earlier."

Petition to stop weekly ban practice at 322-324 York St, Sale

Petition summary and background	There is a band that practices Tuesday and Thursday nights at 322-324 York St, Sale usually from 6-9pm. They use electronic amplified instruments and the noise can be heard clearly in our house with all the doors and windows closed and even above our TV being on. We call the police every week who then have to waste their time going out to tell these guys to turn the sound down. I have spoken to the owner of the business personally and nothing has happened.
Action petitioned for	We, the undersigned, are people who reside close to this business and can clearly hear and are disturbed by the amplified music. We urge the Wellington Shire Council to act now to make the band practice elsewhere – not adjacent to a residential area!

Printed Name	Signature	Address	Comment	Date
Karina Wolfin	K Wolfin			1/5/16
Dallas Papworth	D Papworth		Band practice noise	1/5/16
Louise Rhodes	L Rhodes		" " "	1/5/16
Natalie Laygeni			Noisy band	1/5/16
MARIAN LAPPIN	Mlappin		Ridiculously loud!!!	1/5/16
T. J. Robinson			Band practice noise too loud, called police.	1/5/16
Jesse Semmens			Really Bad & Too Loud	1.5.16
Carla Wisenbeek	C Wisenbeek		Too loud for residential street - Loud & noisy band 3/6/16	

ITEM A8(3) **RESPONSE TO PETITION – BRADYS BRIDGE REPLACEMENT**

DIVISION: BUILT AND NATURAL ENVIRONMENT

ACTION OFFICER: GENERAL MANAGER BUILT AND NATURAL ENVIRONMENT

DATE: 20 SEPTEMBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
✓				✓	✓	✓		✓	✓

OBJECTIVE

To consider and respond to a petition relating to the future of Bradys Bridge, located on Maxfields Road, Sale.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That

1. ***Council agree with the petition to not pursue funding for a replacement of Bradys Bridge with a vehicular bridge;***

2. ***Council rescind the following resolution made on 19 July 2016:***

    a) ***Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge;***

    b) ***If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program;***

    c) ***If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program;***

3. ***Council endorse the replacement of Bradys Bridge with a pedestrian Bridge and authorise the Chief Executive Officer to write to the head petitioner, advising of this resolution.***

BACKGROUND

A petition containing 16 signatures was submitted on 22 August 2016 and received by Council at its meeting of 6 September 2016. The petition was submitted to express "…strong objection to the proposal to re-open Brady's Bridge to traffic".

The petition highlighted the following issues of concern.

- Environmental impact on the Wetlands Reserve and impact of vehicle traffic on wildlife
- Noise and dust caused by increased vehicle volumes resulting in loss of quiet enjoyment and compromised access to the Wetlands Reserve
- Reduced security due to greater exposure to passing traffic
- Limited benefit in times of flood, due to inability to pass the intersection of Stephenson Street and Maxfields Road
- Need for supporting infrastructure, including sealed roads and pedestrian pathways.

All of the 16 signatories resided in close proximity the bridge, located in Stephenson Street, John Street and Maxfields Road, Sale, as represented in Attachment A. All affected residents were notified in writing that at the Council meeting of 19 July 2016 the following recommendation was to be considered by Council:

> *That Council authorise the commencement of design and tendering for the replacement of the current Bradys Bridge pedestrian structure with a new pedestrian bridge as part of the 2016/2017 capital works program.*

It was noted by the petitioners that they were silent on the issue as they supported the proposed resolution for a new pedestrian bridge. Had there been advice Council was to consider a funding application to re-open the bridge to traffic the petitioners would have attended the Council meeting to voice concern regarding such a proposal.

At the meeting 19 July 2016, Council made the following resolution:

That:

> *1. Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge; and*
>
> *2. If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program; or*
>
> *3. If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program.*

The alternative motion was carried by Council following a verbal and written submission presented at the meeting by Ms Meryl Edwards and Mr Trevor Tucker in favour of replacing Bradys Bridge with a road bridge. Both Ms Edwards and Mr Tucker went to substantial length to demonstrate the importance of a road bridge connection on Maxfields Road for them personally, while also indicating to represent the views of others located in the vicinity of the Bradys Bridge. In light of this petition the information presented by Ms Edwards and Mr Tucker does not appear consistent with the majority of other residents located on Maxfields Road and Stephenson Street.

Traffic over Brady's Bridge was measured to be 132 vehicles per day in 2004 prior to its closure. At the time of the count, the bridge has a 2 tonne load limit. If the bridge was to be reopened to vehicle traffic in 2016, daily usage would exceed 200 vehicles per day based on a 4% annual growth rate. Current traffic counts are estimated at approximately 50 vehicles per day.

The route between Bradys Bridge and the South Gippsland highway, via Maxfields Road, Stephenson Street and John Street, is unsealed and of a basic standard. The anticipated traffic associated with replacing Bradys Bridge with a vehicle bridge would result in more rapid deterioration, greater demand for maintenance and a potential upgrade to maintain acceptable service levels.

A pedestrian count conducted on the current bridge over a period of May to October 2013 indicated usage by 53 pedestrians per weekday and 74 pedestrians on weekends. Should Bradys Bridge be reinstated to cater for vehicles, the volume of pedestrian traffic and anticipated volume of vehicle traffic would warrant the need for dedicated off road pedestrian pathways.

Previous analysis has indicated a water depth of between 1.0m and 1.6m at the intersection of Maxfields Road and Stephenson Street, in times of flooding dependent on severity. The depth of water at this location limits any use of Maxfields Road in times of flood for residents in the area, however some residents have told of local arrangements where they travel on foot over high ground on private property to gain access to the Brady's Bridge. This analysis supports the petitioner's point of view, that vehicular access over Bradys Bridge provides little broader benefit in times of flooding.

OPTIONS
Option 1

1. Council agree with the petition to not pursue funding for a replacement of Bradys Bridge with a vehicular bridge.

2. Council rescind the following resolution made on 19 July 2016:

    a) Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge; and

    b) If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program; or

    c) If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program; and

3. Council endorse the replacement of Brady's Bridge with a pedestrian bridge and authorise the Chief Executive Officer to write to the head petitioner, advising of this resolution.

Or Option 2

1. Council notes the petition and proceeds with the following motion made on 19 July 2016 and authorises the Chief Executive Officer to write to the head petitioner, advising of this resolution:

    a) Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge; and

    b) If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program; or

    c) If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program.

PROPOSAL

1. Council agree with the petition to not pursue funding for a replacement of Bradys Bridge with a vehicular bridge.

2. Council rescind the following resolution made on 19 July 2016:

   That:

   a) Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge; and

   b) If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program; or

   c) If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program; and

3. Council endorse the replacement of Brady's Bridge with a pedestrian bridge and authorise the Chief Executive Officer to write to the head petitioner, advising of this resolution

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this report have declared a Conflict of Interest.

FINANCIAL IMPACT

$200,000 was allocated towards the replacement of Brady's Bridge with a pedestrian bridge within the 2014-15 capital budget and has been subsequently carried forward into 2016-17 financial year.

At its meeting of 19 July 2016, Council resolved to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge.

It is anticipated that reinstating Brady's Bridge with a vehicle bridge would increase traffic on Maxfields Road, Stephenson Street and John Street. This route consists of unsealed roads that are of basic standards. There would be a financial impact associated with increased maintenance and renewal demand and potential upgrade works on this route if the bridge was reconstructed for vehicle traffic.

There is currently no allocation of funding for a dedicated pathway on Maxfields Road. This project is identified within the walking and cycling strategic plan and its priority would be reviewed should conditions change substantially with the opening of Bradys Bridge to vehicle traffic.

COUNCIL PLAN IMPACT

The recommendation supports the following objectives of the Council Plan 2013-2017:

Theme 4 – Infrastructure:

Strategic Objective
"Assets and infrastructure that meet current and future community needs."

Strategy 4.1
"Undertake service delivery planning to provide community assets in response to identified needs."

Theme 7 – Community Wellbeing:

Strategic Objective
"Enhance health and wellbeing for the whole community."

Strategic Indicator
"Increased opportunity for people to access footpaths, bikeways, tracks and tails"

RESOURCES AND STAFF IMPACT

The recommendation can be implemented within existing allocated resources.

COMMUNITY IMPACT

Providing a sustainable pedestrian and cycling link via Maxfields Road, connecting East Sale with the Sale Wetlands is considered to have a positive community impact and was identified through the development of the Wellington Shire Council Walking and Cycling Strategic Plan.

Brady's Bridge is considered to have limited broader community benefit as a road bridge.

CONSULTATION IMPACT

The petition follows a report tabled at the Council meeting of 19 July 2016 considering replacement options for Bradys Bridge. Prior to this meeting, all affected residents were notified of the following recommendation:

That Council authorise the commencement of design and tendering for the replacement of the current Bradys Bridge pedestrian structure with a new pedestrian bridge as part of the 2016/2017 capital works program.

At the meeting of 19 July 2019, Council made the following alternative resolution:

That:

1. *Council authorises the Chief Executive Officer to make application to the Federal Government Bridges Renewal Program, for additional funding to replace Bradys Bridge with a road network bridge; and*

2. *If application to the Federal Government Bridges Renewal Program is successful, authorise the replacement of Bradys Bridge with a road network bridge to commence as part of the 2016/2017 capital works program; or*

3. *If application to the Federal Government Bridges Renewal Program is unsuccessful, authorise the replacement of Bradys Bridge with a pedestrian bridge to commence as part of the 2016/2017 capital works program.*

RISK MANAGEMENT

The existing bridge is in a deteriorated condition and will require closure to the public for pedestrian use within the short term if not replaced.

Reinstatement of Brady's Bridge with a vehicle bridge would increase traffic on Maxfields Road, Stephenson Street and John Street, potentially requiring upgrade works to maintain acceptable service levels.

ATTACHMENT - A

Dear Tom,

We, the undersigned residents of Stephenson Street Sale and Maxfield's Road, would like to submit our strong objection to the proposal to re-open Brady's Bridge to traffic.

Notification was received from the Wellington Shire stating that Council was seeking application to rebuild the Brady's Bridge as a pedestrian footbridge, had there been mention of application to re-open the bridge to traffic the undersigned would have attended to voice their concerns.

A new pedestrian footbridge would be a welcome upgrade by the residents of our area as well as the many Sale residents who enjoy the peaceful serenity of Maxfield's Road and Stephenson Street on their family walks and bicycle rides with their children and dogs without the hazard of excessive vehicles, opening the bridge to traffic would increase the volume of vehicular traffic to a predicted 300 vehicles per day compromising the safety of these family outings.

In making the decision to apply to re-open the bridge to traffic we wonder if the Council has taken into consideration the environmental impact on the State Wildlife Wetlands Reserve and its inhabitants? Comments such as the one below taken from a review of the Wetlands will no longer be applicable.

Hardly common...) Picturesque... Poise for a moment amidst the serenity of the common... you can hear a chorus of birdlife ... it is an exceptional place. There is a huge range of birdlife... wonderful boardwalks to enjoy the area to it's full potential. (Taken from www.tourismwellington.com.au)

The noise of these vehicles will drown out the chorus of birdlife, the dust and the unavoidable damage to the unsealed road alone will ruin the serenity and the picturesque drive to access the wetlands and while the local wildlife spend an incredible amount of time in our yards and on our roads, how many deaths would occur with an increase to 300 vehicles per day.

We are a small rural community on the outskirts of town who value their serenity and privacy, this would be severely compromised with an increase of this proportion of traffic - being in an area with Council Heritage Overlay our fences are designed as a low and open – allowing any passer-by full vision into our properties, opening the doorway for burglary and theft.

Our humble little street is unsealed and suffers from lack of council maintenance on a regular basis – corrugated and dusty but peaceful and private, enjoyed by a multitude of pedestrian based Sale residents as well as ourselves for the simple fact that it is not a thoroughfare for transients to disrespect and destroy but used to access the wonderful wildlife refuge and our homes.

In addition to applying for funding to build a bridge to accommodate vehicular traffic the Council would also need to seek funding for the upgrade of Stephenson Street to a sealed access road with a pedestrian footpath to ensure the safety of our families and recreational users of our road. As the undersigned strongly object to the re-opening of the bridge to traffic we would find the Council responsible for providing the upgrade & maintenance of the road rather than becoming our responsibility to fund as ratepayers.

If the argument to open the bridge to vehicles is for use during flooding we would like to ensure the Council is aware to the fact that the corner of Maxfield's Road and Stephenson Street is one of the main flood points and would deny access to the bridge during a flood even if it was open to vehicles.

In summary there is no benefit to re-opening Brady's Bridge to vehicular traffic but the downfalls are plenty not only to the local residents and wildlife but the recreational visitors to our area.

We thank you for your consideration of our objection and hope that the Council considers the detrimental damage to both residents and the environment that would result with the re-opening of Brady's Bridge to vehicular traffic.

Please see the below signatory sheet acknowledging individual objectors names and contact details.

NAME	ADDRESS	CONTACT
Dona Wills		
Janelle Whitehill		
DARREN WHITEHILL		
[illegible] Light		
JUNE NIGHT		
Brad light		
Jemiel Wyer		
Cath Duck		
THEO STERGIOPOULOS		
RON FRANKA		
KRIS JAGIELKA		
PAUL GEDDES		
Michelle Irwin		
Colin Irwin		
ROB DUCK		
DARREN LATHAM		

A - PROCEDURAL

A9 INVITED ADDRESSES, PRESENTATIONS OR ACKNOWLEDGEMENTS

A - PROCEDURAL

A10 QUESTIONS ON NOTICE

A - PROCEDURAL

A11 MAYOR'S REPORT

ITEM A11(1) **MAYOR'S REPORT**

OFFICER: COUNCILLOR McCUBBIN

DATE: 20 SEPTEMBER 2016

RECOMMENDATION

That the Mayor's report be noted.

17 August 2016 – 20 September 2016

18 August	Commemoration Service for Vietnam Veterans, Maffra	Cr Crossley attended.
18 August	Commemoration of 50 years of the Battle of Long Tan, Heyfield	Cr Crossley attended.
18-19 August	South Eastern Australian Transport Strategy (SEATS), Phillip Island	Deputy Mayor Cr Wenger attended.
20 August	Commemoration Service for Vietnam Veterans, Sale	Cr Crossley attended.
20 August	Judging Photography and Painting, Cowwarr	Cr Crossley attended.
20 August	Briagolong Short Film Festival, Briagolong	Cr Crossley attended.
22 August	Small Business Festival: Drive - What makes us buy and buy in (Presented by Dan Gregory), Sale	Mayor, Deputy Mayor Cr Wenger, Cr Crossley, Cr Davine and Cr Rossetti attended.
24 August	Turning of the Sod at Sale Specialist School, School, Sale	Mayor attended.
26 August	Bendigo Bank Gippsland Business Awards, Traralgon	Mayor attended.
30 August	Councillor Community Meeting, Yarram Carers Network, Yarram	Mayor and Deputy Mayor Cr Wenger attended.
30 August	Guest Speaker at Rotary Club of Sale Central, Sale	Mayor
31 August	Welcome to Yarram, Yarram	Mayor and Deputy Mayor Cr Wenger attended.
1 September	Marley Street Project's Second Annual Photograph Competition Presentation and Exhibition, Sale	Mayor attended.

2 September	Port of Sale Cultural Hub - Construction Commencement Event, Sale	Mayor, Cr Cleary, Cr Crossley, Cr Davine and Cr Duncan attended.
2 September	Yarram Eisteddfod Official Opening, Yarram	Mayor attended.
2 September	The Tour of Gippsland Event, Port Albert and Sale	Mayor and Deputy Mayor Cr Wenger attended.
2 September	Spring Graduation - 2016 Bendigo/Kangan Institute Graduating Students, Fulham Correctional Centre, Fulham	Mayor attended
2 September	McLoughlin Beach Residents and Ratepayers meeting at the Boat Ramp, McLoughlins Beach	Mayor attended.
2 September	John Leslie Art Prize, Gippsland Art Gallery Sale including dinner with Artists	Mayor, Cr Cleary, Cr Crossley and Cr Davine attended.
3 September	Sale Lions Club BBQ presentation to sponsors in the Sale Mall, Sale	Mayor attended
3 September	Installation and Induction of Very Rev. Susanna Leigh Pain as Dean of the Cathedral Church of St Paul, Sale	Mayor attended.
3 September	Opening of new green at Maffra Bowls Club, Maffra	Mayor attended.
5 September	Council Community Conversation - Wellington Special Needs Network, Sale	Mayor and Cr Crossley attended.
7 September	Guest speaker at Yarram Rotary Club meeting, Yarram	Mayor attended.
8 September	Municipal Association Victoria (MAV) Annual Conference, Melbourne	Cr Hole attended.
9 September	MAV State Council, Melbourne	Cr Hole attended.
9 September	Visit to St Thomas Primary School, Sale	Mayor attended.
9 September	Wellington Youth Art Prize 2016, Yarram Courthouse, Yarram	Mayor attended.
10 September	AGM - Golden Beach Surf Lifesaving Club, Golden Beach	Mayor attended.
10 September	East Gippsland Hockey Association (EGHA) 2016 Hockey Grand Finals, Sale	Mayor attended.

11 September	Sale Tennis Club Life Members Presentation Day, Sale	Mayor attended.
11 September	Sale Historical Society: Heritage Walk along Foster Street, Sale	Mayor attended.
12 September	Frank Evans and Glenn Stagg of Gippsland Health Service to promote new smoking regulations	Mayor attended.
13 September	Guest speaker at U3A, Sale	Mayor attended.
13 September	Staff Awards - Opal Aged Care, Sale	Mayor attended.
14 September	RACV Gippsland Tourism Conference, Walhalla	Cr Crossley attended.
14 September	Maffra Business and Tourism Association meeting, Maffra	Cr Crossley attended.
14 September	Chair AGM - Golden Paradise Beach Ratepayers Association, Golden Beach	Deputy Mayor Cr Wenger attended.
15 September	Principal for a Day, Sale Primary School, Sale	Cr Rossetti attended.
16 September	Meeting with Bank Australia to discuss renewable energy commitment in Gippsland, Traralgon	Mayor attended.
16 September	Opening of Federation Universities Carbon capture and storage laboratories, Churchill	Mayor attended.
16 September	Women in Media and Rural Press Club of Victoria dinner, Warragul	Cr Crossley attended.

COUNCILLOR DARREN McCUBBIN
MAYOR

B –REPORT

DELEGATES

C1 - REPORT

CHIEF EXECUTIVE OFFICER

ITEM C1.1 **CHIEF EXECUTIVE OFFICER'S REPORT**

ACTION OFFICER: CHIEF EXECUTIVE OFFICER

DATE: 20 SEPTEMBER 2016

RECOMMENDATION

That the Chief Executive Officer's Report be received.

22 August	Met with West Sale recreational flyers representative to discuss matters concerning sale of freehold land.
	Attended a Small Business Festival Event – What makes us buy and buy in by Dan Gregory, Sale
23 August	Conducted Audit Committee Member interviews. In attendance was the Mayor and General Manager Corporate Services.
26 August	Attended the Latrobe Valley Transition meeting, Warragul. Present were senior representatives of Regional Development Victoria, the CEO of City of Latrobe and a senior staff member from Baw Baw Shire Council.
	Chaired the **Gippsland Local Government Network** (GLGN) CEO's meeting, Warragul.
29 August	Conducted Audit Committee Member interviews. In attendance was the Mayor and General Manager Corporate Services.
1 September	Audit Committee meeting, Sale. In attendance was Cr John Duncan, Cr Peter Cleary and external parties.
2 September	Attended the **Port of Sale Hub - Construction Commencement Event**, Sale. In attendance included Senator Fiona Nash, Minister for Regional Development, the Hon. Darren Chester, Federal Member for Gippsland and Minister for Infrastructure and Transport, The Hon. Danny O'Brien, Member for Gippsland South, John Leslie OBE, Mayor Darren McCubbin, Councillors Carolyn Crossley, Emilie Davine, and staff and several community group representatives.
7 September	Attended a collaborative meeting between Vic Roads, DEDJTR and Wellington Shire Council to discuss strategic planning, road safety and upcoming operational projects.
16 September	Attending the **Opening of Federation Universities Carbon Capture and Storage Laboratories**, Churchill.

ITEM C1.2 **AUGUST 2016 PERFORMANCE REPORT**

DIVISION: CHIEF EXECUTIVE OFFICE

ACTION OFFICER: CHIEF EXECUTIVE OFFICER

DATE: 20 SEPTEMBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
✓	✓	✓	✓	✓					

OBJECTIVE

For Council to receive and note the August 2016 Council Performance Report.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That Council receive and note the August 2016 Council Performance Report as attached.

BACKGROUND

The August 2016 Council Performance Report comprises key highlights towards achievement of the 2013-17 Council Plan together with an overview of Council finances including an Income Statement with commentary regarding any major variances, information on cash balances, the level of rates outstanding and a progress update on Council's Capital Works program.

OPTIONS

Following consideration of the attached August 2016 Performance Report, Council can resolve to either:

1. Receive and note the August 2016 Council Performance Report; or
2. Not receive and note the August 2016 Council Performance Report and seek further information for consideration at a later Council meeting.

PROPOSAL

That Council receive and note the attached August 2016 Council Performance Report.

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this report have declared a Conflict of Interest.

FINANCIAL IMPACT

Provision of a monthly financial report to the community facilitates accountability and transparency and ensures that Council and management are able to make informed decisions in a timely manner.

COMMUNICATION IMPACT

The Council Plan communicates Council's strategic direction to the community. The Council Plan can also be used by Council to communicate its vision and direction to other tiers of government, organisations, government agencies and funding bodies.

LEGISLATIVE IMPACT

There is no legislative requirement for provision of a monthly Council Performance Report however Council has determined that, in the interests of accountability and transparency, this report will be provided to the community.

COUNCIL POLICY IMPACT

The August 2016 Council Performance Report has been prepared in the context of existing Council policies.

COUNCIL PLAN IMPACT

Objective 2.2 states that Council will:

> *"Maintain processes and systems to ensure sound financial management'*

Objective 2.3 states that Council will:

> *"Ensure sound governance processes that result in responsive, ethical, transparent and accountable decision making".*

AUGUST PERFORMANCE REPORT

AUGUST 2016 COUNCIL PLAN HIGHLIGHTS

Improved communication with library patrons
Library patrons are now receiving SMS, phone message and email communication regarding hold request availability and pre-overdue notices. As more patrons are made aware of these new ways of communication they are opting for non-printed notifications resulting in less cost to Council.

Sessions for primary school age children
To promote children's literacy and public library services, the library hosts special sessions during Children's Book Week for primary school age children. Local theatrical performers provided 22 sessions with an average of 60 children in each session across the branch network.

Mobile and Outreach Library Conference
The Coordinator Library Services assisted in planning the Mobile and Outreach Library Conference "Eureka" which was held in Ballarat in August. The Outreach Officer attended the conference and contributed a wealth of knowledge on trends in outreach service delivery and expanded network of contacts.

'Down the Alley' by FReeza
A new FReeza group has formed and their first event "Down the Alley" was held on 13 August. It was a huge success with credit to the organising committee, Propellor. Fifteen competitors from 5 bands participated. 144 people attended the event which was supported by 30 volunteers. $1,800 was raised which will go towards future events. A partnership was brokered with Cafe 123 for shared mentoring of the Propellor team.

Youth Council updates
Youth Council is working on the Mental Youth Festival which is scheduled for 15 October to close Mental Health Week. Youth Council recruitment also begins on 1 September and closes on 21 October.

New role for Age Friendly Projects
Age Friendly Project Officer has been appointed and will commence in September 2016.

Exhibitions
The Gallery hosted the following four exhibitions during August.

- 'Find me a Castle' by Children's book illustrator Beci Orpin
- 'The Big Matrix' by Wellington Primary Schools and Kindergartens
- 'A Fine Line', drawings from the Gippsland Art Gallery Collection
- 'The Gippsland 11', a Meeniyan Art Gallery touring exhibition at the Maffra Exhibition Space

Healthy lifestyles updates
Healthy Lifestyles will be submitting project applications to Sport and Recreation Victoria for both the Baldwin Reserve Clubroom Development and Maffra Lawn Tennis Synthetic Courts Resurfacing projects on 31 August. If successful, funding for these projects would become available from 1 July 2017.

Gordon Street Reserve Clubrooms Official Opening is being scheduled for November 2016. Liaison with the Minister's office is ongoing, with three potential dates provided.

The Assessment Panel for the Community Assistance Grants August funding round have assessed all applications with officer recommendations to be presented at a Council workshop on 6 September.

Leisure Services updates
Meetings have been held with the Sale Swimming Club with the following outcomes:

- Catering expectations clarified;
- Options proposed for improving club access to off peak times;
- Club provided with letter of support in bid for kiosk improvement funds.

Preparations for the outdoor pool summer season have also commenced.

A survey has been implemented to consult with members about cardio equipment usage and preferences.

Request for Quotation (RFQ) was circulated to obtain a consultant for Aqua Energy Business Planning process.

Emergency Management updates
The Fire Hydrants Marker project has recommenced while Council is working with VicRoads to complete their roads.

Jack River Fire Recovery project has recommenced with the Recovery Officer tasked to work with Yarram and District communities to facilitate Community Emergency Plans. This work is to be completed by the end of October 2016.

Economic Development Strategy adopted
Economic Development Strategy 2016-22 and Action Plan 2016-18 was adopted by Council on 16 August 2016.

AIR5428 project
Signed funding agreement received for grant to review social and economic opportunities from Defence Project AIR 5428.

Rail travel
On 5 August 2016, Council expressed disappointment with Citizen's Jury recommendation to end new or additional V-Line services at Pakenham.

Toongabbie Broiler Farms approved
VCAT has upheld Council's decision to approve two broiler farms in Toongabbie. Planning permits will now be issued to allow the farms to be developed.

Heyfield Low Density Residential lot study
Council has recently commenced a study to identify low density residential lot ('acre lot') growth opportunities in Heyfield, to support further township growth and development.

Tenders for GRSC stage 2
Tenders / Quotations have been called for the design of Gippsland Regional Sports Complex Stage 2 and the Cowwarr Recreation Reserve Pavilion Upgrade.

Parks Updates
Seaspray Town Tree Plan community meeting was well received with the Ratepayers association who are very enthusiastic about the project. Sale Botanic Gardens Masterplan was adopted by Council while Prince Street Reserve major planting renovation was completed.

Horticulture Experience
VCAL students commenced work in the Sale Botanic Gardens as part of the Horticulture Experience. This is a structured program delivered by the Natural Environment & Parks business unit which is conducted over three hours per week during Term 3 and Term 4. It provides students hands-on experience combined with the theoretical knowledge of horticulture. The program is planned to be delivered annually to VCAL students to showcase the range of career options in the area of Natural Environment & Parks at Council.

AUGUST 2016
FINANCE SUMMARY

INCORPORATED IN PERFORMANCE REPORT

INCOME STATEMENT

For the period ending 31 August 2016

	YEAR TO DATE 2016-17			FULL YEAR 2016-17	
	Actual $000's	Adjusted Budget $000's	Variance $000's	Adjusted Budget $000's	Adopted Budget $000's
Income					
Rates and charges	53,834	53,521	313	53,722	53,722
Statutory fees & fines	76	83	(7)	461	461
User fees	707	658	49	6,117	6,117
Grants - operating	3,682	3,693	(11)	13,619	13,619
Grants - capital	287	247	40	15,483	15,483
Contributions - monetary	35	19	16	1,114	1,114
Net gain on disposal of property, infrastructure, plant and equipment	22	24	(2)	328	328
Other income	409	365	44	2,975	2,975
Total Income	59,052	58,610	442	93,819	93,819
Expenditure					
Employee costs	4,815	5,019	204	25,353	25,353
Contractors, materials and services	3,242	3,834	592	28,913	28,913
Bad and doubtful debts	-	-	-	111	111
Depreciation and amortisation	1,023	1,023	-	21,760	21,760
Borrowing costs	-	-	-	504	504
Other expenses	145	153	8	711	711
Total Expenditure	9,225	10,029	804	77,352	77,352
Surplus for the period	**49,827**	**48,581**	**1,246**	**16,467**	**16,467**

Note: The adjusted budget figures reflect any known changes that have arisen since the adoption of the original budget. Including these changes in an adjusted budget figure enables Council to more accurately monitor financial performance during the year and predict the end of year position. Council must, however, report publicly against the original adopted budget on a quarterly basis.

Major variances that have occurred to Year to Date August 2016 are:

INCOME

- **$313k** - Additional rates and charges have been raised from supplementary valuations since the preparation of the 2016/17 budget.
- **$49k** - More than anticipated income in user fees is primarily due to:

  a. Swim school enrolments at Aqua Energy are higher than anticipated by $42k.

  b. Entertainment centre ticket sales income is greater than predicted due to extra show activities but partly offset by corresponding artist fees resulting in a net gain of $20k.
- **$40k** - Grant funding totalling $307k was received earlier in 2016/17 than expected and is partially offset by other grant funding budgeted to be received in 2016/17, but actually received in 2015/16 including ($90k) for the Cowwarr Recreation Reserve Clubroom Redevelopment, and ($60k) for the Municipal Emergency Resourcing Program. Also anticipated funding for the Hearthall Road Reconstruction project ($125k) is on hold until September 2016 due to wet conditions.
- **$44k** - Primarily due to $33k additional interest on investments resulting from a higher than expected cash balance.

EXPENDITURE

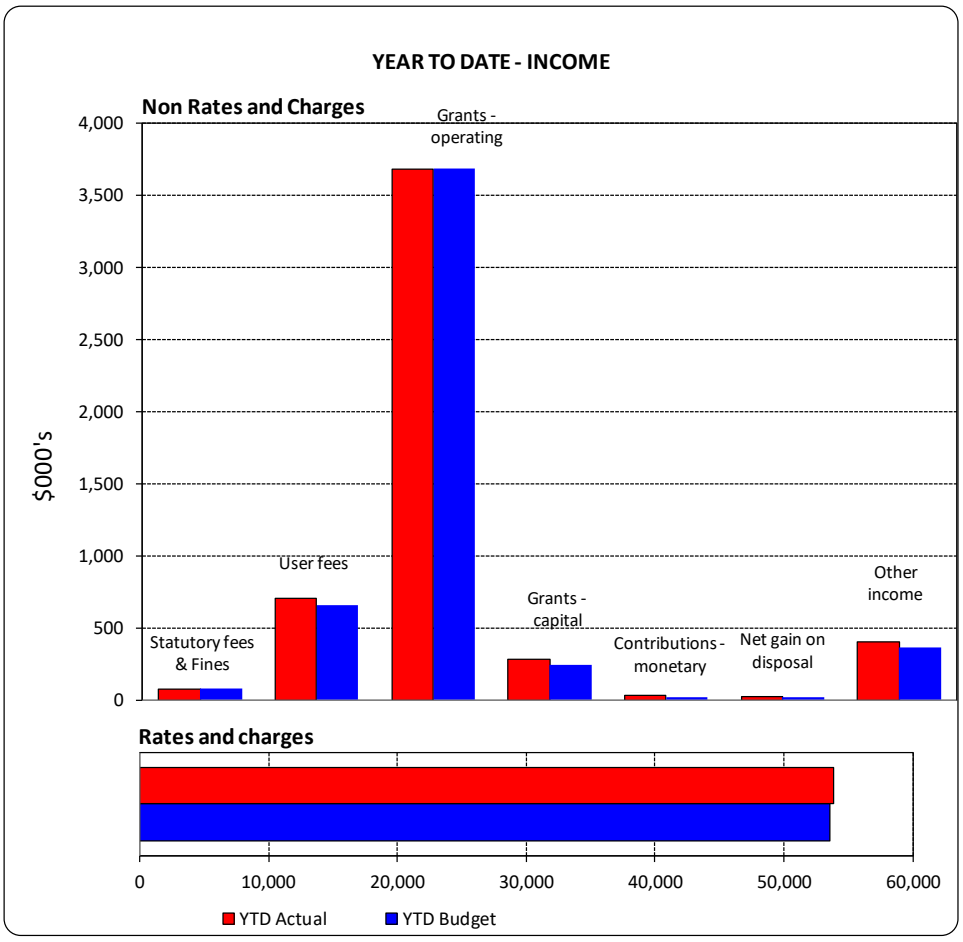
- **$204k** - Employee costs, including savings from the initial WorkCover premium instalment are lower than budgeted $197k, however further expenses may be incurred subject to premium finalisation due in November 2016.
- **$592k** - Gains in contractors, materials and services are primarily due to:

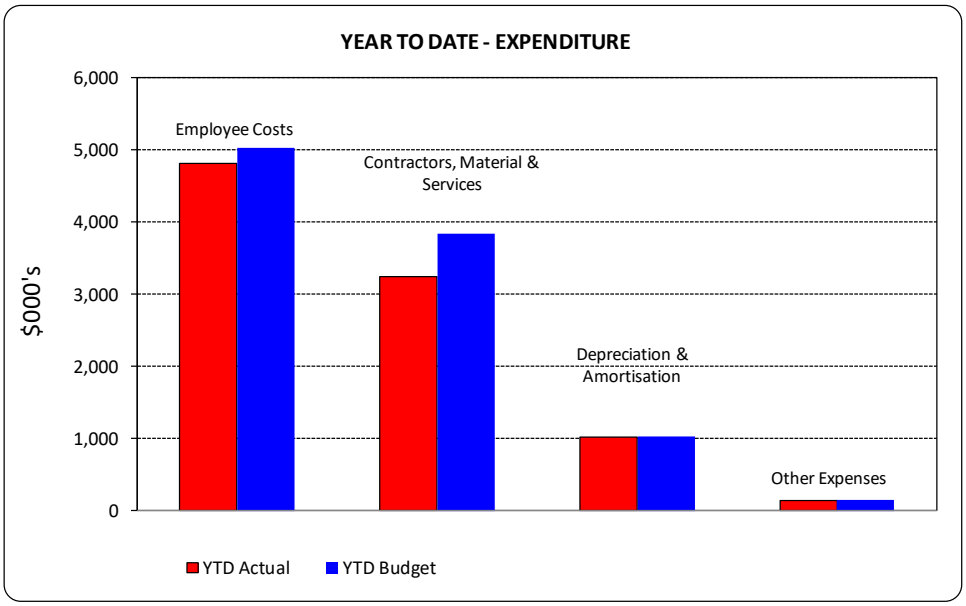
  a. Non-cash adjustments of $245k for the EPA Landfill Levy were completed a month earlier than anticipated.

  b. The Princes Highway/Cobains Road Intersection Upgrade is being delivered by the developer. Contractor costs are occurring, but are $238k below anticipated year to date levels.

  c. Several annual insurance invoices for 2016/17 were lower than expected resulting in $33k savings. In addition, a refund of an insurance excess payment from 2015/16 was received while no claims have been made for 2016/17 resulting in a further $20k gain.

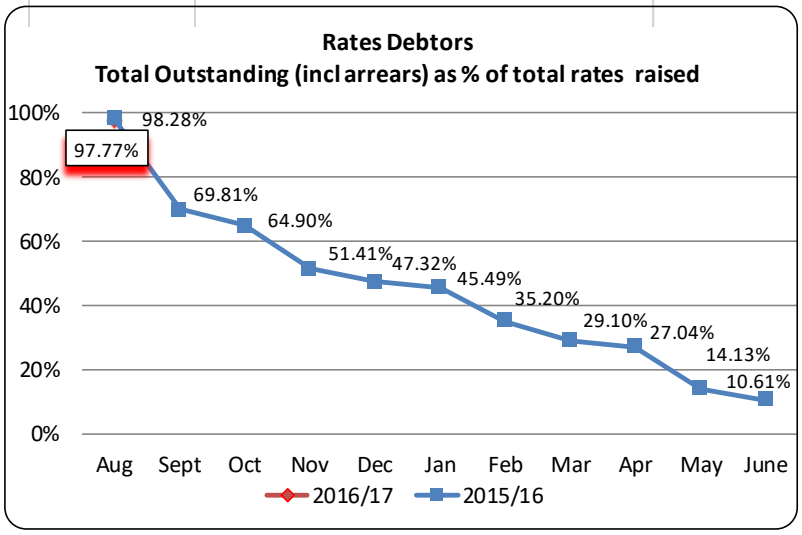
AUGUST 2016 YEAR TO DATE COMPONENTS AT A GLANCE



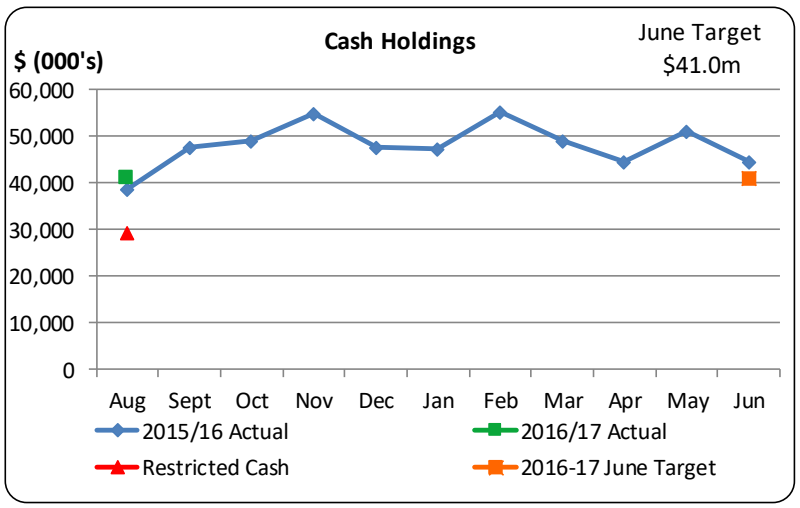


BALANCE SHEET
As at 31 August 2016

Actual August 15		Actual August 16	Adjusted Budget June 17	Adopted Budget June 17
$000's		$000's	$000's	$000's
92,787	Total Current Assets	97,754	46,112	43,009
889,506	Total Non Current Assets	902,917	925,068	925,042
982,293	**Total Assets**	1,000,671	971,180	968,051
14,791	Total Current Liabilities	12,204	13,375	14,997
9,254	Total Non Current Liabilities	9,782	12,479	11,536
24,045	**Total Liabilities**	21,986	25,854	26,533
958,248	**Net Assets**	**978,685**	**945,326**	**941,518**



The 2016/17 rate notices were issued in late August 2016 with the first instalment due on 30 September 2016. The rate debtors outstanding as at the end of August 2016 was $58.8 million (97.8%) compared to August 2015 of $56.3 million (98.3%).



Council cash holdings at the end of August 2016 of $41.0 million is above the August 2015 balance of $38.7 million. The current cash holdings includes restricted funds of $6.8 million to cash back reserves, $8.9 million to cover provisions and $11.1 million for 2015/16 operating and capital projects to be carried forward into 2016/17.

Restricted cash is money that is reserved for a specific purpose and therefore not available for general business use.

CAPITAL EXPENDITURE PROGRAM

For the period ending 31 August 2016

	YEAR TO DATE 2016-17			FULL YEAR 2016-17		
	Actual $000's	Adjusted Budget $000's	Variance $000's	Adjusted Budget $000's	Achieved %	Adopted Budget $000's
Property	(2,334)	(2,380)	(46)	12,443	(19%)	12,443
Infrastructure	3,564	3,177	(387)	29,359	12%	29,359
Plant and Equipment	155	134	(21)	3,149	5%	3,149
Intangibles	10	84	74	675	1%	675
Grand Total	**1,395**	**1,015**	**(380)**	**45,626**	**3%**	**45,626**

	YEAR TO DATE 2016-17			FULL YEAR 2016-17		
	Actual $000's	Adjusted Budget $000's	Variance $000's	Adjusted Budget $000's	Achieved %	Adopted Budget $000's
Renewal	1,643	1,571	(72)	29,352	6%	29,352
Upgrade	184	(85)	(269)	10,294	2%	10,294
Expansion	(478)	(499)	(21)	3,917	(12%)	3,917
New Assets	46	28	(18)	2,063	2%	2,063
Grand Total	**1,395**	**1,015**	**(380)**	**45,626**	**(3%)**	**45,626**

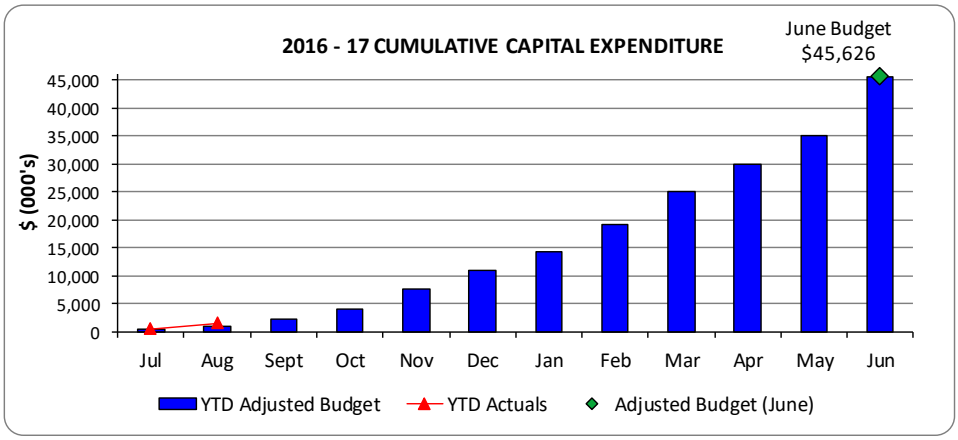
August 2016 Highlights

- Port of Sale Cultural Hub construction contract has been awarded. Construction to commence 1 September 2016.
- Yarram - Regent Theatre Refurbishment has commenced, first stage expected to be complete early September 2016.
- New library management system installed and operational.
- Gordon Street Recreational Reserve Clubroom Development completed, only awaiting power upgrade to be completed by AusNet Services.
- Maffra Brewers Hill Road complete.
- Commercial Road Street Scape Improvements are expected to be completed by October 2016, the median edge strip and drainage modifications complete. Currently working on western footpath & kerb & channel.

Summary Year to Date 2016-17

As at 31 August 2016, the adjusted capital expenditure budget is $45.6 million. 140 projects planned for the year.

Status	% of Capital Works	Other:	% of Capital Works
Complete	3%	Red	1%
Commenced	26%	Amber	2%
Contract	1%	Multi Year	6%
Preplanning	54%	Transferred	7%
Other	16%		



ITEM C1.3 **AUDIT COMMITTEE MEMBER APPOINTMENT**

DIVISION: CHIEF EXECUTIVE OFFICE

ACTION OFFICER: CHIEF EXECUTIVE OFFICER

DATE: 20 SEPTEMBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
				✓					

OBJECTIVE

The purpose of this report is to provide information to Council to enable consideration of the appointment of one external independent member to Council's Audit Committee.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That:

1. ***Council appoint an independent member to Council's Audit Committee for a three year period commencing 29 October 2016 and expiring 28 October 2019 in accordance with the recommendation in the attached confidential evaluation report at Item F1.1 of this Council meeting agenda; and***

2. ***The information contained in the confidential document Item F1.1 Audit Committee Member Appointment and designated under Section 77 Clause (2)(c) of the Local Government Act 1989 as confidential by the Chief Executive Officer on 8 September 2015 because it relates to the following grounds under Section 89(2) of the Local Government Act 1989: h) any other matter which the Council or special committee considers would prejudice the Council or any person;***
be designated confidential information under Section 77 Clause (2)(b) of the Local Government Act 1989, except that once this recommendation has been adopted the name of the successful applicant can be made public.

BACKGROUND

Council maintains an Audit Committee in accordance with Section 139 of the *Local Government Act 1989*. The Audit Committee is a formally appointed committee of the Council and is responsible to Council.

The Audit Committee's role is to report to Council and provide appropriate advice and recommendations on matters relevant to its Charter in order to facilitate decision making by Council in relation to the discharge of its responsibilities.

The Audit Committee membership is comprised of two Councillors and three external independent persons with suitable knowledge and experience, all appointed by Council for periods varying to a maximum term of three years. The term of this current appointment is due to expire on 28 October 2016.

In order to ensure the vacant position is filled an Expression of Interest process has been undertaken to recruit a suitably qualified external member for Council's Audit Committee.

Advertising was undertaken in July/August 2016 and expressions of interest were received by the nominated closing date of 23 August 2016.

An interview process was held in August 2016. The Evaluation Panel's assessment and a recommendation for appointment is included in the attached confidential report.

OPTIONS

Council has the following options:

1. Adopt the recommendation to appoint one independent member for a period commencing 29 October 2016 and expiring 28 October 2019 to Council's Audit Committee; or
2. Amend the recommendation in relation to the proposed appointment.

PROPOSAL

That Council appoint an independent member to Council's Audit Committee for a three year period commencing 29 October 2016 and expiring 28 October 2019 in accordance with the evaluation panel's confidential report attached.

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this Report have declared a Conflict of Interest.

COUNCIL PLAN IMPACT

The Council Plan 2013–17 Theme 2 Organisational states the following strategic objective and related strategy:

> Strategic Objective
> *"An organisation that is responsive, flexible, honest, accountable and consistent."*
>
> Strategy 2.3
> *"Ensure sound governance processes that result in responsive, ethical, transparent and accountable decision making."*

This report supports the above Council Plan strategic objective and strategy.

C2 - REPORT

GENERAL MANAGER CORPORATE SERVICES

ITEM C2.1 **ASSEMBLY OF COUNCILLORS**

DIVISION: CORPORATE SERVICES

ACTION OFFICER: GENERAL MANAGER CORPORATE SERVICES

DATE: 20 SEPTMEBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
		✓		✓					

OBJECTIVE

To report on all assembly of Councillor records received during the period 30 August 2016 to 13 September 2016.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That Council note and receive the attached Assembly of Councillor records received during the period 30 August 2016 to 13 September 2016.

BACKGROUND

Section 80A of the *Local Government Act 1989* requires a written record be kept of all assemblies of Councillors, stating the names of all Councillors and Council staff attending, the matters considered and any conflict of interest disclosures made by a Councillor. These records must be reported, as soon as practicable, at an ordinary meeting of the Council and recorded in the minutes.

Below is a summary of all assembly of Councillor records received during the period 30 August 2016 to 13 September 2016.

Assembly of Councillors summary of reports received during the period 30 August 2016 to 13 September 2016		
Date	**Matters considered**	**Councillors and officers in attendance**
6 September 2016	Councillors' Diary Meeting	Councillor Crossley, Councillor McCubbin, Councillor Cleary, Councillor Davine, Councillor Wenger, Councillor Hole David Morcom, Chief Executive Officer, Leah Schuback, Executive Assistant
6 September 2016	The Year That Was 2015/16 Port Project Update Bushfire Management Overlay – Mapping Update *(presentation did not proceed)* Community Assistance Grants Gippsland Waste and Resource Recovery Implementation Plan Wellington Shire Heritage Study – Stage 2 Implementation	Councillor Crossley, Councillor McCubbin, Councillor Cleary, Councillor Davine, Councillor Wenger, Councillor Hole, Councillor Duncan (items 2-5) David Morcom, Chief Executive Officer, Arthur Skipitaris, General Manager Corporate Services, Glenys Butler, General Manager Community and Culture, Chris Hastie, General Manager Built and Natural Environment, John Websdale, General Manager Development, Ian Carroll, Manager Corporate Finance (item 1), Sharon Houlihan (item 2), Marcus Stone, Acting Manager Healthy Lifestyles (item 4), Tim Rowe, Manager Natural Environment and Parks (item 5), Brian Gibson, Waste Management Coordinator (item 5), Josh Clydesdale, Manager Land Use Planning (item 6)

ASSEMBLY OF COUNCILLORS

1. **DATE OF MEETING:** 06 September 2016

2. **ATTENDEES:**

Councillors:

Name	In attendance (tick)		Name	In attendance (tick)	
	Yes	**No**		**Yes**	**No**
Cr Crossley	✓		Cr McCubbin	✓	
Cr Rossetti		✓	Cr McIvor		✓
Cr Cleary	✓		Cr Wenger	✓	
Cr Davine	✓		Cr Hole	✓	
Cr Duncan		✓			

Officers In Attendance:

Name	In attendance (tick)		Name	In attendance (tick)	
	Yes	**No**		**Yes**	**No**
D Morcom, CEO	✓		G Butler, Acting CEO		✓
C Hastie, GMB&NE		✓	J Websdale , GMD		✓
A Skipitaris, GMCS		✓			

Others in attendance: (list names and item in attendance for)

Name	Item No.	Name	Item No.
Leah Schuback	**1**		

3. **Matters/Items considered at the meeting:**

    1. Councillors' Diary Meeting

4. **Conflict of Interest disclosures made by Councillors:**

Nil

ASSEMBLY OF COUNCILLORS

1. DATE OF MEETING: 06 September 2016

2. ATTENDEES:

Councillors:

Name	In attendance (tick)		Name	In attendance (tick)	
	Yes	No		Yes	No
Cr Crossley	✓		Cr McCubbin	✓	
Cr Rossetti *(leave)*		✓	Cr McIvor		✓
Cr Cleary	✓		Cr Wenger	✓	
Cr Davine	✓		Cr Hole	✓	
Cr Duncan *(item 2 - 5)*	✓				

Officers in Attendance:

Name	In attendance (tick)		Name	In attendance (tick)	
	Yes	No		Yes	No
D Morcom, CEO	✓		G Butler, GMCC	✓	
A Skipitaris, GMCS	✓		John Websdale GMD	✓	
C Hastie, GMBNE	✓				

Others in attendance:

Name	Item No.
Ian Carroll, CEO & GMS	1
Sharon Houlihan	2
- Presentation did not proceed -	3
Marcus Stone	4
Tim Rowe, Brian Gibson	5
Josh Clydesdale	6

3. Matters / Items considered at the meeting:

1. The Year That Was 2015/16
2. Port Project Update
3. Bushfire Management Overlay – Mapping Update *(presentation did not proceed)*
4. Community Assistance Grants
5. Gippsland Waste and Resource Recovery Implementation Plan
6. Wellington Shire Heritage Study – Stage 2 Implementation

4. Conflict of Interest disclosures made by Councillors:

Item 4 Community Assistance Grants - Cr Crossley declared a Conflict of Interest due to a Direct Interest and left the chamber.

ITEM C2.2 **AMENDMENT OF UPCOMING COUNCIL MEETINGS**

DIVISION: CORPORATE SERVICES

ACTION OFFICER: GENERAL MANAGER CORPORATE SERVICES

DATE: 20 SEPTEMBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
✓	✓	✓		✓	✓	✓		✓	

OBJECTIVE

For Council to:

- Cancel the 2 November, 2016 Ordinary Council Meeting and convene a Special Council Meeting on Thursday 3 November 2016 to instate incoming Councillors following the General Election; and
- Amend the start time for the 4 October, 2016 Ordinary Council Meeting

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That:

1. ***Council cancel the scheduled 2 November 2016 Ordinary Council Meeting; and***
2. ***Council approve as per S84A of the Local Government Act (1989) to convene a Special Council Meeting on Thursday 3 November 2016 at 5.00pm, to instate new Councillors; and***
3. ***Council amend the starting time of the 4 October 2016 Ordinary Council Meeting from 1.00pm to 4:00pm; and***
4. ***Council advertise the amendments as detailed above***

BACKGROUND

The Victorian Electoral Commission has advised the Wellington Shire Council that they will declare the 2016 Council Elections results on Monday 31 October 2016.

To ensure sufficient time to induct incoming Councillors given the Melbourne Cup Public Holiday on Tuesday 1 November, it is recommended that the Ordinary Council Meeting scheduled for Wednesday 2 November, 2016 be cancelled and that a Special Council Meeting be convened for Thursday 3 November 2016, to instate incoming Councillors following the General Election.

Under 84A of the *Local Government Act (1989)* the Chief Executive Officer may summon a special meeting of the Council within 14 days after the day the returning officer for a general election publicly declares the result of the election.

The Special Council Meeting on Thursday 3 November 2016 will ensure that the incoming Councillors undertake certain statutory requirements including:

- Taking the Oath
- Election of Mayor and Deputy Mayor
- Declaration to abide by the Councillor Code of Conduct as per legislative requirements

Also to ensure the availability of Councillors at the 4 October Council meeting, it is necessary to amend the scheduled starting time from 1:00pm to 4:00pm.

OPTIONS

Council has the following options:

Option 1

1. Council cancel the scheduled 2 November 2016 Ordinary Council Meeting; and
2. Council approve as per S84 of the *Local Government Act (1989)* to convene a Special Council Meeting on Thursday 3 November 2016 at 5.00pm, to instate new Councillors; and
3. Council amend the starting time of the 4 October 2016 Ordinary Council Meeting from 1.00pm to 4:00pm; and
4. Council advertise the abovementioned changes

Option 2

1. Not to approve either or all of the amendments detailed in Option 1 above; or

Option 3

1. Seek further information for consideration at a later Council Meeting

PROPOSAL

That

1. Council cancel the scheduled 2 November 2016 Ordinary Council Meeting; and
2. Council approve as per S84 of the *Local Government Act (1989)* to convene a Special Council Meeting on Thursday 3 November 2016 at 5.00pm, to instate new Councillors; and
3. Council amend the starting time of the 4 October 2016 Ordinary Council Meeting from 1.00pm to 4:00pm; and
4. Council advertise the abovementioned changes

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this report have declared a Conflict of Interest.

COMMUNICATION IMPACT

Council will advise the community of the cancellation of this scheduled meeting in advance and include in the communication that Council will reconvene as per Council meeting schedule being 15 November 2016, following Special Council Meeting of 3 November, 2016.

LEGISLATIVE IMPACT

The *Local Government Act 1989, Section 89(4)* states that Council must at least 7 days before the holding of –

(a) An ordinary council meeting, or
(b) A special council meeting, or
(c) A meeting of a special committee comprised solely of Councillors –

Give public notice of the meeting.

COUNCIL PLAN IMPACT

The Council Plan 2013–17 Theme 2 Organisational states the following strategic objective and related strategy:

Strategic Objective
"An organisation that is responsive, flexible, hones, accountable and consistent."
Strategy 2.3
"Ensure sound governance processes that result in responsive, ethical, transparent and accountable decision making"

This report supports the above Council Plan strategic objective and strategy.

