Miriam Vale Shire Council
Planning Scheme Policy No 2

Engineering Standards for Self Assessable Development

1.0 COMPLIANCE WITH THE STANDARDS

This Schedule details the relevant engineering standards for self-assessable development within the Shire. Development that is self assessable is identified in Part 3 of the Planning Scheme.

Development that is consistent with the relevant standards identified below complies with Schedule 1 - Engineering Standards for Self Assessable Development.

Where development does not comply with the acceptable solutions in the Planning Scheme and the relevant standards identified below, it becomes Code Assessable development and will require an application to Council

Explanatory Note:
Please refer also to Part 1 of the Planning Scheme which describes the processes for self assessable development and code assessable development.

Note also that a Development Permit may also be required for Operational Works.

2.0 RELEVANT STANDARDS FOR LAND USES

For each type of self assessable development, Table 2.1 below identifies the applicable engineering standards.

Table 2.1 Engineering Standards Applicable to Self Assessable Development

LAND USE TYPE (as defined in Part 1 of The planning Scheme)	WATER SUPPLY & SEWERAGE Refer Section 3.1	FLOOD MANAGEMENT Refer Section 3.2	SITE ACCESS Refer Section 3.3
Dwelling House	√	√	√ (Access and Driveways section only)
Home Occupation	√	√	√ (Access and Driveways section only)
Commercial Premises – if not involving existing buildings1	√	√	√
Shop – if not involving existing buildings1	√	√	√
Local Shop – if not involving existing buildings1	√	√	√
Public Utility	×	√	√
Community Facilities	√	√	√
Indoor Recreation	√	√	√
Outdoor Recreation	√	√	√
Park	×	√	×
Agriculture	×	×	×
Forestry	×	×	×
Grazing	×	×	×
Stockyard	×	√	√

1 Note: If the use involves existing and approved buildings, there are no relevant Engineering Standards.

3.0 ENGINEERING STANDARDS FOR SELF ASSESSABLE DEVELOPMENT

3.1 Water Supply and Sewerage Standards

3.1.1 Relevant Standards

Water Supply Requirements

A reticulated water supply is required, where the site is included in the Defined Water area for Agnes Water, 1770, Bororen and Miriam Vale as shown on the attached Maps.

Where the site is located outside the Defined Water area for Agnes Water, 1770, Bororen and Miriam Vale, the provision of water may be via rainwater storage tanks (as per section 3.1.3).

Sewerage Supply Requirements

A reticulated sewerage system is required, where the site is included in the 'Defined Sewer Area of Agnes Water and 1770 as shown on the attached maps.

Where the site is located outside the Defined Sewer area of Agnes Water and 1770, an on site waste water treatment and disposal system will be required (rather than a reticulated sewerage system).

This section specifies the relevant standards and potential information requirements for the provision of:

Explanatory Note:
For proposals involving Integrated Water Management, proposals are to address the requirements in Planning Scheme Policy No 1 – Engineering Standards for Development Works (Integrated Water Management).

- a reticulated water supply system (where required) and;
- the provision of an on site water supply (where allowed)