C3 - REPORT

GENERAL MANAGER DEVELOPMENT

ITEM C3.1 **PLANNING SCHEME AMENDMENT C90 - PRECINCTS 3 AND 11 LONGFORD DEVELOPMENT PLAN AREA**

DIVISION: DEVELOPMENT

ACTION OFFICER: MANAGER LAND USE PLANNING

DATE: 20 SEPTEMBER 2016

IMPACTS									
Financial	Communication	Legislative	Council Policy	Council Plan	Resources & Staff	Community	Environmental	Consultation	Risk Management
✓	✓	✓		✓		✓	✓	✓	

OBJECTIVE

- To consider two private Planning Scheme Amendment requests to rezone all land within Precincts 3 and 11 of the Longford Development Plan Area for rural residential use.
- To request the Minister for Planning to Authorise Council, as the planning authority, to prepare Amendment 90 – Precincts 3 and 11 Longford Development Plan Area, pursuant to Section 8A of the *Planning and Environment Act 1987* and once Authorisation is granted, proceed to exhibition.

PUBLIC QUESTIONS AND COMMENTS FROM THE GALLERY

RECOMMENDATION

That:

1. ***Council, having considered the private requests (refer to Attachments 1 and 2), resolve to advance the Planning Scheme Amendment process to facilitate the rezoning of all land within Precincts 3 and 11 of the Longford Development Plan Area, Longford.***

2. ***Pursuant to Section 8A of the Planning and Environment Act 1987, Council resolve to request the Minister for Planning to Authorise Council, as the planning authority, to prepare Amendment C90 - Precincts 3 and 11 Longford Development Plan Area (refer to Attachment 3).***

3. ***Council resolve to proceed with the public exhibition of Amendment C90 - Precincts 3 and 11 Longford Development Plan Area, once Authorisation is granted.***

BACKGROUND

In the first half of 2016 Council received two private requests to rezone land within the Longford Development Plan area (see Figure 1).

The application for Precinct 3 (east of the Longford golf course) requests land be rezoned from the Farming Zone to the Township Zone and a Development Plan Overlay - Schedule 10 applied. If rezoned the land could potentially create an additional 6 lots in the short-term. The full application is included in **Attachment 1** to this Report.

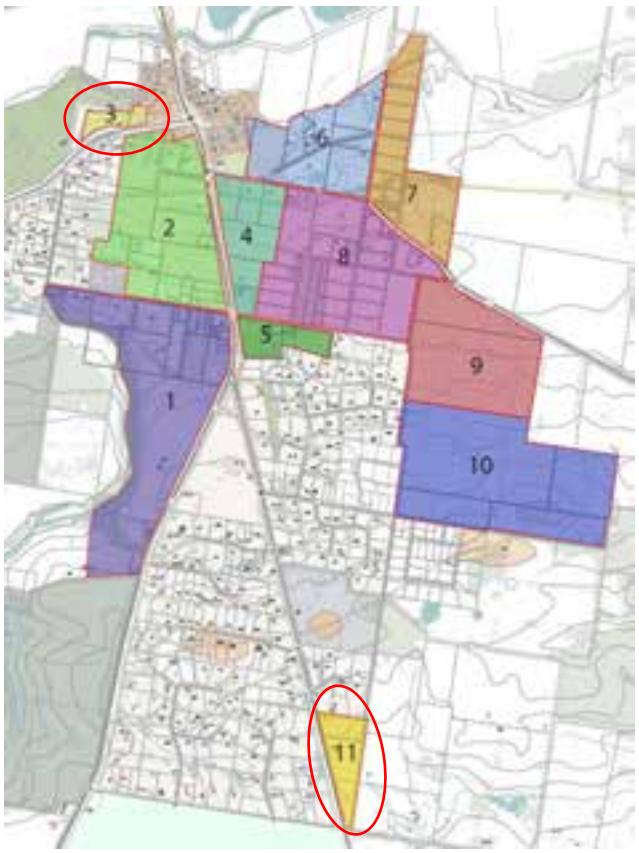


Figure 1: Precinct Plan Longford Development Area

The application for Precinct 11 (north of Boundary Creek Road, Longford) requests land be rezoned from the Farming Zone to the Rural Living Zone - Schedule 5, including the application of a Development Plan Overlay - Schedule 10. If rezoned the land could potentially create an additional 16 lots in the short-term. The full application is included in **Attachment 2** to this Report.

The land subject to both requests is located within the Longford Development Growth Area, which is identified within the Longford Development Plan. The Longford Development Plan was adopted by Council on 17 November 2015 and was formally included in the Wellington Planning Scheme as a reference document on 12 May 2016.

The applications and the information, submitted in support of the rezoning's, are consistent with the requirements set out in the Longford Development Plan, and of a standard that can now allow them to be progressed to the next stage in the process.

The proposed Development Plan Overlay - Schedule 10 will require the preparation of a Precinct Plan for each individual precinct (as set out in the Longford Development Plan), and will address matters relating to infrastructure provision, developer contributions and the need, or otherwise, for potential native vegetation offsets.

In the interests of efficiency in process (for Council) and cost savings for the proponents, the two requests have been combined into a single Planning Scheme Amendment. Planning Scheme Amendment C90 proposes to:

- Rezone land within Precinct 3 to the Township Zone;
- Rezone land within Precinct 11 to the Rural Living Zone - Schedule 5 (with a minimum subdivision size 0.6 hectares); and
- Apply the Development Plan Overlay - Schedule 10 to both precincts.

A full set of the draft Planning Scheme Amendment documents - including the proposed Development Plan Overlay – Schedule 10, are included in **Attachment 3** to this Report.

OPTIONS

Council has the following options:

1. To advance the residential rezoning of land within the Longford Development Plan Area by requesting the Minister for Planning to Authorise Council, as the planning authority, to prepare Amendment 90 – Precincts 3 and 11 Longford Development Area pursuant to Section 8A of the *Planning and Environment Act 1987* and once Authorisation is granted, proceed to exhibit Amendment C90; or

2. To not advance the rezoning of all land within Precincts 3 and 11 of the Longford Development Area, Longford; or

3. To seek further information prior to considering a further report at a future Council Meeting.

PROPOSAL

That Council

1. Having considered the private requests (refer to **Attachments 1 and 2**), resolve to advance the Planning Scheme Amendment process to facilitate the rezoning of all land within Precincts 3 and 11 of the Longford Development Plan Area, Longford.

2. Pursuant to Section 8A of the *Planning and Environment Act 1987*, resolve to request the Minister for Planning to Authorise Council, as the planning authority, to prepare Amendment C90 - Precincts 3 and 11, Longford Development Plan Area (refer to **Attachment 3**).

3. Resolve to proceed with the public exhibition of Amendment C90 - Precincts 3 and 11 Longford Development Plan Area, once Authorisation is granted.

CONFLICT OF INTEREST

No staff and/or contractors involved in the compilation of this report have declared a Conflict of Interest.

FINANCIAL IMPACT

As Amendment C90 is a private request, all direct financial costs associated with the Amendment process will need to be met by the proponent.

COMMUNICATION IMPACT

Should Council decide to proceed with Amendment C90, landowners within and directly adjacent to Precincts 3 and 11 will receive direct notification of the public exhibition once Authorisation is granted by the Minister for Planning. The Council website will also be updated accordingly.

LEGISLATIVE IMPACT

Should Council decide to proceed with Amendment C90 formal Authorisation from the Minister for Planning will be required under the provisions of the *Planning and Environment Act 1987*, prior to public exhibition.

Wellington Shire Council is committed to upholding the Human Rights principles as outlined in the *Charter of Human Rights and Responsibilities Act 2006 (Vic)* and referred to in Council's Human Rights Policy. The Human Rights Checklist has been completed and the proposed amendment to the Wellington Planning Scheme is in accordance with Council's policy commitment to uphold human rights principles.

COUNCIL PLAN IMPACT

The Council Plan 2013–17 Theme 5 Land Use Planning states the following strategic objective and related strategy:

> Strategic Objective
> *"Appropriate and forward looking land use planning that incorporates sustainable growth and development."*
>
> Strategy 5.1
> *"Ensure Land Use Policies and Plans utilise an integrated approach to guide appropriate land use and development."*

Amendment C90 supports the above Council Plan strategic objective and strategy.

PLANNING POLICY IMPACT

Amendment C90 is consistent with the State and Local Planning Policy Frameworks (SPPF and LPPF) within the Wellington Planning Scheme; the Longford Development (2015); the Sale, Wurruk and Longford Structure Plan (2010), the Gippsland Regional Growth Plan (2014), and the relevant State Government Planning Practice Notes.

Clause 21.05 of the Wellington Planning Scheme - Sale, Wurruk and Longford Strategic Framework, identifies the subject land for rural residential expansion.

COMMUNITY IMPACT

The fundamental principle of rural residential development of the Longford Development Plan Area has been advocated in the Sale, Wurruk and Longford Structure Plan since its adoption by Council in 2010. This has since been further strengthened by the Longford Development Plan (November 2015).

Whilst previous community consultation exercises within Longford have not raised concerns in relation to the creation of further rural residential land, it is anticipated that landowners may still have concerns in respect of the potential (amenity) impacts from future development.

On the basis that the Longford Development Plan requires the preparation of a Precinct Plan, any concerns relating to future development can be addressed at that particular stage of the process.

ENVIRONMENTAL IMPACT

Information provided in support of the requests has not indicated any constraints which would prohibit rural residential development within the subject areas. Further specialist reports will be required during the Precinct Plan process.

CONSULTATION IMPACT

Amendment C90 will be exhibited in accordance with the procedures required by the *Planning and Environment Act 1987*. On the basis that support is given for the request to be made to the Minister for Planning to Authorise the Amendment, the process would allow for the following:

a) The exhibition period for Amendment C90 is tentatively scheduled for December 2016/ January 2017, during which submissions can be made by the general public;

b) Depending on the nature of submissions received, Council could either abandon the Amendment, seek to resolve any issues raised by submitters or request the Minister for Planning to appoint an expert independent Planning Panel to consider the submissions and make recommendations to Council.

ATTACHMENT 1

Beveridge Williams

Reference: 1300213
Office: Sale

22 June 2016

ACN 006 197 235
ABN 38 006 197 235

Sale
45 Macalister St
PO Box 47
Sale Vic 3850
ph: 03 5144 3877

Wellington Shire Council
18 DeSailly Street
Sale VIC 3850

Dear Joshua,

RE: APPLICATION TO AMEND THE WELLINGTON PLANNING SCHEME
REZONING OF LAND
2677 ROSEDALE-LONGFORD ROAD & 41 BRENNANS ROAD, LONGFORD

We refer to the above matter and advise that we act on behalf of the owners of 2677 Rosedale-Longford Road, Longford, Graham & Denise James.

We refer to the following documents and recognize that they establish Council's official policy position for residential growth across the Longford area:

- The Sale, Wurruk & Longford Structure Plan, which was included as a reference document at Clause **21.20** of the Wellington Planning Scheme through Amendment C67 on 8 November 2012; and,
- The Longford Development Plan, which was included as a reference document at **Clause 21.20** of the Wellington Planning Scheme through amendment C87 on 12/5/2016.

Since the incorporation of the Structure Plan occurred, we have undertaken a series of site investigations to clarify whether development of the above parcels in Longford can be carried out in a manner that accords with the zonings foreshadowed in the Structure Plan and in the context of Council's strategic planning policies.

We have now completed our investigations, which included a feature and level survey, a land supply/demand analysis, and a land capability assessment and our conclusion is that the site is suitable for rezoning to the Township Zone, as recommended in the Structure Plan and as outlined in the Structure Plan and the Development Plan.

Our clients request that Council commence a planning scheme amendment to rezone the land as a result of the findings of these reports.

Accordingly, we ask that Council amend the Wellington Planning Scheme by rezoning 2677 Rosedale-Longford Road and 41 Brennans Road, Longford to the Township Zone.

We enclose for Council's consideration:

- A Feature & Level Survey;
- A Response to Practice Note No. 37;
- An Explanatory Statement;
- A Land Supply/Demand Assessment;
- Land Capability Assessment for 2677 Rosedale-Longford Road, Longford; and,
- A Statutory Fee of $798.

We believe that the information submitted is sufficiently comprehensive to enable Council to consider this request and that Council is in a position to proceed with the amendment.

We are happy to meet at any time to discuss this application or to provide further information on this request. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
BEVERIDGE WILLIAMS & CO PTY LTD

CHRIS CURNOW
Senior Planner – East Gippsland Region

Beveridge Williams

development & environment consultants

Beveridge Williams
Sale Office
45 Macalister Street
Sale VIC 3850
PO Box 47
Sale Vic 3850
Tel: (03) 5144 3877
Fax: (03) 5144 6591
www.beveridgewilliams.com.au

RESPONSE TO PRACTICE NOTE 37 (RURAL RESIDENTIAL DEVELOPMENT)

Planning Scheme Amendment Application

2677 Rosedale-Longford Road and 41 Brennans Road, Longford

June 2016

DOCUMENT CONTROL DATA

BW	Beveridge Williams Sale Office 45 Macalister Street Sale 3850 PO Box 47 Sale 3850 Tel: (03) 5144 3877 Fax: (03) 5144 6591 www.beveridgewilliams.com.au	**Title**	Response to Practice Note No. 37 (Rural Residential Development)
		Author	CC
		Checked	NS
		Project Manager	CC
		Synopsis	Application to rezone land from Farming Zone to Township Zone.

Reference: 1600374

Client: Graham & Denise James

Revision Table

Rev	Description	Date	Authorised
A	Final draft for Planning Submission	20/6/2016	CC

Distribution Table

Date	Revision	Distribution
20/6/2016	A	Council, file

Copyright Notice

CONTENTS

APPENDICES

1 INTRODUCTION

Beveridge Williams & Co. Pty. Ltd. has been instructed by the proponent, Graham & Denise James, to prepare an application to amend the Wellington Planning Scheme through the rezoning of both their land at 2677 Rosedale-Longford Road, Longford and their neighbour's land at 41 Brennans Road, Longford.

The application proposes to rezone the land from Farming Zone to Township Zone

The report provides an assessment against the provisions of Practice Note 37 – Rural Residential Development (Department of Environment Land, Water and Planning).

2 SITE AND CONTEXT DESCRIPTION

2.1 Site Location

This report pertains to two properties that are located in the northern portion of the low density residential hamlet of Longford and 5.6 kilometres to the south of the regional centre of Sale.

The locality plan in ***Figure 1*** displays the subject sites in relation to key features and facilities across the surrounding area.

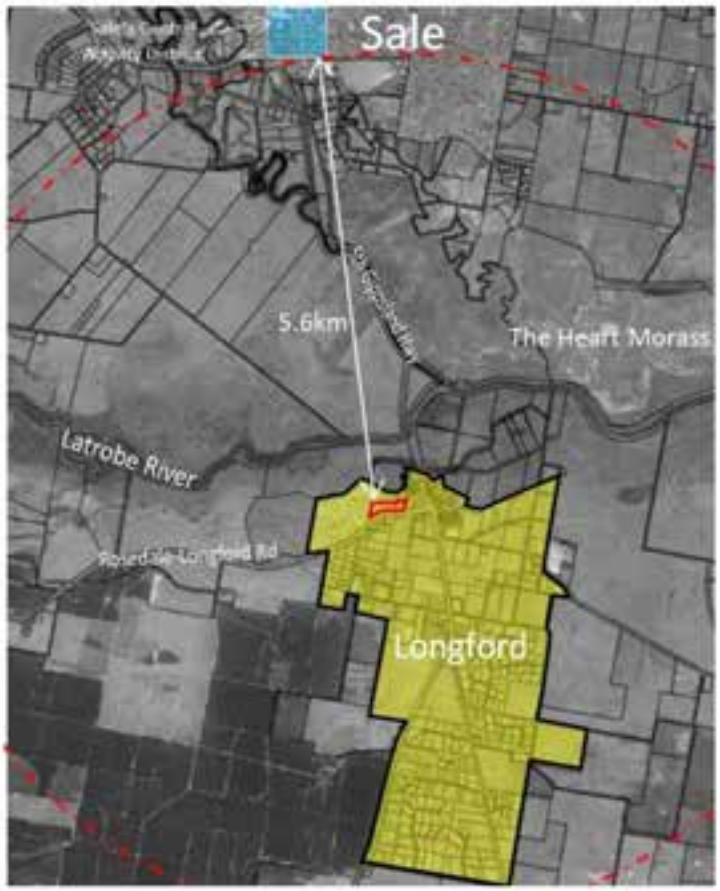


Figure 1*: Locality Plan showing the subject sites, which are outlined red, in relation to key facilities & features across Longford, which is shaded yellow, and the surrounding area*

Property Details

The subject sites have addresses of 2677 Rosedale-Longford Road, Longford and 41 Brennans Road, Longford.

They have the following distinct title particulars, sizes and areas:

2677 Rosedale-Longford Road, Longford:

- Is otherwise known as Lot 2 on Lodged Plan 66556 (LP66556), which is contained in Certificate of Title Volume 08537, Folio 608; and,
- Has area of 3.03 hectares formed in an irregular shape, with a dog-legged frontage of 333.2 metres to Rosedale-Longford Road along its south boundary and frontage of 96.76 metres to Brennans Road along its east boundary.

41 Brennans Road, Longford:

- Is otherwise known as Crown Allotment 20, Parish of Longford, which is contained in Certificate of Title Volume 04820, Folio 918; and,
- Has area of 1.214 hectares formed in a trapezoidal shape with a frontage of 106.4 metres to Rosedale-Longford Road along its south boundary and 199 metres to Brennans Road along its west boundary.

The titles to the two properties can be seen in ***Appendix A***.

Topography

The feature survey at ***Appendix B*** shows the location of site features and topographical contours across subject sites.

The topography of 41 Brennans Road is marked by two plateaus, i.e. one in the northern portion upon which the dwelling sits and a lower one in the southern portion. A steep fall separates these two plateaus and a declared watercourse runs through a shallow gully at the bottom of this slope.

The topography of 2677 Rosedale-Longford Road does not have two plateaus, but does fall reasonably steeply away from its northern boundary.

It is noted that 41 Brennans Road is not developable due to the presence of a declared watercourse that traverses it in an east-west direction. The topography of the developable portion of the site is provided in the feature survey that is contained in ***Appendix B***.

There are no significant views from either site.

Road Access

As demonstrated by the feature survey at ***Appendix B***, 2677 Rosedale-Longford Road enjoys access to Rosedale-Longford Road via a circular gravel crossover that provides two connection points to the land. Meanwhile, 41 Brennans Road gains access to Brennans Road via a gravel crossover that meets the site at the north end of the road frontage. Neither of these crossovers required culvert crossings.

Fire Hazard

The subject site is not affected by a Bushfire Management Overlay, but is located in a Bushfire Prone Area under the Building Code of Australia. Hence, any building permits issued to allow the

construction of dwellings on the land will need to comply with the relevant sections of the Code as regards bushfire risk.

The nearest bushfire threat in the landscape would appear to come from the pine plantation that is located 1.2 kilometres to the south.

Land liable to inundation and floodwaters

None of the land is recognised as being liable to inundation or floodwaters.

Drainage lines and dams

As can be seen in ***Photograph 1***, there is a dam on 41 Brennans Road.

As can be seen in ***Figure 2***, an east-west running declared watercourse traverses through the eastern extremity of 2677 Rosedale-Longford Road and the entirety of 41 Brennans Road. Minor drainage lines can be seen on the Feature Survey at ***Appendix B*** and are discussed further in the Drainage Strategy at ***Appendix E***.

Figure 2*: Watercourse Mapping for the subject sites (Source: VicMap)*

Significant Environmental Features and Vegetation Category

The site does not appear to contain any significant vegetation.

Waterway values

As shown in ***Figure 2***, there is a declared watercourse identified on the sites, with the majority of this feature contained in 41 Brennans Road. The waterway is ephemeral and, hence, does not appear to accommodate any aquatic species.

Land degradation

A land capability assessment has been prepared by Archangel for 2677 Rosedale-Longford Road and is provided at ***Appendix C***. This report did not identify any evidence of salinity, soil instability or erosion. A report was not prepared for 41 Brennans Road as the owner has chosen not to be involved in the preparation of the rezoning application. Nonetheless, given the proximity of the two properties, it is reasonable to consider the findings of the land capability assessment for that site to be analogous.

Soil Capability

As shown at ***Figure 3***, the Department of Primary Industries mapping identifies the soils on the subject sites as being from the Stradbroke Class and, hence they are considered suitable only for livestock grazing at relatively low stocking rates and agroforestry, i.e. growing timber plantations.

The land capability assessment at ***Appendix C*** revealed that the geography of the land features Silty Sand / Clayey Sand topsoils and Clayey Silt / Silty Clay subsoils. These soils are considered suitable for on-site wastewater disposal at a density of 1 lot per 4,000m².

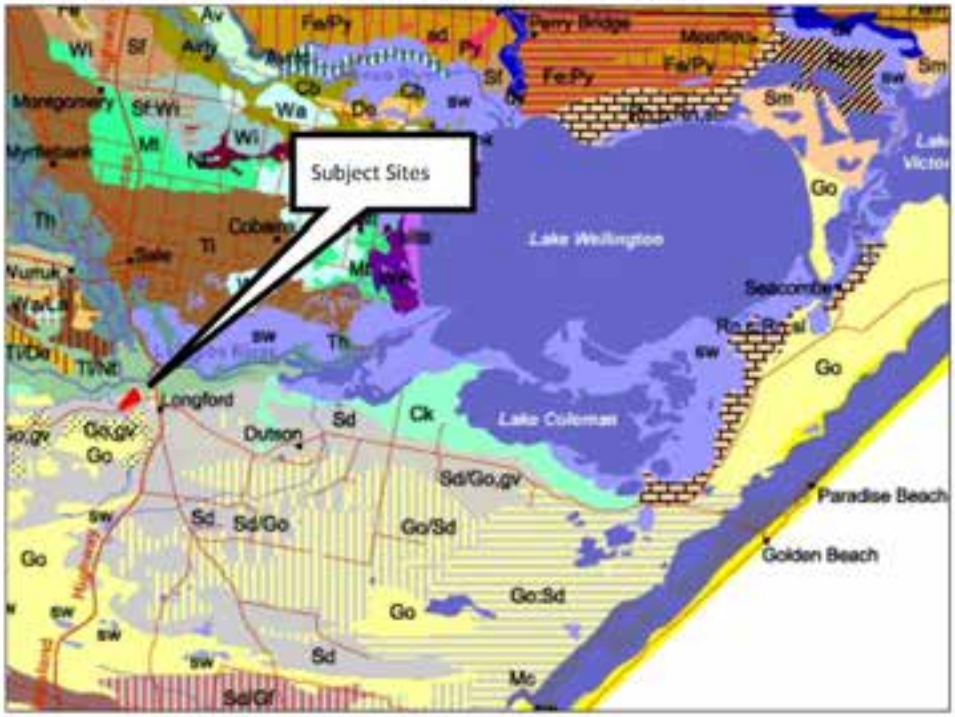


Figure 3: Regional Soil Landform mapping for the Longford Area showing the subject sites as being from the Stradbroke Class (Source: DEPI website)

Soil Contamination

There is no physical or historic evidence of soil contamination and no recording of any in the land capability assessment at ***Appendix C***.

Views

The subject sites do not appear to enjoy any significant views.

Weather Patterns

The annual weather pattern for Longford features unusually high humidity and number of cloudy days relative to surrounding areas, has above average wind speed and daytime temperatures, while overnight temperatures and number of clear days are below average. The following ***Tables 1 to 7*** provide the average annual, temperature, rainfall, rainy days, clear and cloudy days, windspeed and humidity for Longford (source of all statistics: Bonzle.com).

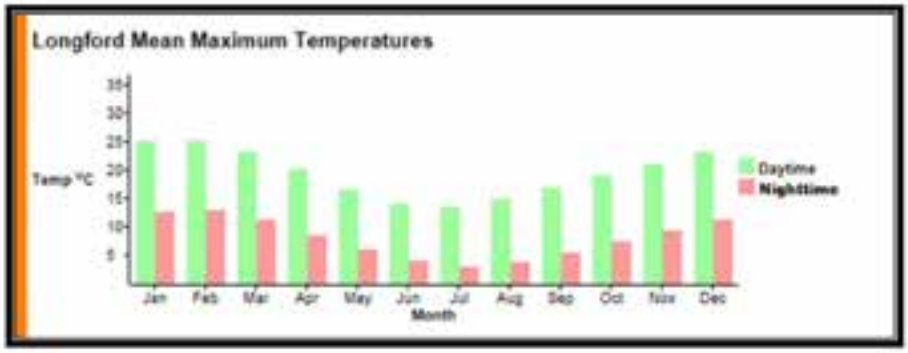


Table 1: Mean Temperatures for Longford, by month

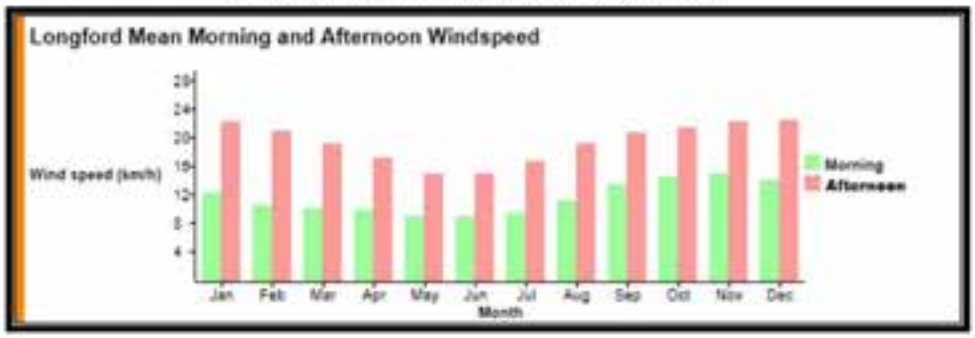


Table 2: Mean Morning and Afternoon windspeed for Longford, by month

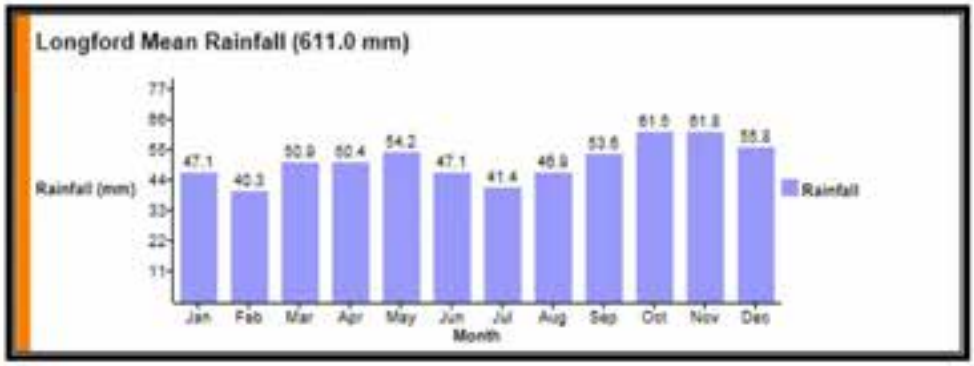


Table 3: Mean Rainfall for Longford, by month

Table 4: Mean Rain days for Longford, by month

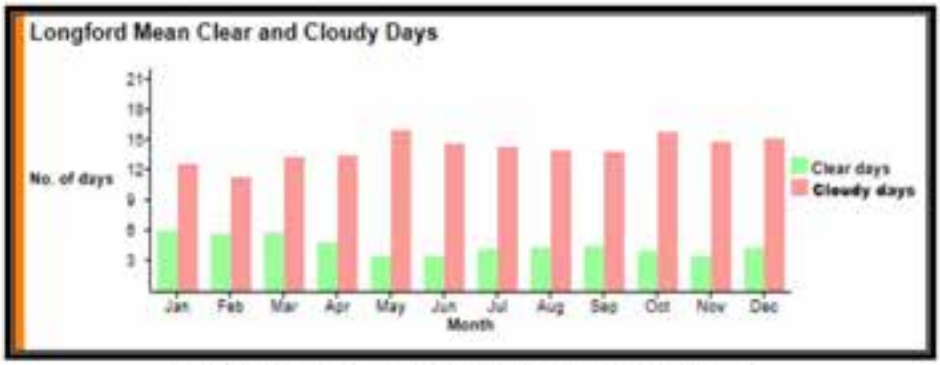


Table 5: Mean Clear and Cloudy days for Longford, by month

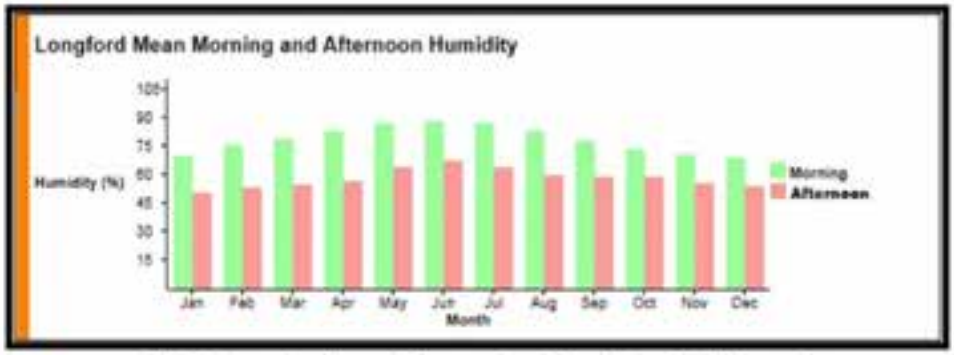


Table 6: Mean Morning and afternoon humidity for Longford, by month

Available Infrastructure

The land is serviced by reticulated electricity and telecommunications by aboveground wires that are hung from poles that line the Rosedale-Longford Road and Brennans Road reservations. There is no reticulated water supply available in Longford.

Existing building and works

The subject sites have the following building and works constructed thereon:

2677 Rosedale-Longford Road, Longford:

- Accommodates a dwelling in its eastern portion that is set back approximately 15 metres from the south boundary frontage to Rosedale-Longford Road and approximately 22 metres from the east boundary frontage to Brennans Road;
- Has an on-site wastewater disposal system positioned adjacent to the dwelling;
- Has a number of outbuildings clustered around the dwelling with some fenced off yards and landscaping on each side; and,
- Is otherwise largely cleared and covered in pasture grass with just a few native and exotic trees lining the western boundary.

41 Brennans Road, Longford:

- Accommodates a dwelling in its northwest portion that is set back approximately 12 metres from the west boundary frontage to Brennans Road and 7 metres from the north boundary;
- Has an on-site wastewater disposal system positioned adjacent to the dwelling; and,
- Is otherwise largely cleared and covered in pasture grass with a few native and exotic trees growing in the southern portion and a dam in the centre of the western half.

The above improvements can be seen in the Feature Survey at ***Appendix B*** and ***Photographs 1 - 10***.

Photograph 1: *Aerial photo of 2677 Rosedale-Longford Road, which is outlined light blue*

Photograph 2: *Aerial photo of 41 Brennans Road, which is outlined light blue*

Adjoining land uses and neighbouring building and works

The subject site is located at the northern fringe of the rural township of Longford, which is an area that is characterised by low density residential lifestyle lots set on the northern banks of the headwaters of the Gippsland Lakes.

Longford acts as a dormitory suburb for the regional centre of Sale and is typically populated by residents enjoying higher socio-economic status than the median for the Wellington Shire.

As a result, many of the dwellings in Longford are quite large and sit within well maintained landscaping on lots of between 8,000m² - 2 hectares in area.

As can be seen in ***Figure 1***, the key thoroughfares through Longford are:

- South Gippsland Highway, which connects Longford back to Sale to the north and Yarram and the balance of South Gippsland to the southeast;
- Seaspray Road, which connects Longford to Seaspray and the townships along the 90 Mile each to the south;
- Longford-Rosedale Road, which connects Longford to Rosedale and the Princes Highway to the west; and,
- Longford-Loch Sport Road, which connects Longford to Loch Sport and Golden Beach to the southeast.

The township of Longford itself comprises a limited range of commercial and community facilities, that includes:

- A Primary school that is situated on the east side of the South Gippsland Highway, approximately 1.2 kilometre southeast of the subject sites; and
- A general store and service station on the east side of the Seaspray Road approximately 2.6 kilometre south of the subject site; and,
- A Public Hall, kindergarten and recreation reserve that is located 500 meters to the east of the subject sites.

Meanwhile, the central activity district of the City of Sale, which offers a full suite of commercial and community facilities including a V/Line train station, is situated 5.4 kilometres to the north via the South Gippsland Highway, as discussed above.

Land to the north and west of 2677 Rosedale-Longford Road is used by the Sale Golf Club as part of its 18-hole golf course, with:

- a large clubroom building and associated carpark positioned approximately 90 metres from the southwest corner of the subject site;
- A greenkeepers maintenance shed adjacent to the western end of the subject site's north boundary; and,
- a fairway adjacent to the remainder of the north boundary of the subject site.

Land to the north of 41 Brennans Road has address of 39 Brennans Road. This land has area of 9,700m² formed in an irregular shape across two lots. It accommodates a single dwelling and detached garage that are both within 10 metres of the common boundary with the subject site.

Land to the east of 41 Brennans Road has address of 2697 Rosedale-Longford Road. This land has area of 7,750m² formed in an irregular shape. It accommodates a single dwelling in its northwest corner that is positioned approximately 30 metres from the common boundary with the subject site, but has a pool and detached garage in between.

Land to the south of the subject sites on the opposite side of Rosedale-Longford Road is comprised across six separate parcels that range in area from 8,000m², i.e. at 2672 Rosedale-Longford Road, to 8 hectares, i.e. at 2684 Rosedale-Longford Road. These land parcels are used for rural residential and low-scale livestock grazing.

As can be seen in ***Photographs 3*** & ***4***, Rosedale-Longford Road is formed with an all-weather bitumen pavement and grassed swale drainage on both sides. It is under the management of VicRoads.

As can be seen in ***Photographs 5*** & ***6***, Brennans Road is a gravel road with grassed shoulders on both sides that terminates approximately approximately 50 metres south of the northwest corner of 41 Brennans Road, where it restarts to provide access to the dwelling on that land. It is under the management of Council.

Photograph 3: View down Rosedale-Longford Road where it fronts 41 Brennans Road, taken looking west

Photograph 4: View looking west along Rosedale-Longford Road from the intersection with Brennans Road

Photograph 5: View up the Brennans Road reserve, taken looking north from Rosedale-Longford Road

Photograph 6: View looking north up Brennans Road where it abuts the dwelling in the north portion of 41 Brennans Road

Aboriginal Cultural Heritage

As demonstrated by the mapping at ***Figure 3***, an area of cultural heritage sensitivity was found in the land to the north of 2677 Rosedale-Longford Road during an archaeological assessment that was carried out on that land.

Figure 3: *Mapping of sites with Aboriginal Cultural Heritage Significance (Source: LandVic)* proposal

3 THE PROPOSAL

3.1 The Proposal

It is proposed to amend the Wellington Planning Scheme by rezoning the subject sites from Farming Zone to Rural Living Zone (Schedule 5).

The feature survey provided at ***Appendix B*** demonstrates the site characteristics and should be read in conjunction with section 2 of this report.

The land capability assessment at ***Appendix C*** demonstrates that 2677 Rosedale-Longford Road can accommodate domestic wastewater on lots with minimum area of 4,000m². It is noted that the presence of the declared watercourse within 41 Brennans Road means that this land is not capable of being developed and, hence, no assessment was made thereof.

All necessary statutory documentation to facilitate the planning scheme amendment is provided at ***Appendix F***.

3.2 Strategic Framework

State Planning Policy Framework

Clauses 11-19 of the Wellington Planning Scheme present the State Planning Policy Framework (SPPF) which provides a context for spatial planning and decision making by planning and responsible authorities.

These provisions apply across the State and support a consistent approach to implementation of local planning scheme provisions in line with Victorian Government policy.

In short, the SPPF includes policies that cover issues such as:

Clause 11 Settlement indicates that planning is to facilitate sustainable development that takes full advantage of existing settlement patterns, investment in transport and communication, water and sewerage and social facilities. The intent of policy is to ensure the ongoing provision of land and supporting infrastructure to facilitate sustainable urban development, whilst utilising opportunities for consolidation, redevelopment and intensification of use and development within existing urban areas responsive to neighbourhood character and landscape considerations.

Clause 12 Environmental and landscape values seeks to protect the health of ecological systems and the biodiversity they support (ecosystems, habitats, species and genetic diversity), conserving areas with identified environmental and landscape values, implementing environmental principles for ecologically sustainable development.

Clause 13 Environmental risks indicates that planning should adopt a best practice environmental management and risk management approach, seeking to avoid or minimise environmental degradation and hazards. In this, it is the intent that planning should identify and manage the potential for the environment and environmental changes, to impact upon the economic, environmental or social well-being of society.

Clause 14 Natural resource management identifies that planning assists in the conservation, use and management of natural resources to support both environmental quality and sustainable development.

Clause 15 Built environment and heritage states that all new land use and development should appropriately respond to its landscape, valued built form and cultural context, protecting places and sites with significant heritage, architectural, aesthetic, scientific and cultural value. The intent is to create quality built environments supporting the social, cultural, economic and environmental well-being of the communities, cities and towns.

Clause 16 Housing provides the following objective and strategies for rural living rezoning and development:

"Objective
To identify land suitable for rural living and rural residential development.

Strategies
Manage development in rural areas to protect agriculture and avoid inappropriate rural residential development.
Reduce the proportion of new housing development provided in rural areas and encourage the consolidation in existing settlements where investment in physical and community infrastructure and services has already been made.
Demonstrate need and identify locations for rural residential development through a housing and settlement strategy.
Ensure planning for rural living avoids or significantly reduces adverse economic, social and environmental impacts by:

- *Maintaining the long-term sustainable use and management of existing natural resource attributes in activities including agricultural production, water, mineral and energy resources.*
- *Protecting existing landscape values and environmental qualities such as water quality, native vegetation, biodiversity and habitat.*
- *Minimising or avoiding property servicing costs carried by local and State governments.*
- *Discouraging development of isolated small lots in rural zones from use for rural living or other incompatible uses.*
- *Encouraging consolidation of existing isolated small lots in rural zones.*
- *Maintaining an adequate buffer distance between rural residential development and intensive animal husbandry.*
- *Ensure land is not zoned for rural living or rural residential development if it will encroach on high quality productive agricultural land or adversely impact on waterways or other natural resources.*
- *Ensure land is only be zoned for rural living or rural residential development where it:*
- *Is located close to existing towns and urban centres, but not in areas that will be required for fully serviced urban development.*
- *Can be supplied with electricity and water and good quality road access."*

Clause 17 Economic development identifies that planning is to provide for a strong and innovative economy, where all sectors of the economy are critical to economic prosperity. Planning should support and foster economic growth and development by providing land, facilitating decisions and resolving land use conflicts.

Clause 18 Transport seeks to ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people/goods, and is safe.

Clause 19 Infrastructure envisages that planning should enable the development and timely provision of social and physical infrastructure. It continues by indicating that the growth and redevelopment of settlements should be planned in a manner that allows for the logical and efficient provision and maintenance of infrastructure, that strategic planning should facilitate the efficient use of existing infrastructure and human services.

Municipal Strategic Statement

Clause 21.01 Municipal Profile provides an overview of the municipality in terms of Settlement, Environment, Economic Development and Particular Uses. It indicates that Wellington Shire includes relatively unspoilt coastal, lake and mountain areas, together with some of the richest agricultural land. The six main urban centres contain the majority of the population in the central part of the municipality. Sale is the largest urban centre in the Shire with the remaining large townships of Heyfield, Maffra, Rosedale and Stratford in the central area of the municipality, fulfilling a service role to the rural areas across the Shire, as well as being centres of commerce, industry and employment in their own right. Yarram, in the south-west of the Shire, fulfils this role within this part of the municipality. Wealth and prosperity are derived from agricultural and farming activities, as well as the timber industry, off shore oil and gas extraction and activities associated with aviation.

The Shire includes an array of ecosystems, with a significant proportion of the Shire's area being public land and many areas recognised through their listing on the National Estate Register and declarations under the RAMSAR Convention.

The rural and agricultural industries are very important to the economy, with dairying and cattle grazing the dominant agricultural pursuits. Smaller farm sizes reflect the high quality of soils, climate and irrigation across the Shire. The Shire hosts important airfield infrastructure with the RAAF base at East Sale being an important local employer. The oil and gas industry has also been well established in the Shire for many years.

The region has the State's primary reserves of brown coal and gas located within it. The delineation and protection of the coal resources and urban buffer areas are seen to aid in retaining this valuable asset, and provide appropriate land use control in the areas adjoining the coal resource.

Clause 21.02 Key Influences indicates that the Shire's natural resources have provided the foundation upon which the Wellington community has developed and prospered, with future development continuing to be dependent on the utilisation, management and protection of these natural resources.

Clause 21.03 Vision – Strategic Framework details the identified direction for the Shire, including the indication that Strategic Framework Plans identify directions for future land use planning and development in the Municipality, summarising locations where specific land use outcomes will be supported and promoted.

Clause 21.04 Settlement provides an overview for urban and rural townships, coastal areas, rural lifestyle areas and infrastructure, providing objectives and strategies relevant to the individual elements. The clause continues by identifying intent for various locations within the Shire, including the following specific to Longford:

- Provide suitable opportunities for rural residential development to the extent appropriate to the area's functional role and environmental capacity, and in areas which do not detrimentally affect the retention of high quality agricultural land.

- Support the redevelopment of the Sale Golf Club including the provision of housing around the golf course subject to appropriate infrastructure and environmental measures being implemented as part of the development.
- Consider the following factors before any further land is designated/rezoned for future residential or rural residential purposes:
  - land to be designated/rezoned should be adjoining or within close proximity to the existing township or rural living zoned land;
  - land to be designated/rezoned should be located in an area with high quality scenic views, such as on one of the natural ridges, where there are panoramic distant views, or on an area with immediate views over the floodplain/wetlands; and,
  - if suitable areas with high quality scenic views are unavailable, land that is located between the existing Township Zone and the Rural Living Zone, generally close to the Longford Primary School or the recreation reserve should be considered for residential or rural residential purposes.

The Sale, Wurruk and Longford Strategic Framework recognises the distinct yet closely linked nature of the three communities by virtue of their proximity to each other and the common services and amenities they share. The Structure Plan indicates that, for this reason, the success or failure of one community will be the success or failure of the others. In consequence, the Structure Plan has been prepared to ensure that the three communities work together in partnership to achieve common goals.

In relation to Longford, it is detailed as the main rural residential catchment in the area and the 'gateway' to the Ninety Mile Beach. Longford is inevitably reliant on Sale as the main service centre and, hence, only contains a limited range of commercial and community infrastructure.

Longford is viewed through the Structure Plan as being a key focus for rural residential growth in the area and Shire more broadly and will provide some urban growth opportunities in close proximity to recreation and education facilities and the redeveloped golf course. It is indicated that land in Longford is not currently serviced with reticulated water or sewerage, but potential exists for this to occur in the future as growth occurs and Longford's identity as a desirable rural lifestyle area is protected and enhanced. The Longford Strategy Plan, which can be seen in ***Figure 4***, seeks to realise these objectives.

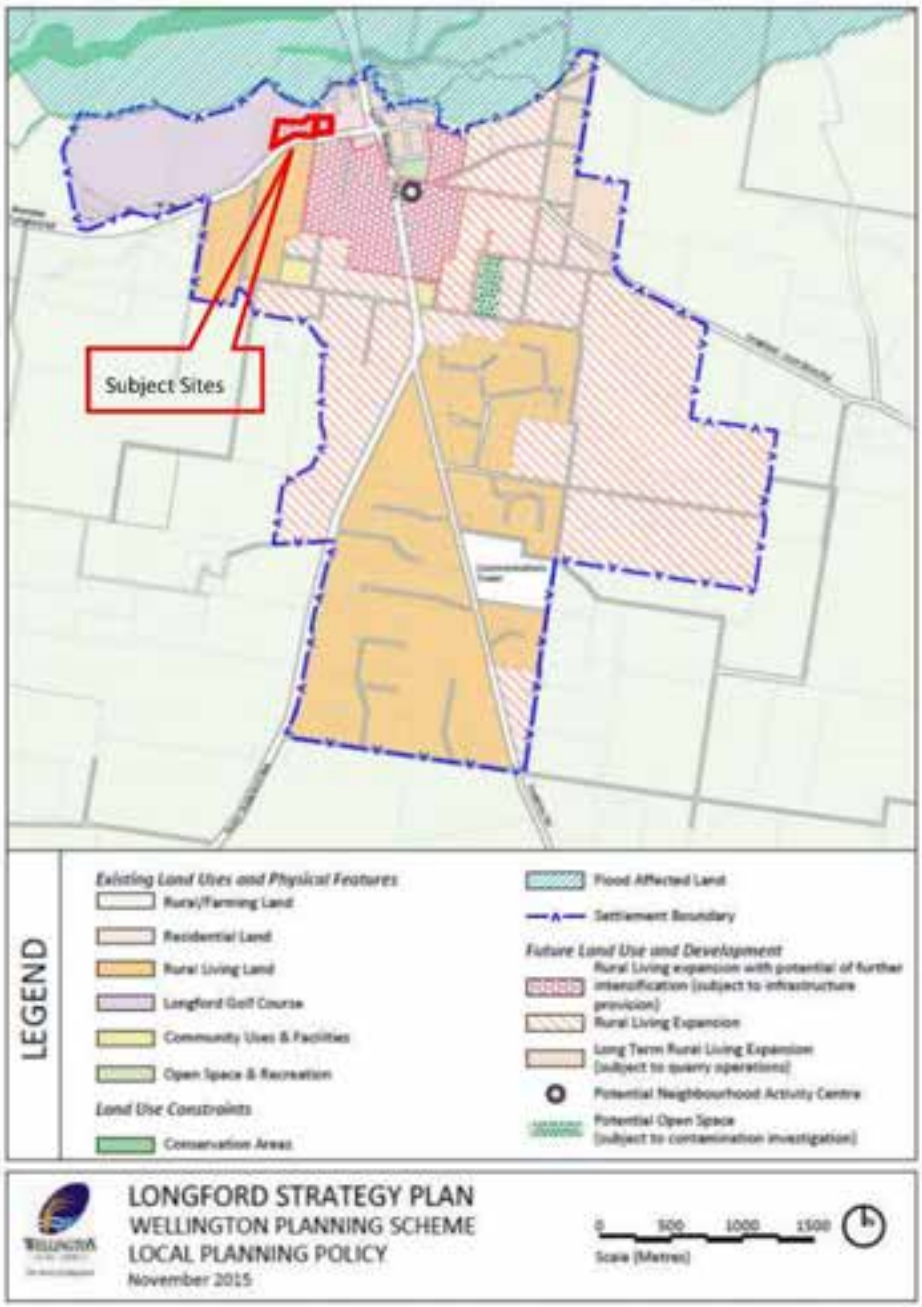


***Figure 4**: Longford Strategy Plan*

It is further noted that Council has prepared and adopted an outline development plan for Longford that divides the land that has been earmarked for residential rezoning through the Longford Strategy Plan up into 11 precincts that must be considered for rezoning by precinct.

The subject sites comprise precinct 3 in the structure plan and are recommended for rezoning to the Township Zone, with a minimum lot size of 4,000m², which will lead to an eventual yield of 7 lots.

As can be seen in ***Figure 5***, the structure plan is not specific about the final lot layout that should be achieved from a future subdivision, but suggests that the existing intersection between Brennans Road and Rosedale-Longford Road should be the primary access point, with a service road providing access to future lots within 2677 Rosedale-Longford Road.

***Figure 5**: Design Response Plan (Longford Development Plan)*

3.3 Housing Need and the Housing Objectives of the area

An assessment of land supply and demand in Longford has been carried out and is contained within ***Appendix D***.

This assessment concludes that:

- There are 68 vacant lots available in Longford;
- There have been an average of 9.3 new dwellings built per year across Longford over the last 10 years;
- Longford presently has 7.3 years of residential land supply available;
- There are expected to be an additional 2.5 lots created per annum in Longford through ongoing subdivision of existing Rural Living Zoned land, which will mean that the there is actually 10 years of underlying land supply; and,
- If the subject sites were rezoned and developed as envisaged in the Longford Development Plan today the supply of available land supply in Longford would increase to 12 years. However, the likely 2 year time lag before lots are actually available for sale will mean that the real land supply in Longford never exceeds 11 years.

Clause 11.02-1 within the State Planning Policy Framework of the Wellington Planning Scheme provides the following strategy for managing land supply:

- *"Ensure that sufficient land is available to meet forecast demand;*
- *Plan to accommodate projected population growth over at least a 15 year period and provide clear direction on where this growth should occur. Residential land supply will be considered on a municipal basis, rather than a town by town basis; and*
- *Monitor development trends and land supply and demand for housing and industry."*

So, as the rezoning of the subject sites will be necessary to maintain supply within Longford at around 11 years, it is supported by the relevant housing policy within the Wellington Planning Scheme.

3.4 Suitability of the location

3.4.1 How the proposal is supported by existing urban development

As discussed earlier, the subject sites collectively abut a golf course and a rural residential use along its north boundary, a rural residential use on its east boundary and further rural residential land uses to the south on the opposite side of Rosedale-Longford Road. There is also:

- A high quality road network that provides direct, flood-proof access back to the regional centre of Sale and beyond;
- A public hall, kindergarten and active/passive recreation precinct located 500 metres to the east;
- A primary school located 1.2 kilometres to the southeast;
- A general store and service station located approximately 2.6 kilometre to the south;
- A regional centre, i.e. the City of Sale, located 5.6 kilometres to the north.

These facilities provide a full spread of commercial and community facilities with a series of formal and informal walking trails within public road reserves providing pedestrian/cycle access to most of the abovementioned facilities.

3.4.2 The land's capability for agricultural use

As demonstrated on the mapping at ***Figure 3***, the subject sites have soils from the Stockdale classification, which have fairly limited agricultural capacity beyond livestock grazing and agroforestry, i.e. timber plantations.

On top of this the subject sites:

- are each far too small to be able to accommodate a viable farming use in their own right;
- have no access to an irrigated water supply; and,
- already abut rural residential land uses across the north and east boundaries.

In light of these factors, the agricultural capacity of the subject sites is considered negligible.

3.4.3 Natural Resources and the measures taken to protect the

The subject site is not recognised as being located in an area that is blessed with exploitable natural resources. In particular, it is noted that it has not been earmarked as being pertinent to future coal resource exploitation, as other land in the Longford area has.

3.4.4 *Environmental features and the measure taken to protect them*

The vegetation across the site is comprised of pasture grass and exotic or planted vegetation.

The declared watercourse that runs through 41 Brennans Road and the eastern perimeter of 2677 Rosedale-Longford Road represents the only environmental feature of any consequence. In order to protect this feature, 41 Brennans Road will not be further developed, despite the rezoning.

3.4.5 *Landscape and heritage features and the measures taken to protect them*

As demonstrated at ***Figure 4***, an area of Aboriginal Cultural heritage sensitivity has been identified within the golf course to the north. Hence, any future development of 2677 Rosedale-Longford Road will include an investigation of whether it will have any impacts on aboriginal cultural heritage.

Otherwise, there are no apparent landscape or heritage features within the subject sites that require any special consideration.

3.4.6 *Social and physical infrastructure requirements and their costs*

The rezoning of the subject sites will potentially increase the patronage of the Longford Primary School, the Longford General Store/Service Station, the Longford kindergarten/recreation reserve and the Longford Bowls Club.

It is understood that all of these facilities have capacity to absorb and even benefit from the likely additional patronage that would flow from an additional 6 new dwellings being constructed on the subject land.

Moreover, the recent extension of the concrete walk/cycle path between Sale and Longford will improve the capacity of future residents of dwellings on the subject sites to access facilities in Sale without needing to use motorised vehicle transport.

3.4.7 *Compatibility or impact on surrounding uses*

As discussed above, the proposed rezoning will allow the subdivision of 2677 Rosedale-Longford Road into 7 lots, with 6 new dwellings able to be constructed on the vacant lots created to join the existing dwellings on the two subject sites.

Land to the north of the subject sites is already developed with a golf course and a low density residential use, while land to the east and south is developed with low density residential uses in a highly similar fashion. Hence, the rezoning of the land and its eventual development is unlikely to result in any inappropriate land use interfaces.

3.4.8 *Servicing Capacity*

The township lots that will ensue from the proposed rezoning will rely only upon electrical connection and road access. Each new lot created through the rezoning will be provided with an underground electricity connection that will be attained through an extension to the existing network of wires surrounding the land. Meanwhile, each new lot will also be provided with vehicle and pedestrian access

via a new service road to the Rosedale-Longford Road that will be constructed in accordance with Council and VicRoad's standards.

All drinking water supply in Longford is harvested from rainfall, with the average 4 bedroom dwelling typically needing a minimum water tank holding supply of around 45,000 litres. Annual rainfall figures have typically been sufficient to sustain this level of storage.

All wastewater from future dwellings on the land will be managed on site, as there is no reticulated sewerage in Longford. The outcomes of the land capability assessment at ***Appendix C*** suggest that this outcome is feasible based upon the nature of the soils and prevailing annual rainfall data.

A drainage strategy has been prepared and is contained within ***Appendix E***. This plan shows how the site can be drained in such a fashion that 7 lots could be created from the subdivision of 2677 Rosedale-Longford Road.

4 AGENCY COMMENTS

Feedback in relation to the proposed rezoning was sought from VicRoads, as the subject sites abut Rosedale-Longford Road.

No objection was made.

5 CONCLUSION

The detail provided throughout this submission demonstrates that the subject sites comply with the criteria for the rezoning of land to Rural Living Zone set out in Practice Note 37 (Department of Environment, Land, Water and Planning).

As such, it is requested that the Wellington Shire Council initiate an amendment to the Wellington Planning Scheme to allow the rezoning to occur without delay.

Beveridge Williams

APPENDIX A. Certificates of Title

APPENDIX B. Feature Survey

APPENDIX C. Land Capability Assessments for 2677 Rosedale-Longford Road, Longford

APPENDIX D. Land Supply and Demand Analysis

APPENDIX E. Planning Scheme Amendment documentation

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 08537 FOLIO 608 Security no : 124060739949U
Produced 06/06/2016 02:29 pm

LAND DESCRIPTION

Lot 2 on Plan of Subdivision 066556.
PARENT TITLES :
Volume 02070 Folio 892
Volume 02286 Folio 078 to Volume 02286 Folio 079
Volume 02299 Folio 681
Volume 02811 Folio 172 to Volume 02811 Folio 173
Volume 04456 Folio 163
Created by instrument LP066556 02/03/1965

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
DENISE SHIRLEY JAMES of ROSEDALE ROAD LONGFORD VIC 3851
AE809245D 20/12/2006

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AE809246B 20/12/2006
COMMONWEALTH BANK OF AUSTRALIA

Any encumbrances created by Section 90 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP066556 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

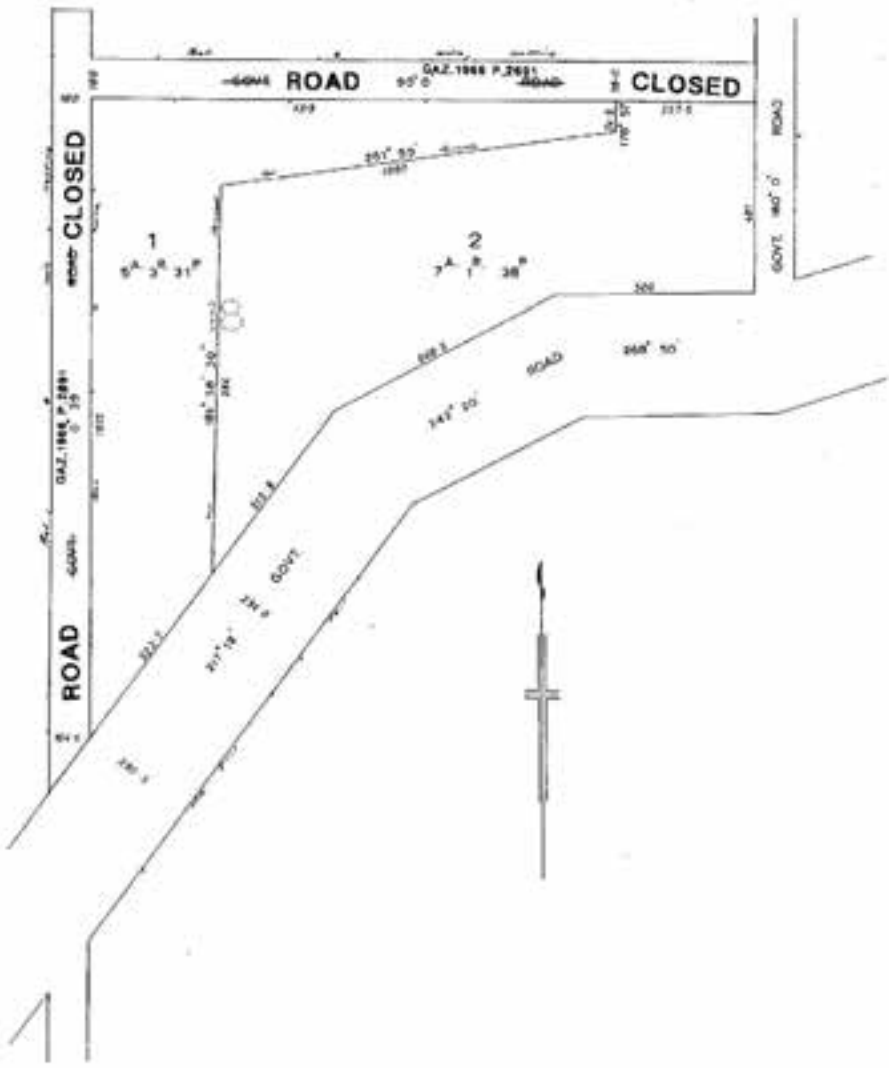
DOCUMENT END

PLAN OF SUBDIVISION OF
LOTS 1 TO 15, L.P. 1921
BEING SUBURBAN C.A. 18

TOWNSHIP & PARISH OF LONGFORD

LP66556
EDITION 1
APPROVED 24/12/64

SCALE CHAINS



REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 04820 POLIO 918

Security no : 1240607404805
Produced 06/06/2016 02:36 pm

LAND DESCRIPTION

Crown Allotment 20 Township of Longford Parish of Longford.
PARENT TITLE Volume 03814 Folio 664
Created by instrument 1152874 26/02/1924

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
CHRISTOPHER IAN ROBERTS of 121 STAWELL STREET SALE VIC 3850
AK416324V 22/06/2013

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AK416325T 22/06/2013
AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

For details of any other encumbrances see the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP750517U FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 41 BRENNANS ROAD LONGFORD VIC 3851

DOCUMENT END

	TITLE PLAN		EDITION 1	TP 758517U

Location of Land

Parish: LONGFORD
Township: LONGFORD
Section:
Crown Allotment: 20
Crown Portion:

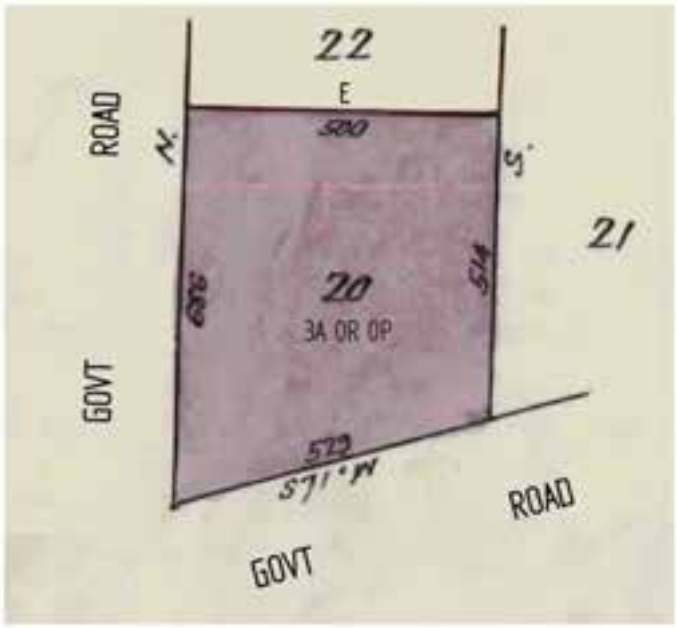
Last Plan Reference:
Derived From: VOL 4820 FOL 918
Depth Limitation: 50 FEET

Notations

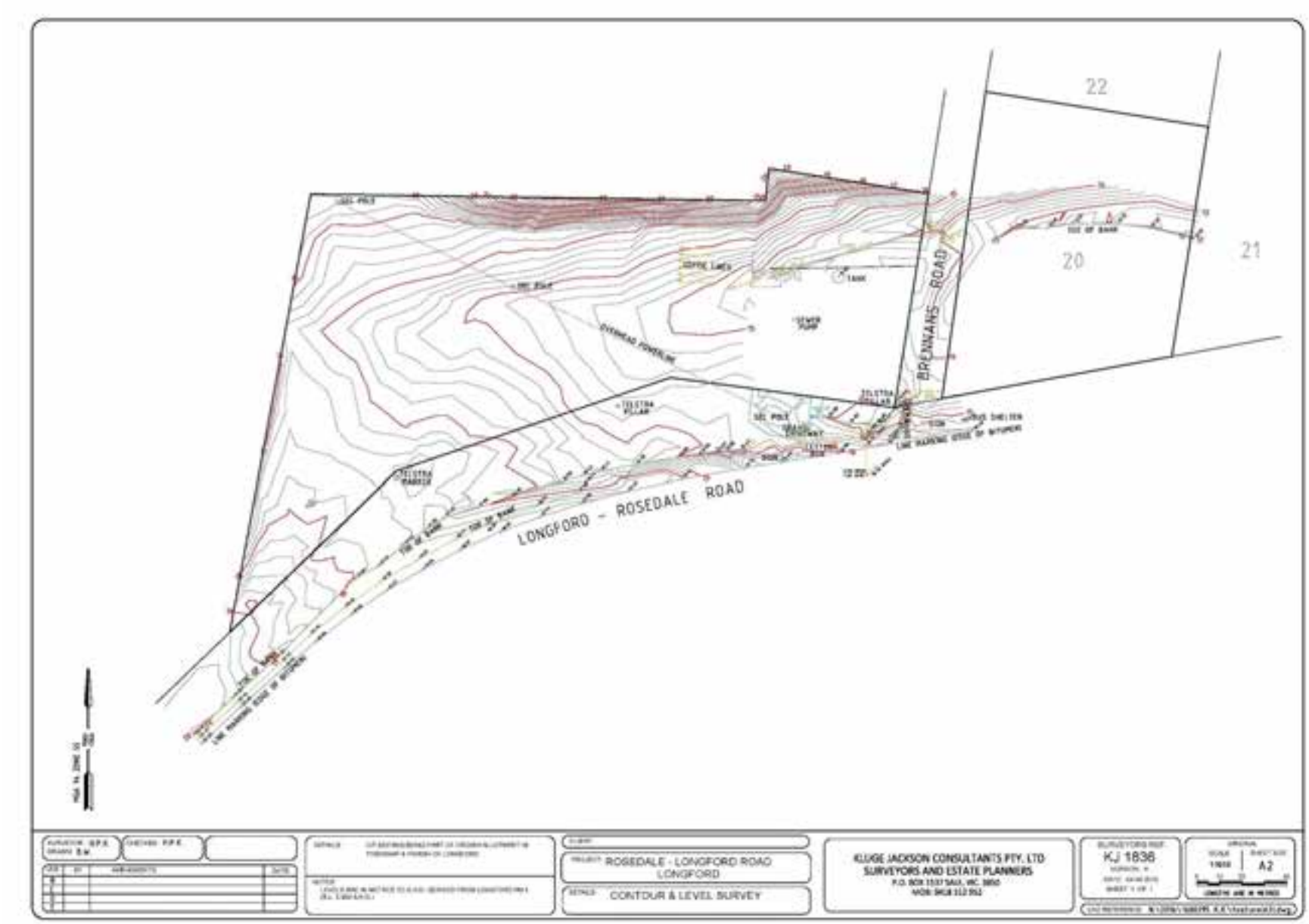
ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 26/11/2003
VERIFIED: BC



LENGTHS ARE IN LINKS	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets


22
21
20
BRENNANS ROAD
LONGFORD - ROSEDALE ROAD
ROSEDALE - LONGFORD ROAD
LONGFORD
CONTOUR & LEVEL SURVEY
KLUGE JACKSON CONSULTANTS PTY. LTD
SURVEYORS AND ESTATE PLANNERS
KJ 1836
A2

LAND CAPABILITY ASSESSMENT FOR
2677- 2679 LONGFORD – ROSEDALE ROAD
LONGFORD
21/04/16

ASSESSOR:	**CLIENT:**
Scott McFarlane Ba. Eng. (Civil) Ark Angel P/L 475 Old Melbourne Rd Traralgon VIC 3844 PH: (03) 5175 0895 EMAIL: arkangel@wideband.net.au	G & D James C/O Peter Kluge PO Box 1537 Sale VIC 3850 PH: 0418 513 962 EMAIL:

1.0 Introduction

The author has **been commissioned to conduct a land capability assessment by the owners G & D James of a proposed 7 Lot subdivision on this 3.06 Ha, Farming zoned property**, refer Figure 3 or 4. A land capability assessment is required to ensure that in any future development, an approved onsite sewage management system can successfully maintain all treated effluent onsite in accordance with EPA, 2013, *Code of Practice – Onsite Wastewater Management*, Publication 891.3. It is expected that the assessment will accompany a septic tank permit application to **Wellington Shire Council.** This application will be undertaken by the owner, or their representative, e.g. a plumber or drainer.

This report recommends the best practical assessment known to the author who is fully qualified, experienced and insured to undertake such assessments. However, the author cannot guarantee the assessment will be approved by Council. The information contained in this report is also site specific and is not to be used outside the bounds of the property.

2.0 Summary

It was found that **an approved primary and secondary treatment system is suitable for maintaining all effluent onsite. Refer to Figure 4 for the Lot's that are suited to each of these effluent management types.** The limiting site conditions are such that the following onsite wastewater management system is recommended:

1. **A suitable EPA approved primary or secondary treatment system can be installed on the Lots in this subdivision, refer Section 6.3 and Figures 1, 4 - 15 for more typical details.**
2. **Trench effluent dispersal systems has been analysed for effluent management at this site. The recommended trench design and effluent dispersal area for this system are shown in Table 1 and Figures 1, 4 - 13.**
3. **Drip effluent dispersal systems has been analysed for effluent management at this site. The recommended drip irrigation system design and effluent dispersal area for this system are shown in Table 1 and Figures 1, 4, 14, 15.**
4. **Minimum buffer distances described in Section 8.0 from the effluent dispersal area to salient features are to be adhered to.**
5. **The soils in the effluent dispersal area are to be amended, refer Section 6.5 for details.**
6. **It is recommended that water conservation appliances and practices are to installed and maintained, refer Section 9 for more details.**
7. **All other services (e.g. Gas, water telecom, underground power, etc. are to be determined by others before beginning system construction.**
8. **It is recommended that the onsite sewage system be maintained like that discussed in Section 9 and the attached management information file.**
9. **All other details regarding the construction and management of the proposed effluent management system are to be compliant with the recommendations of this report and regulatory authority directives where appropriate.**

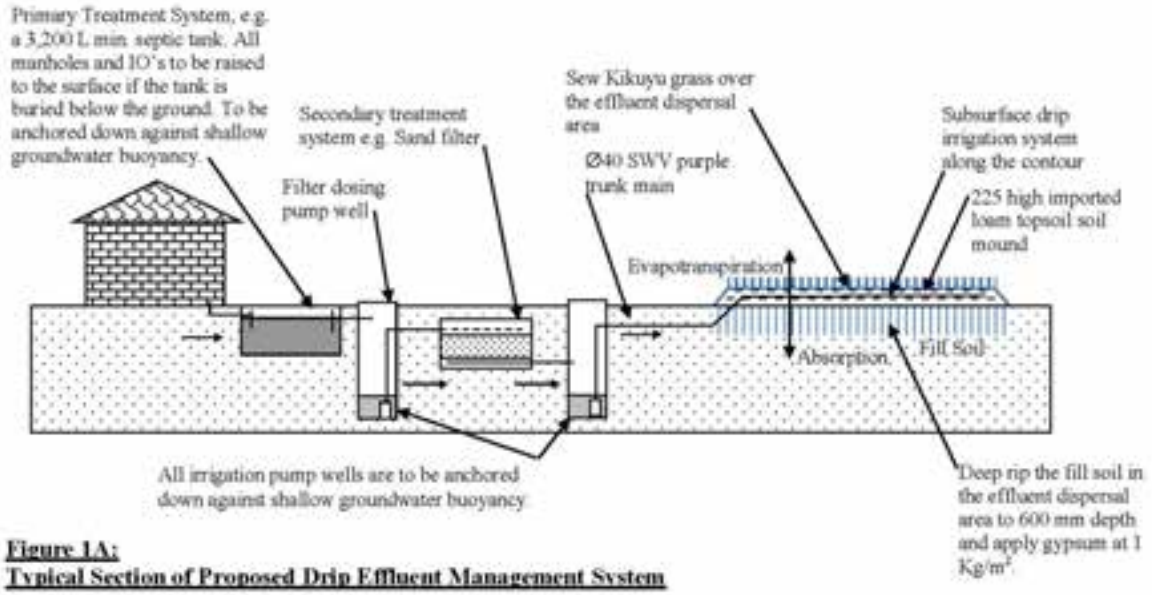


Figure 1A:
Typical Section of Proposed Drip Effluent Management System

NB: While a typical sand filter is shown in this diagram, any secondary treatment system that is approved by the EPA can be used for this purpose, unless recommended otherwise.

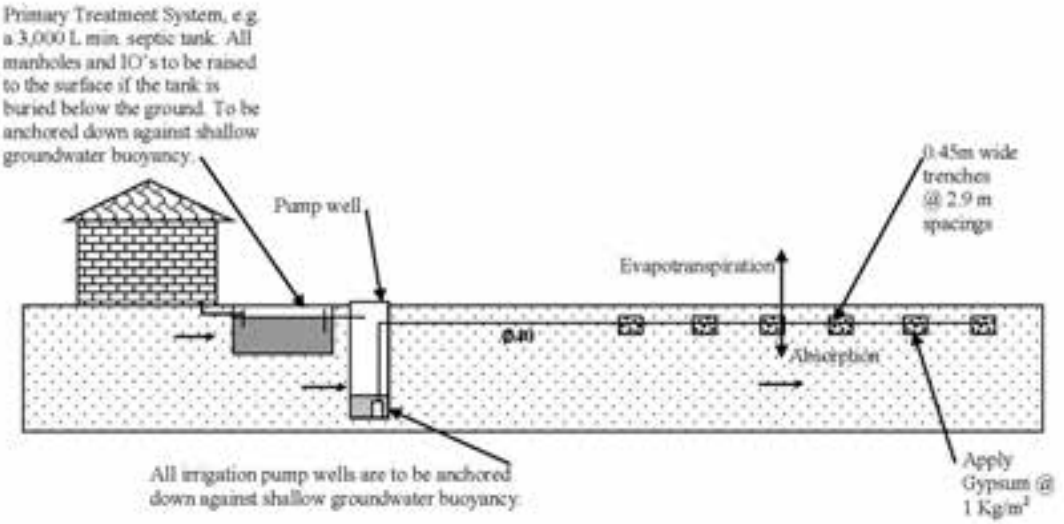


Figure 1B:
Typical Section of a Pumped Trench Effluent Management System

3

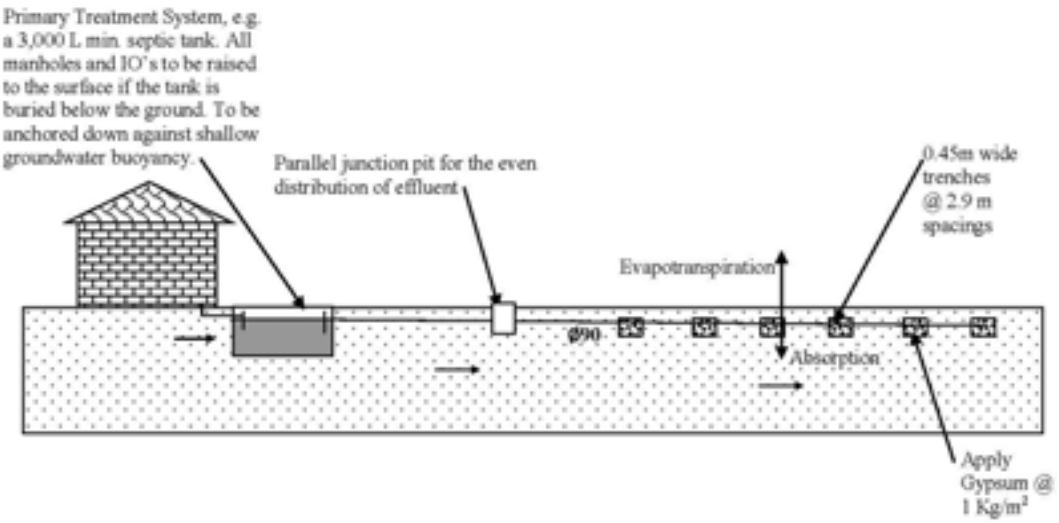


Figure 1C:
Typical Section of a Gravity Flow Trench Effluent Management System

Table 1:
Required Residential Effluent Management System Characteristics

ITEM	Sewage Influent (L/d)	Maximum number of people	Minimum absorption trench area (m^2)	Minimum trench length (m)	Minimum dispersal, envelope area for trench irrigation systems (m^2)	Minimum dispersal, envelope with a reserve trench area (m^2)	Minimum septic tank size, without a partition (L)
For Trench Systems on slopes >5%, 0.45m Wide x 2.9 $m^2/_c$ Spacing's							
3 Bedroom house	600	4	40	89	261	522	3,000
4 Bedroom house	750	5	50	111	326	652	3,000
5 Bedroom house	900	6	60	133	391	782	3,000
For Drip Irrigation Systems							
3 Bedroom house	600	4	-	-	300	-	3,000
4 Bedroom house	750	5	-	-	375	-	3,000
5 Bedroom house	900	6	-	-	450	-	3,000

4

NB:

1. The sewage influent and absorption area in this table is calculated on the basis of average effluent production rate of 150 L/p.d being used, as recommended by the EPA's Septic Tank Code of Practice (COP 2013) for households on rainwater tanks. I also recommend that any proposed household install water conservation fixtures. These include 3-4 star flush toilets, 3 star shower roses, 4-5 star dishwashers (or no dishwashers), and 4-5 star washing machines.
2. The maximum number of design people in a household equals the number of bedrooms + 1.
3. Minimum septic tank size as per EPA, CA 1.1/03.
4. The proposed trench Design Loading Rate (DLR) is 15 mm/d, as determined by the method recommended by Appendix A of the EPA's COP 2013.
5. The proposed whole Trench $Effluent_T$ for >5% slopes is 2.3mm/d, as determined by a slope, nutrient, soils, slope and site water balance analysis.
6. The proposed Drip Irrigation Rate (DIR_D) is 2.0 mm/d, as determined by a slope, nutrient, soils, slope, and site water balance analysis.

3.0 Method

The author Scott McFarlane undertook an **onsite investigation on the 28/02/16**. The main purpose of this assessment is to take the guess work out of the design of onsite sewage systems. As a consequence, a range of potentially limiting site and soil features were assessed. This information is summarised in Table 2.0 along with proposed management comments that recommend land improvement works, soil amelioration, or simply adopting high level technologies to ensure environmental protection and containment on site. This combined information is then used by the author to design an effluent management system that is suited to this site.

At this site the author has used a hand auger to determine the texture and the nature of the soil ped structure to 2.0 m depth. The top soil profile consists of Silty Clay Loam, and underlying loam soil from 400-850 mm depth. Underlying this is a dispersive medium clay soil. These soils are suitable for trench systems for those sites where the deeper loam soil layer is present, i.e. to the north of the subdivision. Where the shallower loam soil horizons exist, a drip irrigation system is recommended, i.e. to the south of the subdivision. Proposed Lots 1 & 2 also has up to a 1.0 m of loam to clay soil fill. For these sites it is recommended that the site be smoothed over, ripped to a depth of 600mm, have gypsum applied at 1 Kg/m^2, and have an imported loam topsoil mound with a shallow drip irrigation system installed. More details for all these recommendations are recommended throughout this report.

4.0 Location

Figure 2 provides a locality plan and indicates the location of the site of the proposed development. **Figure 3** provides a typical existing site plan describing the sites key site features. **Figure 4** below will provide information on the proposed effluent management system, including any effluent dispersal envelope/s.

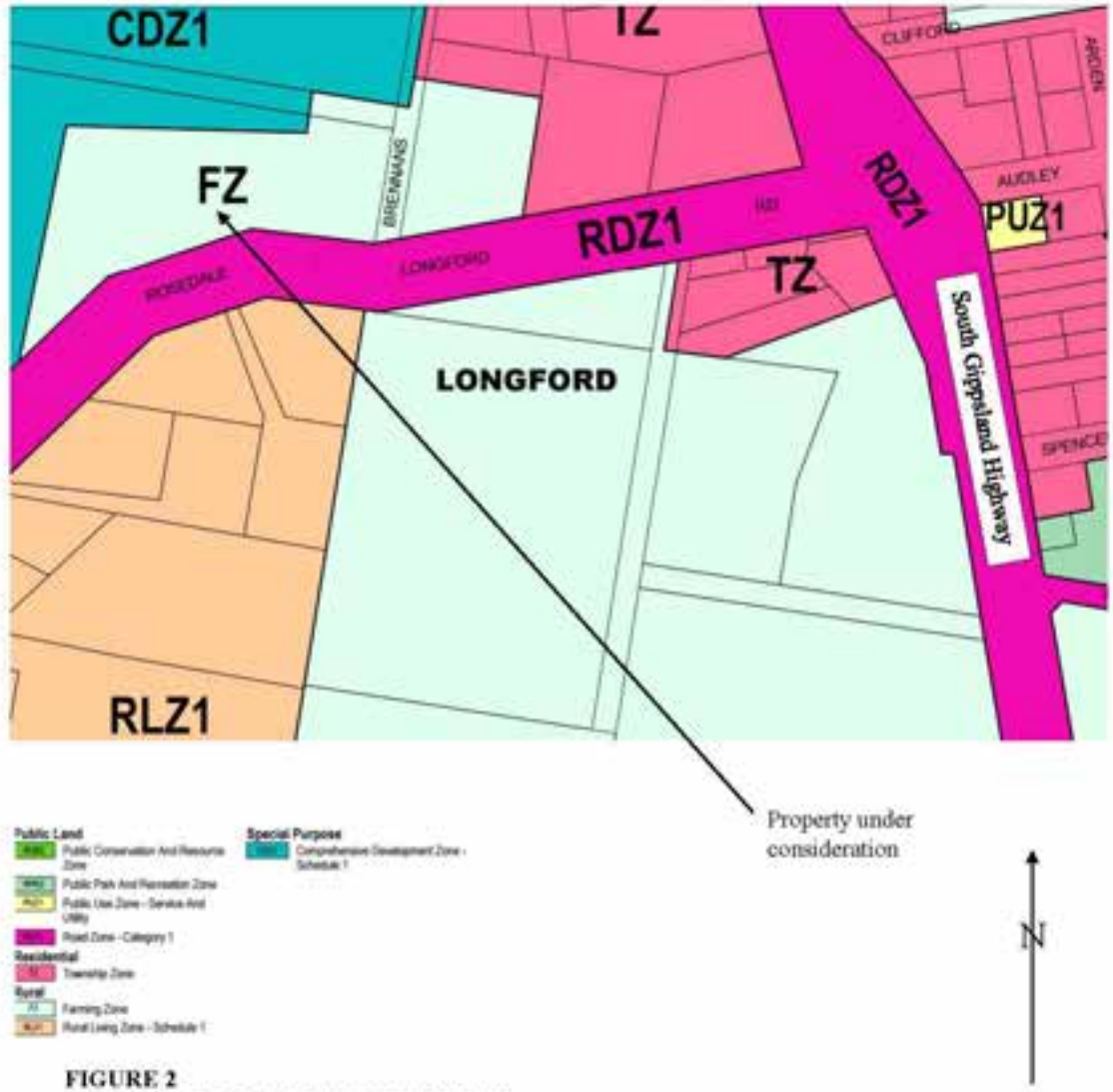


FIGURE 2
LOCALITY PLAN OF PROPOSED SITE

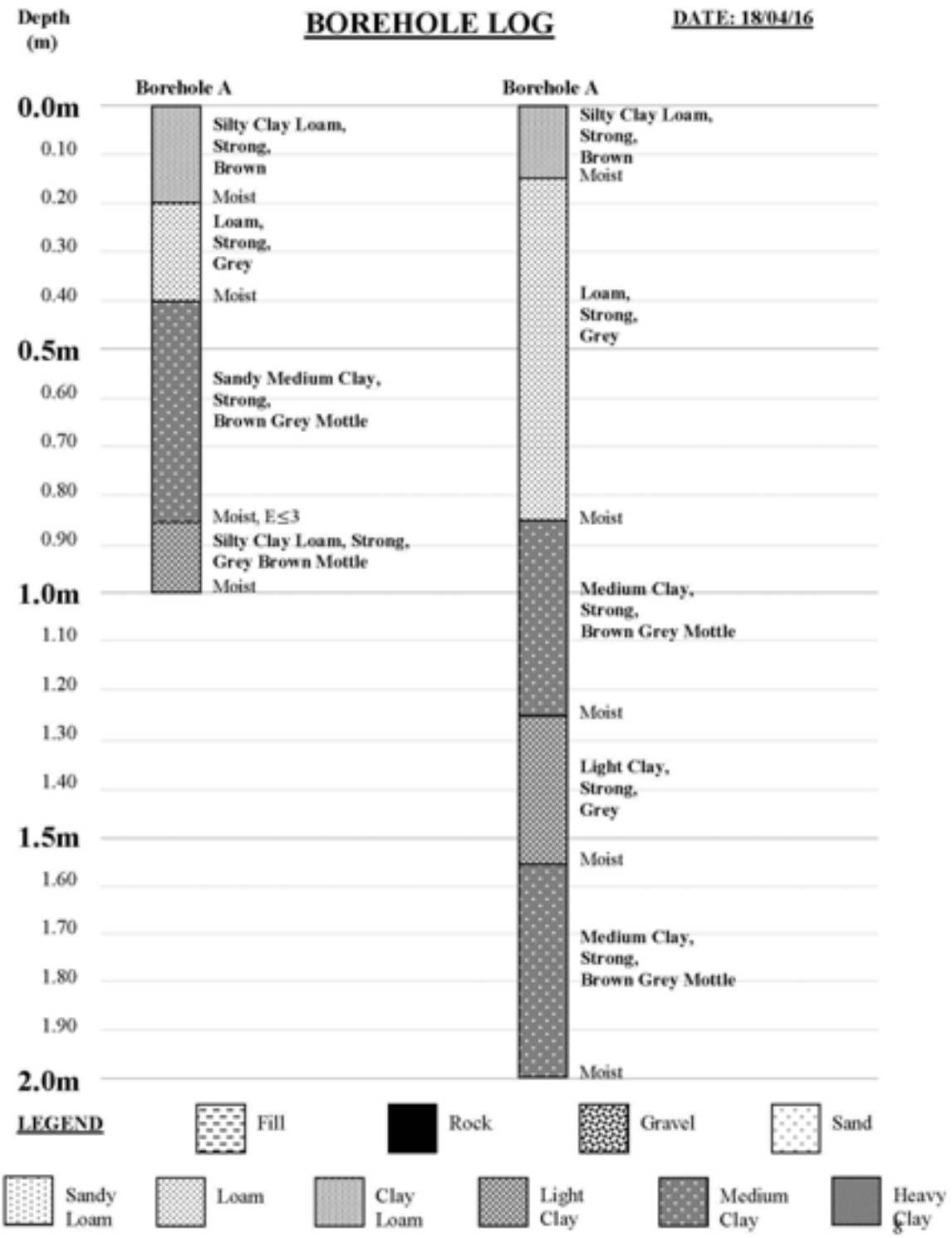
6

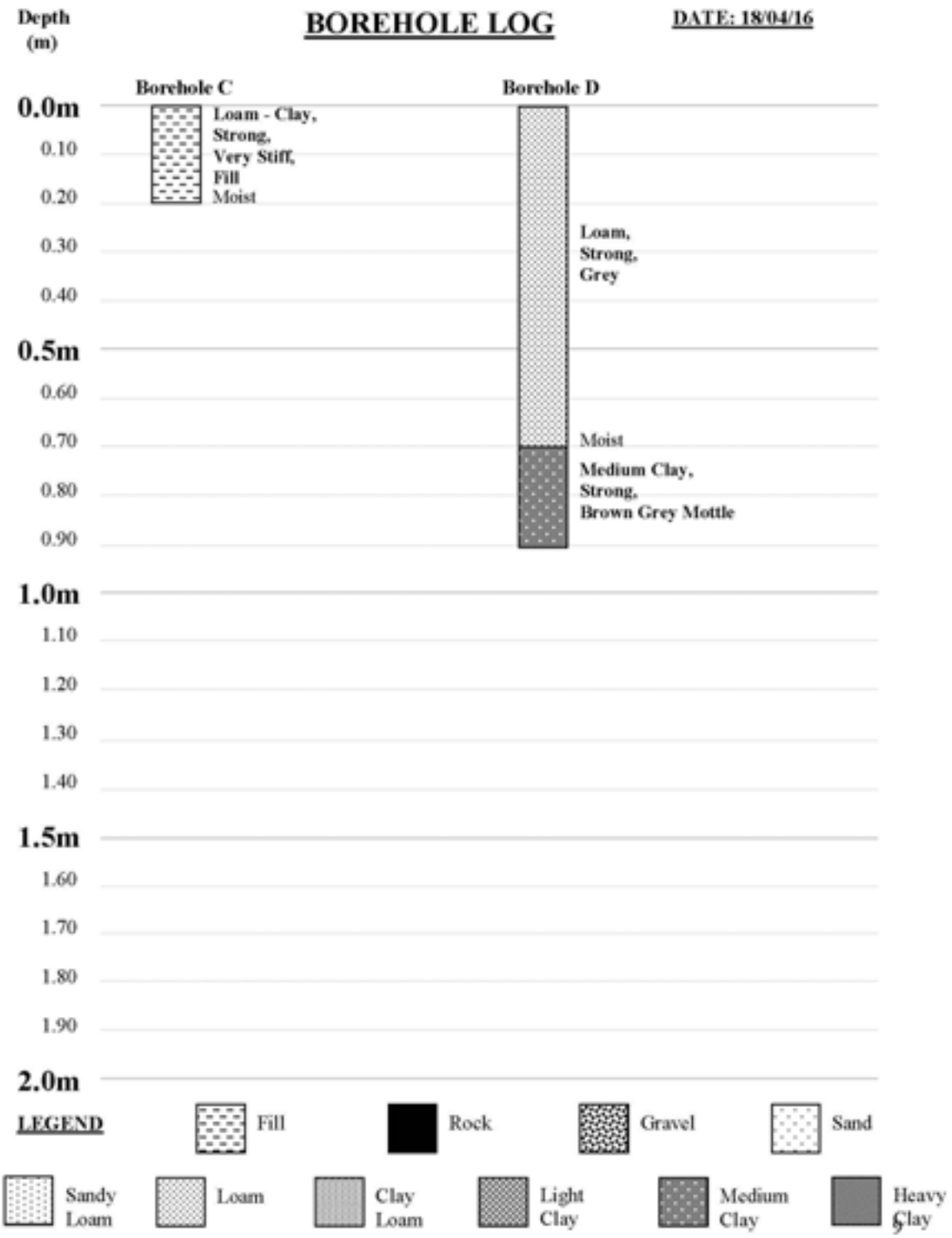
FIGURE 3:
PLAN OF EXISTING PROPERTY

NB:

1. To scale as shown
2. Metre dimensions unless stated otherwise.
3. The shown lot boundaries are preliminary only.
4. Soil boreholes shown at alphanumeric dots.
5. Permeability test holes shown at numeric dots
6. The site is cleared land with good quality grass coverage.
7. The property is on mains power
8. The property is on tank water.
9. To be read in conjunction with attached report.

7


BOREHOLE LOG
DATE: 18/04/16
Depth (m)
Borehole A
Borehole A
0.0m
0.10
0.20
0.30
0.40
0.5m
0.60
0.70
0.80
0.90
1.0m
1.10
1.20
1.30
1.40
1.5m
1.60
1.70
1.80
1.90
2.0m
Silty Clay Loam, Strong, Brown
Moist
Loam, Strong, Grey
Moist
Sandy Medium Clay, Strong, Brown Grey Mottle
Moist, E≤3
Silty Clay Loam, Strong, Grey Brown Mottle
Moist
Silty Clay Loam, Strong, Brown
Moist
Loam, Strong, Grey
Moist
Medium Clay, Strong, Brown Grey Mottle
Moist
Light Clay, Strong, Grey
Moist
Medium Clay, Strong, Brown Grey Mottle
Moist
LEGEND
Fill
Rock
Gravel
Sand
Sandy Loam
Loam
Clay Loam
Light Clay
Medium Clay
Heavy Clay


Depth (m)
BOREHOLE LOG
DATE: 18/04/16
Borehole C
Borehole D
0.0m
0.10
0.20
0.30
0.40
0.5m
0.60
0.70
0.80
0.90
1.0m
1.10
1.20
1.30
1.40
1.5m
1.60
1.70
1.80
1.90
2.0m
Loam - Clay, Strong, Very Stiff, Fill Moist
Loam, Strong, Grey
Moist
Medium Clay, Strong, Brown Grey Mottle
LEGEND
Fill
Rock
Gravel
Sand
Sandy Loam
Loam
Clay Loam
Light Clay
Medium Clay
Heavy Clay

5.0 Land Capability Assessment

The land at this site is primarily assessed and designed from the information shown in Table 2. The proposed risk assessment method and their meanings are outlined in MAV, 2014, *Victorian Land Capability Assessment Framework*. Some parameters are determined from site observation. The method of soil and permeability assessment is consistent with AS/NZS 1547:2012, Tables E1, E4, B2, 5.2, and Appendix G where relevant. Field and laboratory measured soil qualities are taken from hand augured borehole samples within 100mm of a soil horizon change, or at 400 mm depth where trenches are considered.

Table 2:
Land Capability Assessment Parameter Risk Check and Resulting Design Strategy

Land Features	Risk Assessment - Minor, Moderate, Major	Observation & Remarks
GENERAL SITE		
Aspect	Minor	Very good.
Climate	Minor	No problem. A simplified Water Balance assessment is recommended for all sites. This will determine the effluent dispersal area all systems, and the trench spacing and width requirements.
Erosion	Minor	The surface is well grassed.
Exposure	Minor	Very good.
Fill	Minor	There up to 1.0 m of fill soil on proposed Lots 1 & 2. As a consequence of this, it is recommended that all effluent be applied by a drip irrigation system for these properties. In addition to this it is recommended that the undulating surface level for the effluent dispersal area be smoothed over and ripped to a minimum depth of 600 mm. The drip irrigation area is covered by gypsum (e.g. @ 1 Kg/m^2), and is then covered by a 225 mm high imported loam soil mound in which the drip irrigation system is placed.
Flood Frequency	Minor	Unlikely
Groundwater Bores	Minor	A bore is located just west of the existing western house. There is enough COP clearance between it and any proposed effluent dispersal area.
Available Land Area	Minor	There is enough land area for any proposed effluent dispersal system.
Land Slip	Minor	None.
Rock Outcrops	Minor	None.
Slope	Minor	The proposed effluent dispersal site has 2->5% slopes.
Soil Drainage	Moderate	The soil has a Silty Clay Loam texture, however it has a dispersive clay Emerson rating of ≤3. Consequently this is Category 6 clay soil. The soil permeability test indicates that the soils in the base of any proposed trench have an average permeability of 0.20 m/d. The site has good deep drainage characteristics because the existing septic systems appear to have been in operation for 30 years or more without any problems.
Stormwater run on	Moderate	There is a shallow stormwater drain running through the middle of the subdivision.
Waterway Set Back	Minor	>60m from any waterway.
Vegetation Coverage	Minor	Good quality grass coverage.
SOIL PROFILE		
Electrical Conduct.	Minor	No signs of any problems.

Emerson (Simple)	Major	The mottled clay soils are dispersive clays with an Emerson rating of ≤3. Consequently it is recommended that the base of all trenches, and all drip irrigation areas on Lots 1 & 2 be covered over with gypsum at a rate of 1 Kg/m^2 to help minimise the impact of this soil feature.
Gleying	Minor	None.
Mottling	Minor	Some in the Clay soils. Gypsum is applied to help overcome this problem.
pH	Minor	No signs of any problems.
Rock Fragments	Moderate	There are rock fragments in the fill soil on Lots 1 & 2.
Sodicity	Major	As for Emerson rating.
Soil Depth to Rock	Minor	None observed.
Soil Structure	Minor	All soils have good draining strongly structured soils.
Soil Texture	Major	Where trenches are proposed the loam soils in the base of the trench have a DLR of 15 mm/d and the trenches are located where the Loam soils extend at least 700 mm below the surface. For Lots 1 & 2, the imported clay soils have crusted over due to their dispersive nature (i.e. They have a low Emerson rating). Consequently the drip lines are located within an imported loam soil mound to ensure proper initial absorption of the applied effluent.
Water Table Depth	Minor	>2.0 m.
TREATMENT SYSTEMS		
Suitable Treatment System	Moderate	An EPA approved Primary treatment system (e.g. a septic tank) for all Lots except Lots 1 & 2. For proposed Lots 1 & 2, a secondary treatment system is recommended.
Suitable Effluent Dispersal System	Moderate	Trenches are recommended for all proposed Lots, except Lots 1 & 2. For proposed Lots 1 & 2, a mounded drip irrigation system is recommended.
Special Management	Minor	Refer to attached management information sheet.
Land Features	**Assessment**	**Remarks**

6.0 The Onsite Effluent Management System

This Land Capability Assessment has been prepared to accompany a development application to the local Council for the management of onsite wastewater. A detailed design of the proposed effluent management system, based on the assessed site information in Table 2 is discussed in the following Sections of this report.

6.1 The Influencing Design Requirements

The basic influential design parameters for a suitable onsite sewage system are shown in the remarks column of Table 2. These will be used in the analysis discussed below.

6.2 Estimated Quantity and Quality of Sewage and Other Influential Parameters

The quantity and quality of sewage and other influential factors used in the design of onsite sewage systems are as follows:

1. The **average sewage production rate Q** for a residential sewage is **150 L/p.d as recommended by Table 4 of the EPA's Septic Tank Code of Practice for households on rainwater tanks.**
2. **The number of design people is equivalent to the "number of bedrooms + 1"**; refer Section3.4.1 of EPA, 2013, *Code of Practice, Onsite Wastewater Management*. Publication 891.3
3. The average raw sewage BOD_5 quality for a domestic household is **60 g BOD_5/p.d**; refer Table 2 of EPA, 1997, *Code of Practice for Small Wastewater Treatment Plants*, Publication 500.
4. All EPA approved treatment plants must be capable of effectively treating this amount and strength of influent.

6.3 Treatment Systems

Only primary treatment with trench effluent irrigation systems will be analysed for use at this site. The following treatment system requirements are recommended for low risk and trouble free service:

1. Though not mandatory, it is recommended that all EPA approved septic tank treatment plants, including pump wells, be constructed in such a manner that their manholes or inspection openings be raised at least 150 mm above the surface to prevent the ingress of storm water into the tank, refer Section 2.2 of AS/NZS1546.1:2008, *On-site Domestic Wastewater Treatment Units – Septic Tanks*. This practice will help to remind owners that they have a sewage system that they need to maintain. Consequently it will likely result in cheaper system maintenance and location practices.

2. Where primary or secondary treated effluent is required, only EPA approved treatment systems are recommended. Primary treatment systems are expected to reduce the influent BOD_5 loading rate by ½, refer page 304 of Crites & Tchobanoglous, 1998, *Small and Decentralized Wastewater Management Systems*. Secondary treatment systems are expected to reduce the BOD_5 effluent loading rate to at least 20 mg/L.

3. Where the expected treatment plants treatment capacity is expected to exceed 1,000 L/d, and pumping is required; a duty pump and a backup duty pump shall be provided. In any case, a duty pump failure alarm system, with float switch shall be provided. **If effluent is being pumped downhill, it is recommended that an air relief valve be located at the high point in the pressure pipe near the pump.**

6.4 Land Application

6.4.1 *A Water Balance Analysis for Trench and Drip Irrigation Systems*

This analysis is conducted in accordance with Note 2 & 3 of Table L1 of AS/NZS1547:2012 which points to the use of Appendix Q of AS/NZS 1547:2012, which shows the following adjusted water balance Equation 1. It should be noted that this is not the MAV water balance model, as this model uses assumptions that do not comply with the model recommended by AS/NZS1547 2012, (e.g. DI does not = 2.0 mm/d for the worst monthly average day); and therefore the model used here:

Effluent = Evapotranspiration + Deep infiltration + Runoff + Interflow + Soil Moisture Change - Precipitation

Or put more simply:

$$\textbf{Effluent}_D = Et + DI + RO + IF + \Delta S - P \quad \text{...(Equation 1)}$$

For Trenches On Slopes >5%

Equation 1 can thus be used in the following simplified analysis to determine the adjusted dispersal area for the overall trench effluent dispersal area where:

$Effluent_T$	= to be determined in the required analysis below (mm/d)
P	= 783 (mm/y) (90^{th} %ile annual value for Station No. 085072, East Sale Airport)
DI	= 2.0 mm/d or 730 mm/y … This is the annual average deep infiltration rate for permeable underlying soil. NB: DIR for category 6 soil = 2.0 mm/d or 730 mm/y
Et	= Cropping Factor x Pan Evapotranspiration Rate, from BOM. = 0.6 x 1200 mm/y …for a warm season grassed effluent irrigation area. = 720 mm/y
RO	= RC x P = 0.15 x 783 = 117 mm/y
IF	= 0

12

ΔS = 0

$Effluent_T$ = Et + DI + RO + IF + ΔS - P …(Equation 1)
= 772 + 730 + 117 + 0 + 0 – 783
= 836 mm/y, or 2.3 mm/d

$Area_a$ = Q / $EFFLUENT_a$ m^2

S_T = DLR x W_T / $EFFLUENT_T$ m

L_T = $Area_T$ / S_T m

Where:

$Area_a$ = Total effluent dispersal area of any **D**rip, **S**alinity or **T**rench system. m^2

Q = Peak week, average daily discharge. L/d
= 150 x 5 for a 4 bedroom house.
= 750 L/d

$EFFLUENT_a$ = Total effluent application rate for the **D**rip, **S**alinity or **T**rench system as derived by the water or salinity balance assessments. mm/d

DLR = Effluent design loading rate over the trench basal area. mm/d

W_T = Width of trench; excavation bucket widths of 0.2, 0.3, 0.45 and 0.6m is typical.

L_T = Total trench length. m

S_T = Trench centreline spacing; 3±2 m is typical for Category 5 & 6 soils, and wider for Category 1-4 soils, refer Table K1 of AS/NZS1547 2012.

$Area_T$ = 750 / 2.3
= 326 m^2

S_T = 15 x 0.45 / 2.3
= 2.9 m

L_T = 326 / 2.9
= 113 m for a 4 bedroom house.

<u>For Drip Irrigation Systems on ~ 1% Slopes</u>

$Effluent_D$ = to be determined in the required analysis below (mm/d)

P = 783 (mm/y) (90^{th} %ile annual value for Station No. 085072, East Sale Airport)

DI = 2.0 mm/d or 730 mm/y … This is the annual average deep infiltration rate for permeable underlying soil. NB: DIR for category 6 soil = 2.0 mm/d or 730 mm/y

Et = Cropping Factor x Pan Evapotranspiration Rate, from BOM.
= 0.6 x 1200 mm/y …for a warm season grassed effluent irrigation area.
= 720 mm/y

RO = RC x P
= 0.15 x 783 x 1/5
= 23 mm/y

IF = 0

ΔS = 0

$Effluent_D$ = Et + DI + RO + IF + ΔS - P …(Equation 1)
= 772 + 730 + 23 + 0 + 0 – 783
= 742 mm/y, or 2.0 mm/d

$Area_T$ = 750 / 2.0

13

= 375m^2 for a 4 bedroom house.

6.4.2 *A Nutrient Analysis Drip Irrigation Systems*
Any drip irrigation system where DIR≤2.0 mm/d is deemed to have a suitable nutrient balance.

6.4.3 *Slope Adjustment*
No slope adjustment is necessary for the <10% slopes on this property.

6.4.4 Recommended Effluent$_s$ and Effluent Distributions System Type
After due consideration of the site's water balance, nutrient, soil type and slope adjustment requirements; it is recommended that **Effluent$_T$ = 2.3 mm/d for trench system with slopes > 5%; and Effluent$_D$ = 2.0 for drip irrigation systems on ~1% slopes. The outcome of these assessments is summarised in Table 1. I have shown the typical effluent distribution systems for trenches in Figures 1, 7 - 13, and for drip irrigation systems in Figures 1, 14, 15.**

6.5 Dispersal Area Soil Amendments
To help improve the longevity of the trench and drip irrigations system, it is recommended that:
1. 1 Kg/m^2 of gypsum be applied to the base of all trenches, refer Figures 1 & 9, 13.
2. The undulating surface level for the effluent dispersal area be smoothed over and ripped to a minimum depth of 600 mm. The drip irrigation area is covered by gypsum (e.g. @ 1 Kg/m^2), and is then covered by a 225 mm high imported loam soil mound in which the drip irrigation system is placed, refer Figure 1, 14-15.

7.0 Configuration of the Land Application Area
The full potential effluent dispersal area for this property is shown in Figure 4. It is recommended that the effluent dispersal system be located approximately where and how it is shown in Figure 4. However there are options available to use drip irrigation systems instead of trench systems if this results in a more amenable and saleable property, refer Figure 4.

8.0 Buffer Distances
The recommended key buffer distances for this development in accordance with Table 4.6 of EPA's, 2003, *Septic Tanks Code of Practice* are as follows:

1. There is a minimum effluent disposal system offset distance of 3.0 m to gas and water pipes and salient features such as upslope buildings and boundary lines.

2. There is a minimum effluent disposal system offset distance of 6.0m to salient features such as drains, downslope boundaries and buildings.

3. There is a minimum effluent disposal system offset distance of 100m to waterways, including wetlands.

4. **All the above buffer distances can be halved where secondary treatment systems are used.**

5. There is a minimum effluent disposal system offset distance of 20m to any Bore.

6. All sewer pipes built under roads and tracks are to have at least 600mm of soil cover or are to be placed in a suitable protective metal pipe sleeves.

7. All in-ground treatment systems, including septic tanks, pump wells, or other treatment systems are to have a minimum setback distance of 2m to buildings and effluent dispersal systems.

9.0 Monitoring, Operation and Maintenance

In each case it is assumed that the onsite sewage system is managed in such a way that the system has a long life, e.g. at least 30 years. However this does not mean that the onsite sewage system can be left to look after itself without maintenance.

It is recommended that water conservation appliances be installed throughout the house. These include 3-4 star flush toilets, 3 star shower roses, 4-5 star dishwashers (or no dishwashers), and 4-5 star washing machines. **It is also recommended that no phosphorus washing machine detergents be used in this environmentally sensitive area.** It is also recommended **that the onsite wastewater management system be monitored and operated in the manner outlined in the attached operation and maintenance sheet. In addition to this it is recommended that all new household occupants should undergo a Council organised information and training course on how to manage their onsite sewage system; assuming this is available.**

10.0 Stormwater Management

It is recommended that an upslope stormwater drain is constructed above any proposed effluent dispersal area, refer Figures 8 & 14.

11.0 Conclusion and Recommendations

It was found that **an approved primary and secondary treatment system is suitable for maintaining all effluent onsite. Refer to Figure 4 for the Lot's that are suited to each of these effluent management types.** The limiting site conditions are such that the following onsite wastewater management system is recommended:

1. **A suitable EPA approved primary or secondary treatment system can be installed on the Lots in this subdivision, refer Section 6.3 and Figures 1, 4 - 15 for more typical details.**
2. **Trench effluent dispersal systems has been analysed for effluent management at this site. The recommended trench design and effluent dispersal area for this system are shown in Table 1 and Figures 1, 4 - 13.**
3. **Drip effluent dispersal systems has been analysed for effluent management at this site. The recommended drip irrigation system design and effluent dispersal area for this system are shown in Table 1 and Figures 1, 4, 14, 15.**
4. **Minimum buffer distances described in Section 8.0 from the effluent dispersal area to salient features are to be adhered to.**
5. **The soils in the effluent dispersal area are to be amended, refer Section 6.5 for details.**
6. **It is recommended that water conservation appliances and practices are to installed and maintained, refer Section 9 for more details.**
7. **All other services (e.g. Gas, water telecom, underground power, etc. are to be determined by others before beginning system construction.**
8. **It is recommended that the onsite sewage system be maintained like that discussed in Section 9 and the attached management information file.**
9. **All other details regarding the construction and management of the proposed effluent management system are to be compliant with the recommendations of this report and regulatory authority directives where appropriate.**

12.0 Limitations

Unless otherwise employed, the author is not responsible for choosing the treatment system subtype, the final location of the disposal system, the quality of construction, or determining the location of any essential services

(e.g. power, gas, telephone, water lines etc.) that may be built over in the course of this proposals construction. Where construction details are not mentioned in this report, it is recommended that information in relevant Septic Tank Codes of Practice or Certificates of Approval be adopted. It is recommended that appropriately qualified plumbers or drainers carry out all construction work. It is suggested that the owners (or their representative) of this property pass their landscape design, that includes an onsite sewage system, and building envelope proposal documentation onto the Council with the appropriate application form where appropriate for approval.

Scott McFarlane Ba. Eng. (Civil)
Earth's Manager

16

FIGURE 4:
PLAN OF TYPICAL PROPOSED EFFLUENT MANAGEMENT AREAS
NB:

1. Not to scale
2. Metre dimensions unless stated otherwise.
3. The proposed lot boundaries are preliminary only.
4. In all cases the minimum sized envelope and required setback distances, as discussed in Section 2, Table 1; and offset distances discussed in Section 8.0 must be achieved.
5. All boundary setbacks are to the limit of the effluent dispersal area.
6. To be read in conjunction with attached report.