3.1.2 Standards for Reticulated Water Supply / Reticulated Sewerage / Waste WaterTreatment and Disposal

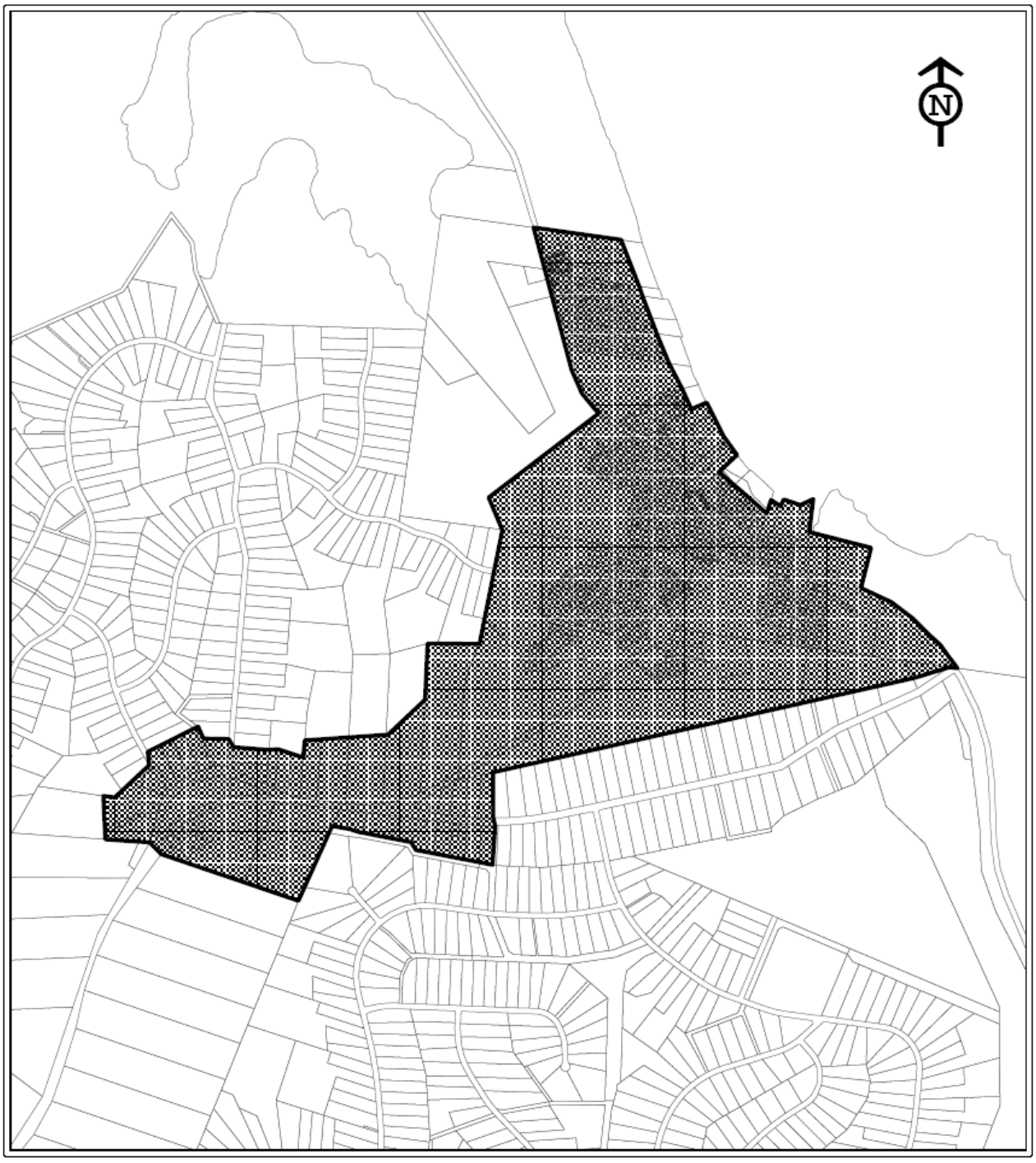
The key standards applied for Reticulated Water Supply, Reticulated Sewerage and On-Site Waste Water Treatment and Disposal are the:

- Miriam Vale Shire Council Water Supply and Sewerage Standard; and the
- Water Services Association of Australia (WSAA) National Codes.

3.1.3 Standards for On-Site Water Supply

All Class 1-9 buildings (as defined in the Building Code of Australia), are to be provided with rain water storage tanks in accordance with Appendix A- Policy for Rainwater Storage Tanks.