17

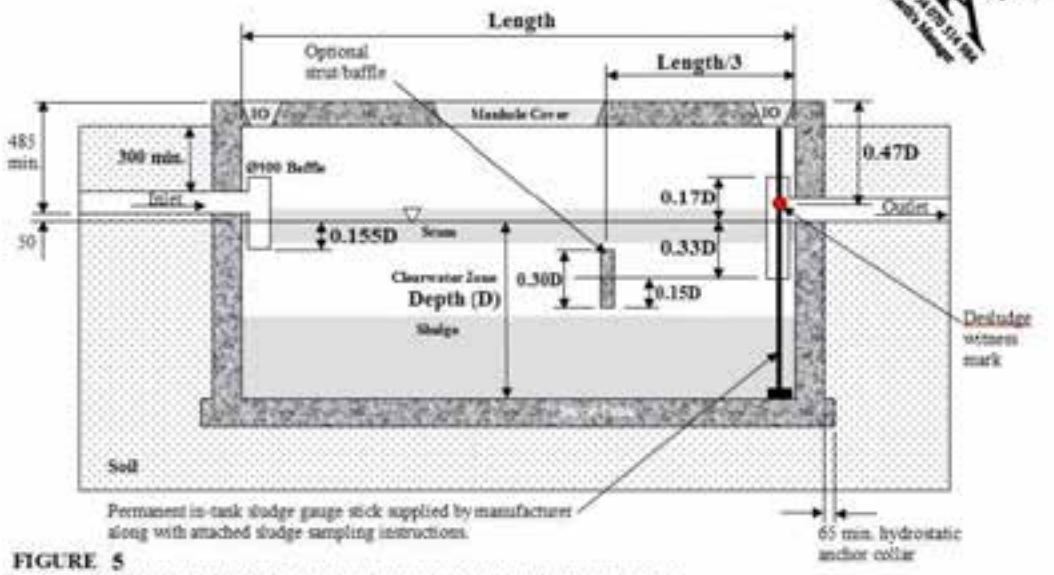


FIGURE 5
TYPICAL LONGITUDINAL CROSS-SECTION OF A SEPTIC TANK
- Minimum Recommended Requirements

NB:

1. Not to scale.
2. Millimetre dimensions used unless stated otherwise.
3. The structural integrity of the septic tank is to be designed by suitably a suitably qualified structural engineer.
4. This septic tank design complies with AS/NZS1546.1, 2008.
5. For a typical all-waste 3,000 Litre septic tank, Length = 3,000mm, and Depth (D) = 1,000mm

18

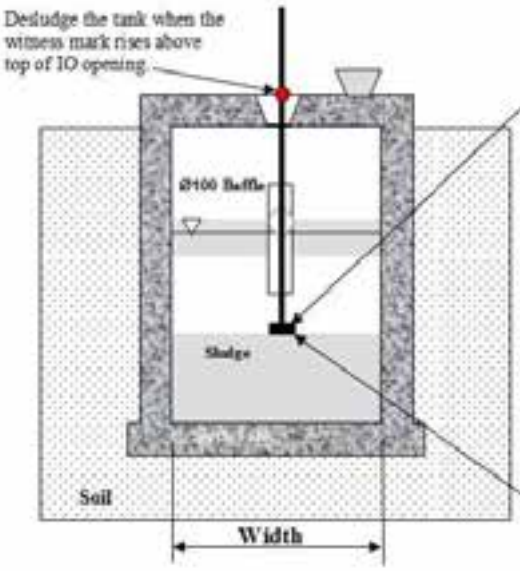


FIGURE 6
TYPICAL CROSS-SECTION OF A SEPTIC TANK
- Minimum Recommended Requirements

NB:

1. Not to scale.
2. Millimetre dimensions used unless stated otherwise.
3. For practical minimum treatment requirements, the septic tank's **Length = 3 x Width**, refer Section 4.6.2 of United States EPA, 2002, *Onsite Wastewater Treatment Systems Manual*.
4. For a typical all-waste 3,000 Litre septic tank, the tank's Width = 1,000mm

19

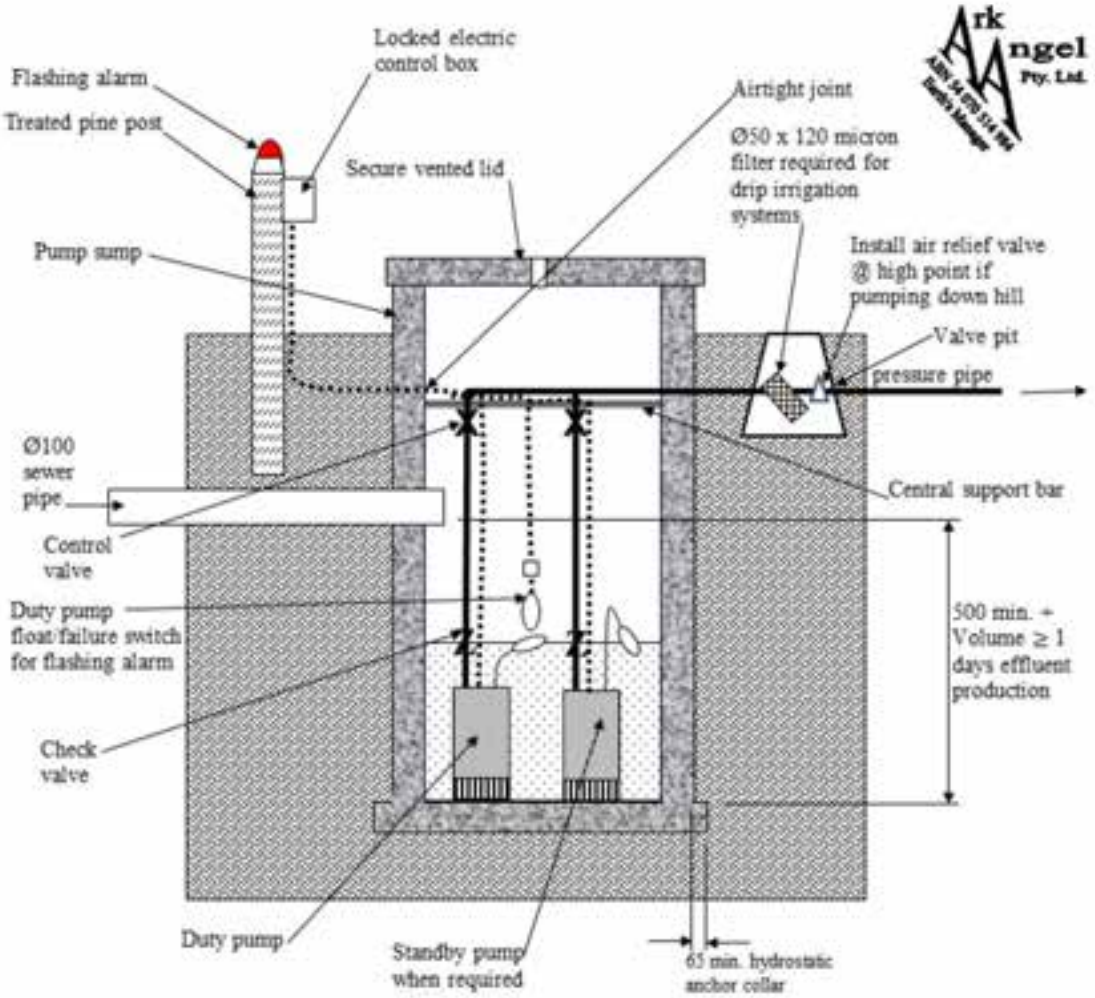


FIGURE 7
PROPOSED TYPICAL SECTION VIEW OF A PUMP PIT
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. A standby duty pump is required if the effluent management system exceeds 1,000 L/d.
4. For more basic details of pumping systems, refer Section 8 of EPA, *Code of Practice for Small Wastewater Treatment Plants*, Publication 500.
5. The duty pump float failure switch is to turn the audible/flashing light alarm on before the standby pump is called for duty.
6. The pump well typically must have an internal diameter that is ≥ 750 mm.
7. All water quality sampling is to be taken from the secondary treatment pump wells.
8. To be read in conjunction with attached report.

20

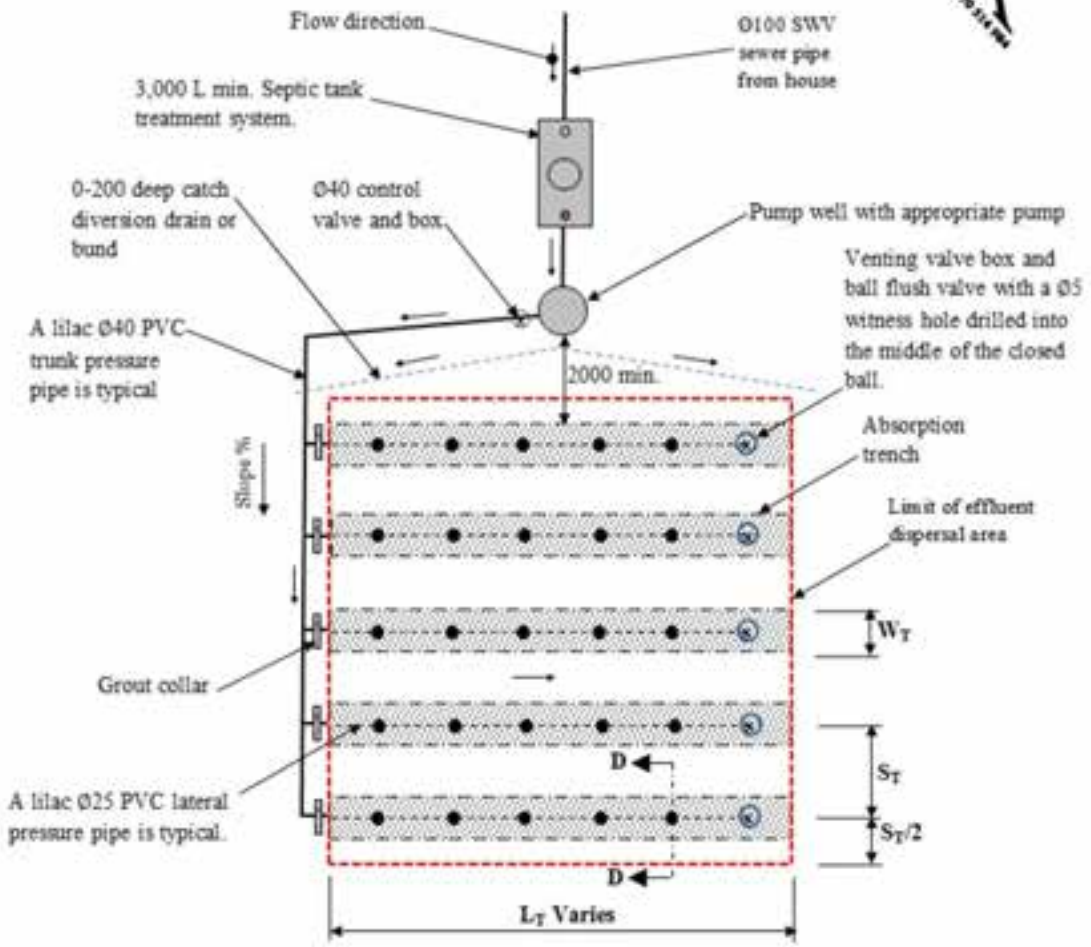


FIGURE 8
TYPICAL PLAN OF A PUMPED TRENCH SYSTEM
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. The highest and/or most distant distribution pipe must have at least 1.5 m head of pressure after allowing for pipe friction losses and elevation.
4. For a typical domestic sewerage system, use a Ø40 PVC pipe for 1 lateral pipe, a Ø32 PVC pipe for 2 lateral pipes, and a Ø25 PVC pipe for 3 or more lateral pipes.
5. Large area trench systems will require the use of indexing valve distribution systems.
6. Where possible the trenches are constructed along the terrains contour.
7. All minor hills and hollows within the effluent dispersal area are to be cut or filled over.
8. All pipework is to be flushed clean prior to commissioning the treatment system.
9. To be read in conjunction with the attached conditions of installation.

21

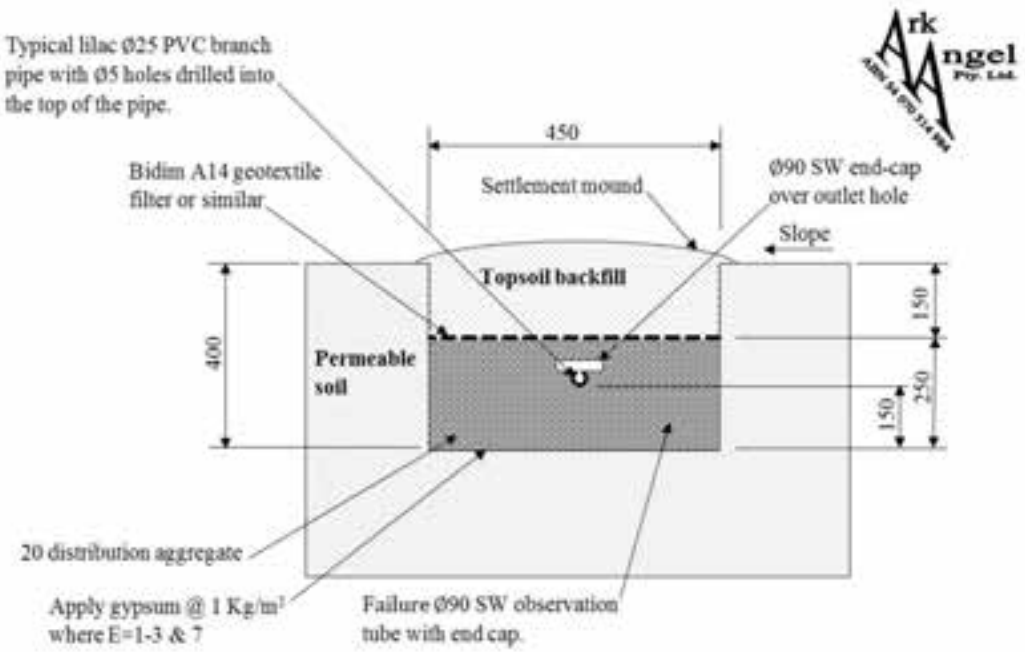


FIGURE 9

TYPICAL CROSS SECTION DD OF A SHALLOW ABSORPTION TRENCH

NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. The lateral and longitudinal grade of the absorption trench base is level. It is recommended that this be achieved with the use of a laser level system that is attached to the arm of the excavator.
4. It is recommended that the Ø25 PVC distribution pipe be supported by suitable bar chairs (e.g. typically used in the concreting industry) at ~2.0 m intervals, prior to backfilling with the 20 mm distribution aggregate.
5. Where possible all trenches are not to be exposed to rainfall during their construction.
6. For a typical domestic sewerage system, no more than 30 x Ø5 holes are to be drilled in the top of lateral distribution lines. All holes are spaced evenly over the entire effluent dispersal area.
7. Use a Davey D25VA pump (i.e. for nearby or downslope dispersal areas) or a D25 pump (i.e. for distant or upslope dispersal areas) or similar pumps.
8. To be read in conjunction with the attached report.

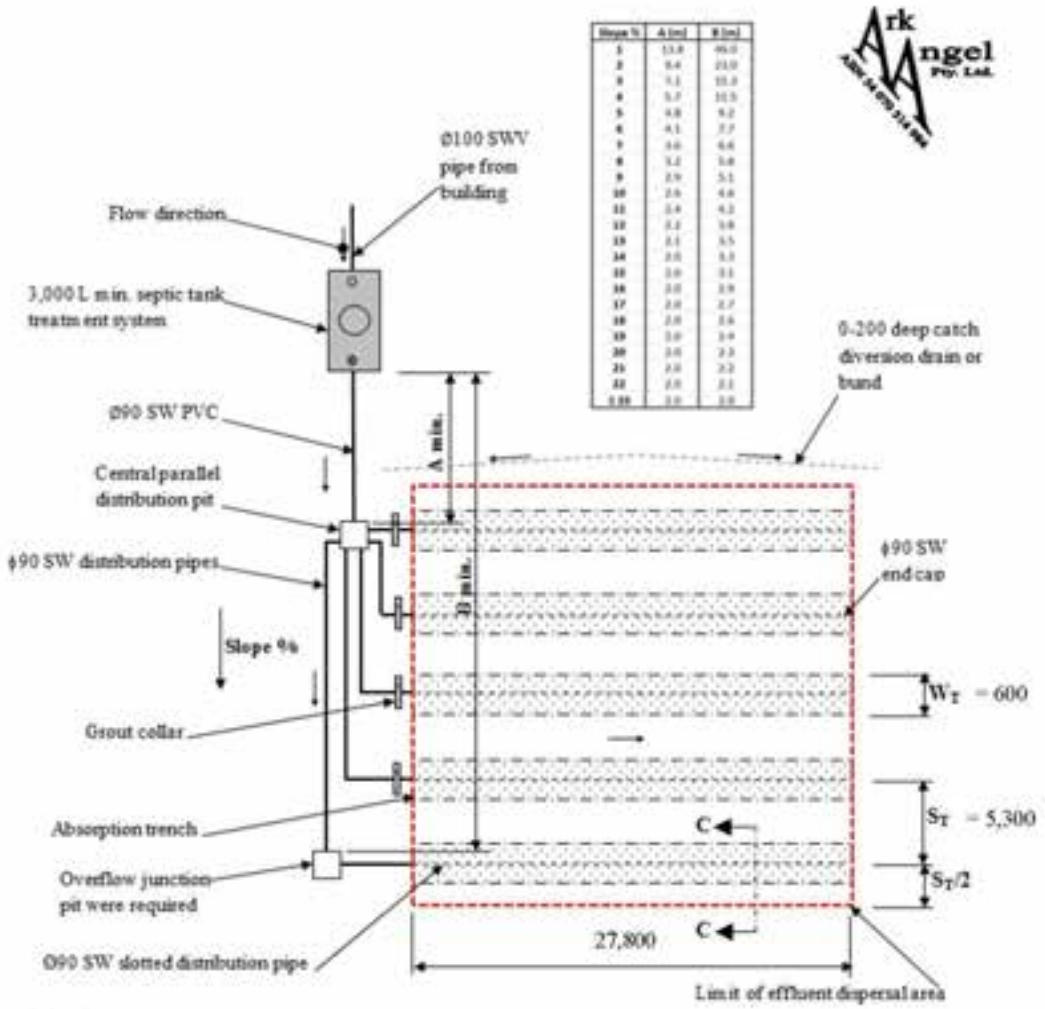


FIGURE 10
TYPICAL PLAN OF GRAVITY FLOW TRENCH SYSTEM WITH PARALLEL DISTRIBUTION
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. Dimensions A & B are minimum requirements for absorption trenches. For those flatter down sloping sites where the junction pit offset dimensions A & B cannot be complied with, the deep absorption trench and junction pit option should be considered.
4. If the space is available, then the overflow junction pit can be done away with by adopting the "B" dimension from the septic tank outlet to the central parallel distribution pit, i.e. the distribution pit is also an overflow pit.
5. If for any reason the septic tank cannot be constructed to the minimum depth, or the effluent dispersal area is upslope of the septic tank, then the effluent must be pumped to the absorption trenches.
6. Where required, the catch diversion drain must drain all upslope runoff away from the effluent dispersal area.
7. In most cases, the trenches are constructed along the terrains contour.
8. All minor hills and hollows within the effluent dispersal area are to be cut or filled over.
9. To be read in conjunction with the attached conditions of installation.

23

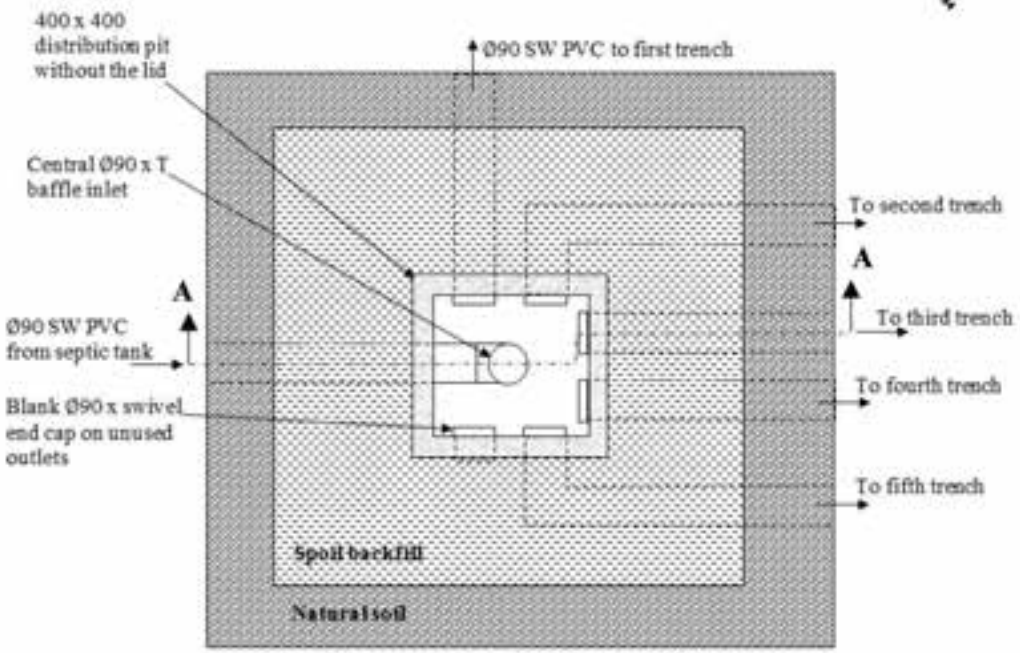


FIGURE 11
TYPICAL PLAN OF GRAVITY FLOW PARRALLEL DISTRIBUTION PIT
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. To be read in conjunction with the attached conditions of installation.

24

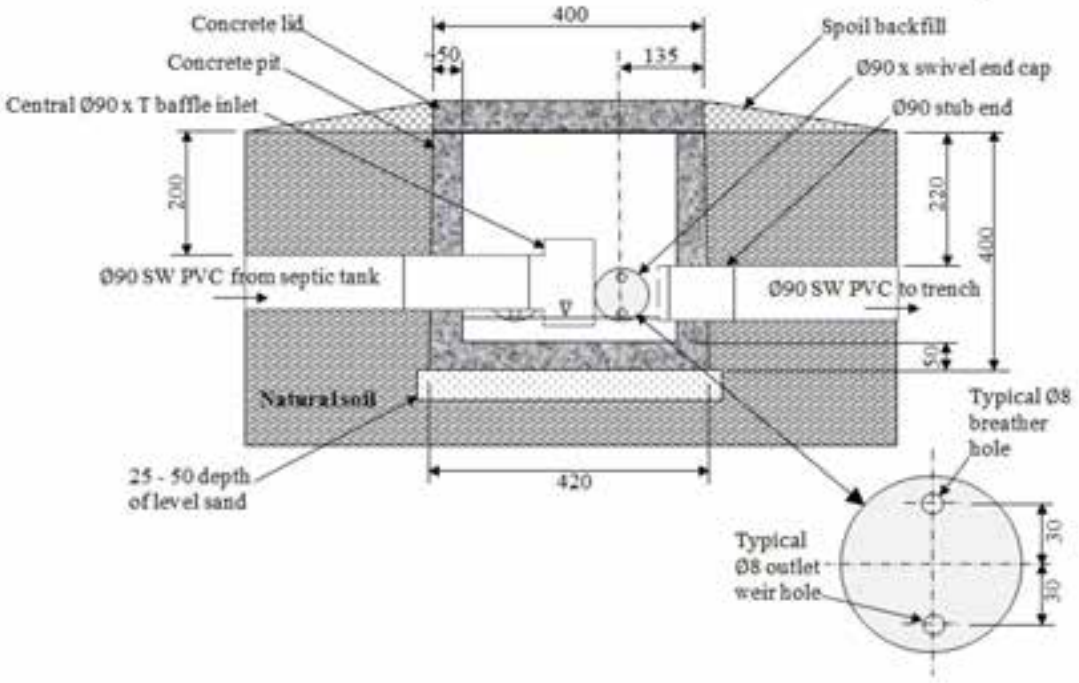


FIGURE 12

TYPICAL SECTION AA OF A SHALLOW GRAVITY FLOW PARRALLEL DISTRIBUTION PIT

NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. Where possible, shallow distribution pits are to be used in preference to deep distribution pits. Shallow distribution pits are typically used where there are no spatial constraints, on slopes ≥ 2%, where pumping is not required, and where the minimum mean average temperature for July is > 4°C.
4. The junction pits are supplied with ø90 SW PVC pipe stub ends cast or glued into the sidewalls of the pit.
5. All swivel end caps with outlet weirs are to be set level with the aid of a common water level in the junction pit, on the day of installation.
6. To be read in conjunction with the attached conditions of installation.

25

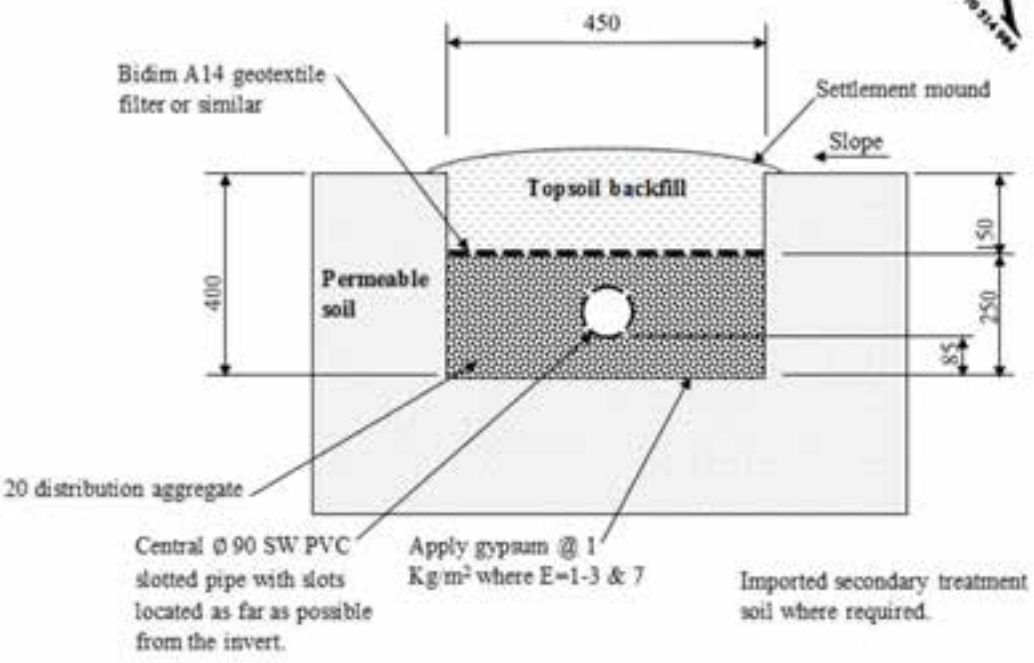


FIGURE 13
TYPICAL CROSS SECTION CC OF A SHALLOW ABSORPTION TRENCH
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. The lateral and longitudinal grade of the absorption trench base is level.
4. It is recommended that the Ø90 slotted pipe be supported by suitable bar chairs (e.g. typically used in the concreting industry) at –3.0 m intervals, prior to backfilling with the 20 mm distribution aggregate.
5. Where possible all trenches are not to be exposed to rainfall during their construction.
6. To be read in conjunction with the attached report.

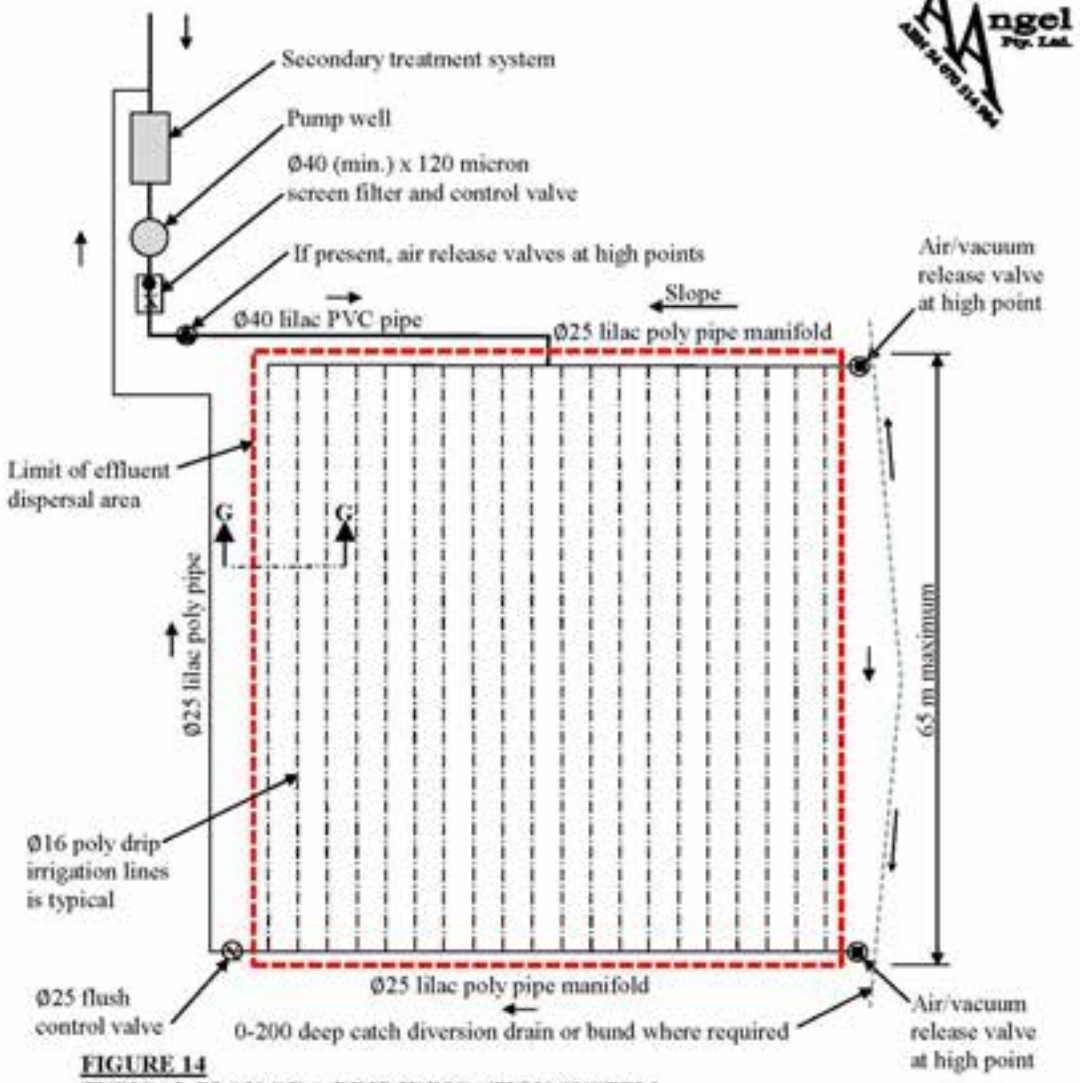


FIGURE 14

TYPICAL PLAN OF A DRIP IRRIGATION SYSTEM

NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. All minor hills and hollows within the effluent dispersal area are to be cut or filled over before the drip lines are installed.
4. Where possible, the drip irrigation lines are to be laid along the terrains contour.
5. Ensure there is adequate downslope drainage away from the effluent dispersal area.
6. All valves and filters are to be located in a purpose built, subsurface valve box with a lilac coloured lid.
7. Where required, the catch diversion drain must drain all upslope runoff away from the effluent dispersal area.
8. The highest and/or most distant drip irrigation pipe must have at least 10 m head of pressure after allowing for pipe friction losses and elevation.
9. Due to the relatively large size of the effluent dispersal areas at this site, a 2 station indexing valve is recommended.
10. To be read in conjunction with the attached conditions of installation.

27

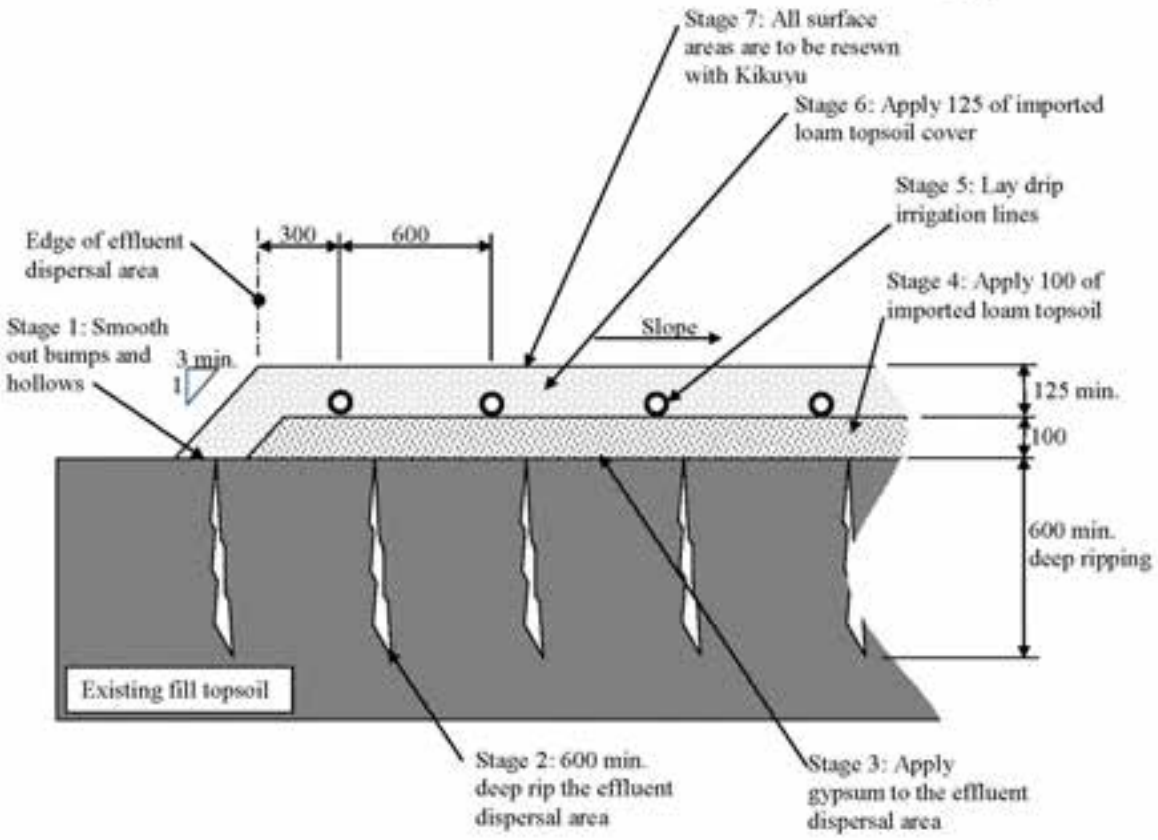


FIGURE 15:
TYPICAL SECTION GG OF A MOUNDED DRIP IRRIGATION SYSTEM
NB:

1. Not to scale
2. Unless stated otherwise, millimetre dimensions used.
3. All small hills and hollows to be smoothed over and filled in before importing the clean soil fill.
4. Air relief valves are to be located at high points (in a valve box) in the drip irrigation system.
5. A return flush line (with a control valve) is to be laid to the head of the treatment plant.
6. The pressure pump (a multi stage pump is typical) system must be appropriately sized to ensure that the highest distribution drip line has 20m head of pressure, after allowing for elevation and pipe friction head losses.
7. The trunk main from the pump to the drip irrigation system is to have a minimum diameter of Ø40 mm.
8. To be read in conjunction with the attached report.

28

OPERATING INFORMATION FOR YOUR ONSITE SEWAGE SYSTEM

1. Treatment system type _____
2. Commissioning date _____
3. Maximum number of contributing persons _____
4. Minimum effluent disposal area _____ m^2
5. Maximum sewage loading rate (Litres/day) _____ L/d

NB: Inhouse water consumption (Litres/person.day) and conservation rating:
≤100 L/p.d (GOOD), 150 L/p.d (AVERAGE), ≥200 L/p.d (POOR)

6. Is water conservation maintenance highly critical? _____
7. Is sensitive environment maintenance highly critical? _____
8. Is this system designed for a spa greater than 200 litres? _____
9. Required septic tank desludging frequency _____ Years
10. Required maintenance check frequency _____ Years
11. Required treated effluent testing frequency _____ Years
12. Special conditions _____

Also refer to the General Maintenance, Sensitive Environment Maintenance and Water Conservation Maintenance information sheet. If you plan to change any of the above conditions, or you suspect your sewage system is failing and threatening public health, contact your service agent and Council Environmental Health Officer for advice.

Contact Details for Onsite Sewage Maintenance Contractors *(Look in Yellow Pages)*:
(For a laminated sheet, use an indelible marker pen to insert information. Methylated spirits and a rag remove writing.)
Next Service Date

Plumber or *Drainer* Service Agent _____ _____

Septic Tank Cleaning Service Agent _____ _____

Sewage Treatment Service Agent _____ _____

Water Testing Service Agent _____ _____

To be placed in a prominent position, e.g. Back of kitchen, bathroom, laundry or toilet door. 1
Assessor: Glenn McFarlane Ba. Eng. (Civil) Date: 26/11/13

MAINTAINCE INFORMATION FOR YOUR ONSITE SEWAGE SYSTEM

General Maintenance

1. All onsite sewage systems are not designed for the disposal of baby or female sanitary napkins, cigarette butts, solvents, oils, unused medicines, hazardous chemicals, etc.
2. Gross kitchen food scraps, including that from food preserving activities are to be disposed of to a dedicated food scrap container.
3. Left over kitchen fats and cooking oils are best collected in a tin and disposed of separately.
4. Use a plughole strainer in the kitchen sink to help remove residual food scraps.
5. As a general rule, insinkerators and spars are not recommended, however if they are proposed, always consult with your local Environmental Health Officer or Onsite Wastewater Engineer regarding a suitable wastewater management system.
6. Septic systems, including effluent dispersal fields are not designed for the disposal of roof or garden rainwater runoff, swimming pool water or the wastewater from water softening appliances.
7. Spread clothes laundering times evenly throughout the week and use showers in preference to baths to help ensure that the septic system is not overloaded.
8. If you have a primary treatment septic tank system with a parallel, gravity flow junction pit system, periodically clean and adjust the weir outlets to ensure the even distribution of effluent to the absorption lines. The greenness of the absorption lines will indicate which lines are not receiving their even share of effluent.
9. Do not plant trees within 15m of trench effluent dispersal areas, including neighboring properties.
10. If you have a pumped drip irrigation system, periodically clean the drip-line filter and remove vegetation biomass from the effluent dispersal area, e.g. all grass cuts per year, however leave to refertilize when the vegetation in the cut area is looking unhealthy.
11. When treatment plant failure alarm systems are enacted, call your local service agent where appropriate.
12. Flush out drip irrigation lines, and pressurized trench distribution systems at least once per year.
13. If you have a drip irrigation system, only irrigate the number of zoned irrigation areas that is equivalent to the number of people living in the house. Every year in November rotate the zoned irrigation system by 1 zone.
14. Follow the operation and maintenance advice of the treatment system's manufacturer.
15. A rough desludging frequency guide for primary treatment, septic tank systems is shown in Table 1 at the end of these instructions.
16. Maintain clear access for desludge trucks, suction lines and excavation machinery to all relevant parts of the effluent management system, including reserve areas for ongoing management purposes.
17. Roads and buildings are not to be constructed over the effluent dispersal area and reserve area unless this has been allowed for in the design process. Maintain effluent transpiring grass, or grass and tree cover (for drip systems only) at all times.
18. If the effluent dispersal area or areas around septic tanks and junction pits are lush and green, smelly, and are constantly wet under foot (i.e. the system has failed), it is recommended that the effluent management system be immediately refurbished to current installation standards.

To be placed in a prominent position, e.g. Back of kitchen, bathroom, laundry or toilet door. 2

Assessor: Ba. Eng. (Civil) Date: 26/11/13

MAINTAINCE INFORMATION FOR YOUR ONSITE SEWAGE SYSTEM

Sensitive Environment Maintenance

1. Use low sodium and phosphorus laundry and dishwashing detergents, particularly in hot - dry climates. In general, liquid detergents are kinder than powdered detergents. For a summary of best detergent products refer to www.landfaxlabs.com.au
2. Where feasible, use rainwater tank water in preference to salty and hard ground waters.
3. Onsite sewage systems constructed in stable and well drained surface soils should not suffer too much damage when lightly grazed by livestock. However if the onsite system is constructed in boggy and poorly drained surface soils, then the effluent dispersal area should be covered with at least 150 mm of loam topsoil, or be fenced off from any livestock.

Water Conservation Maintenance

1. Use water efficient appliances, e.g. 3-4 star flush toilets, 3 star shower roses, 4-5 star washing machines, and 4-5 star automatic dishwashers, or no automatic dishwasher.
2. Adopt good water conservation habits like using the dishwasher and washing machines only when they are full. Restrict shower times to 4 minutes.
3. Do not leave taps running unnecessarily.
4. Promptly fix all leaking appliances.

Also refer to the operating information sheet for your onsite sewage system.

Table 1:
Estimated Desludge Times for Various Septic Tank Sizes and Household Occupancy Rates

ITEM	2 People	3 People	4 People	5 People	6 People
3 year desludge			2,133 L		3,200 L
4 year desludge		2,133 L		3,200 L	
5 year desludge			3,200 L		
6 year desludge					
7 year desludge					
8 year desludge	2,133 L	3,200 L			
9 year desludge					
10 year desludge					
11 year desludge					
12 year desludge					
13 year desludge	3,200 L				

NOTES:

1. The 3,200 L septic tank in this table represents a standard septic tank size in Victoria without a 2/3's partition.
2. The 2,133 L septic tank in this table represents a standard 3,200 L septic tank size in Victoria with a 2/3's partition. Partitions reduce the scum storage volume in a septic tank, hence they increase the desludge frequency requirement.

To be placed in a prominent position, e.g. Back of kitchen, bathroom, laundry or toilet door. 3
Assessor: Ba. Eng. (Civil) Date: 26/11/13

SIMON ANDERSON

CONSULTANTS

Structural, Civil & Project Engineers

DRAINAGE STRATEGY

Crown Allotment18 (Part)

PARISH OF LONGFORD

TABLE OF CONTENTS

1. Introduction

Simon Anderson Consultants have been engaged by Kluge Jackson Consultants to provide a Drainage Strategy for the proposed subdivision for the land bounded by Rosedale Longford Road, Brennans Road and the golf course in Longford in support of the Rezoning Application for the proposed subdivision into five lots with a balance lot containing the two existing dwellings.

This report will outline detention requirements and offer solutions for the drainage of the proposed development works and identify possible whole catchment solutions that will meet the legislative requirements.

The existing storm water infrastructure in the area mainly consists of open swale drains, overland flows and existing table drains in and around the general vicinity with associated concrete culverts conveying stormwater from adjacent roads and lands to the existing designated water way located at the rear and east of the subject land.

The land is currently vacant paddocks with two existing dwellings located in the future lot zone that has some remnant stands of vegetation both in the road reserve adjacent to the site and along the edges of the site. The land has a ridge running along the north of the site with the land falling to the south and then in an easterly direction. Please refer to Appendix A for the proposed plan of subdivision and contour plan of the site.

This drainage strategy outlines the proposed system for providing appropriate stormwater drainage and detention for the development, as well as providing the drainage authority with options for detention and mitigating adjacent site impacts. The detention evaluation approach has been determined based on the obligations of each Lot having a 600 square metre intensive development area, which in turn determines the detention volume that each lot requires to off-set the additional run-off from the development area within each Lot.

The golf course located adjacent to the site drains towards the western boundary of the development site and has a low lying area located on the practise fairway. This low lying area contains water at various times of the year. With the proposed developments for the Golf Club and to manage major storm events discharging from the golf course it is proposed to install an overland swale drain through the subdivision to contain and convey these flows along with the run-off from the developed Lots.

2. Detention Requirements

The objectives of Clause 56 of the Planning Scheme are:

- To minimise the damage to properties and inconvenience to residents from urban run-off
- To ensure that streets operate adequately during major storm events and provides for public safety
- To minimise increases in storm water run-off and protect the environmental values and physical characteristics of receiving waters from degradation by urban run-off.

Urban run-off needs to be managed to minimise the risk of flooding and protect receiving water and the environment. The receiving waters can be either surface water (creeks, rivers, bays) or groundwater.

Wellington Shire has adopted the Infrastructure Design Manual (IDM) as a regional standard for infrastructure development. The IDM has been utilised as the basis for calculating the pre-development and post development flows from the development site including storm frequency, co-efficients of run-off and associated design elements.

The detention requirements for the development have been modelled on the basis of the obligation of each Lot utilising an intensive development area of 600 square metres.

2.1 Allowance Per Lot

The proposed detention requirement per lot has been modelled and the results are contained within Annexure B:

- Storm Event of 1 in 5 Years
- Development Area of 600 Sq.m per Lot
- IDM Coefficient Factors

2.1.1 Modelling Results

The modelling has determined that a minimum detention of 1000 litres is required per Lot for a 1 in 5 year event.

2.1.2 Proposed Detention Installation Per Lot

It is proposed that an appropriately sized tank be installed with a minimum detention in the top of the tank of 1000 litres. Refer Appendix D for a standard detention tank arrangement.

2.1.3 Stormwater reuse

Gippsland Water have indicated there are no plans to provide reticulated water to the subdivision and as a result all water use for each household will be from stormwater collected via onsite tanks.

2.2 Proposed Catchment Detention Installation

It is proposed to install one detention pond installation for the whole subdivision to receive the future lot discharge and flows from the swale drain through the site, this will be located at the junction of the designated water way at the rear of the existing houses (future 2 Lot zone) and Brennans Road. Please refer to Appendix A for the proposed location.

This installation will be sized to suit the contributing area of the houses and infrastructure from the future lots as determined by the detailed design in the future subdivision application and flows from the swale drain through the development.

The installation is proposed to be a detention basin with the necessary capacity including a low flow pipe to limit discharge from the basin to the pre-development flows. All site discharge from the subdivision to the West will be designed to reach this point.

3. Clause 56 Provisions – Urban Run-off Management

Stormwater management systems must be designed and managed to the requirements of the relevant drainage authority, in this case the Wellington Shire. The current water quality objectives are 80% retention of typical urban annual suspended solids load, 45 % retention of typical urban annual phosphorus load, 45% retention of typical urban annual nitrogen load and 70% reduction in typical urban annual litter load.

Flows in waterways from a proposed subdivision must be designed to ensure that flows downstream of the subdivision site are restricted to pre-development levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts.

3.1 Water Collection

It is proposed to concentrate the discharge from the development to the nominated collection point at Brennans Road as per Appendix A. General site runoff will be collected via a grassed swale drain and conveyed along the current drainage line through the development site to Brennans Road. All driveway culverts and the swale drain through the site will be sized as per the requirements of the Infrastructure Design Manual (**IDM**) and have the ability to convey the nominated storm event. The sizing of both the grassed swale drain and culverts will be undertaken in the detailed design.

3.2 Water Quality Treatment Options

A review of the Infrastructure Design Manual with regard to development within Wellington Shire allows for the following stormwater treatment options:

- Bio-retention swales & basins
- Vegetated swales
- Sand filters
- Sedimentation basins
- Constructed wetlands
- Ponds & shallow lakes
- Rainwater tanks

3.2.1 Water Quality Proposal

In order to minimise the ongoing maintenance and renewal cost, a whole of catchment approach is offered as the preferred solution to water quality.

This will negate the requirement for a myriad of sub catchment solutions throughout the development.

It is proposed to incorporate the following treatment option into the development. Please refer to Appendix A for the location of the identified solution:

- Collection of all general land runoff via grassed swale drain. All stormwater will then be transported via the grassed swale drain to the Brennan's Rd collection point of the development.
- If required, provide a bio-retention basin incorporated into the detention basin that will be sized and designed to meet the water quality objectives.
- Please note that the proposed solutions will be modelled via MUSIC as part of the detailed design and results submitted to the drainage authority that will demonstrate compliance. Please refer to Appendix E for general layout arrangements for bio-retention basins.

4. Proposed Stormwater Treatment System in Priority Order

The proposed stormwater treatment solutions are listed below with priority given to installations that treat the stormwater while minimising ongoing maintenance and renewal costs.

Order of Priority	
Treatment	**Benefits**
• Grass Swales for the receipt and transfer of stormwater run-off from the Sale Golf Course, and developed properties.	No ongoing maintenance costs for the drainage authority. Additional grading may be required at infrequent intervals although this has not eventuated in other subdivisions in Longford.
• Installation of a Bio-retention basin, if required by detailed design.	Minimise ongoing maintenance and renewal costs by providing a single treatment for the whole development. Ongoing maintenance costs for bio-media, plantings and associated pipe work and infrastructure.

5. Overland Flow Paths

Based on the contours of the site the overland flow paths have been determined. Please refer to Appendix A for information.

A drain currently runs through the site and it is proposed to formalise this to contain and convey a 1:100 year event through the development to the Brennan's Road collection point. It is proposed that this drainage line be protected by a drainage easement and located to minimise the impact on the development of the adjacent lands. The size, slope and final location of the swale drain will be determined by detailed design.

The golf course located adjacent to the site drains towards the western boundary of the development and has a low lying area located on the practise fairway. This low lying area contains water at various times of the year. With the proposed developments for the Golf Club and to manage major storm events discharging from the golf course, the swale drain through the subdivision will need to be sized to contain and convey these flows as determined by detailed design.

A ridge runs along the north boundary of the subdivision and the land to the north of the ridge falls away from the site.

The VicRoads main road adjacent to the site has a one-way cross fall to the south and discharges stormwater run-off to the south table drain. This then drains to a box culvert located at Brennan's Road. This overland flow then travels down the east side of Brennans Road to the designated water way located in the property to the East of the development. These flows will not impact on the proposed subdivision.

A shallow table drain exists on the north side of the VicRoads main road that picks up run-off from the shoulder and bank of the road and conveys this storm-water to the Brennan's Road overland flows.

6. Conclusion

This report presents the proposed stormwater collection, detention, treatment and discharge layout for the development. We believe that this system minimises the stormwater infrastructure to be maintained and renewed while providing the development with an appropriate level of drainage & storm water detention.

We recommend approaching water quality for this development from a whole of catchment position. This will allow treatment of storm water run-off to acceptable levels from a limited number of treatment sites, minimising ongoing maintenance and renewal costs and providing better opportunities for stormwater reuse.

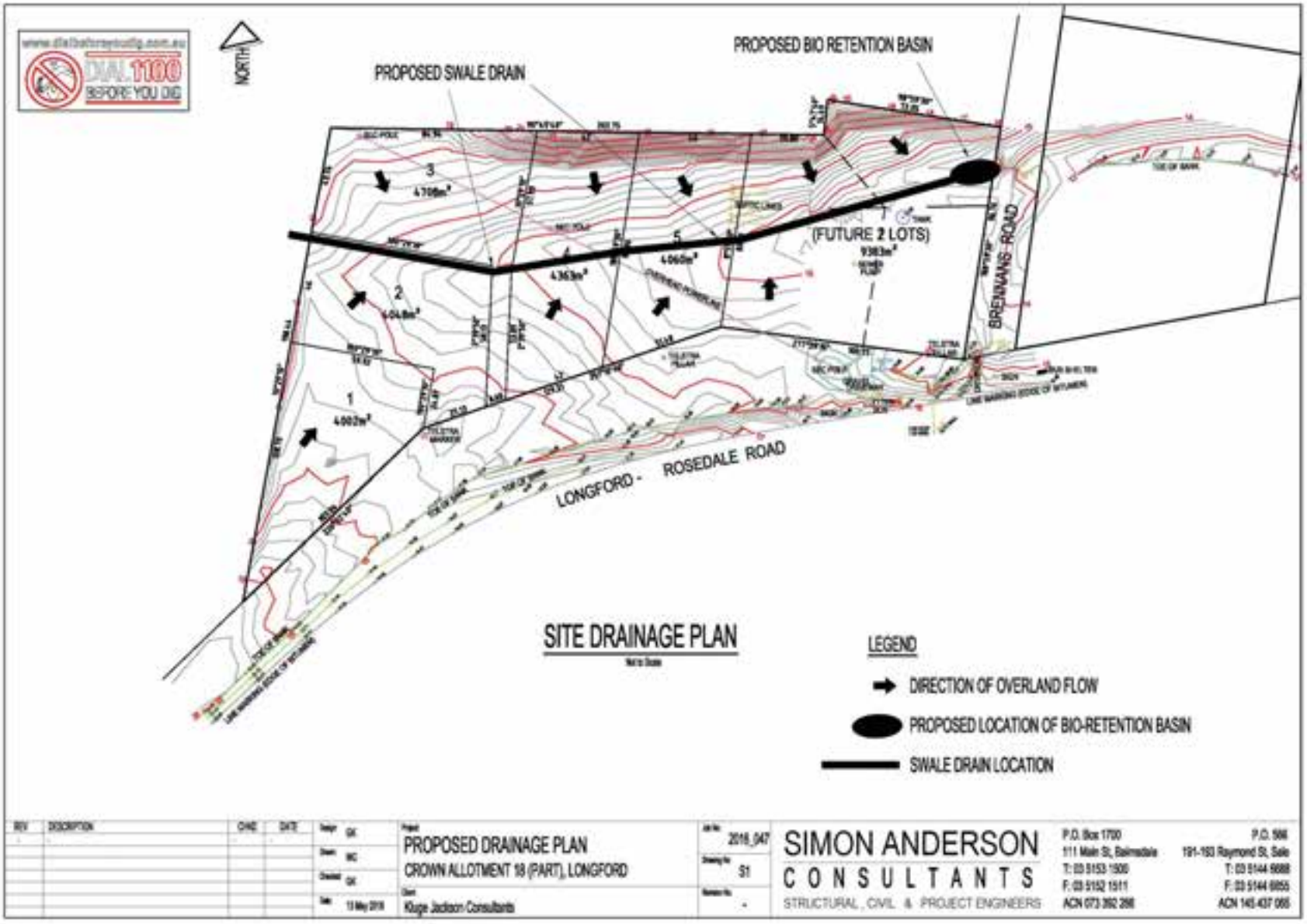
Modelling has demonstrated the following detention requirements for the development in accordance with the requirements of the Infrastructure Design Manual:

- 1000 Litres per allotment via on-site tank storage based on a 600 square metre development area

Water Quality will be achieved via the following initiatives:

- Collection and transport of run-off through the development via grass swale drains to the nominated collection point.
- Bio-retention basin located at the junction of the designated water way and Brennans Road, if required by detailed design.

Appendix A – Proposed Subdivision including contour plan and proposed facility locations


PROPOSED SWALE DRAIN
PROPOSED BIO RETENTION BASIN
NORTH
(FUTURE 2 LOTS)
BRENNANS ROAD
LONGFORD - ROSEDALE ROAD
SITE DRAINAGE PLAN
LEGEND
DIRECTION OF OVERLAND FLOW
PROPOSED LOCATION OF BIO-RETENTION BASIN
SWALE DRAIN LOCATION
PROPOSED DRAINAGE PLAN
CROWN ALLOTMENT 18 (PART), LONGFORD
Kluge Jackson Consultants
2016_047
S1
SIMON ANDERSON
CONSULTANTS
STRUCTURAL , CIVIL & PROJECT ENGINEERS

Appendix B –Drainage Detention Modelling per Lot

CROWN ALLOTMENT 18 (PART), PARISH OF LONGFORD
STORMWATER DETENTION DESIGN

Lot Detention based on an Average Development Area of 600 Squ.m Per Lot, Average Lot Size is 4,236 sq.m

1. AIM:

To demonstrate on-site detention system for the proposed development that will ensure that post development flows do not exceed predevelopment flows. An example intensive development area of 600 squ.m per Lot will be used within the average overall lot size of 4,236 squ.m.

2. OBJECTIVE:

To model the nominated storm event using the Infrastructure Design Manual and nominate the size of the on site detention system required.

3. REFERENCES:

- Infrastructure Design Manual
- Australian Rainfall & Runoff Volume 2, Institute of Engineers, Australia.

4. DESIGN METHODOLGY

(a) To calculate the existing stormwater discharge (Q_{PSD}) from the site for a 1 in 5 year storm for a Time of Concentration (T_c) of 6 minutes.

(b) Store the difference between the existing stormwater discharge (Q_{PSD}) rate and the discharge from the developed site in a 1 in 5 year storm event.

5. PRE DEVELOPED DESIGN FLOW (Q_{PSD})

$$Q_{PSD} = \frac{CAI}{3600}$$

where: C = Undeveloped coefficient of runoff
A = Site Area (m^2)
I = Rainfall Intensity for 1 in 5 year storm (mm/hr)

Rainfall Intensity, I5 = 78.96 mm/hr based on Tc = 6 mins and AR&R parameters for SALE (refer attached documentation)

PREDEVELOPED SITE CONDITIONS

Consideration	Area (A, m^2)	Coefficient (C)	CA
Existing Undeveloped Land	600	0.30	180.0
ΣA	600	ΣCA	180.0

$$Q_{pre} = \frac{CAI}{3600} = \frac{180 \times 78.96}{3600} = \mathbf{3.95\ l/s}$$

6. DEVELOPED SITE CONDITIONS

Consideration	Area (A, m^2)	Coefficient (C)	CA
Lawn / Garden / Farm Land	0	0.35	0.0
Residential Areas of 600 -1000 Squ.m	600	0.60	360.0
ΣA	600	ΣCA	360.0

7. DETENTION SYSTEM CAPACITY

Permissible Site Discharge (Q_{pss}) l/s	3.95
Effective Area (ΣCA)	360.0
Time of Concentration	6 mins
Average Recurrence Interval (ARI)	5 Year
Maximum Storage Capacity Required (m^3)	0.900

It is Proposed that a minimum on-site storage of 1000 litre via on-site stormwater tank per Lot be utilised. Outlet from tank to be restricted to 25mm at required height of tank to allow a minimum 1000 litre above the outlet.

9. ATTACHMENTS

- Typical Engineering Detention Plan prepared by Simon Anderson Consultants P/L
- Spreadsheet model of detention capacity requirement

10. GENERAL ADVICE

Simon Anderson Consultants has undertaken the design of the stormwater detention system to demonstrate the onsite detention required. It has been determined that a restriction of the stormwater flows from each Lot is required in this instance as per Item 7 details.

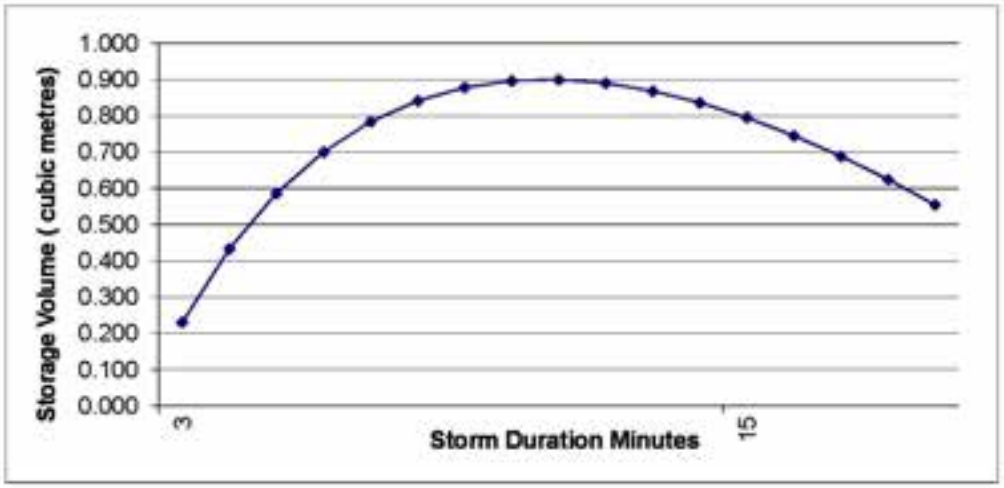
SACS
5th May 2016

Effective Area	0.04 Ha	360.0 sq m
Time of Conc.	6 min	
Outflow (Full no head)	0.003948 cu.m/s	3.95 l/s
Outflow (Full with head)	0.003948 cu.m/s	
Return Period	5	

SALE

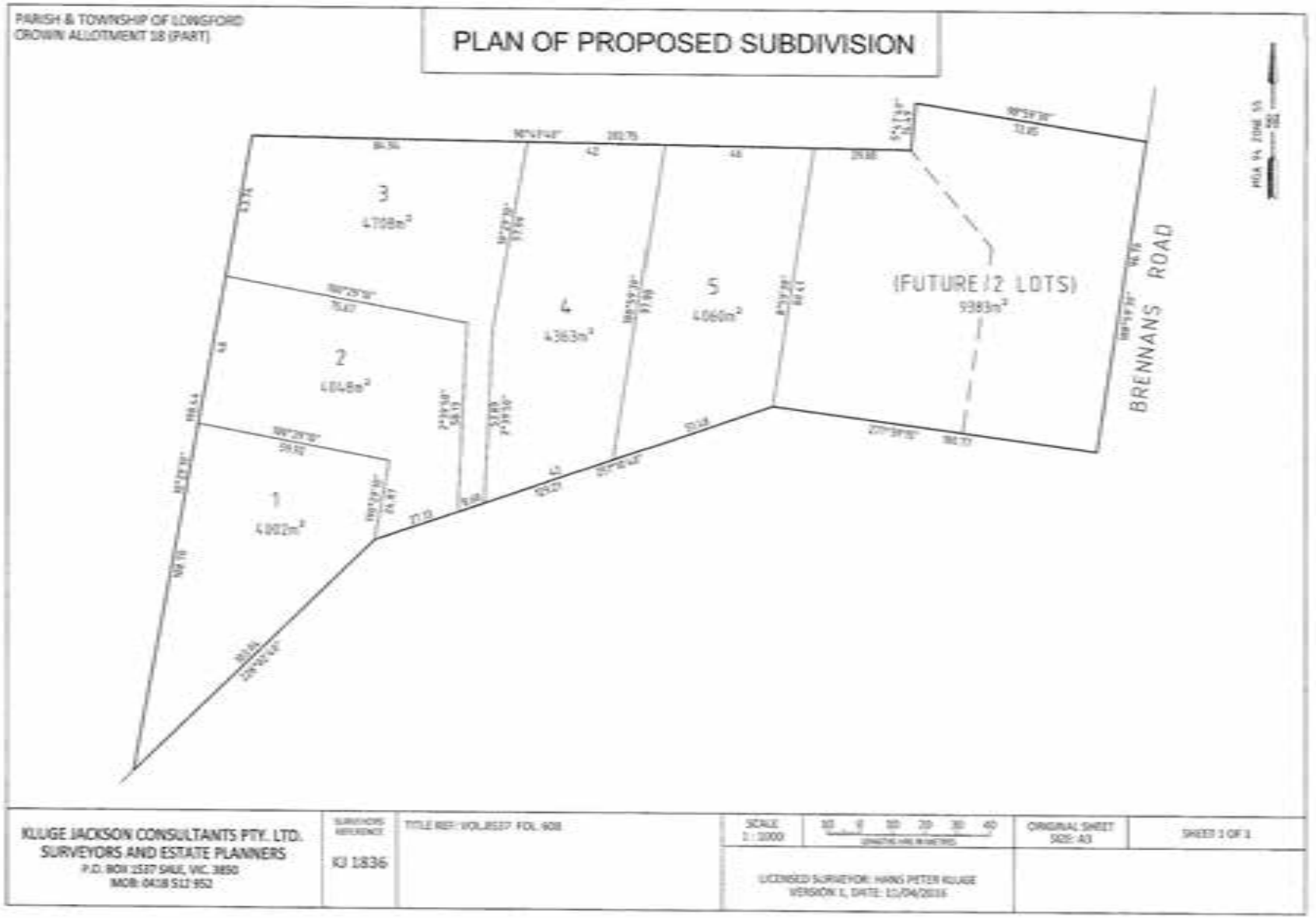
a	b	c	d	e	f	g
3.170063734	-6.08E-01	-1.72E-02	8.57E-03	-1.21E-03	-2.82E-04	4.04E-05

Time	I	Q dev	a	b	c	Storage
Min	mm/hr	cu.m/s	min	min	min	cu.m
3.00	100.08	0.01	2.37	3.63	-3	0.230
4.00	91.08	0.01	2.60	3.40	-2	0.433
5.00	84.17	0.01	2.81	3.19	-1	0.586
6.00	78.58	0.01	3.01	2.99	0	0.700
7.00	73.90	0.01	3.21	2.79	1	0.784
8.00	69.89	0.01	3.39	2.61	2	0.841
9.00	66.41	0.01	3.57	2.43	3	0.878
10.00	63.35	0.01	3.74	2.26	4	0.897
11.00	60.63	0.01	3.91	2.09	5	0.900
12.00	58.19	0.01	4.07	1.93	6	0.890
13.00	55.98	0.01	4.23	1.77	7	0.868
14.00	53.98	0.01	4.39	1.61	8	0.836
15.00	52.15	0.01	4.54	1.46	9	0.795
16.00	50.47	0.01	4.69	1.31	10	0.745
17.00	48.91	0.00	4.84	1.16	11	0.688
18.00	47.48	0.00	4.99	1.01	12	0.624
19.00	46.14	0.00	5.13	0.87	13	0.554
20.00	44.90	0.00	5.28	0.72	14	0.479
21.00	43.74	0.00	5.42	0.58	15	0.398
22.00	42.65	0.00	5.55	0.45	16	0.313
					Max	0.900

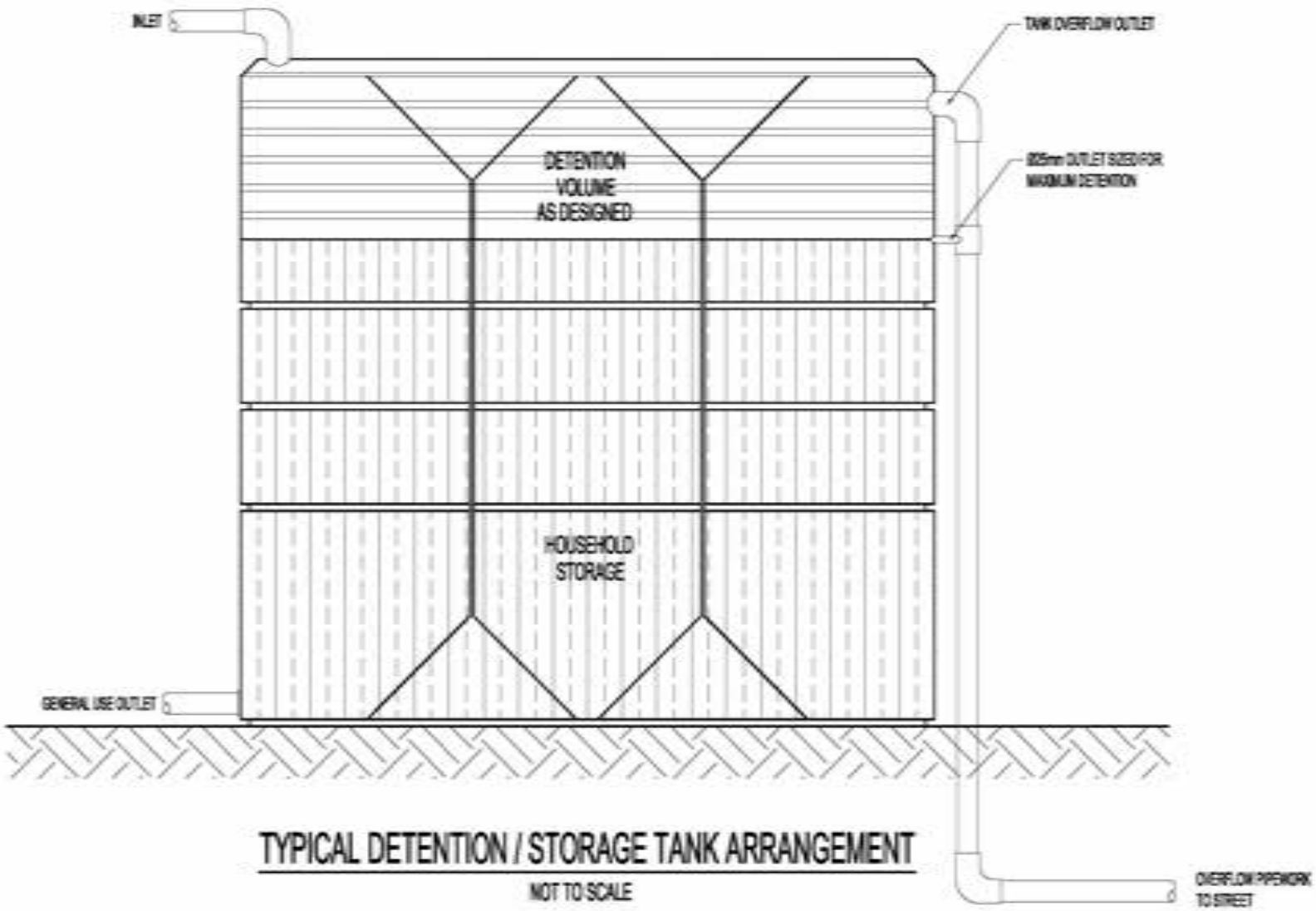


Intensity Frequency Duration Table for Sale

Duration (min)	(hr)	ARI (years) 1	2	5	10	20	50	100
5		43.70	59.14	84.62	102.62	126.38	161.24	190.72
6		40.93	55.34	78.96	95.61	117.59	149.80	177.00
8		36.60	49.39	70.15	84.73	103.98	132.12	155.84
10		33.36	44.95	63.61	76.66	93.91	119.07	140.23
12		30.79	41.44	58.44	70.30	85.98	108.82	127.99
14		28.71	38.59	54.27	65.18	79.61	100.59	118.18
15		27.78	37.33	52.42	62.92	76.79	96.85	113.85
16		26.94	36.19	50.76	60.88	74.26	93.69	109.96
18		25.46	34.17	47.82	57.27	69.78	87.93	103.11
20		24.15	32.37	45.21	54.08	65.83	82.84	97.06
22		23.03	30.85	43.00	51.38	62.48	78.54	91.96
24		22.01	29.47	40.99	48.93	59.45	74.66	87.35
25		21.54	28.83	40.07	47.81	58.06	72.88	85.24
26		21.11	28.24	39.22	46.77	56.78	71.23	83.29
28		20.29	27.13	37.81	44.82	54.36	68.14	79.62
30		19.55	26.12	36.16	43.05	52.18	65.35	76.31
35		17.98	23.99	33.10	39.33	47.60	59.49	69.38
40		16.69	22.24	30.59	36.29	43.85	54.71	63.73
45		15.61	20.79	28.51	33.77	40.75	50.77	59.07
50		14.70	19.56	26.76	31.66	38.15	47.47	55.18
55		13.91	18.49	25.24	29.82	35.90	44.61	51.81
60	1	13.22	17.56	23.92	28.23	33.95	42.13	48.89
70		12.10	16.05	21.80	25.69	30.85	38.23	44.32
80		11.20	14.84	20.12	23.67	28.40	35.15	40.71
90	1.5	10.44	13.83	18.71	21.99	26.35	32.57	37.69
120	2	8.81	11.64	15.68	18.35	21.94	27.04	31.23
180	3	6.90	9.10	12.15	14.18	16.90	20.74	23.88
240	4	5.80	7.63	10.14	11.80	14.02	17.16	19.72
300	5	5.07	6.66	8.81	10.23	12.13	14.81	16.99
360	6	4.54	5.96	7.86	9.11	10.78	13.14	15.05
600	10	3.35	4.37	5.71	6.59	7.76	9.41	10.75
720	12	3.00	3.91	5.10	5.88	6.90	8.35	9.52
4320	72	0.81	1.07	1.47	1.73	2.09	2.59	3.01


PARISH & TOWNSHIP OF LONGFORD
CROWN ALLOTMENT 18 (PART)
PLAN OF PROPOSED SUBDIVISION
3
4708m²
2
4048m²
1
4002m²
4
4363m²
5
4060m²
(FUTURE) 2 LOTS)
9383m²
BRENNANS ROAD
MGA 94, ZONE 55
KLUGE JACKSON CONSULTANTS PTY. LTD.
SURVEYORS AND ESTATE PLANNERS
P.O. BOX 1507 SALE, VIC. 3850
MOB: 0438 512 952
KJ 1836
SCALE
1 : 2000
ORIGINAL SHEET
SIZE: A3
SHEET 1 OF 1

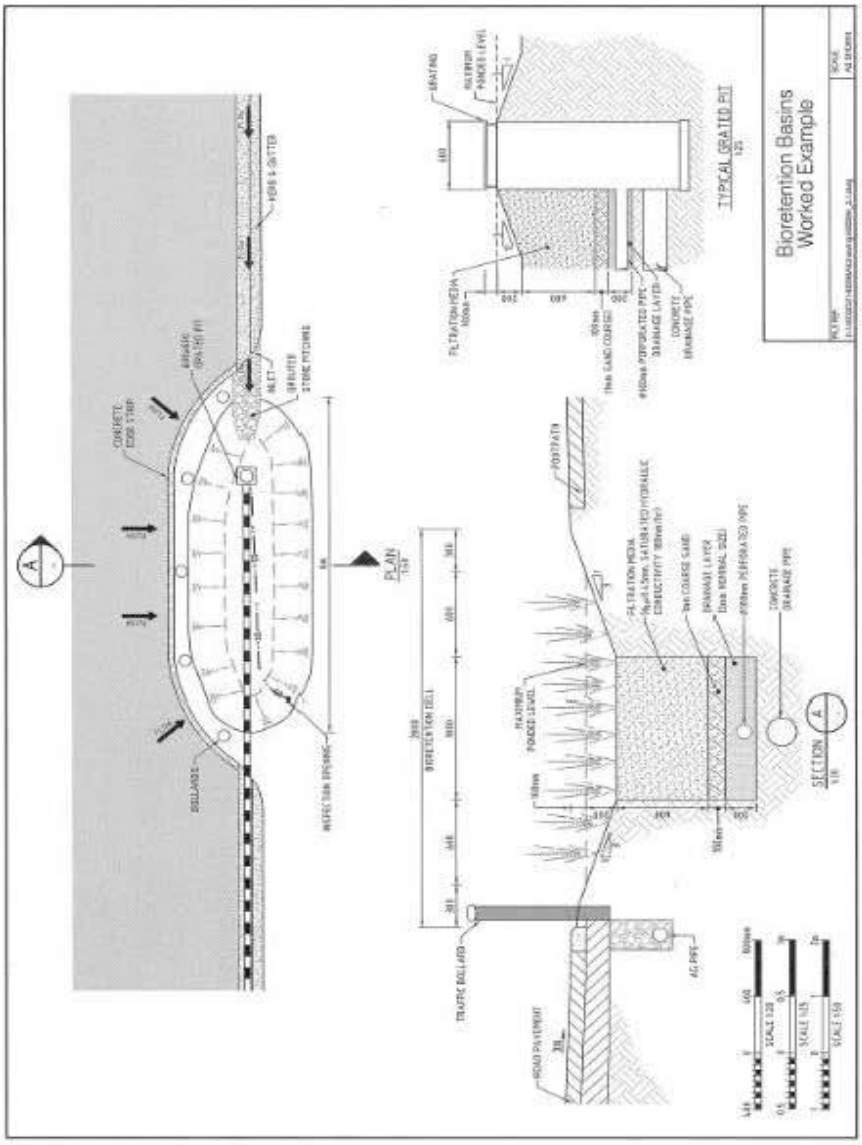
Appendix C – Standard Tank Detention Arrangement



TYPICAL DETENTION / STORAGE TANK ARRANGEMENT

NOT TO SCALE

Appendix D – General layout of Bio-retention Basin



Beveridge Williams

development & environment consultants

Beveridge Williams
Sale Office
45 Macalister Street
Sale VIC 3850
PO Box 47
Sale Vic 3850
Tel: (03) 5144 3877
Fax: (03) 5144 6591
www.beveridgewilliams.com.au

LAND SUPPLY & DEMAND ANALYSIS FOR LONGFORD

August 2016

DOCUMENT CONTROL DATA

	Beveridge Williams Sale Office 45 Macalister Street Sale Vic 3850 PO Box 47 Sale Vic 3850 Tel: (03) 5144 3877 Fax: (03) 5144 6591 www.beveridgewilliams.com.au	**Title**	Land Supply & Demand Analysis for Longford
		Author	CC
		Checked	NS
		Project Manager	CC
		Synopsis	An analysis of existing land supply and prevailing and predicted demand for the Longford area with projections as to how the rezoning of land at 2677 Rosedale-Longford Road and 41 Brennans Road, Longford will impact supply.

Reference: 1600374

Client: Graham & Denise James

Revision Table

Rev	Description	Date	Authorised
A	Final draft for rezoning application	8/8/2016	CC

Distribution Table

Date	Revision	Distribution
8/8/2016	A	Council, client, file

Copyright Notice

CONTENTS

1 KEY FINDINGS

1.1 KEY FINDING

In August 2016 there were 68 residential lots available across Longford, as shown in ***Table 1***.

	Available Vacant Lots
Lots in an approved RLZ estate	25
RLZ lots on the market	41
Infill Township Zone lots	3
Total:	68

Table 1: Vacant or approved residential across Longford

1.2 DEMAND FOR RESIDENTIAL LAND

Based on the two demand scenarios analysed, i.e. the Sale, Wurruk & Longford Structure Plan and Building Approvals from 2005-2015, future dwelling requirements could range from 8.5 to 9.3 dwellings per annum. This equates to a demand for 127.5 to 139.5 new dwellings over the coming 15 years, i.e. from 2016 to 2030 (***Table 2***).

	Sale, Wurruk & Longford Structure Plan	Building Approvals
Estimated Dwelling Demand per annum 2016-2030	8.5	9.3
Total Estimated Dwelling Demand 2016-2030 (Average)	127.5	139.5

Table 2: Housing demand indicators summary

1.3 ESTIMATED YEARS OF RESIDENTIAL LAND SUPPLY

On a bare reading the current supply of residential land in Longford is 68 lots, as shown in ***Figure 1***. This equates to a 7.3 year supply based upon the existing building activity data, which indicates that there are 9.3 dwellings being built in Longford per annum.

However, land supply in Longford has for the last 10 years been heavily impacted by a Council decision to change the schedule to the Rural Living Zoned land across the township to allow a density of 1 lot per 8,000m². This change occurred around 10 years ago and has led to the re-subdivision of a number of infill lots that already had dwellings on them, which, in turn, created additional land supply. For instance, since the Structure Plan was completed in 2010, this infill subdivision activity has led to the creation of 30 extra vacant lots.

This trend is expected to continue, albeit with tapering off to zero by 2030, as the amount of easily subdivide-able infill land is gradually exhausted.

So, it is considered that an accurate estimate of the number of years of residential land supply in Longford over the study period, i.e. 2016-2030, must factor in an additional 2.5 lots per annum to account for an ordered tapering of infill supply from 5 lots per annum to 0 lots per annum by 2030.

This will mean that the demand for lots will catch up to supply in 10 years, i.e. 68 current lots + (2.5 x 10 =) infill 25 lots = 93 lots overall / 9.3 dwellings needed per annum.

So, by including this underlying supply from infill subdivisions, Longford more realistically could last another 10 years without needing any further residential rezoning, provided the housing demand figure of 9.3 dwellings per annum did not change.

1.4 LAND SUPPLY AND DEMAND – A COMPARISON WITH 2010

1.4.1 Land Supply

Upon its publication in August 2010, the Sale, Wurruk & Longford Structure Plan estimated that the remaining residential land supply in Longford was 25 lots, i.e. 15 in the Rural Living Zone and 10 in the Township Zone.

This compares to a supply figure arrived at in the current study of 68 lots, which has increased due to the rezoning of two lots on Andrews Road from Farming Zone to Rural Living Zone, yielding an extra 58 lots, of which 33 have already been created.

This increase has offset a diminishment in the number of available Township and existing Rural Living Zoned lots through dwelling development.

1.4.2 Demand for land

The Structure Plan relied upon Building Activity Data from 2005-2010, which revealed that there had been 41 dwellings constructed on land in the Rural Living Zone and 3 on land in the Township Zone over the previous 5 year period.

This led to a demand figure of 8.5 dwellings per annum.

Building activity data from 2005-2015 reveals that 98 dwellings were constructed on land in the Rural Living Zone and 4 dwellings were constructed on land in the Township Zone within Longford over the past 10 years.

This equates to a dwelling demand of 9.3 dwellings per annum, which is an increase of 0.8 dwellings per annum relative to the figures used in the Structure Plan.

As shown in ***Table 3***, by extrapolating these demand figures out across the next 15 years, i.e. 2016-2030, the Structure Plan would have estimated that there would need to be 127.5 new dwellings constructed, while this study estimates that there would need to be 139.5 new dwellings constructed, or an extra 12.

	Longford Structure Plan figure + 30 new lots created since 2010	2016 estimate	Decline/increase from 2010 projections
Estimated Residential Land Supply	55	68	+13
Estimated Dwelling Demand per annum 2016-2025	8.5	9.3	+0.8
Total Estimated Dwelling Demand 2016-2030 (Average)	127.5	139.5	+12

***Table 3**: A comparison of dwelling supply and demand – 2010 to 2016*

1.4.3 Estimated years of residential land supply

The Structure Plan estimated that there was a 2.9 year supply of vacant land in Longford, based upon there being 25 vacant lots available for development in 2010 and a demand for 8.5 new dwellings per year.

This compares to a supply figure arrived at in the current study of 7.3 years (= 68 lots / 9.3 dwellings per annum).

However, to get an accurate projection for Longford, it is necessary to include the yield from infill subdivisional activity, which is predicted to lead to an additional 2.5 lots being created per annum over the next 15 years. The Structure Plan figures did not include this factor.

So, if the assumptions about land base and the underlying supply used in the current study were applied to the building activity data used in the Structure Plan, i.e. 8.5 dwellings per annum, supply would have been predicted to run out in 11.5 years (= 98 lots / 8.5 dwellings per annum).

This compares with 10 years for a demand of 9.3 dwellings per annum as found in the current study. These comparisons are shown in ***Table 4***.

	Lots required per annum	Years Supply*
Sale, Wurruk & Longford Structure Plan	8.5	11.5
Building approvals in Longford	9.3	10
Change	+0.8	-1.5

* Based upon the addition of 2.5 lots per annum to a base supply of 98 lots

Table 4 Estimated Years Supply

It is interesting to note that there have been 60 dwellings constructed in Longford over the period 2010-2015 (see ***Table 6***). So, the supply that was estimated as being available in 2010 coupled with the additional lots that have been created through subsequent infill subdivisions (25 lots + 30 lots = 55 lots) would have been completely exhausted 1 year ago and there would have been a shortfall that grew by 6.8 lots (= 9.3 lots – 2.5 lots) per annum, if it had not been for the rezoning and subdivision of land in Andrews Road.

It is also interesting to note that construction on Rural Living Zoned lots in Longford peaked in 2010 (see ***Table 6*** & ***Figure 3***), at which point the number of developable lots had fallen to 25, of which only a handful would have been on the market.

So, one of the key factors in the drop in required dwellings that ensued could quite likely be as a result of the exhaustion of supply of Rural Living Zoned land, which was only alleviated in 2015 by the rezoning of land in Andrews Road.

One of the main purposes of this report is to ascertain the impact of rezoning 2677 Rosedale-Longford Road and 41 Brennans Road, Longford from Farming Zone to Township Zone on land supply in Longford. Based upon the evidence gathered, it would appear that this rezoning will be necessary to maintain supply at between 10-15 years.

2 INTRODUCTION

This report has been prepared by Beveridge Williams & Co. Pty. Ltd. and provides an assessment of residential land supply in Longford in August 2016 as background detail for a planning scheme amendment seeking the rezoning of 2677 Rosedale-Longford Road and 41 Brennans Road, Longford, which is collectively recognized as Precinct 3 in the Longford Outline Development Plan, from Farming Zone to Township Zone.

The report builds on the *Sale, Wurruk and Longford Structure Plan (August 2010)* and provides updated information about the availability of residential land, projected demand and the estimated number of years of supply that current supply represents.

2.1 Methodology

Land supply in Longford was considered to be made up of vacant lots within the township boundaries that in zones that allow use and development of a dwelling without the need for a planning permit or rezoning. In Longford this includes land in the Rural Living Zone and Township Zone.

Information about land supply across the study area was captured through zoning maps and in consultation with Council's strategic planning team. A map showing vacant lots in Longford is provided at **Appendix A.**

Three sources of information were used to predict residential growth/demand for new dwellings over the 15 year period from 2016 to 2030. These were:

- The projections in the Sale, Wurruk & Longford Structure Plan; and
- Building approvals for new dwellings in Longford, as listed in the Sale, Wurruk and Longford Structure Plan for the 5 year period between (January, 2005 to 2008);
- Data held by Beveridge Williams & Co. Pty. Ltd. in relation to subdivision across Longford over the period 2010-2016; and,
- Victorian Building Association Data for the period 2009-2015.

2.2 Findings

This report has found that that:

- There is presently 7.3 years of land supply across Longford (See ***Table 4***); however, if re-subdivision of existing infill land persists, the available supply will stretch out to 10 years, provided demand remains static at 9.3 dwellings per annum; and,
- The rezoning of 2677 Rosedale-Longford Road and 41 Brennans Road, Longford will be necessary to help maintain supply at between 10-15 years over the study period, i.e. 2016-2030.

3 POLICY CONTEXT

The State Planning Policy Framework

The following State Planning Policies within the Wellington Planning Scheme are pertinent to issues of land supply and rezoning of land in Precinct 3 for residential purposes:

- **Clause 11.02** (Urban Growth)

  Response:

  This Clauses emphasises the need for all municipal Councils to assess and monitor residential land supply across their cities, suburbs and townships and ensure that it does not begin to influence the property market in a negative fashion, either through an undersupply or oversupply of developable land. To achieve this, the State Government recommends that where growth is possible, the land supply across a city, suburb or township should remain at least 15 years, based upon the most up to date demand figures.

  The proposed rezoning of precinct 3 is predicted to elevate land supply within Longford to around 10 years based upon current figures and infill subdivision activity.

  Hence, the conclusions reached in this analysis accord with the land supply expectations set out in this Clause.

- **Clause 12.01** (Biodiversity)

  Response:

  This Clause emphasises the need for all municipal Councils to protect significant habitats and flora communities within threatened and endangered ecological vegetation classes to foster broad biodiversity across the State. The calculation of available land factored into the land supply analysis for precinct 3 excludes any areas within the site that will require protection due to their threatened or endangered nature.

  Hence, the density projections for the land being examined in this report present an accurate portrayal of supply once the provisions of this clause are taken into account.

- **Clause 13.05** (Bushfire)

  Response:

  This Clause discourages the consideration of land that is prone to bushfire risk for development. Precinct 3 is not affected in a Bushfire Management Overlay and is not understood to be under consideration for inclusion by the Country Fire Authority due to its generally cleared nature and extensive setbacks from any forested land.

  Nonetheless, it is in an area that could potentially be susceptible to impacts from a bushfire elsewhere and, hence, like the rest of Longford, is considered to be in a "Bushfire Prone area" under the Building Code of Australia. As such, all buildings constructed on the site will need to consider what risks may arise from a bushfire elsewhere and how they can best be managed. To that end, the consideration of road structure and the accessibility of the

various estates to the CFA appliances has been taken into account in the density projections used.

Hence, the figures used in this study are accurate in light of the provisions of this Clause.

- **Clause 15.01** (Urban Environment)

  Response:

  This Clause encourages the use of best practice urban design in consideration of the optimal layout for a residential subdivision. Consideration must be given to the context of the site and how best to make any new development blend in with what surrounds it whilst also overcoming existing shortfalls in community infrastructure, where appropriate. It also suggests that residential development should be designed with a focus on allowing future residents to pursue healthy, active lifestyles and gain access to internal and external facilities on foot or bicycle.

  Precinct 3 has not been designated as a preferred location for an open space reserve as part of the Longford Development Plan; so, no land will be lost to recreation reserves and the predicted yield, i.e. 7 lots, can be met.

  Hence, the land supply scenario considered in this report is in accordance with this Clause.

- **Clause 15.02** (Sustainable Development)

  Response:

  This Clause encourages the use of best practice urban and architectural design to achieve the optimal outcome for energy efficiency and easy non-motorised vehicle transport in a residential development. The density factors used in the Longford Development Plan incorporated the desired outcomes and predicted a yield of 7 lots from precinct 3.

  Hence, the land supply figures reached in this report reflect the intent of this Clause.

- **Clause 15.03** (Heritage)

  Response:

  This Clause emphasises the need for development to only occur in circumstances where the historically relevant vestiges of pre and post European Settlement activity are either preserved or recorded, as appropriate. A site has been recorded on land to the north of Precinct 3, but the significant earthworks that have been carried out within Precinct 3 are predicted to have eliminated any likely sensitivity to pre or post-European settlement history on the land.

  Hence, the land supply figures reached in this report reflect the intent of this Clause.

- **Clause 16.01** (Residential Development)

  Response:

  This Clause encourages consideration of issues relating to the integration of housing with the market demand, the appropriate location of new housing, diversity of housing choice and housing affordability in any new residential development. The land supply figures used

in this report are based upon an outcome whereby these matters are incorporated in any new development layout through the use of a variety of lot sizes within any new estate.

Hence, the conclusions reached in this report are accurate in light of the objectives and strategies within this Clause.

- **Clause 18.01** (Integrated Transport)

  Response:

  This Clause encourages the integration of various transport modes with land use outcomes in order to provide multiple safe and efficient options for travelling within residential estates and to key external sites. The figures used in this analysis take into account the provision of transport options that will achieve these objectives.

  Hence, the conclusions reached in this report are accurate in light of the objectives and strategies within this Clause.

- **Clause 18.02** (Movement Networks)

  Response:

  This Clause promotes sustainable personal transport, with an emphasis on providing future residents of any residential estate with the option of walking, cycling, driving or taking public transport to and from all key destinations within a reasonable distance from the development site. These outcomes have been incorporated in the land supply calculations set out in this analysis.

  Hence, the conclusions reached in this report are accurate in light of the objectives and strategies within this Clause.

- **Clause 19.02** (Community Infrastructure)

  Response:

  This Clause promotes the integration of health, education and cultural facilities with new development. The Longford Development Plan has not designated any areas within Precinct 3 as being appropriate for community infrastructure.

  Hence, the conclusions reached in this report are accurate in light of the objectives and strategies within this Clause.

- **Clause 19.03** (Development Infrastructure)

  Response:

  This Clause promotes the timely provision of all available reticulated infrastructure. The density outcomes considered in this analysis take the provision of the road network, reticulated electricity and land capability for on-site wastewater management account into account.

  Hence, the conclusions reached in this report are accurate in light of the objectives and strategies within this Clause.

Local Planning Policy Framework

The following Local Planning Policies within the Wellington Planning Scheme are pertinent to issues of land supply and rezoning of land in precinct 3 for rural residential purposes:

- **Clause 21.02-1** (Settlement and Housing)

  Response:

  The land that is being considered for rezoning is within the Longford township boundary as designated through the Structure Plan and the Longford Development Plan. It is also flanked by existing residential development on its north and west sides.

  Hence, this Clause is supportive of the rezoning of the entirety of the land in accordance with the Structure Plan and the supply figures will not be impacted by its objectives.

- **Clause 21.02-7** (Transport)

  Response:

  The Longford-Rosedale Road is a VicRoads managed road in excellent condition, from which access can be made to the land via the existing intersection with Brennans Road.

  Hence, the rezoning of Precinct 3 can be achieved in line with the objective of this Clause.

- **Clause 21.02-8** (Infrastructure)

  Response:

  Precinct 3 has access to a reticulated electricity supply and a high-quality bitumen road network via the Rosedale-Longford Road. Furthermore, the land has been deemed capable of managing domestic wastewater on-site at the density proposed. So, the area that is being considered for rezoning can be fully serviced for an economical price. Facilities of this nature are considered ample for a Township Zone subdivision.

  Hence, the potential servicing delays foreshadowed in this clause will not constrain the provision of land supply across Precinct 3.

- **Clause 21.03-1** (Vision)

  Response:

  This Clause encourages ongoing population growth within designated growth corridors across the Shire, of which Longford is a major one and supports the creation of land supply that delivers a safe, well-serviced and generally liveable environment.

  Hence, as the land supply figures used in this report, are geared to achieving these ends in Longford, they are supported by this Clause.

- **Clause 21.03-2** (Strategic Framework Land Use Plan)

  Response:

  The land supply figures used in this report are based upon the projections and expectations expressed in the Sale, Wurruk & Longford Structure Plan, which is referenced in this Clause.

- **Clause 21.04-2** (Settlement Objectives)

  Response:

  All land considered in this analysis of land supply is within the Longford township boundaries designated through the Sale, Wurruk & Longford Structure Plan mapping and is able to connect with the existing road and reticulated services.

  Hence, it will be able to achieve the supply figures that are forecast while remaining in compliance with the objectives of this Clause.

- **Clause 21.04-3** (Settlement Strategies)

  Response:

  The supply figures outlined in this analysis predict that the rezoning of precinct 3 will increase this to 11 years. So, the proposal will maintain supply between 10-15 years in accordance with the strategies set out in this Clause. Moreover, the Clause encourages the use of the Sale, Wurruk & Longford Structure Plan in determining supply and demand figures, as has also been done. The yield figures are based upon a density that will allow the creation of estates that:

  - are within the designated township boundaries;
  - encourage healthy lifestyles;
  - will not detrimentally affect high quality agricultural land or significant environmental assets;
  - encourages diversity of housing choice;
  - avoids creating new lots on flood-prone land;
  - are able to provide appropriate community infrastructure to support active lifestyles through the integration of walking/cycling facilities to key sites;
  - can accommodate appropriate effluent and stormwater discharge systems; and,
  - can utilise existing urban infrastructure.

- **Clause 21.05-1** (Vision)

  Response:

  The land supply figures used in this report are based upon the densities that will ensue from development of the land in line with the mapping in the Sale, Wurruk and Longford Structure Plan and Longford Development Plan, while taking into account the following principles:

  - Formation of a sustainable community that integrates with existing adjoining developments;
  - Easy accessibility by car, cycle, or on foot; and,
  - Creation of inclusive neighbourhoods.

- **Clause 21.05-2** (Township Roles)

  Response:

  The figures used in the calculation of potential supply are based upon the creation of an estate that will foster a diversity of housing choice.

  This outcome is foreshadowed in this Clause and, hence, the figures can be relied upon.

- **Clause 21.05-3** (Regional City)

  Response:

  The figures in this analysis are based upon the rezoning of land for rural residential use in Longford to support Sale in its role as a regional centre as suggested in the Sale, Wurruk & Longford Structure Plan and can be delivered in a timely and sequential manner.

  Hence, the findings in this report remain in accordance with the objective and strategies in this clause.

- **Clause 21.05-4** (Housing Choice and Diversity)

  Response:

  The supply figures used in this report are based upon the creation of a good range of lot sizes above 4,000m^2 in area across the precinct.

  Hence, they accord with the strategy and objectives outlined in this clause.

- **Clause 21.05-5** (Residential Development)

  Response:

  The land supply figures are based upon a development density in Longford that can incorporate walkable neighbourhoods, water sensitive urban design, energy efficiency/sustainability measures, staged reticulated infrastructure delivery, access to community facilities, a range of lot sizes and appropriate sequencing.

  Hence, the figures arrived at accord with the objective and strategies of this clause.

- **Clause 21.05-7** (Design Excellence)

  Response:

  The figures used in this report factor in a development density across precinct 3 that will allow development to occur in a manner that is consistent with the character of the area.

  Hence, the conclusions accord with the objective and strategies of this clause.

- **Clause 21.05-9** (Movement Network)

  Response:

  The figures used in this report accommodate the creation of a road network that is appropriate for a rural residential land use and able to provide a safe connection between future lots and the balance of facilities across Longford.

Hence, the supply figures used in this document meet the requirements set out in this clause and can be relied upon.

- **Clause 21.05-11** (Sensitive Assets)

  Response:

  The supply figures used to predict yields from the rezoning of the precinct 3 factor in the need to incorporate water sensitive urban design methods.

  Hence, the supply figures used in this document meet the requirements set out in this clause and can be relied upon.

- **Clause 21.05-12** (Implementation)

  Response:

  The density calculation method used in this report takes into account the need to create a road structure that meets CFA requirements, drainage reserves that meet best practice guidelines and reticulated electricity infrastructure across estates with lots of above 4,000m^2.

  Hence, the supply figures that have been relied upon are sensitive to the requirements set out in the objective and strategies of this clause.

- **Clause 21.13-2** (Biodiversity)

  Response:

  The subject sites contain a declared watercourse that will render 41 Brennans Road undevelopable, but leave ample room within 2677 Rosedale-Longford Road able to accommodate up to 7 lots. Otherwise, there are no significant trees or other sensitive environmental assets, such as indigenous vegetation or waterbodies within the land.

  Hence, the figures arrived at in this report can be relied upon for an accurate analysis of land supply as a result of a rezoning precinct 3.

- **Clause 21.16-1** (Built Environment)

  Response:

  The assumptions made about the density that will be achievable across precinct 3 have taken into account best practice theories about the creation of sustainable residential estates, such as the need to orient housing to take best advantage of solar rays.

  Hence, the supply figures anticipated for precinct 3 are sensitive to the objectives and strategies outlined in this clause.

- **Clause 21.18-2** (Road Infrastructure)

  Response:

  Precinct 3 enjoys access to an excellent road network externally and the density figures that are used in this study anticipate the creation of an appropriately scaled and aligned road network within the site.

  Hence, the land supply figures used in this report provide an accurate portrayal of the likely outcomes from the rezoning of precinct 3.

- **Clause 21.19-1** (Physical Infrastructure)

  Response:

  Precinct 3 is surrounded by low density residential development on its north, east and west sides; so, its development could not be considered leap-frogging.

  Hence, the supply figures in this study are considered accurate as regards the objective and strategies of this clause.

4 RESIDENTIAL LAND SUPPLY

Residential land supply was calculated by adding:

- existing vacant lots in the Rural Living Zone and Township Zone;
- Rural Living Zoned lots that have been approved for subdivision; and,
- historical trends for the amount of re-subdivision of developed Rural Living Zoned lots that occurs each year within Longford's settlement boundaries, as defined in **Clause 21.05**.

4.1 Existing Land Supply

Information about existing vacant lots, as at August 2016, was captured using real estate websites (e.g. realestate.com.au), site inspection, a review of aerial photography in conjunction with zoning maps. A figure for the number of lots created through re-subdivision annually was arrived at by interrogating Beveridge Williams' database and examining the change in subdivisional patterns across the township between 2010 and 2016.

Only lots that met the following criteria were captured:

- All available vacant lots in the Rural Living Zone and Township Zone; and,
- All lots in the settlement boundary adopted in the Wellington Planning Scheme.

The outcomes of this search are displayed in **Table 5**.

	Available Vacant Lots
Grandevue Estate	24
69 Andrews Road	25
21 Boggy Creek Road	4
Infill RLZ lots on the market	13
Infill Township Zone sites	3
Total:	68

Table 5: Vacant or approved Lots in existing estates sites across Longford

As discussed previously an additional 5 lots (on average) have been created per annum through the subdivision of existing Rural Living Zoned lots every year since 2010. However, the amount of easily subdividable land across Longford is expected to completely exhaust over the coming 15 years. So, as shown in ***Table 6***, the anticipated number of lots that will be available within Longford based upon current zonings from 2016-2030 will increase by 38 lots (2.5 extra lots per annum) to 106.

Available Vacant Lots in March 2016	68
Additional lots expected to be created by re-subdivision (2016-2030)	38
Total:	106

Table 6: Anticipated number of vacant lots available in Longford 2016-2030

5 DEMAND FOR HOUSING

5.1 Components of Housing Demand

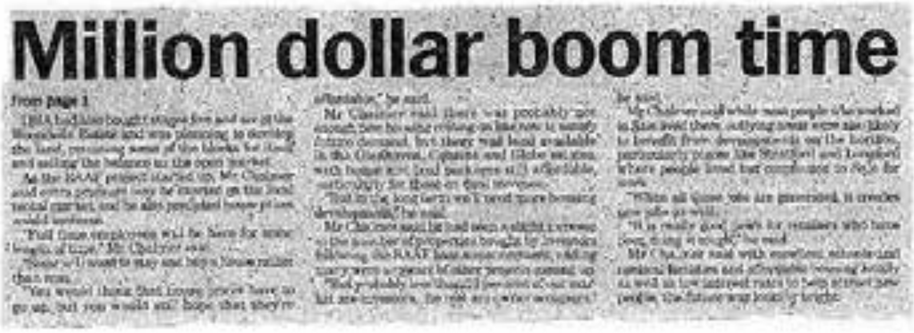
In locations such as Longford, demand for housing is driven by two main factors:

- Gradual growth in permanent population due to the ageing of Australia's population, decreased household sizes, international immigration and general depopulation of traditional farming areas into urban centres; and
- Growth in key local industries, such as resource exploitation (Oil and Natural Gas refinement at Longford and offshore in Bass Strait), Defence (expansion of the RAAF Base – East Sale), Corrections (expansion of Fulham Prison), Agriculture (Ongoing intensification of irrigated dairying and vegetable growing and usual activity in agroforestry and dryland grazing).

Figures 1 & ***2***, which includes excerpts from a newspaper article in the Gippsland Times dated Tuesday, 29th of December, 2015, provides evidence of the economic impetus that Sale is presently experiencing and provides some background to the factors referenced above.


GIPPSLAND Times
& MAFFRA SPECTATOR
PAGE 9
PIPELINE UNDER WAY
PAGE 2
CHRISTMAS PEST
SPORT
THE YEAR IN SPORT
Million dollar boom time

Figure 1: Excerpt from "Million dollar boom time" article, Page 1 of the Gippsland Times, 29/12/2015


Million dollar boom time

From page 1

Figure 1: Excerpt from "Million dollar boom time" article, Page 3 of the Gippsland Times, 29/12/2015

These factors will influence the number of dwellings that are needed within the municipality over time, and therefore the number of lots that will be required to support this growth.

This section provides a review of these growth factors, augmented by analysis of historical data such as dwelling approvals and property values. This additional analysis provides further evidence relating to the future demand for dwellings in the municipality.

5.2 The Sale Wurruk & Longford Structure Plan

Clause 11.02-1 of the SPPF states that planning must give consideration to official population projections for Longford. The Sale, Wurruk and Longford Structure Plan provides the most recent official housing demand projections for Longford and is Council's officially adopted document in relation to the area, as well as a reference document at **Clause 21.20**.

The Structure Plan was released in 2010 and is the most up to date set of projections for Longford.

The plan estimated that Longford had a land supply of 2.9 years in 2010 and would require an additional 8.5 dwellings per annum over the period 2010 - 2025.

5.3 Building Approvals

Historical building approval data for residential development has been analysed to show historical trends in new housing development and activity that will indicate future likely rates. Building approvals at the municipal level provide a useful alternative or comparison to broad population projections when estimating future housing demand.

Table 6 provides the total building approvals for new dwellings across Longford over the period 2005-2015, while ***Figure 3*** represents this data in a column graph format to more clearly demonstrate the trends over the study period.

Year	Building Permits Issued	
	RIZ	TZ
2005	7	0
2006	7	1
2007	6	1
2008	6	0
2009	13	1
2010	15	1
2011	10	0
2012	10	0
2013	9	0
2014	8	0
2015	7	0
Totals	98	4
Annual Averages	8.9	0.4

Table 6: New dwelling approvals data 2005-2015

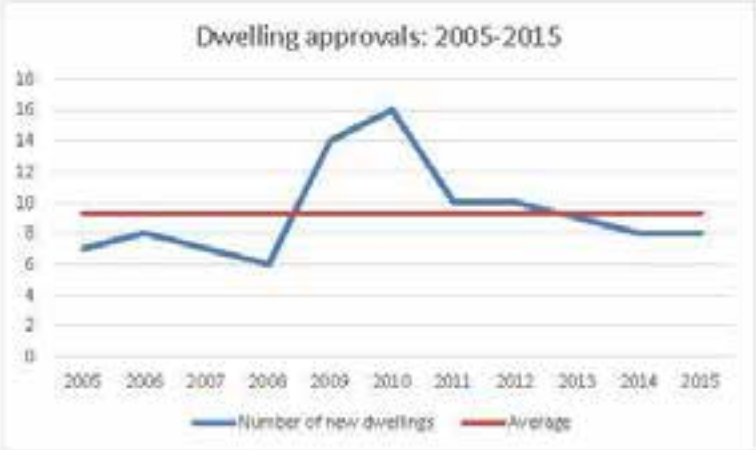


Figure 3: Line chart of dwelling approvals from 2005-2015

5.4 Estimated Demand for Housing

Figure 3 shows a stabilising of building activity and, hence, the demand figure of 9.3 dwellings per year that was arrived at from historical data sourced between 2005 – 2015 is expected to provide a relatively accurate measure for Longford over the next 15 years.

This will mean that there is likely to be an additional 148.4 houses constructed in Longford by 2030, provided there is adequate land supply.

5.5 Estimated years of supply

Based upon a demand of 9.3 dwellings per annum and a supply of 68 lots + 2.5 lots per year, it is estimated that supply will be exhausted within 10 years, i.e. 68 lots + 25 lots / 9.3 lots per annum = 10 years.

6 LIKELY IMPACTS OF FURTHER REZONING ON SUPPLY

The eventual impact of rezoning 2677 Rosedale-Longford Road and 41 Brennans Road, Longford from Farming Zone to Township Zone will be the addition of 6 lots to the supply of vacant, developable Township Zone lots.

If this rezoning occurred immediately, there would be 9 vacant Township Zone lots available in Longford and 74 vacant lots available overall. In other words, the rezoning proposed would have the effect of increasing the available land supply to 11 years, based upon the current building activity of 9.3 dwellings per annum and an additional 2.5 developable lots being created per annum.

However, given the likely 2-year lag period between the lodging of an application to amend the Wellington Planning Scheme and the eventual delivery of new vacant lots to the market as a result of the rezoning, it is considered unlikely that the actual available land supply in Longford would exceed 10 years at the time vacant lots became available at 2677 Rosedale-Longford Road and 41 Brennans Road, Longford.

Planning and Environment Act 1987

WELLINGTON PLANNING SCHEME

AMENDMENT C90

DRAFT EXPLANATORY REPORT

Who is the planning authority?

This amendment has been prepared by the Wellington Shire Council, which is the planning authority for this amendment.

The amendment has been made at the request of Beveridge Williams & Co. Pty. Ltd. on behalf of Graham & Denise James.

Land affected by the amendment

The amendment applies to Lot 2 on Lodged Plan No. 66556 (2677 Rosedale-Longford Road, Longford) and Crown Allotment 20 Parish of Longford (41 Brennans Road, Longford).

What the amendment does

The amendment rezones the land at 2677 Rosedale-Longford Road, Longford, from Farming Zone to Township Zone.

Strategic assessment of the amendment

- **Why is the amendment required?**

  The amendment is required to allow the land to be developed for residential purposes. To achieve this, the amendment seeks the rezoning of the land from Farming Zone to Township Zone to ensure that all necessary information is provided prior to the approval of a subdivision layout. The amendment is supported by the Sale, Wurruk and Longford Structure Plan and the change of zoning will facilitate the identified development outcome.

- **How does the amendment implement the objectives of planning in Victoria?**

  The amendment supports the key objectives of planning in Victoria by providing for and facilitating the fair, orderly, economic and sustainable use and development of the land within Longford. The amendment will implement the recommendations of the Sale, Wurruk and Longford Structure Plan and the Longford Outline Development Plan, both of which seek to facilitate residential growth within expanded urban boundaries in Longford at an appropriate density.

- **How does the amendment address the environmental effects and any relevant social and economic effects?**

- **Environment**

  The land at 2677 Rosedale-Longford Road and 41 Brennans Road, Longford was previously cleared and used for rural residential purposes, with only exotic vegetation and pasture grass remaining. A declared watercourse runs through 41 Brennans Road and will require protection through any future development process. Otherwise, the site is devoid of significant environmental assets.

- **Social and Economic**

  Given lots to the immediate north and east of 41 Brennans Road are already located in the Township Zone and developed for residential purposes and land to the immediate north and west of 1677 Rosedale-Longford Road is developed with the Sale Golf Course, it is submitted that the inclusion of an extra 6 new houses within this part of Longford will not have a significant social impact.

  The subsequent subdivision of the site will have a positive economic effect for the landholders in terms of an increase in the value of their land, and any infrastructure providers or builders that obtain work from the project. On top of this, there will likely be a boost in patronage to the general store/service station, primary school, kindergarten, golf club and bowls club, which will improve the viability of these facilities.

- **Does the amendment address relevant bushfire risk?**

  The subject land has previously been cleared of native vegetation, with some exotic vegetation and pasture grass all that remains. Apart from the road reserve to the south, the subject land only abuts largely cleared residential developments and the golf course, which is also substantially cleared. Although the subject site is not recognised as having any bushfire risk through the planning scheme, it is within a bushfire prone area under the building code and, hence, buildings will still need to be constructed to a minimum standard to provide protection from bushfire events. There is a large plantation approximately 1.2 kilometres to the south of the subject site; however, the cleared nature of the land in between and the separation distance will provide a significant buffer since buildings must be constructed to take ember attack into consideration.

  Development can be achieved in accordance with the relevant State and Local Planning Policies and in a manner that will not increase risk to life or property from a bushfire, or the need for any ongoing land management controls.

- **Does the amendment comply with the requirements of any Minister's Direction applicable to the amendment?**

  The Longford Development Plan provides some guidance for how the land could be developed and the analysis carried out as part of this amendment application suggests that the foreshadowed outcome is achievable. Otherwise, the proposed rezoning complies with all other scheme policies and documents; so, no further amendments to the policies or zone within the Wellington Planning Scheme are required. In light of this, the amendment meets the requirements of Ministerial Direction 11 regarding Strategic Assessment of Amendments.

- **How does the amendment support or implement the State Planning Policy Framework and any adopted State policy?**

  The amendment is consistent with Clause 11.05-1 Regional settlement networks, which identifies Sale as a regional centre that should support sustainable development. This amendment assists with the provision of an alternative form of living within Longford, which will support the Sale township, while offering future residents access to a wide range of facilities and services.

  It is recognised that the subject site will be removed from any possibility of agricultural production; however, it is not considered to be of strategic agricultural significance due to its size, soil type, i.e. Stradbroke classification, and proximity to rural residential development and the golf course on its north, east and west sides. It's rezoning is therefore consistent with the objectives of Clause 14.01-1 Protection of agricultural land.

  As the amendment proposes only to rezone land to the Township Zone it is expected that the objectives and strategies of Clause 15 will be considered and applied during the planning permit process. It is noted that the subject site is not within an area of cultural heritage significance.

The amendment supports the objective of Clause 16.01-4 Housing diversity, by respecting the rural character and providing opportunities for a diverse housing choice.

Otherwise, the subject land has been identified in the Sale, Wurruk and Longford Structure Plan at Clause 22.05 and the Longford Development Plan, which is a reference document at Clause 22.20**,** as being appropriate to provide a residential living option for people who wish to use Sale as their primary service/retail centre.

- **How does the amendment support or implement the Local Planning Policy Framework, and specifically the Municipal Strategic Statement?**

  The proposed amendment is strongly supported by the Local Planning Policy Framework.