MIRIAM VALE SHIRE COUNCIL
AGNES WATER - WATER & SEWERAGE DEFINED AREAS
Adopted 16 May 2005



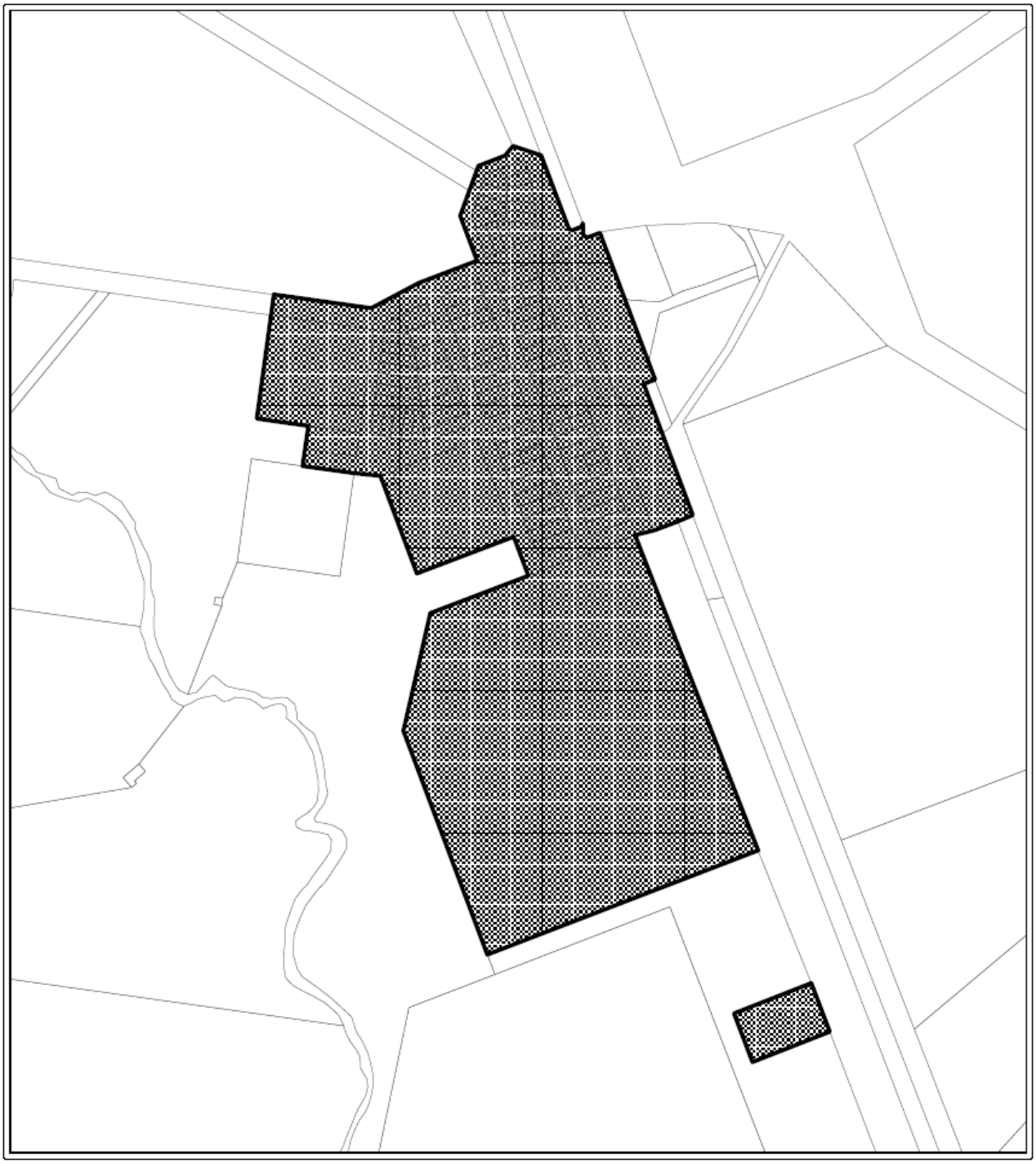
Miriam Vale Shire Council
36 Roe Street
Miriam Vale
QLD 4677
Ph 07 4974 6222
Fx 07 4974 6299
info@miriamvale.qld.gov.au
www.miriamvale.qld.gov.au

MIRIAM VALE SHIRE COUNCIL
SEVENTEEN SEVENTY - WATER & SEWERAGE DEFINED AREAS
Adopted 16 May 2005

Miriam Vale Shire Council
36 Roe Street
Miriam Vale
QLD 4677
Ph 07 4974 6222
Fx 07 4974 6299
info@miriamvale.qld.gov.au
www.miriamvale.qld.gov.au