  Clause 21.04-1 (Settlement & Housing – Rural Lifestyle) provides that:

  "There are numerous low density residential and rural living areas in the Shire. They are predominantly located in attractive rural or natural settings accessible to township services but beyond the urban fringe and away from urban growth corridors. Key characteristics of these areas include a clustering of lots between 4,000 square metres and 8 hectares, a lack of reticulated services and limited drainage. Longford is well positioned to cater for a significant proportion of the demand for rural living in the Sale area, in accordance with the Sale, Wurruk and Longford Structure Plan, 2010."

  Similarly, Clause 21.05 (Sale, Wurruk & Longford Strategic Framework) has several objectives and strategies which support the rezoning of the subject site.

  Clause 21.04-2 provides the following objectives for settlement and rural lifestyle:

  - "To accommodate future population growth over the next fifteen years in those settlements that can accommodate change and are expected to grow.
  - To provide rural lifestyle opportunities in appropriate locations.
  - Ensure that development occurs in accordance with the town strategy plans and other relevant plans included in Clauses 21.05 – 21.12.
  - Ensure that rezonings to residential zones only occur when it is demonstrated as necessary to satisfy housing needs within 10 – 15 years or to provide a choice of residential locations."

  Under Clause 21.05-2 Township Roles, it is stated that "Longford will be a key focus for rural residential growth and will also provide opportunities for further residential intensification within its core and in close proximity to recreation and education facilities and the redeveloped golf course. As growth occurs, Longford will see its identity as a desirable rural lifestyle area protected and enhanced."

  The amendment proposes no changes to the Local Planning Policy Framework. .

- **Does the amendment make proper use of the Victoria Planning Provisions?**

  The amendment seeks to use the Township Zone to facilitate the residential development of the subject site. The land capability assessment that has been carried out determined that the density of any future subdivision should be around 4,000m² per lot, which would allow a subdivision of 2677 Rosedale-Longford Road into 7 lots in accordance with the provisions of the Township Zone.

- **How does the amendment address the views of any relevant agency?**

  The preliminary views of VicRoads have already been sought with no objections raised. Their comments will be sought again during the public exhibition process.

- **Does the amendment address relevant requirements of the Transport Integration Act 2010?**

  The amendment will necessitate upgrades to existing connections to Rosedale-Longford Road to provide vehicular access into the new lots in accordance with the Longford Development Plan. Given the extensive sightlines that are available on the pertinent section of Rosedale-Longford Road, neither outcome is likely to have a significant impact on the transport system, as recognised in Section 3 of the *Transport Integration Act 2010*. The statements of policy principles under Section 22 of the *Transport Integration Act 2010* are not relevant to the current proposal.

Resource and administrative costs

- **What impact will the new planning provisions have on the resource and administrative costs of the responsible authority?**

  The amendment will entitle the owner of 2677 Rosedale-Longford Road, Longford to lodge an application for a planning permit that will allow the subdivision of their land in accordance with the zone and the Longford Development Plan. Given no permit is required to construct a dwelling on land in the Township Zone, no further planning permits should need to be issued. Otherwise, Council will become responsible for the maintenance of all new public infrastructure. However, when balanced against the likely increase in rates revenue from an additional 6 lots, the resource and administrative costs will easily be outweighed.

Panel hearing dates

In accordance with clause 4(2) of Ministerial Direction No.15 the following panel hearing dates have been set for this amendment:

- directions hearing: [insert directions hearing date]
- panel hearing: [insert panel hearing date]

Where you may inspect this Amendment

The amendment is available for public inspection, free of charge, during office hours at the following places:

Sale Service Centre
70 Foster Street
SALE VIC 3850

Yarram Service Centre
156 Grant Street
YARRAM VIC 3971

The amendment can also be inspected free of charge at the Department of Planning and Community Development website at www.dpcd.vic.gov.au/planning/publicinspection.

ATTACHMENT 2

Beveridge Williams

Reference: 1300213
Office: Sale

23 May 2016

ACN 006 197 235
ABN 38 006 197 235

Sale
45 Macalister St
PO Box 47
Sale Vic 3850
ph: 03 5144 3877

Wellington Shire Council
18 DeSailly Street
Sale VIC 3850

Dear Joshua,

RE: APPLICATION TO AMEND THE WELLINGTON PLANNING SCHEME
REZONING OF LAND
233 & 245 SEASPRAY ROAD AND 1 COBB ROAD, LONGFORD

We refer to the above matter and advise that we act on behalf of the owner of 245 Seaspray Road, Longford, Ingmar Kappenberger.

We refer to the following documents and recognize that they establish Council's official policy position for residential growth across the Longford area:

- The Sale, Wurruk & Longford Structure Plan, which was included as a reference document at Clause **21.20** of the Wellington Planning Scheme through Amendment C67 on 8 November 2012; and,
- The Longford Development Plan, which was included as a reference document at **Clause 21.20** of the Wellington Planning Scheme through amendment C87 on 12/5/2016.

Since the incorporation of the Structure Plan occurred, we have undertaken a series of site investigations to clarify whether development of the above parcels in Longford can be carried out in a manner that accords with the zonings foreshadowed in the Structure Plan and in the context of Council's strategic planning policies.

We have now completed our investigations, which included a feature and level survey, a vegetation assessment, a land supply/demand analysis, and a land capability assessment and our conclusion is that the site is suitable for rezoning to Rural Living Zone (Schedule 5), as recommended in the Structure Plan and as outlined in the Structure Plan and the Development Plan.

Our clients request that Council commence a planning scheme amendment to rezone the land as a result of the findings of these reports.

Accordingly, we ask that Council amend the Wellington Planning Scheme by rezoning 233 & 245 Seaspray Road and 1 Cobb Road, Longford to the Rural Living Zone (Schedule 5).

It is also proposed to apply the Development Plan Overlay across all of the above sites and introduce a new Development Plan Overlay Schedule that will set out the requirements for the preparation of an outline development plan covering all of the above parcels.

We enclose for Council's consideration:

- A Feature & Level Survey;
- A Response to Practice Note No. 37;
- A Draft DPO Schedule;
- An Explanatory Statement;
- A Land Supply/Demand Assessment;
- A Vegetation Assessment;
- Land Capability Assessments for 245 Seaspray Road & 1 Cobb Road, Longford; and,
- A Statutory Fee of $798.

We believe that the information submitted is sufficiently comprehensive to enable Council to consider this request and that Council is in a position to proceed with the amendment.

We are happy to meet at any time to discuss this application or to provide further information on this request. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
BEVERIDGE WILLIAMS & CO PTY LTD

CHRIS CURNOW
Senior Planner – East Gippsland Region

Beveridge Williams

development & environment consultants

Beveridge Williams
Sale Office
45 Macalister Street
Sale VIC 3850
PO Box 47
Sale Vic 3850
Tel: (03) 5144 3877
Fax: (03) 5144 6591
www.beveridgewilliams.com.au

RESPONSE TO PRACTICE NOTE 37 (RURAL RESIDENTIAL DEVELOPMENT)

Planning Scheme Amendment Application

233 & 245 Seaspray Road and 1 Cobb Road, Longford

May 2016

DOCUMENT CONTROL DATA

BW	Beveridge Williams Sale Office 45 Macalister Street Sale 3850 PO Box 47 Sale 3850 Tel: (03) 5144 3877 Fax: (03) 5144 6591 www.beveridgewilliams.com.au	**Title**	Response to Practice Note No. 37 (Rural Residential Development)
		Author	CC
		Checked	NS
		Project Manager	CC
		Synopsis	Application to rezone land from Farming Zone to Rural Living Zone (Schedule 5) with a Development Plan Overlay.

Reference: 1300213

Client: Ingmar Kappenberger

Revision Table

Rev	Description	Date	Authorised
A	Final draft for Planning Submission	23/5/2016	CC

Distribution Table

Date	Revision	Distribution
23/5/2016	A	Council, client, file

Copyright Notice

CONTENTS

APPENDICES

1 INTRODUCTION

Beveridge Williams & Co. Pty. Ltd. has been instructed by the proponent, Ingmar Kappenberger, to prepare an application to amend the Wellington Planning Scheme through the rezoning of both his land at 245 Seaspray Road, Longford and his neighbours' land at 235 Seaspray Road and 1 Cobb Road, Longford.

The application proposes to

1. Rezone the land from Farming Zone to Rural Living Zone (Schedule 5); and,
2. Apply a Development Plan Overlay over the land.

The report provides an assessment against the provisions of Practice Note 37 – Rural Residential Development (Department of Environment Land, Water and Planning).

2 SITE AND CONTEXT DESCRIPTION

2.1 Site Location

This report pertains to three properties that are located at the southern tip of the low density residential hamlet of Longford, which sits 10 kilometres to the south of the regional centre of Sale.

The locality plan in ***Figure 1*** displays the subject sites in relation to key features and facilities across the surrounding area.

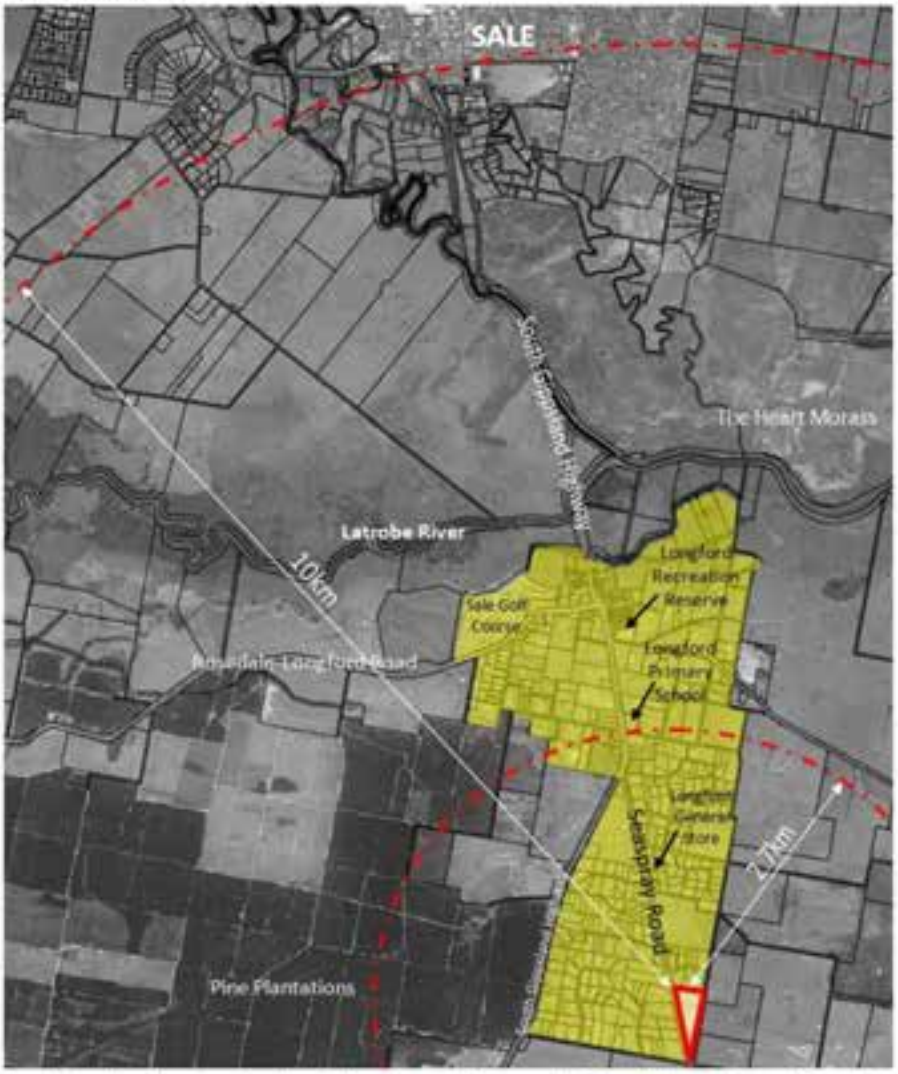


***Figure 1**: Locality Plan showing the subject sites, which are outlined red, in relation to key facilities & features across Longford, which is shaded yellow, and the surrounding area*

Property Details

The three subject sites have addresses of are 233 & 245 Seaspray Road, Longford and 1 Cobb Road, Longford.

They have the following distinct title particulars, sizes and areas:

233 Seaspray Road, Longford:

- Is otherwise known as Lot 1 on Lodged Plan 97183 (LP97183), which is contained in Certificate of Title Volume 08478, Folio 135; and,
- Has area of 4.047 hectares formed in a trapezoidal shape, with dimensions of 315.3 metres (north boundary) x 141.8 metres (east boundary) x 255.3 metres (south boundary) x 154 metres (west boundary);

245 Seaspray Road, Longford:

- Is otherwise known as Lot 2 on Lodged Plan 97183 (LP97183), which is contained in Certificate of Title Volume 08982, Folio 136; and,
- Has area of 5.22 hectares formed in a trapezoidal shape, with dimensions of 255.3 metres (north boundary) x 260.5 metres (east boundary) x 145.2 metres (south boundary) x 282.8 metres (west boundary);

1 Cobb Road, Longford:

- Is otherwise known as Crown Allotment 56, Parish of Glencoe, which is contained in Certificate of Title Volume 09077, Folio 861; and,
- Has area of 2.46 hectares formed in a trapezoidal shape, with dimensions of 145.2 metres (north boundary) x 301.35 metres (east boundary) x 17.9 metres (south boundary) x 327 metres (west boundary).

Topography

The feature survey at ***Appendix B*** shows the location of site features and topographical contours across subject sites.

The overall land experience a fall from northwest to southeast, with the high point at the northwest corner of 233 Seaspray Road (77.79 metres to Australian Height Datum) and the low point at the mid-point of the east boundary of 1 Cobb Road (62.13 metres to AHD).

More specifically, the fall peaks at 1 metre in 27 metres in the northern portion of the land and flattens out to a fall of 1 metre in 80 metres in the southeast portion.

The full topography of the site is provided in the feature survey that is contained in ***Appendix B***.

The feature survey did not reveal any ridgelines or erosion areas; however, there are five dams spread across the three subject sites and there are pleasant rural views to the south.

Road Access

As demonstrated by the feature survey at ***Appendix B***, each of the three existing lots enjoy access to the Seaspray Road via a single gravel crossover that are each splayed at the road formation to accommodate vehicle turning manoeuvres. These crossovers each pass through reasonably heavily vegetated sections of the road reserve and have culvert crossings to allow the conveyance of stormwater via an open drain within the road reserve. The vegetation through much of the road reserve is exotic, e.g. pine trees, and is discussed in more detail in the vegetation assessment at ***Appendix D***.

None of the properties presently rely upon either Cobb Road, or Boundary Creek Road for vehicle access and have no crossovers to them.

Fire Hazard

The subject site is not affected by a Bushfire Management Overlay, but is located in a Bushfire Prone Area under the Building Code of Australia. Hence, any building permits issued to allow the construction of dwellings on the land will need to comply with the relevant sections of the Code as regards bushfire risk.

The nearest bushfire threat in the landscape would appear to come from the pine plantations that are located 1.5 kilometres to the west and 1 kilometre to the south.

Land liable to inundation and floodwaters

None of the land is recognized as being liable to inundation or floodwaters.

Drainage lines and dams

As can be seen in ***Photograph 1***, there are single dams on 245 Seaspray Road and 1 Cobb Road and three dams on 233 Seaspray Road. The subject sites do not have any declared watercourses traversing them. Minor drainage lines can be seen on the Feature Survey at ***Appendix D***.

Significant Environmental Features and Vegetation Category

The vegetation assessment at ***Appendix D*** provides the following assessment of the environmental features on 245 Seaspray Road and 1 Cobb Road:

"Field Survey (page 7)

From the site assessment, the entire study site appears to have historically been cleared of all native vegetation. Both properties contain a residence surrounded by a yard with areas of grass and planted trees. The remainder of the properties comprise; fenced paddocks which are periodically slashed or grazed by horses; trees and shrubs planted along fencelines, driveways and around edges of paddocks; and a few small isolated patches of native vegetation regrowth.

Observations of vegetation along the Seaspray Road nearby the study site suggest it is likely that the site would have supported the EVC Damp Sands Herb-rich Woodland, as modelled by the DEPI EVC mapping.

Vegetation Assessment (page 8)

*Ethos NRM identified that small areas of regrowth and planted vegetation meet the definition of **remnant patch native vegetation**, according to the Guidelines (see definition box below). The native vegetation is of **poor quality**, with **low diversity** of floristic species and structure, and is **not characteristic of known EVCs** in the surrounding area.*

Pasture (page 8)

The paddock areas contain a mixture of introduced pasture species, with small scattered clumps of native grasses (Kangaroo-grass Themeda triandra, Weeping Grass Microlaena stipoides) comprising up to 10% of grass cover across most of the site, and up to 20% in the north-west of 1 Cobb Road. These areas are considered pasture and not remnant patches.

Regrowth (Native vegetation) (page 8)

*Small areas of regrowth which meet the definition of **'remnant patch'** native vegetation under the Guidelines were recorded at 1 Cobb Road to the west of the driveway/access track. The vegetation was characterised by dense patches of opportunistic colonising shrub species Burgan (Kunzea ericoides) and Sallow Wattle (Acacia longifolia) and native grasses."*

It is noted that this investigation did not identify evidence of any habitat corridors, threatened species, wetlands or watercourses.

Waterway values

There are no declared watercourses identified on the site.

Land degradation

Land capability assessments have been prepared by Strata – Geoscience and Environmental for 245 Seaspray Road and 1 Cobb Road. These are provided at ***Appendix C***. These reports did not identify any evidence of salinity, soil instability or erosion. A report was not prepared for 233 Seaspray Road as the owner has chosen not to be involved in the preparation of the rezoning application. Nonetheless, given the proximity of 245 Seaspray Road to 233 Seaspray Road, it is reasonable to consider the findings of the land capability assessment for that site to be analogous.

Soil Capability

As shown at ***Figure 2***, the Department of Primary Industries mapping identifies the soils on the subject sites as being from the Stradbroke Class and, hence they are considered suitable only for livestock grazing at relatively low stocking rates and agroforestry, i.e. growing timber plantations.

The land capability assessments at ***Appendix C*** revealed that the geography of the land features Silty Sand / Clayey Sand topsoils and Clayey Silt / Silty Clay subsoils. These soils are considered suitable for on-site wastewater disposal at a density of 1 lot per 6,000m².

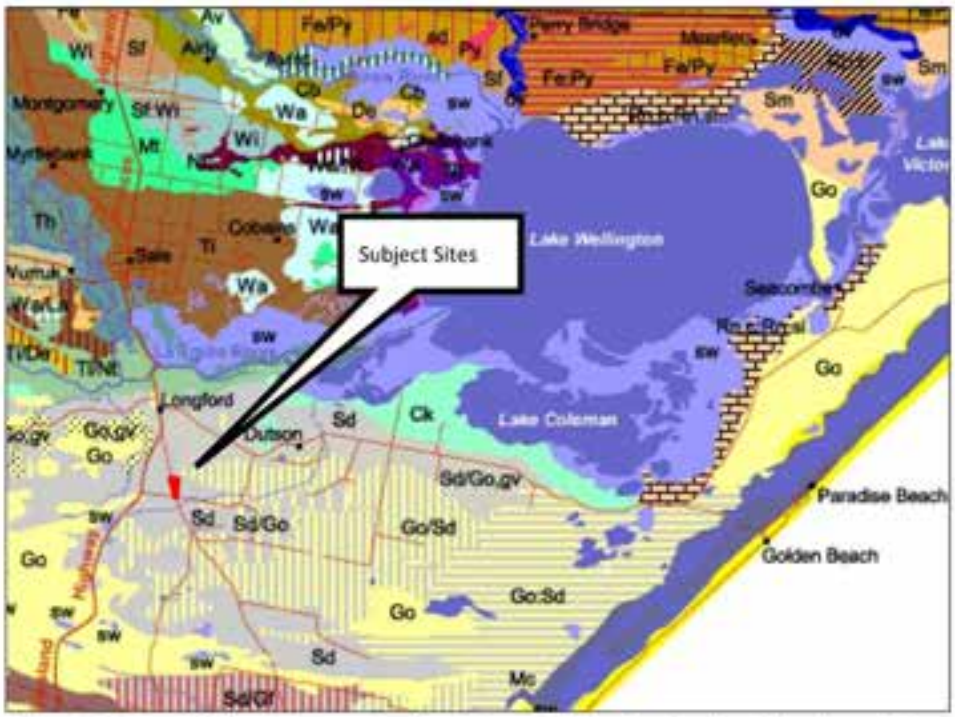


***Figure 2**: Regional Soil Landform mapping for the Longford Area showing the subject sites as being from the Stradbroke Class (Source: DEPI website)*

Soil Contamination

There is no physical or historic evidence of soil contamination and no recording of any in the land capability assessments at ***Appendix C***.

Views

By virtue of their location on the southern fall of '3GI Hill', the subject sites enjoy pleasant rural views to the south.

Weather Patterns

The annual weather pattern for Longford features exceptionally high humidity and number of cloudy days relative to surrounding areas, has above average wind speed and daytime temperatures, while overnight temperatures and number of clear days are below average. The following ***Tables 1 to 7*** provide the average annual, temperature, rainfall, rainy days, clear and cloudy days, windspeed and humidity for Longford (source of all statistics: Bonzle.com).

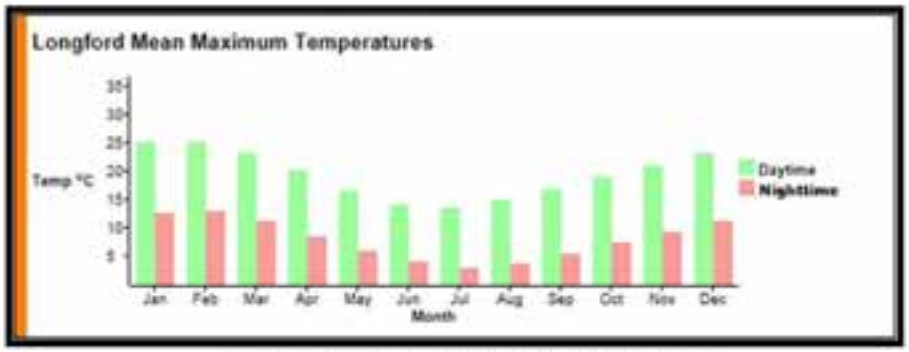


Table 1: Mean Temperatures for Longford, by month

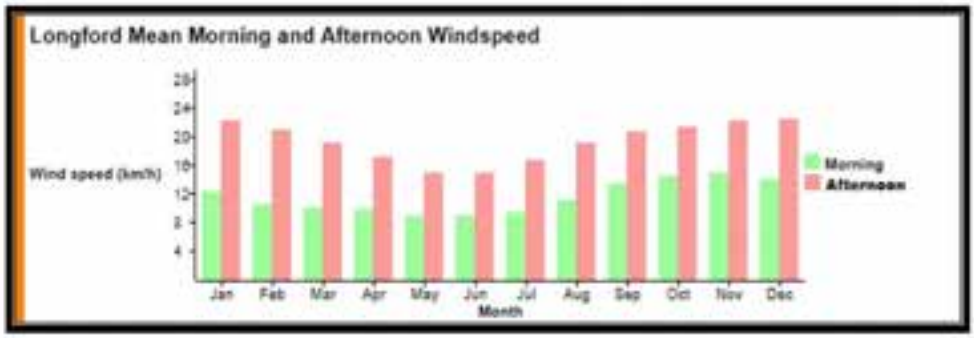


Table 2: Mean Morning and Afternoon windspeed for Longford, by month

Table 3: Mean Rainfall for Longford, by month

Table 4: Mean Rain days for Longford, by month

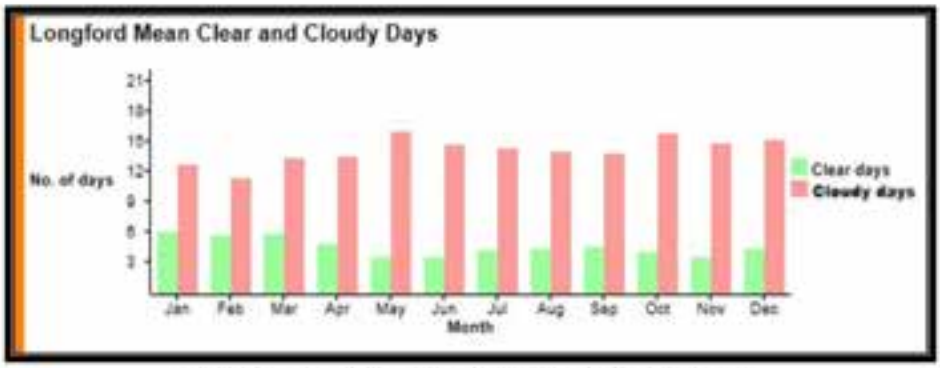
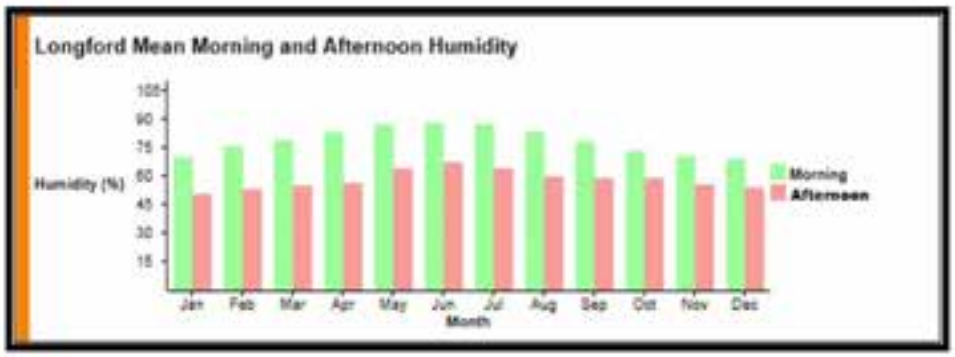


Table 5: Mean Clear and Cloudy days for Longford, by month



Available Infrastructure

The land is serviced by reticulated electricity and telecommunications by aboveground wires that are hung from poles that line the Seaspray Road reserve adjacent to each subject site's west boundary. There is no reticulated water supply available in Longford.

Existing building and works

The three subject sites have the following building and works constructed thereon:

233 Seaspray Road, Longford:

- Accommodates an existing dwelling and shedding that is located in the northwest corner of the site;
- Has an on-site wastewater management system and rainwater harvesting system for potable water supply;
- Has three dams across its breadth;
- Enjoys access to Seaspray Road via a gravel crossover that connects to the site at the southern end of its west boundary, with a curved driveway leading to the dwelling and sheds;
- Has screening planted landscape vegetation cover along the west, north and south boundaries, around the dwelling and through the centre of the land; and,

245 Seaspray Road, Longford:

- Accommodates an existing dwelling and shedding that is located in the northwest portion of the site;
- Has an on-site wastewater management system and rainwater harvesting system for potable water supply;
- Has a dam situated in the east portion of the land;
- Enjoys access to Seaspray Road via a gravel crossover that connects to the site at the northern end of its west boundary, with a curved driveway leading to the dwelling and sheds;
- Has screening planted landscape vegetation cover along the west, north and south boundaries and around the dwelling.

1 Cobb Road, Longford:

- Accommodates an existing dwelling and shedding that is located in central portion of the site;
- Has an on-site wastewater management system and rainwater harvesting system for potable water supply;
- Has a dam situated in the east portion of the land;
- Enjoys access to Seaspray Road via a gravel crossover that connects to the site at the northern end of its west boundary, with a curved driveway leading to the dwelling and sheds;
- Has screening planted landscape vegetation cover along its driveway and around the dwelling.

These building works can be seen on the aerial photograph at ***Photograph 1*** and the feature and level survey at ***Appendix B***.

Photograph 1: *Aerial photo showing all improvements on the subject sites and the immediately surrounding land*

Adjoining land uses and neighbouring building and works

The subject site is located at the southern tip of the rural township of Longford, which is an area that is characterised by low density residential lifestyle lots set on the south and southwest slopes of "3GI" Hill.

Longford acts as a dormitory suburb for the regional centre of Sale and is typically populated by residents enjoying higher socio-economic status than the median for the Wellington Shire.

As a result, many of the dwellings in Longford are quite large and sit within well maintained landscaping on lots of between 8,000m² - 2 hectares in area.

As can be seen in ***Figure 1***, the key thoroughfares through Longford are:

- South Gippsland Highway, which connects Longford back to Sale to the north and Yarram and the balance of South Gippsland to the southeast;
- Seaspray Road, which connects Longford to Seaspray and the townships along the 90 Mile each to the south;
- Longford-Rosedale Road, which connects Longford to Rosedale and the Princes Highway to the west; and,
- Longford-Loch Sport Road, which connects Longford to Loch Sport and Golden Beach to the southeast.

The township of Longford itself comprises a limited range of commercial and community facilities, that includes:

- A Primary school that is situated on the east side of the South Gippsland Highway, approximately 2.7 kilometre northeast of the subject site; and
- A general store and service station on the east side of the Seaspray Road approximately 1 kilometre north of the subject site; and,
- A Public Hall, kindergarten and recreation reserve that are located 3.5 kilometres to the north of the subject sites.

Meanwhile, the central activity district of the City of Sale, which offers a full suite of commercial and community facilities including a V/Line train station, is situated 10 kilometres to the north via the South Gippsland Highway, as discussed above.

Land to the north and west of the subject site comprises land uses that are best characterised as being low density residential situated on lots at the following densities:

- 11 lots lining with average area of 1.38 hectares lining both sides Clark Court, which is located immediately to the north of the subject site;
- 17 lots with average area of 2.25 hectares lining both sides of Hampton Court, which is situated on the opposite side of Seaspray Road to the west of the subject site;

Land to the east of the subject site on the opposite side of Cobb Road is comprised across three separate parcels of area 15.6 hectares (CA 58, Parish of Glencoe), 23.2 hectares (CA 60A, Parish of Glencoe) and 16.2 hectares (175 Boundary Creek Road) respectively. The southernmost parcel, i.e. 175 boundary Creek Road, is developed with a single dwelling, while both of the Crown Allotments remain vacant. These three land parcels are used for low-scale livestock grazing.

As can be seen in ***Photographs 2*** & ***3***, Seaspray Road is formed with an all-weather bitumen pavement and grassed swale drainage on both sides. It is under the management of VicRoads and has a mixture of native and exotic (pine) trees lining its east side where it abuts the subject sites.

Photograph 2: View down Seaspray Road where it fronts the subject site taken from the crossover to 245 Seaspray Road looking south

Photograph 3: View up Seaspray Road where it fronts the subject sites taken from the crossover to 245 Seaspray Road looking north

As can be seen in ***Photograph 4***, Cobb Road is formed with a gravel treatment; although the road pavement changes gradually to a sandy surface approximately 400 metres north of the intersection with Boundary Creek Road. A row of native trees line the east side of the Cobb Road reserve while swale drainage lines have formed down both sides.

Photograph 4: View up Cobb Road where it abuts the subject sites, taken looking north from the intersection with Boundary Creek Road

Boundary Creek Road is formed with a bitumen treatment close to its intersection with Seaspray Road, but reverts to a gravel treatment roughly halfway along the abuttal with the subject site. There is no roadside vegetation within the road reserve abutting the subject site.

Photograph 5: View along Boundary Creek Road where it abuts the subject sites, taken looking west towards the intersection with Seaspray Road

Aboriginal Cultural Heritage

As demonstrated by the mapping at ***Figure 3***, the land is not recognized as having any sensitivity to Aboriginal Cultural Heritage.

Figure 3: *Mapping of sites with Aboriginal Cultural Heritage Significance (Source: LandVic)* proposal

3 THE PROPOSAL

3.1 The Proposal

It is proposed to amend the Wellington Planning Scheme by rezoning the subject sites from Farming Zone to Rural Living Zone (Schedule 5) and apply a Development Plan Overlay over them.

The site analysis plan provided at ***Appendix B*** demonstrates the site characteristics and should be read in conjunction with Section 2 of this report.

The land capability assessments at ***Appendix C*** demonstrate that the subject land can accommodate domestic wastewater on lots with minimum area of 6,000m².

All necessary statutory documentation to facilitate the planning scheme amendment is provided at ***Appendix F***.

3.2 Strategic Framework

State Planning Policy Framework

Clauses 11-19 of the Wellington Planning Scheme present the State Planning Policy Framework (SPPF) which provides a context for spatial planning and decision making by planning and responsible authorities.

These provisions apply across the State and support a consistent approach to implementation of local planning scheme provisions in line with Victorian Government policy.

In short, the SPPF includes policies that cover issues such as:

Clause 11 Settlement indicates that planning is to facilitate sustainable development that takes full advantage of existing settlement patterns, investment in transport and communication, water and sewerage and social facilities. The intent of policy is to ensure the ongoing provision of land and supporting infrastructure to facilitate sustainable urban development, whilst utilising opportunities for consolidation, redevelopment and intensification of use and development within existing urban areas responsive to neighbourhood character and landscape considerations.

Response:

The amendment is consistent with Clause 11.05-1 Regional settlement networks, which identifies Sale as a regional centre that should support sustainable development. This amendment assists with the provision of an alternative form of living within Longford, which will support the Sale township, while offering future residents access to a wide range of facilities and services.

Clause 12 Environmental and landscape values seeks to protect the health of ecological systems and the biodiversity they support (ecosystems, habitats, species and genetic diversity), conserving areas with identified environmental and landscape values, implementing environmental principles for ecologically sustainable development.

Response:

The subject site has been examined and deemed not to contain any areas of significant ecosystems, environmental habitat, recognized as

Clause 13 Environmental risks indicates that planning should adopt a best practice environmental management and risk management approach, seeking to avoid or minimise environmental degradation and hazards. In this, it is the intent that planning should identify and manage the potential for the environment and environmental changes, to impact upon the economic, environmental or social well-being of society.

Clause 14 Natural resource management identifies that planning assist in the conservation, use and management of natural resources to support both environmental quality and sustainable development.

Clause 15 Built environment and heritage states that all new land use and development should appropriately respond to its landscape, valued built form and cultural context, protecting places and sites with significant heritage, architectural, aesthetic, scientific and cultural value. The intent is to create quality built environments supporting the social, cultural, economic and environmental well-being of the communities, cities and towns.

Clause 16 Housing provides the following objective and strategies for rural living rezoning and development:

"Objective
To identify land suitable for rural living and rural residential development.

Strategies
Manage development in rural areas to protect agriculture and avoid inappropriate rural residential development.
Reduce the proportion of new housing development provided in rural areas and encourage the consolidation in existing settlements where investment in physical and community infrastructure and services has already been made.
Demonstrate need and identify locations for rural residential development through a housing and settlement strategy.
Ensure planning for rural living avoids or significantly reduces adverse economic, social and environmental impacts by:

- *Maintaining the long-term sustainable use and management of existing natural resource attributes in activities including agricultural production, water, mineral and energy resources.*
- *Protecting existing landscape values and environmental qualities such as water quality, native vegetation, biodiversity and habitat.*
- *Minimising or avoiding property servicing costs carried by local and State governments.*
- *Discouraging development of isolated small lots in rural zones from use for rural living or other incompatible uses.*
- *Encouraging consolidation of existing isolated small lots in rural zones.*
- *Maintaining an adequate buffer distance between rural residential development and intensive animal husbandry.*

- *Ensure land is not zoned for rural living or rural residential development if it will encroach on high quality productive agricultural land or adversely impact on waterways or other natural resources.*
- *Ensure land is only be zoned for rural living or rural residential development where it:*
- *Is located close to existing towns and urban centres, but not in areas that will be required for fully serviced urban development.*
- *Can be supplied with electricity and water and good quality road access."*

Clause 17 Economic development identifies that planning is to provide for a strong and innovative economy, where all sectors of the economy are critical to economic prosperity. Planning should support and foster economic growth and development by providing land, facilitating decisions and resolving land use conflicts.

Clause 18 Transport seeks to ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people/goods, and is safe.

Clause 19 Infrastructure envisages that planning should enable the development and timely provision of social and physical infrastructure. It continues by indicating that the growth and redevelopment of settlements should be planned in a manner that allows for the logical and efficient provision and maintenance of infrastructure, that strategic planning should facilitate the efficient use of existing infrastructure and human services.

It is recognised that the subject site will be removed from any possibility of agricultural production; however, it is not considered to be of strategic agricultural significance due to its size, soil type, i.e. Stradbroke classification, and proximity to rural residential development on its north and west sides. It's rezoning is therefore not considered to be inconsistent with the objectives of Clause 14.01-1 Protection of agricultural land.

As the amendment proposes only to rezone land to the Rural Living Zone it is expected that the objectives and strategies of Clause 15 will be considered and applied during the planning permit process. It is noted that the subject site is not within an area of cultural heritage significance.

Amendment C90 supports the objective of Clause 16.01-4 Housing diversity, by respecting the rural character and providing opportunities for a diverse housing choice.

This amendment supports Clause 16.02-1 Rural residential development by identifying land suitable for rural living development. This land has been identified in the Sale, Wurruk and Longford Structure Plan and the Longford Development Plan to provide a rural residential living option for people who wish to use Sale as their service/retail centre.

Municipal Strategic Statement

Clause 21.01 Municipal Profile provides an overview of the municipality in terms of Settlement, Environment, Economic Development and Particular Uses. It indicates that Wellington Shire includes relatively unspoilt coastal, lake and mountain areas, together with some of the richest agricultural land. The six main urban centres contain the majority of the population in the central part of the municipality. Sale is the largest urban centre in the Shire with the remaining large townships of Heyfield, Maffra, Rosedale and Stratford in the central

area of the municipality, fulfilling a service role to the rural areas across the Shire, as well as being centres of commerce, industry and employment in their own right. Yarram, in the south-west of the Shire, fulfils this role within this part of the municipality. Wealth and prosperity are derived from agricultural and farming activities, as well as the timber industry, off shore oil and gas extraction and activities associated with aviation.

The Shire includes an array of ecosystems, with a significant proportion of the Shire's area being public land and many areas recognised through their listing on the National Estate Register and declarations under the RAMSAR Convention.

The rural and agricultural industries are very important to the economy, with dairying and cattle grazing the dominant agricultural pursuits. Smaller farm sizes reflect the high quality of soils, climate and irrigation across the Shire. The Shire hosts important airfield infrastructure with the RAAF base at East Sale being an important local employer. The oil and gas industry has also been well established in the Shire for many years.

The region has the State's primary reserves of brown coal and gas located within it. The delineation and protection of the coal resources and urban buffer areas are seen to aid in retaining this valuable asset, and provide appropriate land use control in the areas adjoining the coal resource.

Clause 21.02 Key Influences indicates that the Shire's natural resources have provided the foundation upon which the Wellington community has developed and prospered, with future development continuing to be dependent on the utilisation, management and protection of these natural resources.

Clause 21.03 Vision – Strategic Framework details the identified direction for the Shire, including the indication that Strategic Framework Plans identify directions for future land use planning and development in the Municipality, summarising locations where specific land use outcomes will be supported and promoted.

Clause 21.04 Settlement provides an overview for urban and rural townships, coastal areas, rural lifestyle areas and infrastructure, providing objectives and strategies relevant to the individual elements. The clause continues by identifying intent for various locations within the Shire, including the following specific to Longford:

- Provide suitable opportunities for rural residential development to the extent appropriate to the area's functional role and environmental capacity, and in areas which do not detrimentally affect the retention of high quality agricultural land.
- Support the redevelopment of the Sale Golf Club including the provision of housing around the golf course subject to appropriate infrastructure and environmental measures being implemented as part of the development.
- Consider the following factors before any further land is designated/rezoned for future residential or rural residential purposes:
  - land to be designated/rezoned should be adjoining or within close proximity to the existing township or rural living zoned land;
  - land to be designated/rezoned should be located in an area with high quality scenic views, such as on one of the natural ridges, where there are panoramic distant views, or on an area with immediate views over the floodplain/wetlands; and
  - if suitable areas with high quality scenic views are unavailable, land that is located between the existing Township Zone and the Rural Living Zone, generally close to the Longford Primary School or the recreation reserve should be considered for residential or rural residential purposes.

The Sale, Wurruk and Longford Strategic Framework recognises the distinct yet closely linked nature of the three communities by virtue of their proximity to each other and the common services and amenities they share. The Structure Plan indicates that, for this reason, the success or failure of one community will be the success or failure of the others. In consequence, the Structure Plan has been prepared to ensure that the three communities work together in partnership to achieve common goals.

In relation to Longford, it is detailed as the main rural residential catchment in the area and the 'gateway' to the Ninety Mile Beach. Longford is inevitably reliant on Sale as the main service centre and, hence, only contains a limited range of commercial and community infrastructure.

Longford is viewed through the Structure Plan as being a key focus for rural residential growth in the area and Shire more broadly and will provide some urban growth opportunities in close proximity to recreation and education facilities and the redeveloped golf course. It is indicated that land in Longford is not currently serviced with reticulated water or sewerage, but potential exists for this to occur in the future as growth occurs and Longford's identity as a desirable rural lifestyle area is protected and enhanced. The Longford Strategy Plan, which can be seen in ***Figure 4***, seeks to realize these objectives.

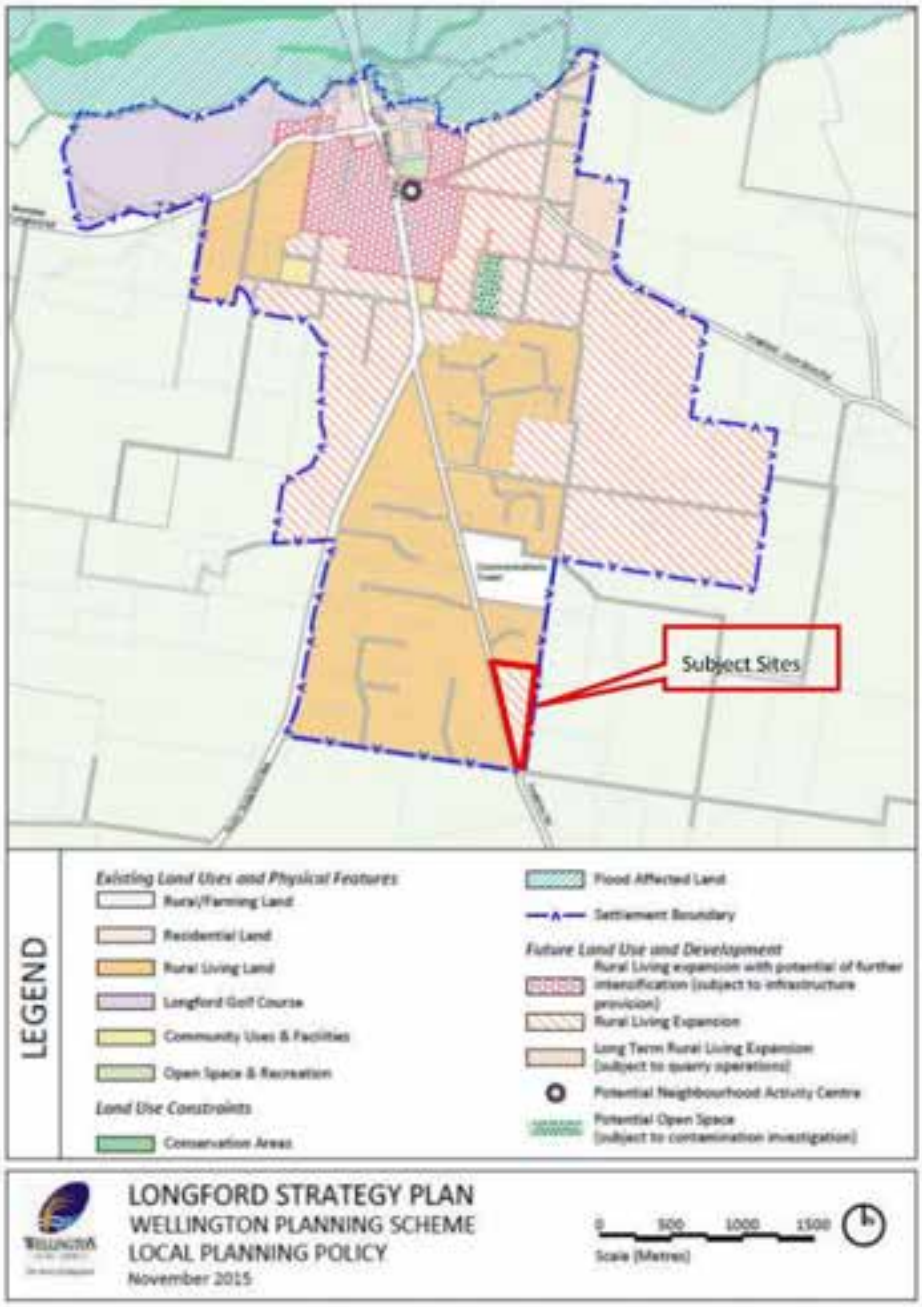


***Figure 4**: Longford Strategy Plan*

It is further noted that Council has prepared and adopted an outline development plan for Longford that divides the land that has been earmarked for residential rezoning through the Longford Strategy Plan up into 11 precincts that must be considered for rezoning by precinct.

The subject sites comprise precinct 11 in the structure plan and are recommended for rezoning to the Rural Living Zone, with a minimum lot size of 6,000m², which will lead to an eventual yield of 16 lots.

As can be seen in ***Figure 5***, the structure plan is not specific about the final lot layout that should be achieved from a future subdivision, but has nominated Cobb Road as the primary access point.

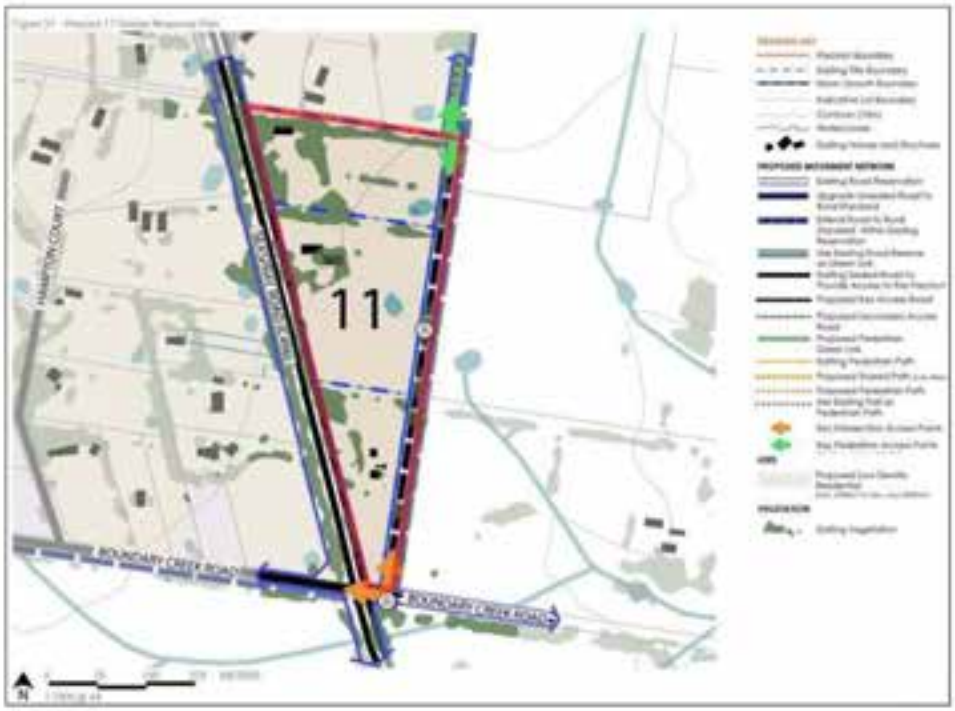


***Figure 5**: Design Response Plan (Longford Development Plan)*

3.3 Housing Need and the Housing Objectives of the area

An assessment of land supply and demand in Longford has been carried out and is contained within ***Appendix E***.

This assessment concludes that:

- There are 68 vacant lots available in Longford;
- There have been an average of 9.3 new dwellings built per year across Longford over the last 10 years;
- Longford presently has 7.3 years of residential land supply available;
- There are expected to be an additional 2.5 lots created in Longford through ongoing subdivision of existing zoned land over the study period, which will mean that the there is actually 10 years of underlying land supply; and,
- If the subject sites were rezoned and developed as envisaged in the Longford Development Plan today the supply of available land supply in Longford would increase to 12 years. However, the likely 2 year time lag before lots are actually available for sale will mean that the real land supply in Longford never exceeds 11 years.

Clause 11.02-1 within the State Planning Policy Framework of the Wellington Planning Scheme provides the following strategy for managing land supply:

- *"Ensure that sufficient land is available to meet forecast demand;*
- *Plan to accommodate projected population growth over at least a 15 year period and provide clear direction on where this growth should occur. Residential land supply will be considered on a municipal basis, rather than a town by town basis; and*
- *Monitor development trends and land supply and demand for housing and industry."*

So, as the rezoning of the subject sites will be necessary to maintain supply within Longford at around 11 years, it is supported by the relevant housing policy within the Wellington Planning Scheme.

3.4 Suitability of the location

3.4.1 How the proposal is supported by existing urban development

As discussed earlier, the subject sites collectively abut rural residential uses along the north boundary with further rural residential land uses to the west on the opposite side of Seaspray Road. There is also:

- A high quality road network that provides direct, flood-proof access back to the regional centre of Sale and beyond;
- A general store and service station located approximately 1 kilometre to the north;
- A primary school located 2.7 kilometres to the north;
- A public hall, kindergarten and active/passive recreation precinct located 3.5 kilometres to the north;
- A public golf course/bowling club located 3.8 kilometres to the northeast; and,
- A regional centre, i.e. the City of Sale, located 10 kilometres to the north.

These facilities provide a full spread of commercial and community facilities with a series of formal and informal walking trails within public road reserves providing pedestrian/cycle access to most of the abovementioned facilities.

3.4.2 The land's capability for agricultural use

As demonstrated on the mapping at ***Figure 3***, the subject sites have soils from the Stockdale classification, which have fairly limited agricultural capacity beyond livestock grazing and agroforestry, i.e. timber plantations.

On top of this the subject sites:

- have a fairly steady, if gentle fall across their breadth;
- have no access to an irrigated water supply;
- already abut rural residential land uses across the north boundary; and,
- are each far too small to be able to accommodate a viable farming use in their own right.

In light of these factors, the agricultural capacity of the subject sites is considered negligible.

3.4.3 Natural Resources and the measures taken to protect the

The subject site is not recognized as being located in an area that is blessed with exploitable natural resources. In particular, it is noted that it has not been earmarked as being pertinent to future coal resource exploitation, as other land in the Longford area has.

3.4.4 *Environmental features and the measure taken to protect them*

The vegetation across the subject sites has been assessed by Ethos NRM in order to ascertain its capacity to provide habitat and/or its contribution to the preservation of the ecological vegetation class for this part of Longford. A copy of this assessment is provided at ***Appendix B***.

It is noted that the study did not recognize the subject site as providing any significant habitat or examples of unique or threatened vegetation. Hence, the rezoning of the land to allow rural residential land development can occur without the need for protective measures to be undertaken.

3.4.5 *Landscape and heritage features and the measures taken to protect them*

As demonstrated at ***Figure 2***, the subject sites are not considered to bear any potential for aboriginal cultural heritage sensitivity.

The subject sites sit on the mostly cleared lower section of the southern fall of '3GI Hill'; so, future dwellings on lots created thereon will enjoy pleasant rural views to the south and enjoy a similar context to the existing rural residential uses on the west side of Seaspray Road and along Clark Court to the north.

However, given the subject sites will sit lower in the landscape than these abutting developments, their rezoning and subsequent development with 13 new dwellings on lots of a similar size is considered unlikely to disturb any significant landscape features.

3.4.6 *Social and physical infrastructure requirements and their costs*

The rezoning of the subject sites will potentially increase the patronage of the Longford Primary School, the Longford General Store/Service Station, the Longford kindergarten/recreation reserve and the Longford Bowls Club.

It is understood that all of these facilities have capacity to absorb and even benefit from the likely additional patronage that would flow from an additional 13 new dwellings being constructed on the subject land.

Moreover, the recent extension of the concrete walk/cycle path between Sale and Longford will improve the capacity of future residents of dwellings on the subject sites to access facilities in Sale without needing to use motorised vehicle transport.

3.4.7 *Compatibility or impact on surrounding uses*

As discussed above, the proposed rezoning will allow the subdivision of the land into 16 lots, with 13 new dwellings being constructed on the vacant lots created to join the three existing dwellings on the land.

Land to the north and west of the subject sites is already developed in a highly similar fashion and, with roads separating the subject sites from very low-scale farming operations to the south and east, the proposal will be highly unlikely to result in any inappropriate land use interfaces.

3.4.8 *Servicing Capacity*

The rural residential lifestyle lots that will ensue from the proposed rezoning rely only upon electrical connection and road access. Each new lot created through the rezoning will be provided with an underground electricity connection that will be attained through an extension to the existing network of wires surrounding the land. Meanwhile, each new lot will also be provided with vehicle and pedestrian access via internal subdivisional roads, which will extend through the site via intersections with surrounding roads and be constructed to Council's standards.

All drinking water supply in Longford is harvested from rainfall, with the average 4 bedroom dwelling typically needing a minimum water tank holding supply of around 45,000 litres. Annual rainfall figures have typically been sufficient to sustain this level of storage.

All wastewater from future dwellings on the land will be managed on site, as there is no reticulated sewerage in Longford. The outcomes of the land capability assessments at ***Appendix C*** suggest that this outcome is feasible based upon the nature of the soils and prevailing annual rainfall data.

4 AGENCY COMMENTS

Feedback in relation to the proposed rezoning was sought from VicRoads, as the subject sites abut Seaspray Road.

No objection was made.

5 CONCLUSION

The detail provided throughout this submission demonstrates that the subject sites comply with the criteria for the rezoning of land to Rural Living Zone set out in Practice Note 37 (Department of Environment, Land, Water and Planning).

As such, it is requested that the Wellington Shire Council initiate an amendment to the Wellington Planning Scheme to allow the rezoning to occur without delay.

Beveridge Williams

APPENDIX A. Certificates of Title

APPENDIX B. Vegetation Assessment

APPENDIX C. Land Capability Assessments for 245 Seaspray Rd & 1 Cobb Rd, Longford

APPENDIX D. Feature Survey

APPENDIX E. Land Supply Demand Analysis

APPENDIX F. Planning Scheme Amendment documentation

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 08982 POLIO 135

Security no : 124060516625N
Produced 23/05/2016 04:14 pm

LAND DESCRIPTION

Lot 1 on Plan of Subdivision 097183.
PARENT TITLE Volume 08470 Folio 655
Created by instrument LP097183 19/07/1973

REGISTERED PROPRIETOR

Estate Fee Simple
Joint Proprietors
RUSSELL FRANCIS FLINT
JODIE CHRISTINE FLINT both of 233 SEASPRAY ROAD LONGFORD VIC 3851
AF957015J 09/07/2008

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF957016G 09/07/2008
AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP097183 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

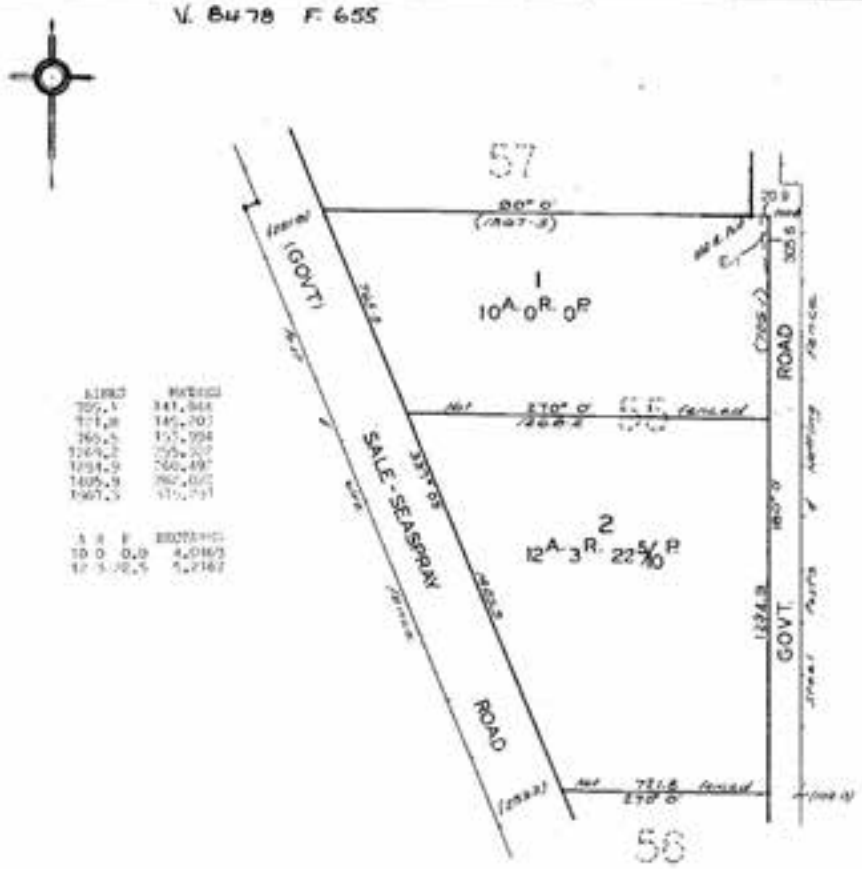
Street Address: 233 SEASPRAY ROAD LONGFORD VIC 3851

DOCUMENT END

LP97183
EDITION 2
APPROVED 10/5/73

PLAN OF SUBDIVISION OF C.A. 55 PARISH OF GLENCOE COUNTY OF BULN BULN **Measurements are in Links** Conversion Factor LINKS X 0.201168 = METRES	APPROPRIATIONS	ENCUMBRANCES & OTHER NOTATIONS
		AS TO THE LAND MARKED E-1 AN EASEMENT FOR THE TRANSMISSION OF ELECTRICITY ACQUIRED BY STATE ELECTRICITY COMMISSION OF VICTORIA IN R603546M

V. 8478 F. 655



LAND	I.D.	MODIFICATION	DEALING NUMBER	EDITION	ASSISTANT REGISTRAR OF TITLES
LOT 1	E-1	ACQUISITION OF EASEMENT	R603546M	2	A.D.

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 08982 POLIO 136

Security no : 124060516640W
Produced 23/05/2016 04:15 pm

LAND DESCRIPTION

Lot 2 on Plan of Subdivision 097183.
PARENT TITLE Volume 08478 Folio 655
Created by instrument LP097183 19/07/1973

REGISTERED PROPRIETOR

Estate Fee Simple
Joint Proprietors
INGMAR NEIL KAPPENBERGER
TANIA NARELLE NICHOLS both of 20 CLARK COURT LONGFORD VIC 3851
AJ710281F 06/06/2012

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AL993140Y 29/06/2015
NATIONAL AUSTRALIA BANK LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP097183 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

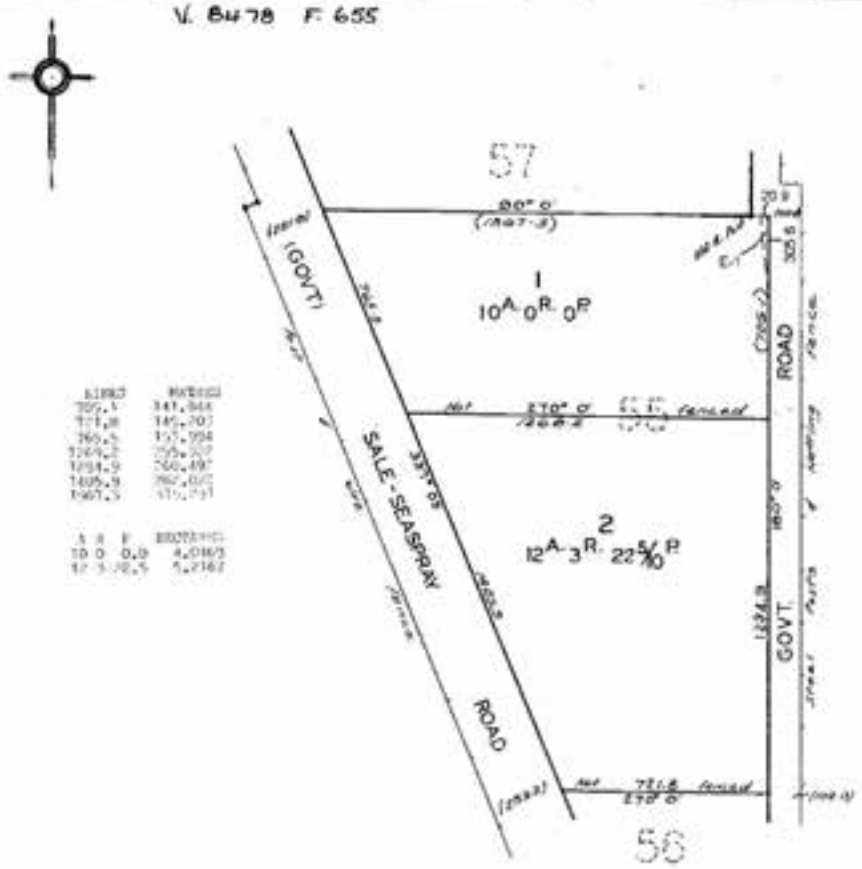
Street Address: 245 SEASPRAY ROAD LONGFORD VIC 3851

DOCUMENT END

LP97183
EDITION 2
APPROVED 10/5/73

PLAN OF SUBDIVISION OF C.A. 55 PARISH OF GLENCOE COUNTY OF BULN BULN **Measurements are in Links** Conversion Factor LINKS X 0.201168 = METRES	APPROPRIATIONS	ENCUMBRANCES & OTHER NOTATIONS
		AS TO THE LAND MARKED E-1 AN EASEMENT FOR THE TRANSMISSION OF ELECTRICITY ACQUIRED BY STATE ELECTRICITY COMMISSION OF VICTORIA IN R603546M

V. 8478 F. 655



LAND	I.D.	MODIFICATION	DEALING NUMBER	EDITION	ASSISTANT REGISTRAR OF TITLES
LOT 1	E-1	ACQUISITION OF EASEMENT	R603546M	2	A.D.

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09077 POLIO 861

Security no : 124060516650L
Produced 23/05/2016 04:15 pm

LAND DESCRIPTION

Crown Allotment 56 Parish of Glencoe.
PARENT TITLE Volume 08470 Folio 655
Created by instrument P603434 14/02/1975

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
ROBERT CHARLES NEWTON of NAMBROK VIA ROSEDALE
P603435 14/02/1975

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AD843445K 30/08/2005
WESTPAC BANKING CORPORATION

For details of any other encumbrances see the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP271198W FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 1 COBB ROAD LONGFORD VIC 3851

DOCUMENT END

TITLE PLAN		EDITION 1	TP 271198W

Location of Land

Parish: GLENCOE
Township:
Section:
Crown Allotment: 56
Crown Portion:

Last Plan Reference:
Derived From: VOL 9077 FOL 861
Depth Limitation: 50 FEET

Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 13/01/2000
VERIFIED: SOC

LENGTHS ARE IN LINKS	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

Vegetation Assessment for Rezoning Application – 245 Seaspray Road and 1 Cobb Road, Longford

Prepared For: Beveridge Williams and Ingmar Kappenberger

June 2014

ETHOS NRM PTY LTD

ABN 44 104 909 333
PO Box 204, 162 Macleod St
Bairnsdale, Vic. 3875
Telephone: 03-5153 0037
Facsimile: 03-5153 0038
E-mail: info@ethosnrm.com.au
Website: www.ethosnrm.com.au

ENVIRONMENTAL, PLANNING & NATURAL RESOURCE MANAGEMENT CONSULTANTS

TABLE OF CONTENTS

FIGURES

Cover Photo: Planted vegetation (shelterbelt) along western boundary of 245 Seaspray Road.

Ethos NRM Pty Ltd				
Document Control				
Client	Beveridge Williams and Ingmar Kappenberger			
Title	Preliminary Vegetation Assessment - Longford			
Author	Amie Hill			
Manager	Eric Sierp			
Version	Final			
Electronic File Name	14014 bw longford vegetation assessment report_final_ethosnrm.docx			
Date Last Saved	3/07/2014 3:07 PM			
Date Last Printed	3/07/2014 3:07 PM	No	Format	Date
Distribution:	Kerry Spencer – internal review	1	Word – draft v1.1	17/6/14
	Chris Curnow (Beveridge Williams)	1	PDF – draft v1.2 for review	17/6/14
	Chris Curnow (Beveridge Williams)	1	PDF – final report	03/07/14

1 INTRODUCTION

Ethos NRM has been engaged by Beveridge Williams on behalf of the landowners of two parcels of land (the Study Site) at 245 Seaspray Road and 1 Cobb Road, Longford, to undertake an assessment of vegetation quality and significance. The properties are subject to a proposal to rezone the land from Farming Zone to Rural Living Zone.

A preliminary assessment of vegetation at the study site has been undertaken by Ethos NRM, to identify the presence of, and map the location of, native vegetation, and to categorise native vegetation in accordance with the *Permitted Clearing of Native Vegetation - Biodiversity Assessment Guidelines* (DEPI, 2013a) herein referred to as the '*Guidelines*'. This report provides an outline of the legislative requirements for potential native vegetation removal.

1.1 Objectives

The broad objectives of this Vegetation Assessment are to:

- identify and map any native vegetation (remnant patch or scattered trees) across the study site,
- identify any areas of significant vegetation,
- provide advice on the potential approval requirements for any vegetation removal and likely offset requirements.

1.2 Site Location and Description

The study site is located approximately 11km south of Sale, and comprises the following two parcels of land in Longford:

- 245 Seaspray Road; and
- 1 Cobb Road.

The site is accessible from Seaspray Road and Cobb Road, see **Figure 1**.

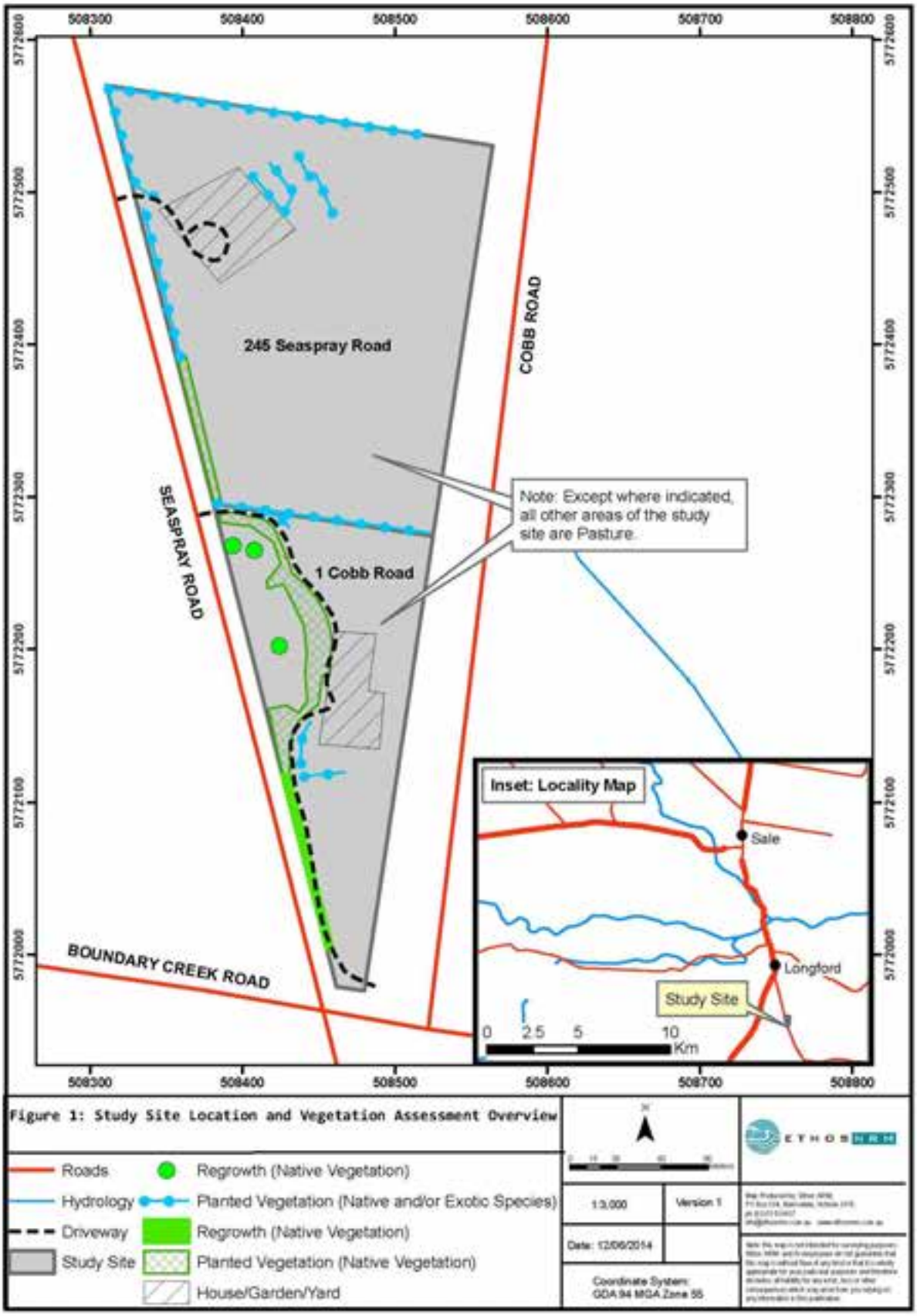
The site has historically been cleared of remnant native vegetation. Each property has a residence surrounded by planted gardens and paddocks. Paddocks appeared to be either slashed or grazed by horses.

Paddock grasses are dominated by a mixture of introduced pasture species. Shelterbelts have been planted along some of the property boundaries. The adjacent roadside vegetation is also dominated by introduced pasture species, with patches of native grasses and woody species along Cobb Road, and dense shrubby native vegetation along Seaspray Road.

1.3 Planning Context

The study site is located within the Wellington Shire Council area, with the current zoning of land Farming Zone (FZ). The Design and Development Overlay Schedule 6 applies to the site, which places controls over building height. Planning Zones and Overlays were sourced from Planning Maps Online (DTPLI, 2014).

The study site is entirely within a Designated Bushfire-prone Area, which requires certain Building Standards to be met, but does not trigger specific planning controls in relation to native vegetation.


508300
508400
508500
508600
508700
508800
5772600
5772500
5772400
5772300
5772200
5772100
5772000
245 Seaspray Road
COBB ROAD
SEASPRAY ROAD
1 Cobb Road
BOUNDARY CREEK ROAD
Note: Except where indicated, all other areas of the study site are Pasture.
Inset: Locality Map
Sale
Longford
Study Site
0 2.5 5 10
Km
Figure 1: Study Site Location and Vegetation Assessment Overview
Roads
Hydrology
Driveway
Study Site
Regrowth (Native Vegetation)
Planted Vegetation (Native and/or Exotic Species)
Regrowth (Native Vegetation)
Planted Vegetation (Native Vegetation)
House/Garden/Yard
1:3,000
Version 1
Date: 12/06/2014
Coordinate System:
GDA 94 MGA Zone 55
ETHOS NRM

2 ASSESSMENT METHODOLOGY

The following steps have been undertaken to assess potential vegetation values at the study site:

- Desktop Investigation
- Field Survey – Identification of native vegetation and assessment of significance of vegetation
- Provide advice regarding the Risk-based Pathway and approval of native vegetation removal and offsetting under the *Guidelines*

Results of the desktop and field investigations are detailed Sections 3 and 4 of this report.

2.1 Desktop Investigation

Desktop investigation of flora data was initially used to gather information on the site prior to undertaking vegetation assessments and preparation of this report. Ethos NRM has obtained data for the occurrence and description of bioregions, EVCs, Rare or Threatened flora and Threatened Ecological Communities from a number of sources, including:

- Planning Maps on-line (DTPLI, 2014)
- EPBC on-line Protected Matters Search Tool (DE, 2014)
- DEPI Interactive Maps – Biodiversity Interactive Maps (DEPI, 2014a)
- DEPI Ecological Vegetation Class Benchmark Descriptions (DEPI, 2014b)
- DEPI Bioregion Descriptions (DEPI, 2014b)
- DEPI Native Vegetation Information Management Tool (DEPI, 2014c)

2.2 Field Survey

Vegetation on-site was assessed as planted (exotic and/or native species), pasture or 'native vegetation' in accordance with the *Guidelines (DEPI, 2013a)*. Any native vegetation identified was mapped and categorised as a remnant patch or scattered trees.

The sites were surveyed by a DEPI Accredited Native Vegetation Assessor on the 22nd May 2014.

2.3 Taxonomy

Common and scientific names for terrestrial vascular plants within this report follow the Victorian Biodiversity Atlas (VBA) of the Department of Environment and Primary Industries (DEPI).

2.4 Survey Limitations

The survey effort combined with information gathered from other sources is considered adequate to assess the significance of vegetation and flora values within the study site, to meet the objectives in Section 1.1.

3 RESULTS

3.1 Desktop Investigation

A desktop investigation was conducted to identify potential significant biodiversity values at the study site, with regard to relevant Commonwealth and State legislation and policies.

3.1.1 Commonwealth Biodiversity Values

The *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* is the Australian Government's environmental legislation which provides a legal framework to protect and manage nationally and internationally significant flora, fauna, ecological communities and heritage places, defined in the EPBC Act as Matters of National Environmental Significance.

If a proposed action has the potential to have a significant impact on a Matter of National Environmental Significance, then an EPBC Referral is required to determine whether approval will be required to undertake the activity (i.e. controlled action).

An online EPBC Protected Matters Search was undertaken and the results identified the following Matters of National Environmental Significance within 5km of the study site (see **Appendix 1**). Results of the EPBC Protected Matters Search included:

- 1 Wetland of International Importance (RAMSAR – Gippsland Lakes)
- 2 Listed Threatened Ecological Communities
- 2 Threatened Flora Species
- 16 Threatened fauna species
- 11 Listed Migratory Species

3.1.2 State Biodiversity Values

Legislation relevant to native vegetation conservation and management in Victoria include the *Flora and Fauna Guarantee (FFG) Act 1988*, the *Planning and Environment Act 1987* and the *Catchment and Land Protection Act 1994*. Relevant policy documents include the '*Permitted Clearing of Native Vegetation Biodiversity Assessment Guidelines*' (DEPI, 2013a).

DEPI databases (Biodiversity Interactive Maps) were reviewed to identify rare and threatened species and communities that are modelled to occur or have been previously recorded at the study site. There are no previous records of rare or threatened flora or fauna species within, or close vicinity of, the study site on DEPI databases (DEPI, 2014a). Ethos NRM determined that rare and threatened species which have been recorded within 5km are not likely to occur at the study site.

DEPI Ecological Vegetation Class (EVC) mapping (see **Appendix 2**) at the study site indicates a small area of Damp Sands Herb-rich Woodland (EVC 3) in the northwest corner. The majority of the study site is mapped as being devoid of native vegetation.

3.2 Field Survey

On-site assessment of vegetation was conducted to identify the presence and significance of any native vegetation present at the site, as well as other potential biodiversity values identified through the desktop assessment.

From the site assessment, the entire study site appears to have historically been cleared of all native vegetation. Both properties contain a residence surrounded by a yard with areas of grass and planted trees. The remainder of the properties comprise; fenced paddocks which are periodically slashed or grazed by horses; trees and shrubs planted along fencelines, driveways and around edges of paddocks; and a few small isolated patches of native vegetation regrowth.

Observations of vegetation along the Seaspray Road nearby the study site suggest it is likely that the site would have supported the EVC Damp Sands Herb-rich Woodland, as modelled by the DEPI EVC mapping.

3.2.1 Vegetation Assessment

During the field assessment, the following types of vegetation were recorded at the study site:

- Pasture;
- Regrowth (native vegetation);
- Planted vegetation (exotic and native species); and
- Weeds.

Ethos NRM identified that small areas of regrowth and planted vegetation meet the definition of **remnant patch native vegetation**, according to the *Guidelines* (see definition box below). The native vegetation is of **poor quality**, with **low diversity** of floristic species and structure, and is **not characteristic of known EVCs** in the surrounding area.

Vegetation recorded at the study site is described in more detail in **Sections 3.2.2 to 3.2.5** below, and locations of vegetation are indicated in **Figure 1**. Photographs of examples of vegetation across the study site are included in **Appendix 4**.

Native vegetation is defined in the Victoria Planning Provisions as:
'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses.'

A **remnant patch** of native vegetation is either:
- an area of vegetation where at least 25% of the total perennial understorey plant cover is native
- any area with three or more native canopy trees where the canopy foliage cover is at least 20% of the area*

A **scattered tree** is:
- a native canopy tree that does not form part of a remnant patch*

A **canopy tree is a mature tree that is greater than 3 meters in height and is normally found in the upper layer of the relevant vegetation type.*

Definitions from Section 2.2, page 5 of the *Guidelines*.

3.2.2 Pasture

The paddock areas contain a mixture of introduced pasture species, with small scattered clumps of native grasses (Kangaroo-grass *Themeda triandra*, Weeping Grass *Microlaena stipoides*) comprising up to 10% of grass cover across most of the site, and up to 20% in the north-west of 1 Cobb Road. These areas are considered pasture and not remnant patches. Pasture areas are not indicated in **Figure 1**, but constitute all areas not otherwise mapped.

3.2.3 Regrowth (Native Vegetation)

Small areas of regrowth which meet the definition of **'remnant patch'** native vegetation under the *Guidelines* were recorded at 1 Cobb Road to the west of the driveway/access track. The vegetation was characterised by dense patches of opportunistic colonising shrub species Burgan (*Kunzea ericoides*) and Sallow Wattle (*Acacia longifolia*) and native grasses.

3.2.3.1 1 Cobb Road

The paddock in the north-west corner of the property contains small scattered patches (<5x5m) of native vegetation regrowth (<10 years old) including tall shrubs and native grass cover of at least 30%.

A narrow strip of native vegetation regrowth was also recorded along the western property boundary to the south of the residence. The vegetation is approximately 3-4 metres wide and less than 10 years old, with low structural and species diversity. It is comprised mostly of dense shrubs of Burgan (*Kunzea ericoides*), several small Rough-barked Manna Gums (*Eucalyptus viminalis subsp. pryoriana)*, and scattered Kangaroo-grass (*Themeda triandra*), Saw-sedge (*Gahnia* sp.) and Spiny-headed Mat-rush (*Lomandra longifolia*).

3.2.4 Planted Vegetation

Several ages of tree and shrub plantings are evident across the study site, with the largest, and presumably oldest (estimated >20 years old), trees occurring around the residences and along the driveways. Shelterbelt plantings along fences were observed by Ethos NRM to be mostly more than 10 years old, with the row of trees and shrubs between the two properties most likely less than 10 years old (based on plant size and tree guards).

Although some planted species on-site are native to Victoria, only a small proportion of the plantings comprise species that naturally occur in the local area, and generally are not typical of the EVC Damp Sands Herb-rich Woodland that would have occurred at the site historically. Planted trees include Victorian natives Blue Gum (*Eucalyptus globulus*) and Paperbark (*Melaleuca* spp.), and a variety of eucalypts which are not indigenous to the local area or Victoria, as well as scattered exotic Pine and Cypress trees.

Planted areas had variable coverage of native grass in the understorey and also some encroachment of Burgan (*Kunzea ericoides*) from the roadside vegetation. Generally, areas of planted vegetation did not meet the definition of native vegetation, due to absence of appropriate canopy species, or low coverage of native understorey species relative to the dominant perennial weeds or introduced pasture species.

More detailed description of the areas which meet the definition of native vegetation are provided below, and photographs are provided in **Appendix 4**.

3.2.4.1 245 Seaspray Road

The shelterbelt along the lower half of the western boundary of 245 Seaspray Road comprises of Rough-barked Manna Gum (*Eucalyptus viminalis subsp. pryoriana*) which is typical of the EVC Damp Sands Herb-rich Woodland. This species has been planted in two distinct rows (see photos in Appendix 4), and is inter-planted with a mixture of shrub species from the local area and across Victoria (e.g. Bottlebrush *Callistemon* sp., Paperbark *Melaleuca* spp., Rosemary Grevillea *Grevillea rosmarinifolia*). Introduced weed or pasture species dominate the grass cover (e.g. Panic veldt-grass *Ehrharta erecta*), however Burgan (*Kunzea ericoides*) and native grasses (Kangaroo Grass and Wallaby-grass) comprise more than 25% of the understorey cover, and hence this area meets the definition of a '**remnant patch**' of native vegetation under the *Guidelines*.

3.2.4.2 1 Cobb Road

The planted area to west of the driveway at 1 Cobb Road is comprised of a variety of mature planted trees (eucalypts and other species), with native grasses dominant in the understorey comprising up to 50% cover of Kangaroo Grass (*Themeda triandra*) and Wallaby-grass (*Rytidosperma spp.*). Therefore, it meets the definition of a '**remnant patch**' of native vegetation under the *Guidelines*.

Native vegetation quality was observed to be low due to lack of species and structural diversity, including absence of canopy species. Tree species recorded on-site are mostly

not from Victoria or the local area, except for Red Box (*E. polyanthemos*) and Forest Red Gum (*Eucalyptus tereticornis subsp. mediana*); these species appear to be the same age as the surrounding planted trees, hence have assumed to have been planted. They are not species considered typical of the EVC Damp Sands Herb-rich Woodland.

3.2.5 Weeds

Weed species were recorded in low densities across the study site and include;

- Blackberry (scattered)
- Willows along the (south) western boundary of 1 Cobb Road
- Panic Veldt-grass and Bridal Creeper in the shelterbelt along the west boundary of 245 Seaspray Road.
- African Love-grass in the paddock in the southeast of 245 Seaspray Road
- Sweet Vernal-grass (scattered)

African Lovegrass and Blackberry are declared noxious weeds under the CALP Act, and are regionally controlled in West Gippsland. The CALP Act states that land owners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land (DEPI, 2014d).

3.3 Native Vegetation Significance

No rare or threatened flora or fauna species were recorded during the field survey.

Vegetation at the site has been highly modified, with small patches of native vegetation regrowth recorded comprising mostly of opportunistic, colonising species of shrubs and grasses, which show little resemblance to the vegetation types that would originally have occurred in the area.

The planted vegetation comprises a relatively small proportion of tree and shrub species indigenous to the local area, however would be expected to provide some habitat value to small native birds.

3.3.1 Commonwealth Legislation

The study site is located within the catchment of the Gippsland Lakes Ramsar site. While it is unlikely that the scale of development of the site would have a significant impact on the Ramsar site, it should be considered in any plans to develop the site.

No remnants of the Commonwealth listed ecological communities *Gippsland Red Gum Grassy Woodland and Associated Native Grassland*, or *Seasonal Herbaceous Wetlands of the Temperate Lowland Plains* were recorded at the study site.

The landscape within and surrounding the study site is largely cleared of vegetation and utilised for either agriculture or housing; the remaining vegetation is scattered and isolated with highly modified structure. It is not likely that the study site provides important habitat for threatened flora or fauna species, or migratory species.

Hence, it is not expected that any of the Protected Matters with potential to occur at the study site, as listed in Appendix 1, will be impacted upon by potential development of the study site.

3.3.2 State Legislation

State Policy for vegetation removal requires that the impacts on biodiversity from proposals to remove native vegetation are assessed according to the *Guidelines* (DEPI, 2013a). Impacts of native vegetation removal on State biodiversity values, such as rare and threatened species and communities, are integrated into the provisions of the *Guidelines*, and hence require no further individual consideration. This is described in more detail in Section 4 below.

4 IMPLICATIONS OF NATIVE VEGETATION REMOVAL

A permit to remove native vegetation is required from the Wellington Shire Council in accordance with the *Guidelines*, unless an exemption or 'as of right use' applies. Impacts of native vegetation removal on State biodiversity values, such as rare and threatened species and communities, are integrated into the provisions of the *Guidelines*.

Most areas of pasture and planted vegetation at the study site do not meet the definition of 'native vegetation' under the *Guidelines*. Other areas meet definitions in the *Table of exemptions* under Clause 52.17 of the Planning Scheme, and with some provisions, are expected to be exempt from requiring a planning permit for the removal of native vegetation, as described below.

4.1 Exemptions under Clause 52.17

52.17-7 Table of exemptions in Clause 52.17 defines a number of circumstances when a permit is not required to remove native vegetation. Three categories of exemptions were identified to be relevant to vegetation at the study site.

4.1.1 Regrowth

Areas of native vegetation regrowth to the west of the driveway/access track at 1 Cobb Road meet the definition of 'Regrowth' in the Table of Exemptions, as it comprises naturally established native vegetation which is less than 10 years old.

4.1.2 Fences

The vegetation along the southern half of the western boundary of 1 Cobb Road, is located within 4 metres of the boundary fence of the property, to the west of the access track/driveway. Roadside vegetation to the west of the property is vegetated, comprising dense shrubs. Clearing of vegetation up to 4m from a fence is exempt from a permit, to allow for the operation or maintenance of an existing fence or construction of a boundary fence. This vegetation also meets the definition of 'Regrowth' exemption.

4.1.3 Planted vegetation

Removal of planted native vegetation (which has not been government funded) is exempt from a permit and hence does not need to meet the requirements of the *Guidelines* (and thus does not need an offset).

Planted vegetation in the south-west of 245 Seaspray Road and north-west of 1 Cobb Road meets the definition of native vegetation under the *Guidelines*. Both these areas appear to fit the exempt categories of aesthetic or amenity planting (e.g. gardens, shelterbelts). However, **it should be confirmed with the landowners that no government funding was received for planting or maintenance of the vegetation**, and the terms of any funding did not anticipate removal of the vegetation, before assuming that it is exempt under Clause 52.17 of the Planning Scheme from requiring a planning permit and offset.

If it is determined that the exemption does not apply, then a permit and commensurate offset will be required in accordance with the *Guidelines* (refer to Section 4.2).

It is anticipated that a permit will not be required to remove native vegetation.
Vegetation at the study site **either**:
does not meet the definition for *Native Vegetation* under the *Guidelines* **or**
is exempt from requiring a permit under Clause 52.17-7.
Providing all exemptions apply, there will be **no offset required**.
No other significant vegetation values were recorded at the study site.

4.2 Identification of Potential Permit Application Requirements

Although considered unlikely, if the 'Planted Vegetation' exemption does not apply to 1 Cobb Road (ie. if government funding was used to plant or manage the vegetation), preliminary information relevant to an application to remove native vegetation has been provided below.

Application requirements for a permit to remove native vegetation are determined by the relevant risk-based pathway, **low, moderate and high risk**, as defined by the *Guidelines*. The risk-based pathway is identified from a combination of **extent risk** (the amount of vegetation proposed to be removed) and **location risk** (DEPI modelled strategic landscape value) of a site.

The risk-based pathway dictates the detail of information required, including the need for detailed on-site vegetation condition assessment (Habitat Hectares), and the decision guidelines for assessment of that application (DEPI, 2013b).

4.2.1 Identification of the Risk-based Pathway and Application Requirements

Preliminary examination of the online DEPI *Native Vegetation Information Management (NVIM)* Tool (DEPI, 2014c) *Location Risk Map* indicated the entire study site to be **within Location A.** The Location Risk is combined with the area or number of scattered trees proposed to be removed (Extent Risk), to determine the risk-pathway for an application to remove vegetation as defined in *Table 3* in the *Guidelines*.

Assuming the 'Planted Vegetation' exemption does not apply to 1 Cobb Road and 245 Seaspray Road, the maximum area of vegetation with potential to require a permit for removal at 1 Cobb Road (planted vegetation patches shown as hashed areas on **Figure 1**) is approximately 0.3 ha. Therefore an application to remove native vegetation would be required to follow the **Low-risk pathway**.

The calculation of total loss of native vegetation resulting from land development must include both direct removal, and indirect impacts on native vegetation, such as; changes to hydrology, effluent discharge, stormwater runoff and excessive shading on vegetation (DEPI, 2013b).

4.2.2 Offsetting Native Vegetation Losses

Where vegetation removal cannot be avoided, provision of offsets is required to compensate for the impacts on biodiversity; the purpose of an offset is to achieve a 'no net loss' in the contribution made by native vegetation to Victoria's biodiversity.

Offsets are achieved through the long-term protection, enhancement and management of the quality and quantity of native vegetation. Offsets can be achieved on private land owned by the proponent or a third party, or sourced as Native Vegetation Credits through accredited native vegetation Offset Brokers.

A formal agreement is required in all instances to secure the ongoing protection and management of the nominated offset site.

4.2.3 Calculating offset requirements for scattered trees

Offset requirements cannot be calculated for the potential development of the study site without knowing which vegetation may be removed, as the location and extent of vegetation proposed for removal must be accurately mapped.

For vegetation under the **low-risk pathway** native vegetation offsets can be calculated by using a purpose-built *Native Vegetation Information Management* Tool developed by DEPI. The tool assesses the mapped area of vegetation proposed to be removed against DEPI models to determine the type, quantity and attributes of the offset required.

Offsets under the *Guidelines* comprise two types:

- **general biodiversity equivalence units (GBEUs)** *and/or*
- **specific biodiversity equivalence units (SBEUs)**

Vegetation removal under the low-risk pathway comprises only **general units (GBEUs)**, whereas under the moderate- and high-risk pathways may comprise one or both of **general units (GBEUs) and/or specific units (SBEUs)**. Specific units may be more difficult to source than general units.

4.2.4 Offset Attributes

When a **general offset** is required the offset secured must meet the ***minimum strategic biodiversity score*** and ***vicinity*** attributes.

Any general offsets required for the removal of Remnant Patch native vegetation at the Study Site must:

- be located within the West Gippsland Catchment Management Authority boundary, or Wellington Shire boundary, AND
- have a minimum strategic biodiversity score as stated in the *Biodiversity assessment report* generated by the NVIM tool (not yet known; would depend on precise area proposed for removal).

4.2.5 Timing

Assuming the 'Planted Vegetation' exemption does not apply to 1 Cobb Road, and 245 Seaspray Road, a compliant offset **must be secured**, to the satisfaction of the responsible or referral authority, **before the native vegetation is removed** (DEPI, 2013a), by either:

- A security agreement for the site including an onsite (Offset) management plan, or
- Evidence of a secured third party offset, e.g. Native Vegetation Credit Register extract.

It is not expected that sufficient offsets would be available on-site, and if required, would need to be sourced from a third party.

The study site is entirely within **Location A.**

Potential removal of native vegetation would require an application to follow the **Low-risk Pathway.**

Native vegetation offsets would comprise **General Biodiversity Equivalence Units** only.

No permit or offset is required if the 'Planted Vegetation' exemption applies.

5 CONCLUSION

Ethos NRM has been engaged by Beveridge Williams on behalf of the landowners of 245 Seaspray Road and 1 Cobb Road (the Study Site) in Longford, to undertake an assessment of vegetation quality and significance. The study site is the subject of a proposal to rezone the land from Farming Zone to Rural Living Zone.

On-site assessment of vegetation found the following:

- The study site has historically been cleared of all native vegetation.
- Each property contains a residence with associated yard/garden and paddocks.
- Paddocks are maintained by slashing or grazing by horses, and vegetation comprises a mixture of introduced pasture species with low density of native grasses.
- Small patches of native vegetation regrowth (<10 years old) occur within 1 Cobb Road, along the southern half of the western property boundary, and within the grassy area in the north-west of the property. The vegetation is of poor quality, with low diversity of species and vegetation structure, dominated by colonising shrub species with native grasses or sedges developing underneath.
- The regrowth patches meet the definition of native vegetation under the *Guidelines*, however they also meet the requirements for exemptions from a permit under *Clause 52.17*, including 'regrowth' and 'fences'.
- Shelterbelts and driveway plantings comprise of a mixture of trees and shrubs, of which only a small proportion are indigenous to the local area, and a combination of native and exotic grasses are present in the understorey.
- Most of the planted areas do not meet the definition of Native Vegetation under the *Guidelines*, with the exception of areas in the north-west of 1 Cobb Road and south-west boundary of 245 Seaspray Road. It is expected that these areas meet the 'Planted Vegetation' exemption in Clause 52.17 as aesthetic or amenity plantings (unless Government funding was received for planting or maintenance).
- If the 'Planted vegetation' exemption does not apply to the study site, a permit under the low-risk pathway, and commensurate offset, would be required to remove vegetation from this area. Ethos NRM considers this to be unlikely.
- No threatened species or communities were recorded by Ethos NRM at the study site during the site assessment. It is not expected that the native vegetation provides important habitat for threatened species (flora or fauna) which were identified by the desktop investigation as being known, or likely, to occur within 5km of the study site.

It is anticipated that **a permit will not be required to remove native vegetation**, as the vegetation at the study site **either**:

- **does not meet the definition for *Native Vegetation*** under the *Guidelines* **or**
- **is exempt** from requiring a permit under Clause 52.17.

No other significant vegetation values were recorded at the study site.

6 REFERENCES

DE, 2014. **EPBC on-line Protected Matters Search Tool,** EPBC Protected Matters Report. Commonwealth Department of the Environment. Report created 5/5/2014.

DEPI, 2013a. ***Permitted clearing of native vegetation Biodiversity Assessment Guidelines.*** Victorian Government Department of Environment and Primary Industries, Melbourne, May 2013.

DEPI, 2013b. ***Biodiversity Assessment Handbook.*** Victorian Government Department of Environment and Primary Industries, Melbourne, September 2013.

DEPI, 2014a. ***Online Mapping - Biodiversity Interactive Map.*** http://www.dse.vic.gov.au/about-depi/interactive-maps (Viewed on 05/5/2014). Victorian Government Department of Environment and Primary Industries.

DEPI, 2014b. ***Native Vegetation Information*** www.depi.vic.gov.au Victorian Government Department of Environment and Primary Industries, Melbourne.

DEPI, 2014c. ***Native Vegetation Information Management online tool.*** www.depi.vic.gov.au Victorian Government Department of Environment and Primary Industries, Melbourne.

DEPI, 2014d ***Invasive Plant Classifications.*** http://www.depi.vic.gov.au/agriculture-and-food/pests-diseases-and-weeds/weeds/invasive-plant-classifications (Viewed on 13/06/14). Victorian Government Department of Environment and Primary Industries, Melbourne.

DSE, 2004. ***Vegetation Quality Assessment Manual – Guidelines for applying the habitat hectares scoring method.*** *Version 1.3.* Victorian Department of Sustainability and Environment, Melbourne.

DTPLI, 2014. **Planning Maps Online tool.** http://services.land.vic.gov.au/maps/pmo.jsp Viewed 5/5/2014. Victorian Department of Planning, Transport and Local Infrastructure.

7 APPENDICES

7.1 Appendix 1: EPBC Protected Matters Search Report

Australian Government
Department of the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

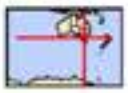
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/05/14 15:28:57

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	16
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	14
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	1
State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	34
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (RAMSAR) [Resource Information]

Name	Proximity
Gippsland lakes	Within 10km of Ramsar

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy Woodland and Associated Native Grassland	Critically Endangered	Community likely to occur within area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat likely to occur within area
Fish		

Name	Status	Type of Presence
Galaxiella pusilla		
Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Vulnerable	Species or species habitat known to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Frogs		
Litoria raniformis		
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
Insects		
Synemon plana		
Golden Sun Moth [25234]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Dianella amoena		
Matted Flax-lily [64886]	Endangered	Species or species habitat may occur within area
Thelymitra epipactoides		
Metallic Sun-orchid [11896]	Endangered	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat known to occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat likely to occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

Places on the RNE [Resource Information]

Note that not all Indigenous sites may be listed.

Name	State	Status
Natural		
Gippsland Lakes Area	VIC	Indicative Place

State and Territory Reserves [Resource Information]

Name	State
Sale Common N.C.R.	VIC

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
Gippsland RFA	Victoria

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within

Name	Status	Type of Presence
		area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Coordinates

-38.200095 147.096598,-38.194968 147.094925,-38.194934 147.09795,-38.200162 147.097006,-38.200095 147.096598

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

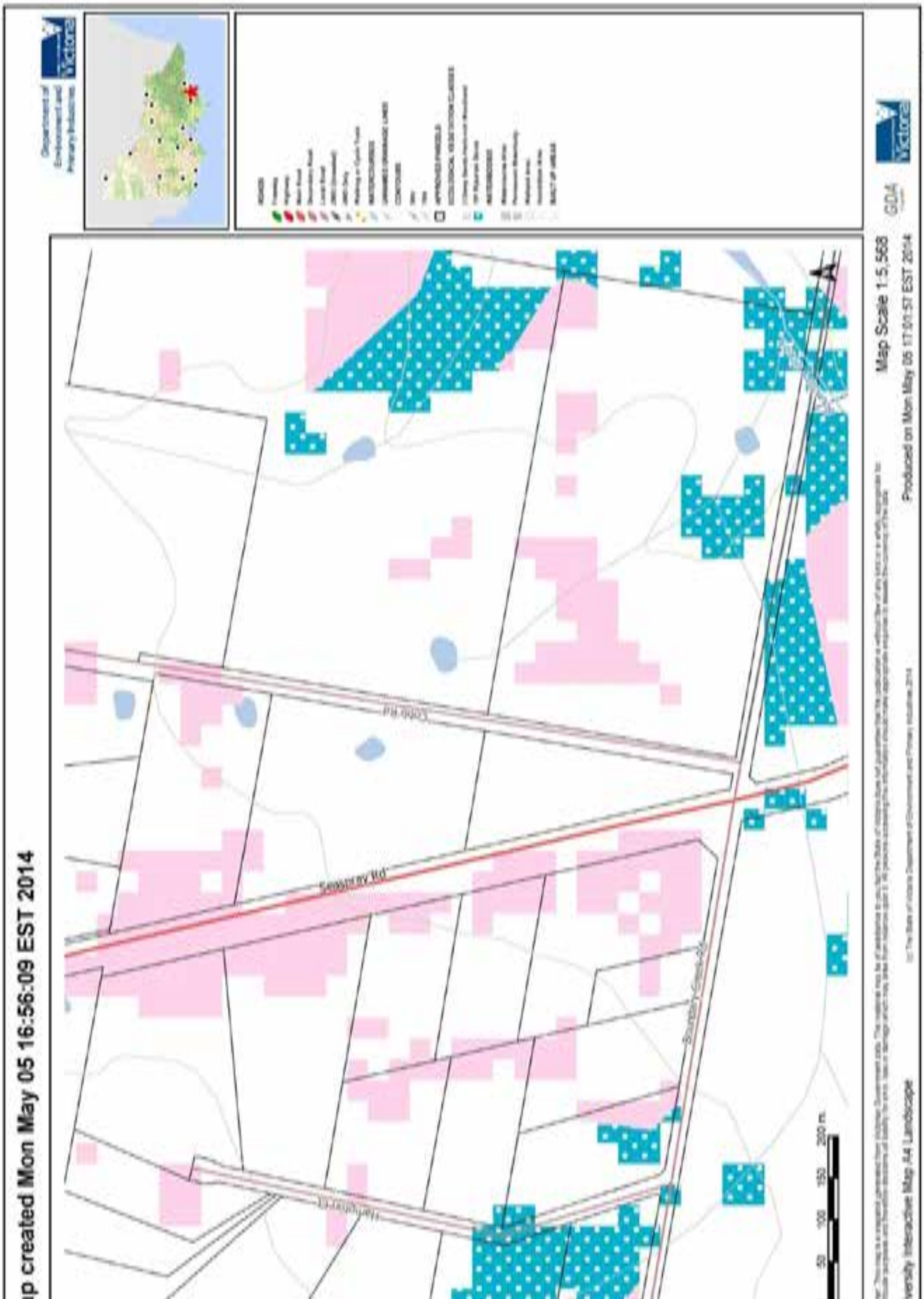
This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Geoscience Australia
-CSIRO
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

7.2 Appendix 2: DEPI EVC Mapping


Map created Mon May 05 16:56:09 EST 2014
Map Scale 1:5,568
Produced on Mon May 05 17:01:57 EST 2014
Biodiversity Interactive Map A4 Landscape
0 50 100 150 200 m

7.3 Appendix 3: Photographs of vegetation at the study site.

Above: 245 Seaspray Road, Southern paddock looking towards Cobb Rd. Top right of picture shows planted Shelterbelt along boundary between 245 Seaspray Rd & 1 Cobb Rd.

Above: 245 Seaspray Road; Planted shelterbelt along southern section of Western boundary. Two rows of Rough-barked Manna Gum, interplanted with shrubs. Burgan regrowth is encroaching from roadside vegetation. Grass cover is a mixture of introduced and native grasses.

Above: 245 Seaspray Road. Shelterbelt along western boundary, north of section of Manna Gums (in previous photo); mixture of eucalypts, paperbarks, Pine trees and Cypress. Pasture grasses visible in foreground.

Above: 245 Seaspray Road. Planted shelterbelt along internal fenceline, north of property.

Above: 1 Cobb Road, southern paddock almost entirely pasture grasses. Boxes mark native vegetation regrowth along west boundary (red/ on left, also see photo below) & shelterbelt of non-indigenous eucalypts (blue/ on right).

Above: 1 Cobb Road, native vegetation regrowth along western boundary, to right (west) of track. Scattered shrubs to left (east) of track.

Above: 1 Cobb Rd: southern end of planted vegetation. Mix of bottlebrush and Melaleuca in foreground; non-indigenous eucalypts and acacia in background. Native grasses dominant in understorey.

Above: 1 Cobb Rd: planted vegetation along driveway. Trees and shrubs mostly not indigenous to local area or Victoria. Native grasses dominant in understorey

Above: 1 Cobb Rd: North-western paddock surrounded by planted vegetation. Pasture comprised of native grasses <25%, remainder introduced pasture grasses.

Above: 1 Cobb Road north-west paddock: Small 'remnant patch' native vegetation regrowth in middle of paddock; comprises Burgan, Sallow wattle and native grasses.

strata
geoscience and environmental

Land Capability Assessment and Onsite Wastewater System Concept Design for

Proposed Rezoning
245 Seaspray Road
Longford

April 2014

Important Notes:

The author, Strata Geoscience and Environmental, gives permission for this report to be copied and distributed to interested parties only if it is reproduced in colour and in full including all appendicies. No responsibility is taken for the contents and recommendations of this report if it is not reproduced as requested.

Strata Geoscience and Environmental reserves the right to submit this report the relevant regulatory agencies where it has a responsibility to do so.

1. Introduction

Strata Geoscience and Environmental Pty Ltd was commissioned to perform a limited scope Land Capability Assessment for:

Table 1 : Site and Client Details	
Client/Agent	Ingmar Kappenberger
Site Address	245 Seaspray Road Longford (see Site Plan)
Nature of Development	Proposed Rezoning with 6000m^2 min lot size

The investigation was conducted based upon specific development plans supplied by the client (Figures 2&3) and with reference to the following documents:

1. EPA Victoria (2013) Code of Practice for Onsite Wastewater Management
2. Australian Standard AS1547-2012 Onsite Wastewater Management

The investigation also follows the principles outlined in:

1. MAV & DSE 2006 (as amended) Model LCA Report
2. AS1726-1993 Geotechnical Site Investigations.

2. Description of the Development

Table 2 Site Description	
Site Address	245 Seaspray Road Longford
Owner/Developer/Agent	Ingmar Kappenberger
Postal Address	Unknown
Council Area	Wellington
Zoning	Farming (Rezoning to Rural Living Proposed)
Allotment Size	Min 6000 m^2
Domestic Water Supply	Onsite roof water collection
Anticipated Wastewater Load	Up to 1440 L/D (See Section 6)
Availability of Sewer	Unsewered and unlikely to be unsewered in mid term

3. Site Plans and Key Site Features

S Nielsen (MEngSc, CPSS-2) undertook a site investigation on 1 April 2014. A range of soil and landscape features were assessed for their potential to impact upon land application area siting and level of wastewater treatment required over the site. Figures 1-2 give locality and proposed site plans respectively whilst Table 3 summarises key features as in relation to effluent management over the site.

Figure 1 Locality Plan

Figure 2 Proposed Site Plan

Table 3 Site Features	
Climate	The nearest weather station with long term data is the East Sale Airport Station with a mean annual rainfall of 599.5 mm (BOM 2014) and current evaporation data. The region has a near Mediterranean climate with maximum temperatures and minimum rainfall in the summer.
Exposure	The site is relatively unshielded with exposure to winds which predominate from the NW/SW directions
Vegetation	Pasture.
Landform	Hillslope
Slope	Slight slopes
Fill	No fill evident, minor fill will be created with bulk earthworks associated with the development
Rocks and Rock Outcrops	No signs of near surface rock over the site.
Erosion Potential	No evidence of erosion, erosion potential considered low
Surface Water	Dam approximately 30m
Flood Potential	<1:100 AEP
Stormwater Run-on and Upslope Seepage	To south.
Groundwater	No groundwater was encountered throughout site reconnaissance and is likely to be several meters under the ground surface contained within rock.
Site Drainage and Subsurface Drainage	The site receives minimal run on and does not show signs of springs or other areas of ephemeral subsurface water retention. Given clay subsoils perched watertable may exist in some areas of the site
Recommended Buffer Distances	Given the significant land area, all buffer distances as stipulated in EPA (2013) are achievable
Available Land Application Area	There is surplus space to land application area requirements (including reserves).

4. Soil Assessment and Constraints

Soils have been assessed for their suitability for onsite wastewater management through both desktop review and intrusive field investigation.

4.1 Desktop Review

No published information could be obtained for the subject site.

4.2 Field Investigation

Field investigation consisted of drilling one soil bore per proposed lot using a Dando Terrier Tracked percussion drilling rig driving 50mm soil probes to 1.5m or refusal on rock with retrieval of undisturbed soil cores for logging, sampling and testing for pH, EC and Emmerson Aggregate Class using a handheld meter to measure 1:5 soil:water solutions.

Bore logs and soil permeability data/soil dispersion test results (where relevant) are presented in Appendix 1. As a general comment soil appeared to be relatively uniform across the site and geotechnical drilling revealed deep clay soils associated with Quaternary alluvial deposits.

With reference to the classification system of Isbell (2002) soils are classified as Brown/Yellow **Chromosols** being structured clays soils which exhibit a subsoil pH >5.5. Soils had duplex profiles with soils depth grading to silty clays at depths below approximately 100-300 mmbgs. Soils are moderately structured and will show the existence of vertical macropores throughout drier periods, significantly increasing their unsaturated hydraulic conductivities. These soils will show a high cation exchange complex for the absorption of nutrients, are likely to have dispersive phases and a slightly acidic pH trend.

Table 4 Typical Soil Characteristics Over Proposed Subdivision*	
Soil Depth (m)	1.5m+ (variable)
Depth to Water Table (m)	1.5-2.5m+
Coarse Fragments (%)	0-5%
Soil Permeability and Design Loading Rates	Approximately 0.1-0.5m/d DIR of 3mm/d appropriate

	Topsoils	Subsoils
Description	Silty SAND (SM)/Clayey SAND (SC)	Clayey SILT (ML)/Silty CLAY (CL)
Soil Category (AS1547-2011)	2	5
DIR (mm/d)/DLR (L/D)	30	3
pH	6.8	6.1
EC	-	-

*See individual bore logs in Appendix 1 for further lot specific details

5. Land Capability Assessment Matrix

Referring to MAV & DSE (2006) and EPA Victoria Publication 746.1 Land Capability Assessment for Onsite Domestic Wastewater Management, the following LCA assessment table has been produced for the site.

Table 5 Land Capability Assessment Matrix

Land Features	Very Good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)	Site Class
General Characteristics						
Site Drainage	No visible signs of dampness	Moist soil, no standing water in pit/bore		Visible signs of dampness	Water ponding on surface	4
Runoff	None	Low	Moderate	High – need for diversionary structures	Very High – diversion not practical	3
Flood Levels	Never		<1 in 100	>1 in 100 to < 1 in 20	<1 in 20	3
Proximity to Watercourses	>60m				<60m	5
Slope %	0-2	2-8	8-12	12-20	>20	3
Landslip	No actual or potential failure		Low potential for failure	High potential for failure	Present or past failure	1
Groundwater (seasonal depth, m)	>5	5-2.5	2.5-2.0	2.0-1.5	<1.5	5
Rock Outcrop (% of land surface)	0	<10%	10-20%	20-50%	>50%	1
Erosion Potential	No erosion potential	Minor	Moderate	High	Severe Erosion Potential	3
Exposure	High sun and wind exposure		Moderate	Low sun and wind exposure		1
Landform	Hillcrests, Convex side slopes and plains		Concave side slopes and footslopes		Floodplains and incised channels	3
Vegetation Type	Turf and Pasture				Dense forest with little understorey	1
Average Rainfall (mm/yr)	<450	450-650	650-750	750-1000	>1000	2
Pan Evaporation (mm/yr)	>1500	1200-1500	1000-1250		<1000	3
Fill	No fill		Fill present			1

Table 5 Land Capability Assessment Matrix (cont)

Land Features	Very Good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)	Site Class
Soil Profile Characteristics						
Soil Permeability Category (AS1547-2012)	2 and 3	4		5	1&6	**4**
Profile Depth	>2	1.5-2.0	1.5-1	1-0.5	<0.5	**2**
Presence of Mottling	None				Extensive	**1**
Coarse Fragments %	<10%	10-20%	20-40%		>40%	**1**
pH	6-8		4.5-6		<4.5, >8	**1**
Emerson Test	4,6,8	5	7	2,3	1	**4**
Electrical Conductivity (dS/m)	<0.3	0.3-0.8	0.8-2	2-4	>4	**3**
Sodicity (ESP%)	<3		6-8	8-14	>14	**3**
Overall Site Rating						**2.4**

The generalised land capability class over the site is between Rating 2-3. This indicates that primary treatment systems may be a suitable over the site however the likelihood of low permeability soils with possible dispersive phases makes secondary treatment with irrigation preferable to maximise the design life of land application areas. See Section 6 for specific system recommendations.

6. Proposed Onsite Wastewater Concept System Designs

6.1 General System Recommendations

Given the results of the LCA, the following recommendations are made for a suitable wastewater treatment system:

- Given low permeability subsoils with possible dispersive phases over the site, secondary treatment with irrigation will maximise design life are suitable concept designs.

Adoption of designs considering these recommendations will limit the public and environmental health risks associated with effluent treatment and disposal over each lot and provide for a sustainable long term solution to effluent treatment and land application.

6.2 Onsite Wastewater Flow and Land Application Area Modelling

For modelling purposes it is proposed that up to a seven bedroom equivalent dwelling with provision for future mains water availability will be constructed over each lot. Each dwelling is assumed to have standard water savings fixtures and a design flow allowance under EPAV 2013 of 180 L per person per day. Therefore the calculated effluent flows and required disposal area for each lot is as follows:

6.2.1 Flow and Land Application Area Requirement

Wastewater System Modeling	
Proposed Number of Bedrooms	7
Number of Equivalent Persons (EP) (No bedrooms plus 1)	8
Water Source (Tank/Reticulated Mains)	R
Water Saving Fixtures (None/Standard/Full)	S
Total Daily Loading	1440
Soil Category (AS1547-2012)	5
Indicative Permeability (m/d)	0.5
Design Irrigation Rate/ Design Loading Rate (DIR/DLR)	3
Required Effluent Dipsosal Area (m^1)	480

As a result of these calculations, at least **480 m²** of area is required dispose of these flows on a daily basis via irrigation.

6.2.2 Water Balance and Land Application Area Modelling

Please refer to Appendix 2 for the water balance modelling for each lot based upon VLCAF (2013). The nominated area method is used to calculate the area required to balance all inputs and outputs, without the need for wet weather storage. As a result of these calculations, at least **694 m²** of area is required to achieve zero wet weather storage.

6.2.3 Nutrient Balance and Land Application Area Modelling

Please refer to Appendix 2 for the nutrient balance modelling (Nitrogen and Phosphorus) for each lot based upon VLCAF (2013). The methodology aims to ensure that the LAA is of sufficient size to ensure all nutrients from the applied effluent are assimilated by soils and vegetation. As a result of these calculations, at least **478 m²** of area is required to achieve sustainable assimilation of N and P over the nominated system design life.

BASED UPON THE ABOVE MODELLING THE MAXIMUM MODELLED LAA REQUIREMENT IS 694 m² FOR EACH LOT FOR SECONDARY TREATED EFFLUENT BASED UPON THE WATER BALANCE MODEL.

6.2.4. Alternative Loadings and Land Application Area Modelling

Given that the water balance model produces the most conservative LAA, it has been used to calculate the subsurface drip irrigation area for a range of loadings based upon the "Number of bedrooms plus 1" model at 180L/person/day. Results are detailed in Table 6 below:

Table 6 LAA Requirement for Various Dwelling Sizes

Number of Bedrooms	Theoretical Loading (L/day)	Required LAA (m^2 of irrigation)
4	900	434
5	1080	521
6	1260	607
7	1440	694

6.5 Concept System Designs

6.5.1 Treatment Systems

Given the above modelling with a maximum of a seven bedroom equivalent dwelling being constructed the following treatment systems would be appropriate:

- Min DN100 gravity fed sewer pipe
- Approved commercially available AWTS system with minimum daily flow capacity of 1500L.

6.5.2 Land Application Areas

The land application areas could consist of:

- Min 694 m^2 of subsurface irrigation with appropriate buffer zones
- Provision for 50% reserve area (must remain free from development)
- Given the relatively minor slopes over the site, upslope interceptor drainage will not likely be required.

6.5.3 Provision of Adequate Setback Distances and Reserve Area

Given the minimum land application areas modelled above combined with the minimum proposed lot size of 0.6 Ha, setback distances complying with the minimum requirements of EPA Vic (2013) are achievable (see Figure 2 and Appendix 4). Further more there is adequate room for the modelled reserve requirements as modelled above.

7. Conclusions and Further Recommendations

In conclusion the following comments and recommendations are made:

- The LCA has found that the generalised capability rating is 2-3 across all lots and given a minimum lot size of 0.6 Ha each proposed lot is suitable for secondary effluent disposal.
- Given low permeability subsoils with possible dispersive phases over each lot, secondary treatment with irrigation will maximise design life and is likely to be capital cost competitive.
- The maximum wastewater flow rate (MWWF) modelling shows that the generated flows for a maximum 7 bedroom equivalent dwelling on each lot is likely to be no more than 1440 L/day.
- Modelled flows will likely require a land application area comprising:
    - Min 694 m^2 of subsurface drip irrigation with appropriate buffer zones)
    - Provision for 50% reserve area (must remain free from development)
- It is likely that peak flows associated with the modelled development on each lot should be within the buffering capacity of proposed systems both in terms of the system sizing as well as for their acceptance into the disposal area.
- Given the minimum lot size of 0.6 ha adequate setback distances and reserve provisions can be met.
- It is likely that earthworks and drainage installation associated with future site development will alter conditions of the site and as a result the recommendations of this report MUST be reconfirmed after these works have occurred. Stormwater diversion or interceptor drain installation may be appropriate at this time.
- This modelling and designs contained within this report are concepts only and do not constitute lot specific detailed designs. These can be produced when lot specific development plans are available.

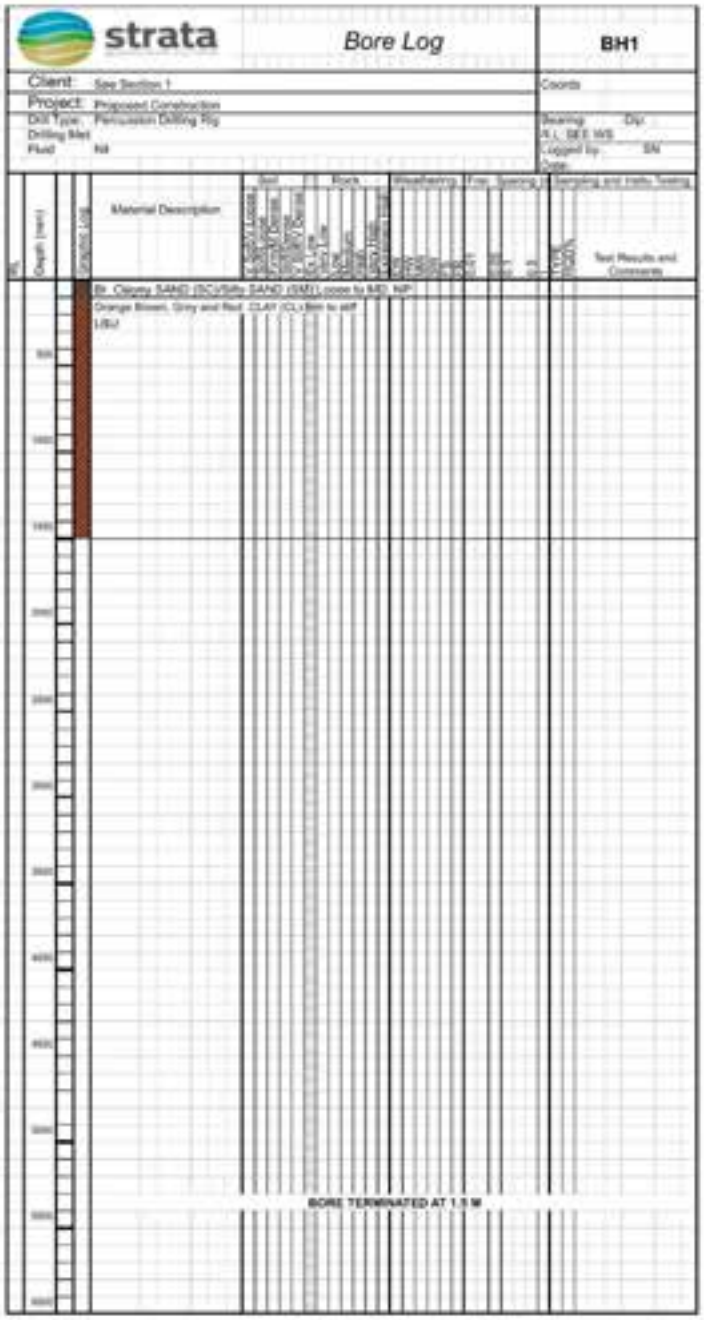
- **If the prescriptions of this report are followed the likely human and environmental health risks associated with effluent disposal over the site is low subject to detailed design of each wastewater water system.**

S Nielsen MEngSc CPSS-2
Director
Strata Geoscience and Environmental Pty Ltd
P: 0413545358
E: sven@strataconsulting.com.au
W: www.strataconsulting.com.au

8. References

- AS1726-1993- Geotechnical Site Investigations
- AS 1547-2012 Onsite Wastewater Disposal
- Bureau of Meteorology Website- Monthly Climate Statistics
- EPA (2013) Vic Code of Practice for Onsite Wastewater Management
- MAV & DSE 2006 (as amended) Model LCA Report
- VLCAF (2013) Victorian Land Capability Assessment Framework – Calculation of Water and Nutrient Balances
- Isbell (2002) Australian Soil Classification (Revised Edn) CSIRO Publishing

Appendix 1 Bore Log



Appendix 2 Water and Nutrient Balance Method Calculations (after VLCAF 2013)

Irrigation area sizing using Nominated Area Water Balance & Storage Calculations

Site Address:	245 Seaspray Road Longford			
Date:	####	**Assessor:**	Nielsen	

INPUT DATA

Design Wastewater Flow	Q	1,440	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)
Design Irrigation Rate	DIR	3.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)
Nominated Land Application Area	L	694	m²	
Crop Factor	C	0.6-0.8	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type
Rainfall Runoff Factor	RF	1	unitless	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff
Mean Monthly Rainfall Data		Sale		BoM Station and number
Mean Monthly Pan Evaporation Data		Sale		BoM Station and number

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R		mm/month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	599
Evaporation	E		mm/month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1450.3
Crop Factor	C		unitless	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	192	141	113	62	37	30	28	38	61	117	131	153	1088.86
Percolation	B	DIRxD	mm/month	93.0	84	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1095.0
Outputs		ET+B	mm/month	285.1	225.56	206.1	152.4	130.5	110.3	122.2	146.5	136.9	209.9	220.9	246.3	2181.9
INPUTS																
Retained Rainfall	RR	RxRF	mm/month	46	47	49	48	52	48	41	48	52	58	55	54	599
Applied Effluent	W	(QxD)/L	mm/month	64.3	58.1	64.3	62.2	64.3	62.2	64.3	64.3	62.2	64.3	62.2	64.3	757.2
Inputs		RR+W	mm/month	110.3	105.1	113.3	110.2	116.3	110.2	105.3	110.3	114.2	122.3	117.2	118.3	1356.3
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-175.2	-124.3	-92.7	-42.1	-3.2	0.0	-16.8	-36.2	-42.7	-87.3	-76.6	-128.0	
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum Storage for Nominated Area	N		mm	0.00												
	V	NxL	L	0												
LAND AREA REQUIRED FOR ZERO STORAGE			m²	166	221	266	414	681	808	560	444	413	296	313	232	

MINIMUM AREA REQUIRED FOR ZERO STORAGE 694.0 m²

Nutrient Balance

Site Address:	**245 Seaspray Road Longford**

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON MOST LIMITING NUTRIENT BALANCE 478 m²

INPUT DATA[1]

Wastewater Loading			Nutrient Crop Uptake					
Hydraulic Load	1440	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	mg/m²/day
Effluent N Concentration	25	mg/L	Crop P Uptake	50	kg/ha/yr	which equals	13.70	mg/m²/day
% N Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal	**Phosphorus Sorption**					
Total N Loss to Soil	7200	mg/day	P-sorption result	240	mg/kg	which equals	3360	kg/ha
Remaining N Load after soil loss	28800	mg/day	Soil Bulk Density	1400	kg/m³			
Effluent P Concentration	8	mg/L	Depth of Soil	1	m			
Design Life of System	50	yrs	% of Predicted P-sorp.[2]	0.5	Decimal			

NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer		
Nitrogen	478	m²
Phosphorus	358	m²

Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)		
Nominated LAA Size	694	m²
Predicted N Export from LAA	-4.78	kg/year
Predicted P Export from LAA	-3.33	kg/year
Phosphorus Longevity for LAA	116	years
Minimum Buffer Required for excess nutrient	0	m²

PHOSPHORUS BALANCE

Using the nominated LAA Size

Nominated LAA Size	694	m²			
Daily P Load	0.012	kg/day	→ Phosphorus generated over life of system	165.128	kg
Daily P Uptake	0.010	kg/day	→ Phosphorus vegetative uptake for life of system	0.128	kg/m²
Measured P-sorption capacity	0.336	kg/m²			
Assumed P-sorption capacity	0.168	kg/m²	→ Phosphorus adsorbed over 50 years	0.168	kg/m²
Site P-sorption capacity	116.592	kg	→ Desired Annual P Application Rate	8.134	kg/year
			which equals	0.022	kg/day
P-load to be sorbed	0.738	kg/year			

Appendix 3 Subsurface Irrigation Concept Design

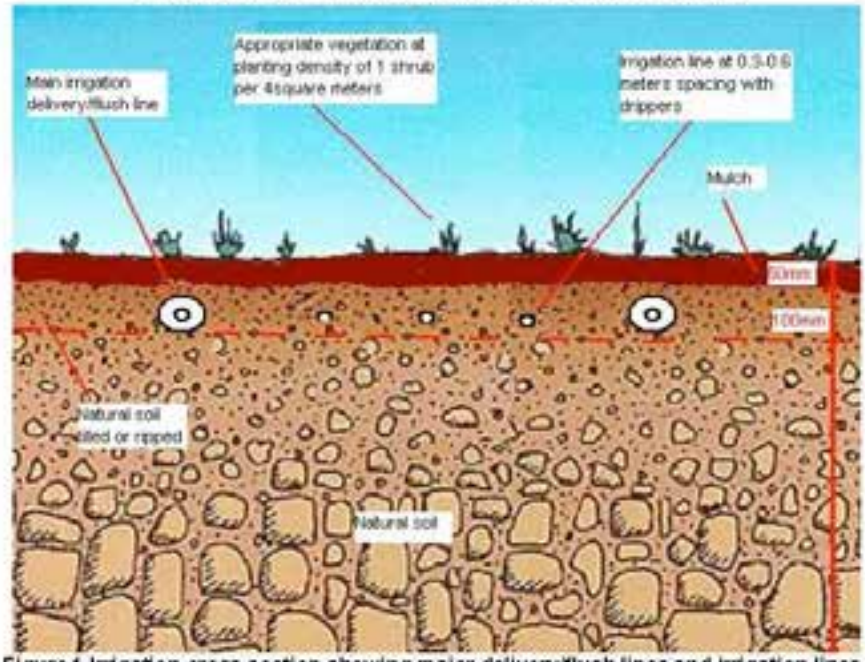


Figure 1 Irrigation cross section showing major delivery/flush lines and irrigation lines.

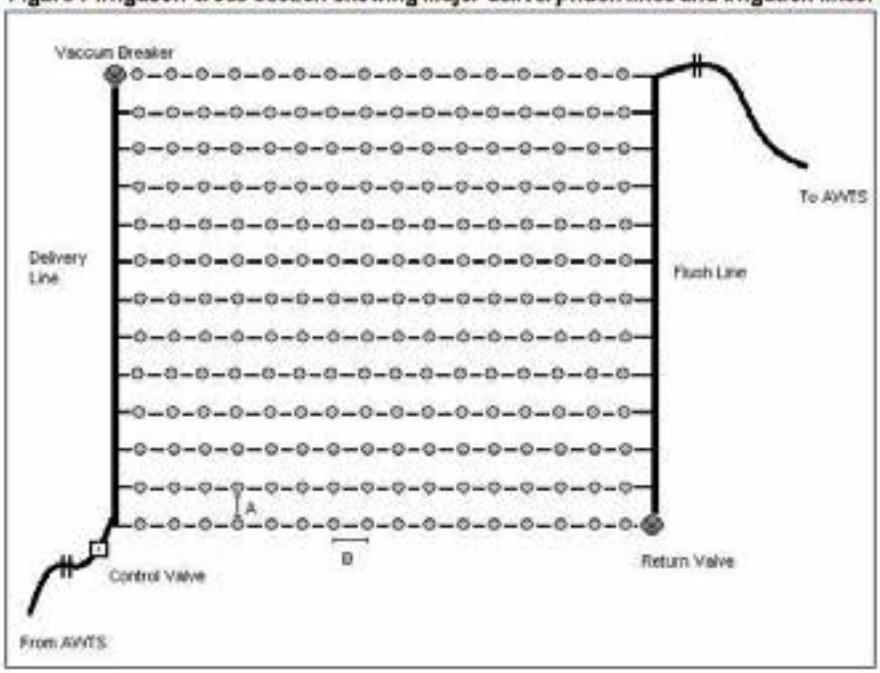


Figure 2 Irrigation Plan View

Land Application Area Design and Construction Notes

1. Delivery/flush line diameter = 25 -30 mm
2. Irrigation line diameter = 12-16mm
3. Irrigation line spacing (A) =300 mm for Sands, Sandy Loams and Loams to 600mm for Clay Loams, Light Clays and Heavy Clays (see the wastewater flow modelling section of this report for soil classification).
4. Dripper/Sprinkler spacing (B) as per manufacturers specifications.
5. A vacuum breaker should be installed at the highest point of the irrigation area (or in the case of multiple irrigation lots at each lot). This breaker should be protected and marked).
6. A flush line should be installed at the lowest point of the irrigation area incorporating a return valve for back flushing of the system back into the treatment chamber.
7. **All lateral lines MUST be installed parallel to the contours of the land. All minimum setbacks MUST be adhered to.**
8. An inline filter must be inserted into the delivery line.
9. The first 100mm of the natural soil below the ground surface should be mechanically tilled to aid line installation and soil permeability.
10. Gypsum should be incorporated at the rate of 1kg/5m^2 in dispersive soils.
11. Selected vegetation should be planted at a density of approx. 1 plant per 4m^2. Recommendation regarding suitable species is made in this report.
12. Irrigation areas greater than 400 m^2 should be split into 100 m^2 cells with effluent flows switched between irrigation lots with an automatic valve system.
13. Where practical a 50% reserve area should be identified on the site to allow movement of the irrigation area if required.
14. In areas of moderate to steep slopes (>10%) then upslope cut off drainage should be installed to minimise shallow ground water recharge of the irrigation area from upslope.

Appendix 4 Extract from EPAV 2013

Code of Practice Onsite Wastewater Management

Table 4: Minimum daily wastewater flow rates and organic loading rates [1] [10]

Source	Design hydraulic flow rates for all water supplies [2, 3, 4] (L/person.day)	Organic material loading design rates (g BOD/person.day) [7]
Households with extra wastewater producing facilities [6]	220	60
Households with standard water fixtures	180	60
Households with full water-reduction fixtures [3]	150	60
Motels/hotels/guesthouse		
- per bar attendant	1000	120
- bar meals per diner	10	10
- per resident guest and staff with in-house laundry	150	80
- per resident guest and staff with out-sourced laundry	100	80
Restaurants (per potential diner) [9]		
- premises >50 seats	40	50
- premises >50 seats	30	40
- tearooms, cafés per seat	10	10
- conference facilities per seat	25	30
- function centre per seat	30	35
- take-away food shop per customer	10	40
Public areas (with toilet, but no showers and no café) [8]		
- public toilets	6	3
- theatres, art galleries, museum	3	2
- meeting halls with kitchenette	10	5
Premises with showers and toilets		
- golf clubs, gyms, pools etc. (per person)	90	10
Hospitals - per bed	350	150
Shops/shopping centres		
- per employee	15	10
- public access	5	3
School - child care	20	20
- per day pupil and staff	20	20
- resident staff and boarders	150	80
Factories, offices, day training centres, medical centres	20	15
Camping grounds		
- fully serviced	150	60
- recreation areas with showers and toilets	100	40

1. Based on EPA Code of Practice for Small Wastewater Treatment Plants, Publication 500 (1997).

2. When calculating the flow rate for an existing commercial premise, use this table or metered water usage data from the premise's actual or pro-rata indoor use.

3. WELS-rated water-reduction fixtures and fittings - minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances (e.g. water-conserving automatic clothes washing machines).

4. These flow rates take into consideration the likelihood of a reliable water supply being currently provided to a premises or in the future (e.g. from groundwater, surface water or reticulated water supply, or a tankered water supply).

5. Where Council is satisfied a household or premises is unlikely to be provided with a reliable water supply (e.g. a rural farming property where groundwater or surface water is unavailable or used only for stock) the design flow rates for Onsite Roof Water Tank Supply listed in the most current version of AS/NZS 1547 may be used.

6. Extra water producing fixtures include, but are not limited to, spa baths.

7. Based on Crites & Tchobanoglous (1998) and EPA Publication 500 (1997).

8. For premises such as public areas, factories or offices that have showers and toilets, use the flow rates for 'Premises with showers and toilets' in the calculations.

9. Number of seats multiplied by the number of seatings i.e., may include multiple seatings for breakfast, morning and afternoon teas, lunch and/or dinner.

10. The organic loading rate must be considered as well as the hydraulic flow rate when selecting the most suitable treatment system.

32

Code of Practice Onsite Wastewater Management

Table 5: Setback distances for primary and secondary treatment plants and effluent disposal/irrigation areas [1,2,3,10,11]

Landscape feature or structure	Setback distances (m)		
	Primary treated effluent	Secondary sewage and greywater effluent	Advanced secondary greywater effluent [3]
Building			
Wastewater field up-slope of building [4]	6	3	3
Wastewater field down-slope of building	3	1.5	1.5
Wastewater up-slope of cutting/escarpment [4]	15	15	15
Allotment boundary			
Wastewater field up-slope of adjacent lot	6	3	1
Wastewater field down-slope of adjacent lot	3	1.5	0.5
Services			
Water supply pipe	3	1.5	1.5
Wastewater up-slope of potable supply channel	300	150	150
Wastewater field down-slope of potable supply channel	20	10	10
Gas supply pipe	3	1.5	1.5
Inground water tank [5]	15	4	3
Stormwater drain	6	3	2
Recreational areas			
Children's grassed playground [6]	6	3 [7]	2 [7]
Inground swimming pool	6	3 [7]	2 [7]
Surface waters (dry-stone pit)			
Dam, lake or reservoir (potable water supply) [8,9]	300	150 [7]	150
Waterways (potable water supply) [8,9]	100	100 [8,9]	30
Waterways, wetlands (continuous or ephemeral), non-potable) estuaries, ocean beach at high tide mark; dams, lakes or reservoirs (stock and domestic, non-potable) [8,9]	60	30	30
Groundwater bores			
Category 1 and 2a soils	NA [7]	50 [8]	20
Category 2b to 6 soils	20	20	20
Waterbody			
Vertical depth from base of trench to the highest seasonal water table [4]	1.5	1.5	1.5
Vertical depth from irrigation pipes to the highest seasonal water table [4]	NA	1.5	1.5

1. Distances must be measured horizontally from the external wall of the treatment system and the boundary of the disposal/irrigation area, except for the 'Watertable' category which is measured vertically through the soil profile. For surface waters, the measuring point shall be from the 'bank-full level'.
2. Primary water-based sewerage systems must only be installed in unsewered areas; secondary sewerage systems must only be installed and managed in sewered areas by Water Corporations; secondary greywater systems can be installed in sewered and unsewered areas (see Section 3.12.3).
3. Advanced secondary treated greywater of 10/10/10 standard.
4. The setback distances are conditional on the following requirements (otherwise the setback distances for primary effluent apply):
   - effluent is secondary treated to 20/30 standard as a minimum
   - effluent is applied to land via pressure compensating sub surface irrigation installed along the contour and
   - a maintenance and service contract, with a service technician accredited by the manufacturer, is in place to ensure the system is regularly serviced in accordance with the relevant CA and Council Septic Tank Permit conditions.

39

Appendix 5 Terms and Conditions

Scope of Work
These Terms and Conditions apply to any services provided to you ("the Client") by Strata Geoscience and Environmental Pty Ltd ("Strata"). By continuing to instruct Strata to act after receiving the Terms and Conditions or by using this report and its findings for design and/or permit application processes and not objecting to any of the Terms and Conditions the Client agrees to be bound by these Terms and Conditions, and any other terms and conditions supplied by Strata from time to time at Strata's sole and absolute discretion. The scope of the services provided to the Client by Strata is limited to the services and specified purpose agreed between Strata and the Client and set out in the correspondence to which this document is enclosed or annexed ("the Services"). Strata does not purport to advise beyond the Services.

Third Parties
The Services are supplied to the Client for the sole benefit of the Client and must not be relied upon by any person or entity other than the Client. Strata is not responsible or liable to any third party. All parties other than the Client are advised to seek their own advice before proceeding with any course of action.

Provision of Information
The Client is responsible for the provision of all legal, survey and other particulars concerning the site on which Strata is providing the Services, including particulars of existing structures and services and features for the site and for adjoining sites and structures. The Client is also responsible for the provision of specialised services not provided by Strata. If Strata obtains these particulars or specialised services on the instruction of the Client, Strata does so as agent of the Client and at the Client's expense. Strata is not obliged to confirm the accuracy and completeness of information supplied by the Client or any third party service provider. The Client is responsible for the accuracy and completeness of all particulars or services provided by the Client or obtained on the Client's behalf. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever suffered by the Client or any other person or entity resulting from the failure of the Client or third party to provide accurate and complete information. In the event additional information becomes available to the Client, the Client must inform Strata in writing of that information as soon as possible. Further advice will be provided at the Client's cost. Any report is prepared on the assumption that the instructions and information supplied to Strata has been provided in good faith and is all of the information relevant to the provision of the Services by Strata. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if Strata has been supplied with insufficient, incorrect, incomplete, false or misleading information.

Integrity
Any report provided by Strata presents the findings of the site assessment. While all reasonable care is taken when conducting site investigations and reporting to the Client, Strata does not warrant that the information contained in any report is free from errors or omissions. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from errors in a report. Any report should be read in its entirety, inclusive of any summary and annexures. Strata does not accept any responsibility where part of any report is relied upon without reference to the full report.

Project Specific Criteria
Any report provided by Strata will be prepared on the basis of unique project development plans which apply only to the site that is being investigated. Reports provided by Strata do not apply to any project other than that originally specified by the Client to Strata. The Report must not be used or relied upon if any changes to the project are made. The Client should engage Strata to further advise on the effect of any change to the project. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever where any change to the project is made without obtaining a further written report from Strata. Changes to the project may include, but are not limited to, changes to the investigated site or neighbouring sites, for instance, variation of the location of proposed building envelopes/footprints, changes to building design which may impact upon building settlement or slope stability, or changes to earthworks, including removal (site cutting) or deposition of sediments or rock from the site.

Classification to AS2870-2011
It must be emphasised that the site classification to AS2870-2011 and recommendations referred to in this report are based solely on the observed soil profile at the time of the investigation for this report and account has been taken of Clause 2.1.1 of AS2870 - 2011. Other abnormal moisture conditions as defined in AS2870 – 2011 Clause 1.3.3 (a) (b) (c) and (d) may need to be considered in the design of the structure. Without designing for the possibility of all abnormal moisture conditions as defined in Clause 1.3.3, distresses will occur and may result in non "acceptable probabilities of serviceability and safety of the building during its design life", as defined in AS2870 - 2011, Clause 1.3.1. Furthermore the classification is preliminary in nature and needs verification at the founding surface inspection phase . The classification may be changed at this time based upon the nature of the founding surface over the entire footprint of the project area. Any costs associated with a change in the site classification are to be incurred by the client. Furthermore any costs associated with delayed works associated with a founding surface inspection or achange in classification are to be born by the client. Where founding surface inspections are not commissioned the classifications contained within this report are void.

Subsurface Variations with Time
Any report provided by Strata is based upon subsurface conditions encountered at the time of the investigation. Conditions can and do change significantly and unexpectedly over a short period of time. For example groundwater levels may fluctuate over time, affecting latent soil bearing capacity and ex-situ/insitu fill sediments may be placed/removed from the site. Changes to the subsurface conditions that were encountered at the time of the investigation void all recommendations made by Strata in any report. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any change to the subsurface conditions that were encountered at the time of the investigation. In the event of a delay in the commencement of a project or if additional information becomes available to the Client about a change in conditions becomes available to the Client, the Client should engage Strata to make a further investigation to ensure that the conditions initially encountered still exist. Further advice will be provided at the Client's cost. Without limiting the generality of the above statement, Strata does not accept liability where any report is relied upon after three months from the date of the report, (unless otherwise

provided in the report or required by the Australian Standard which the report purports to comply with), or the date when the Client becomes aware of any change in condition. Any report should be reviewed regularly to ensure that it continues to be accurate and further advice requested from Strata where applicable.

Interpretation
Site investigation identifies subsurface conditions only at the discrete points of geotechnical drilling, and at the time of drilling. All data received from the geotechnical drilling is interpreted to report to the Client about overall site conditions as well as their anticipated impact upon the specific project. Actual site conditions may vary from those inferred to exist as it is virtually impossible to provide a definitive subsurface profile which accounts for all the possible variability inherent in earth materials. This is particularly pertinent to some weathered sedimentary geologies or colluvial/aluvial clast deposits which may show significant variability in depth to refusal over a development area. Rock incongruities such as joints, dips or faults may also result in subsurface variability. Soil depths and composition can vary due to natural and anthropogenic processes. Variability may lead to differences between the design depth of bored/driven piers compared with the actual depth of individual piers constructed onsite. It may also affect the founding depth of conventional strip, pier and beam or slab footings, which may result in increased costs associated with excavation (particularly of rock) or materials costs of foundations. Founding surface inspections should be commissioned by the Client prior to foundation construction to verify the results of initial site characterisation and failure to insure this will void the classifications and recommendations contained within this report. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any variation from the site conditions inferred to exist.

Strata is not responsible for the interpretation of site data or report findings by other parties, including parties involved in the design and construction process. The Client must seek advice from Strata about the interpretation of the site data or report.

Report Recommendations
Any report recommendations provided by Strata are only preliminary. A report is based upon the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete. Where variations in conditions are encountered, Strata should be engaged to provide further advice. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if the results of selective point sampling are not indicative of actual conditions throughout an area or if the Client becomes aware of variations in conditions and does not engage Strata for further advice.

Geo-environmental Considerations
Where onsite wastewater site investigation and land application system designs are provided by Strata, reasonable effort will be made to minimise environmental and public health risks associated with the disposal of effluent within site boundaries with respect to relevant Australian guidelines and industry best practise at the time of investigation. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from:

(i) changes to either the project or site conditions that affect the onsite wastewater land application system's ability to safely dispose of modelled wastewater flows; or
(ii) seepage, pollution or contamination or the cost of removing, nullifying or clearing up seepage, polluting or contaminating substances; or
(iii) poor system performance where septic tanks have not been de-sludged at maximum intervals of 3 years or AWTS systems have not been serviced in compliance with the manufacturers recommendations; or
(iv) failure of the client to commission both interim and final inspections by the designer throughout the system construction; or
(v) the selection of inappropriate plants for irrigation areas; or
(vi) damage to any infrastructure including but not limited to foundations, walls, driveways and pavements; or
(vii) land instability, soil erosion or dispersion; or
(viii) design changes requested by the Permit Authority.

Furthermore Strata does not guarantee septic trench and bed design life beyond 5 years from installation, given the influence various household chemicals have on soil structural decline and premature trench failure in some soil types.

Strata does not consider site contamination, unless the Client specifically instructs Strata to consider the site contamination in writing. If a request is made by the Client to consider site contamination, Strata will provide additional terms and conditions that will apply to the engagement.

Copyright and Use of Documents
Copyright in all drawings, reports, specifications, calculations and other documents provided by Strata or its employees in connection with the Services remain vested in Strata. The Client has a licence to use the documents for the purpose of completing the project. However, the Client must not otherwise use the documents, make copies of the documents or amend the documents unless express approval in writing is given in advance by Strata. The Client must not publish or allow to be published, in whole or in part, any document provided by Strata or the name or professional affiliations of Strata, without first obtaining the written consent of Strata as to the form and context in which it is to appear.

If, during the course of providing the Services, Strata develops, discovers or first reduces to practice a concept, product or process which is capable of being patented then such concept, product or process is and remains the property of Strata and:

(i) the Client must not use, infringe or otherwise appropriate the same other than for the purpose of the project without first obtaining the written consent of Strata; and

(ii) the Client is entitled to a royalty free licence to use the same during the life of the works comprising the project.

Digital Copies of Report
If any report is provided to the Client in an electronic copy except directly from Strata, the Client should verify the report contents with Strata to ensure they have not been altered or varied from the report provided by Strata.

strata
geoscience and environmental

Land Capability Assessment and Onsite Wastewater System Concept Design for

Proposed Rezoning
1 Cobb Road
Longford

April 2014

Important Notes:

The author, Strata Geoscience and Environmental, gives permission for this report to be copied and distributed to interested parties only if it is reproduced in colour and in full including all appendicies. No responsibility is taken for the contents and recommendations of this report if it is not reproduced as requested.

Strata Geoscience and Environmental reserves the right to submit this report the relevant regulatory agencies where it has a responsibility to do so.

1. Introduction

Strata Geoscience and Environmental Pty Ltd was commissioned to perform a limited scope Land Capability Assessment for:

Table 1 : Site and Client Details	
Client/Agent	Ingmar Kappenberger
Site Address	1 Cobb Road Longford (see Site Plan)
Nature of Development	Proposed Rezoning with 6000m^2 min lot size

The investigation was conducted based upon specific development plans supplied by the client (Figures 2&3) and with reference to the following documents:

1. EPA Victoria (2013) Code of Practice for Onsite Wastewater Management
2. Australian Standard AS1547-2012 Onsite Wastewater Management

The investigation also follows the principles outlined in:

1. MAV & DSE 2006 (as amended) Model LCA Report
2. AS1726-1993 Geotechnical Site Investigations.

2. Description of the Development

Table 2 Site Description	
Site Address	1 Cobb Road Longford
Owner/Developer/Agent	Ingmar Kappenberger
Postal Address	Unknown
Council Area	Wellington
Zoning	Farming (Rezoning to Rural Living Proposed)
Allotment Size	Min 6000 m^2
Domestic Water Supply	Onsite roof water collection
Anticipated Wastewater Load	Up to 1440 L/D (See Section 6)
Availability of Sewer	Unsewered and unlikely to be unsewered in mid term

3. Site Plans and Key Site Features

S Nielsen (MEngSc, CPSS-2) undertook a site investigation on 1 April 2014. A range of soil and landscape features were assessed for their potential to impact upon land application area siting and level of wastewater treatment required over the site. Figures 1-2 give locality and proposed site plans respectively whilst Table 3 summarises key features as in relation to effluent management over the site.

Figure 1 Locality Plan

Figure 2 Proposed Site Plan

Table 3 Site Features	
Climate	The nearest weather station with long term data is the East Sale Airport Station with a mean annual rainfall of 599.5 mm (BOM 2014) and current evaporation data. The region has a near Mediterranean climate with maximum temperatures and minimum rainfall in the summer.
Exposure	The site is relatively unshielded with exposure to winds which predominate from the NW/SW directions
Vegetation	Pasture.
Landform	Hillslope
Slope	Slight slopes
Fill	No fill evident, minor fill will be created with bulk earthworks associated with the development
Rocks and Rock Outcrops	No signs of near surface rock over the site.
Erosion Potential	No evidence of erosion, erosion potential considered low
Surface Water	Dam approximately 50m
Flood Potential	<1:100 AEP
Stormwater Run-on and Upslope Seepage	Variable over proposed lots.
Groundwater	No groundwater was encountered throughout site reconnaissance and is likely to be several meters under the ground surface contained within rock. Monitoring bore at bottom of the property in road reserve.
Site Drainage and Subsurface Drainage	The site receives minimal run on and does not show signs of springs or other areas of ephemeral subsurface water retention. Given clay subsoils perched watertable may exist in some areas of the site
Recommended Buffer Distances	Given the significant land area, all buffer distances as stipulated in EPA (2013) are achievable
Available Land Application Area	There is surplus space to land application area requirements (including reserves).

4. Soil Assessment and Constraints

Soils have been assessed for their suitability for onsite wastewater management through both desktop review and intrusive field investigation.

4.1 Desktop Review

No published information could be obtained for the subject site.

4.2 Field Investigation

Field investigation consisted of drilling one soil bore per proposed lot using a Dando Terrier Tracked percussion drilling rig driving 50mm soil probes to 1.5m or refusal on rock with retrieval of undisturbed soil cores for logging, sampling and testing for pH, EC and Emmerson Aggregate Class using a handheld meter to measure 1:5 soil:water solutions.

Bore logs and soil permeability data/soil dispersion test results (where relevant) are presented in Appendix 1. As a general comment soil appeared to be relatively uniform across the site and geotechnical drilling revealed deep clay soils associated with Quaternary alluvial deposits.

With reference to the classification system of Isbell (2002) soils are classified as Brown/Yellow **Chromosols** being structured clays soils which exhibit a subsoil pH >5.5. Soils had duplex profiles with soils depth grading to silty clays at depths below approximately 100-300 mmbgs. Soils are moderately structured and will show the existence of vertical macropores throughout drier periods, significantly increasing their unsaturated hydraulic conductivities. These soils will show a high cation exchange complex for the absorption of nutrients, are likely to have dispersive phases and a slightly acidic pH trend.

Table 4 Typical Soil Characteristics Over Proposed Subdivision*	
Soil Depth (m)	1.5m+ (variable)
Depth to Water Table (m)	1.5-2.5m+
Coarse Fragments (%)	0-5%
Soil Permeability and Design Loading Rates	Approximately 0.1-0.5m/d DIR of 3mm/d appropriate

	Topsoils	Subsoils
Description	Silty SAND (SM)/Clayey SAND (SC)	Clayey SILT (ML)/Silty CLAY (CL)
Soil Category (AS1547-2011)	2	5
DIR (mm/d)/DLR (L/D)	30	3
pH	7.2	5.8
EC	-	-

*See individual bore logs in Appendix 1 for further lot specific details

5. Land Capability Assessment Matrix

Referring to MAV & DSE (2006) and EPA Victoria Publication 746.1 Land Capability Assessment for Onsite Domestic Wastewater Management, the following LCA assessment table has been produced for the site.

Table 5 Land Capability Assessment Matrix

Land Features	Very Good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)	Site Class
General Characteristics						
Site Drainage	No visible signs of dampness	Moist soil, no standing water in pit/bore		Visible signs of dampness	Water ponding on surface	2
Runoff	None	Low	Moderate	High – need for diversionary structures	Very High – diversion not practical	3
Flood Levels	Never		<1 in 100	>1 in 100 to < 1 in 20	<1 in 20	3
Proximity to Watercourses	>60m				<60m	5
Slope %	0-2	2-8	8-12	12-20	>20	3
Landslip	No actual or potential failure		Low potential for failure	High potential for failure	Present or past failure	1
Groundwater (seasonal depth, m)	>5	5-2.5	2.5-2.0	2.0-1.5	<1.5	5
Rock Outcrop (% of land surface)	0	<10%	10-20%	20-50%	>50%	1
Erosion Potential	No erosion potential	Minor	Moderate	High	Severe Erosion Potential	3
Exposure	High sun and wind exposure		Moderate	Low sun and wind exposure		1
Landform	Hilicrests, Convex side slopes and plains		Concave side slopes and footslopes		Floodplains and incised channels	3
Vegetation Type	Turf and Pasture				Dense forest with little understorey	1
Average Rainfall (mm/yr)	<450	450-650	650-750	750-1000	>1000	2
Pan Evaporation (mm/yr)	>1500	1200-1500	1000-1250		<1000	3
Fill	No fill		Fill present			1

Table 5 Land Capability Assessment Matrix (cont)						
Land Features	Very Good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)	**Site Class**
Soil Profile Characteristics						
Soil Permeability Category (AS1547-2012)	2 and 3	4		5	1&6	**4**
Profile Depth	>2	1.5-2.0	1.5-1	1-0.5	<0.5	**2**
Presence of Mottling	None				Extensive	**1**
Coarse Fragments %	<10%	10-20%	20-40%		>40%	**1**
pH	6-8		4.5-6		<4.5, >8	**3**
Emerson Test	4,6,8	5	7	2,3	1	**4**
Electrical Conductivity (dS/m)	<0.3	0.3-0.8	0.8-2	2-4	>4	**3**
Sodicity (ESP%)	<3		6-8	8-14	>14	**3**
Overall Site Rating						**2.5**

The generalised land capability class over the site is between Rating 2-3. This indicates that primary treatment systems may be a suitable over the site however the likelihood of low permeability soils with possible dispersive phases makes secondary treatment with irrigation preferable to maximise the design life of land application areas. See Section 6 for specific system recommendations.

6. Proposed Onsite Wastewater Concept System Designs

6.1 General System Recommendations

Given the results of the LCA, the following recommendations are made for a suitable wastewater treatment system:

- Given low permeability subsoils with possible dispersive phases over the site, secondary treatment with irrigation will maximise design life are suitable concept designs.

Adoption of designs considering these recommendations will limit the public and environmental health risks associated with effluent treatment and disposal over each lot and provide for a sustainable long term solution to effluent treatment and land application.

6.2 Onsite Wastewater Flow and Land Application Area Modelling

For modelling purposes it is proposed that up to a seven bedroom equivalent dwelling with provision for future mains water availability will be constructed over each lot. Each dwelling is assumed to have standard water savings fixtures and a design flow allowance under EPAV 2013 of 180 L per person per day. Therefore the calculated effluent flows and required disposal area for each lot is as follows:

6.2.1 Flow and Land Application Area Requirement

Wastewater System Modeling	
Proposed Number of Bedrooms	7
Number of Equivalent Persons (EP) (No bedrooms plus 1)	8
Water Source (Tank/Reticulated Mains)	R
Water Saving Fixtures (None/Standard/Full)	S
Total Daily Loading	1440
Soil Category (AS1547-2012)	5
Indicative Permeability (m/d)	0.5
Design Irrigation Rate/ Design Loading Rate (DIR/DLR)	3
Required Effluent Dipsosal Area (m^2)	480

As a result of these calculations, at least **480 m^2** of area is required dispose of these flows on a daily basis via irrigation.

6.2.2 Water Balance and Land Application Area Modelling

Please refer to Appendix 2 for the water balance modelling for each lot based upon VLCAF (2013). The nominated area method is used to calculate the area required to balance all inputs and outputs, without the need for wet weather storage. As a result of these calculations, at least **694 m^2** of area is required to achieve zero wet weather storage.

6.2.3 Nutrient Balance and Land Application Area Modelling

Please refer to Appendix 2 for the nutrient balance modelling (Nitrogen and Phosphorus) for each lot based upon VLCAF (2013). The methodology aims to ensure that the LAA is of sufficient size to ensure all nutrients from the applied effluent are assimilated by soils and vegetation. As a result of these calculations, at least **478 m^2** of area is required to achieve sustainable assimilation of N and P over the nominated system design life.

BASED UPON THE ABOVE MODELLING THE MAXIMUM MODELLED LAA REQUIREMENT IS 694 m^2 FOR EACH LOT FOR SECONDARY TREATED EFFLUENT BASED UPON THE WATER BALANCE MODEL.

6.2.4. Alternative Loadings and Land Application Area Modelling

Given that the water balance model produces the most conservative LAA, it has been used to calculate the subsurface drip irrigation area for a range of loadings based upon the "Number of bedrooms plus 1" model at 180L/person/day. Results are detailed in Table 6 below:

Table 6 LAA Requirement for Various Dwelling Sizes

Number of Bedrooms	Theoretical Loading (L/day)	Required LAA (m^2 of irrigation)
4	900	434
5	1080	521
6	1260	607
7	1440	694

6.5 Concept System Designs

6.5.1 Treatment Systems

Given the above modelling with a maximum of a seven bedroom equivalent dwelling being constructed the following treatment systems would be appropriate:

- Min DN100 gravity fed sewer pipe
- Approved commercially available AWTS system with minimum daily flow capacity of 1500L.

6.5.2 Land Application Areas

The land application areas could consist of:

- Min 694 m^2 of subsurface irrigation with appropriate buffer zones
- Provision for 50% reserve area (must remain free from development)
- Given the relatively minor slopes over the site, upslope interceptor drainage will not likely be required.

6.5.3 Provision of Adequate Setback Distances and Reserve Area

Given the minimum land application areas modelled above combined with the minimum proposed lot size of 0.6 Ha, setback distances complying with the minimum requirements of EPA Vic (2013) are achievable (see Figure 2 and Appendix 4). Further more there is adequate room for the modelled reserve requirements as modelled above.

7. Conclusions and Further Recommendations

In conclusion the following comments and recommendations are made:

- The LCA has found that the generalised capability rating is 2-3 across all lots and given a minimum lot size of 0.6 Ha each proposed lot is suitable for secondary effluent disposal.
- Given low permeability subsoils with possible dispersive phases over each lot, secondary treatment with irrigation will maximise design life and is likely to be capital cost competitive.
- The maximum wastewater flow rate (MWWF) modelling shows that the generated flows for a maximum 7 bedroom equivalent dwelling on each lot is likely to be no more than 1440 L/day.
- Modelled flows will likely require a land application area comprising:
    - Min 694 m^2 of subsurface drip irrigation with appropriate buffer zones)
    - Provision for 50% reserve area (must remain free from development)
- It is likely that peak flows associated with the modelled development on each lot should be within the buffering capacity of proposed systems both in terms of the system sizing as well as for their acceptance into the disposal area.
- Given the minimum lot size of 0.6 ha adequate setback distances and reserve provisions can be met.
- It is likely that earthworks and drainage installation associated with future site development will alter conditions of the site and as a result the recommendations of this report MUST be reconfirmed after these works have occurred. Stormwater diversion or interceptor drain installation may be appropriate at this time.
- This modelling and designs contained within this report are concepts only and do not constitute lot specific detailed designs. These can be produced when lot specific development plans are available.

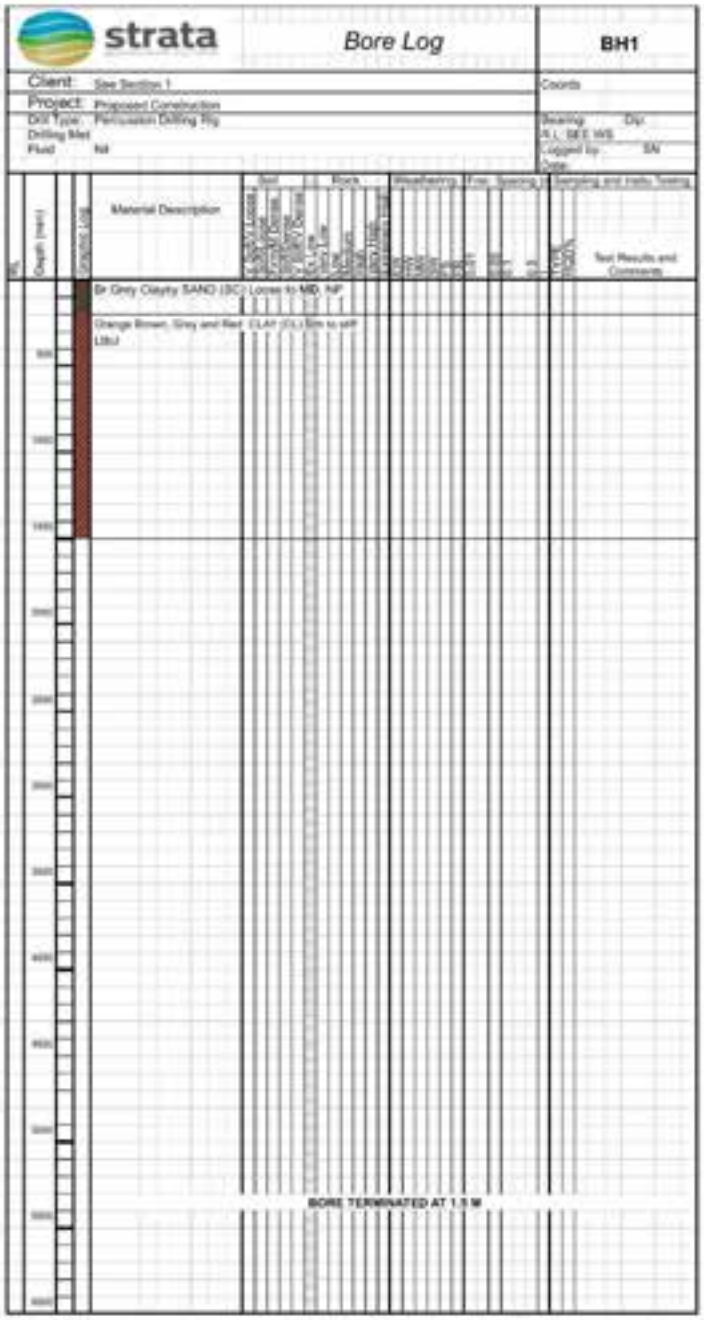
- **If the prescriptions of this report are followed the likely human and environmental health risks associated with effluent disposal over the site is low subject to detailed design of each wastewater water system.**

S Nielsen MEngSc CPSS-2
Director
Strata Geoscience and Environmental Pty Ltd
P: 0413545358
E: sven@strataconsulting.com.au
W: www.strataconsulting.com.au

8. References

- AS1726-1993- Geotechnical Site Investigations
- AS 1547-2012 Onsite Wastewater Disposal
- Bureau of Meteorology Website- Monthly Climate Statistics
- EPA (2013) Vic Code of Practice for Onsite Wastewater Management
- MAV & DSE 2006 (as amended) Model LCA Report
- VLCAF (2013) Victorian Land Capability Assessment Framework – Calculation of Water and Nutrient Balances
- Isbell (2002) Australian Soil Classification (Revised Edn) CSIRO Publishing

Appendix 1 Bore Log



Appendix 2 Water and Nutrient Balance Method Calculations (after VLCAF 2013)

Site Address:	**1 Cobb Road Longford**				
Date:	*####*	**Assessor:**	Nielsen		
INPUT DATA					
Design Wastewater Flow	Q	1,440	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)	
Design Irrigation Rate	DIR	3.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)	
Nominated Land Application Area	L	694	m²		
Crop Factor	C	[illegible]	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type	
Rainfall Runoff Factor	RF	1	unitless	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff	
Mean Monthly Rainfall Data	Site			BoM Station and number	
Mean Monthly Pan Evaporation Data	Site			BoM Station and number	

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R		mm/month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	599
Evaporation	E		mm/month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1453.3
Crop Factor	C		unitless	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	182	141	113	82	27	25	26	54	87	117	111	150	1086.46
Percolation	B	DIRxD	mm/month	93.0	84	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1095.0
Outputs		ET+B	mm/month	275.3	225.38	206.1	172.4	119.5	115.3	122.2	146.5	176.9	209.6	200.9	243.3	2181.5
INPUTS																
Retained Rainfall	RR	RxRF	mm/month	45	43	45	48	52	48	41	45	52	58	58	54	599
Applied Effluent	W	(QxD)/L	mm/month	64.3	58.1	64.3	62.2	64.3	62.2	64.3	64.3	62.2	64.3	62.2	64.3	757.6
Inputs		RR+W	mm/month	109.3	101.1	110.3	110.2	116.3	110.2	105.3	110.3	114.2	122.3	120.2	118.3	1356.2
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-175.0	-124.3	-92.7	-62.1	-3.2	-5.0	-16.8	-36.2	-62.7	-87.3	-75.6	-125.0	
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum Storage for Nominated Area	N		mm	0.00												
	V	NxL	L	0												
LAND AREA REQUIRED FOR ZERO STORAGE			m²	188	221	284	414	481	484	500	444	412	284	313	232	
MINIMUM AREA REQUIRED FOR ZERO STORAGE:				694.5	m²											

Nutrient Balance

Site Address:	**1 Cobb Road Longford**						
SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON MOST LIMITING NUTRIENT BALANCE						479	m²
INPUT DATA[1]							
Wastewater Loading			**Nutrient Crop Uptake**				
Hydraulic Load	1440	L/day	Crop N Uptake	220	kg/ha/yr	which equals 60.27	mg/m²/day
Effluent N Concentration	25	mg/L	Crop P Uptake	50	kg/ha/yr	which equals 13.70	mg/m²/day
% N Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal	**Phosphorus Sorption**				
Total N Loss to Soil	7200	mg/day	P-sorption result	240	mg/kg	which equals 3360	kg/ha
Remaining N Load after soil loss	28800	mg/day	Soil Bulk Density	1400	kg/m³		
Effluent P Concentration	8	mg/L	Depth of Soil	1	m		
Design Life of System	50	yrs	% of Predicted P-sorp.[2]	0.5	Decimal		

NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer			Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)		
Nitrogen	479	m²	Nominated LAA Size	694	m²
Phosphorus	328	m²	Predicted N Export from LAA	-4.70	kg/year
			Predicted P Export from LAA	-1.93	kg/year
			Phosphorus Longevity for LAA	109	years
			Minimum Buffer Required for excess nutrient	0	m²

PHOSPHORUS BALANCE

Using the nominated LAA Size

Nominated LAA Size	694	m²			
Daily P Load	0.012	kg/day	→ Phosphorus generated over life of system	185.120	kg
Daily P Uptake	0.010	kg/day	→ Phosphorus vegetative uptake for life of system	0.125	kg/m²
Measured P-sorption capacity	0.336	kg/m²			
Assumed P-sorption capacity	0.168	kg/m²	→ Phosphorus adsorbed over 50 years	0.168	kg/m²
Site P-sorption capacity	116.592	kg	→ Desired Annual P Application Rate	0.134	kg/year
			which equals	0.000	kg/day
P-load to be sorbed	0.730	kg/year			