Defined Water Area - Bororen

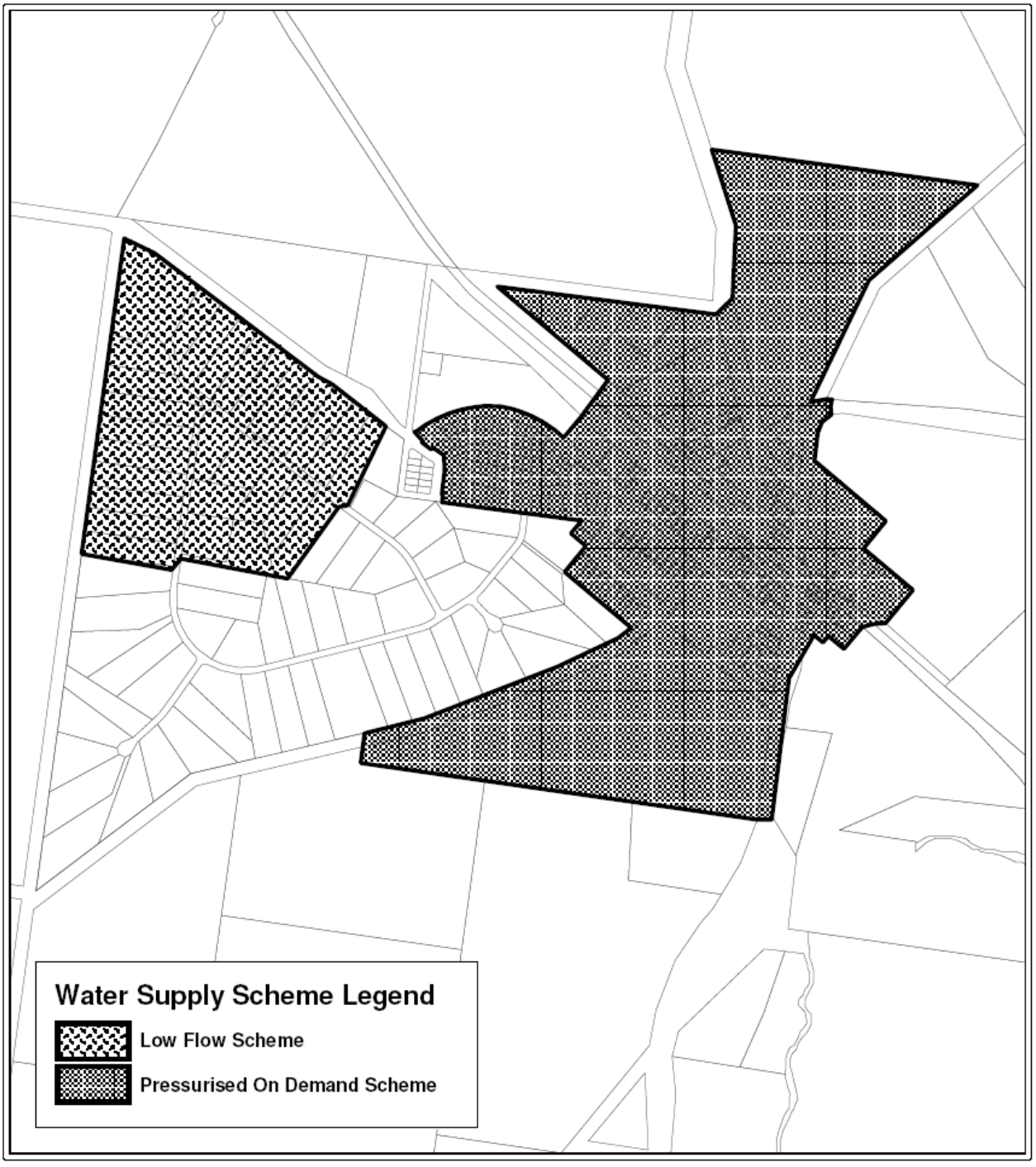
Date: April 26 2005



Miriam Vale Shire Council
36 Roe Street
Miriam Vale
QLD 4677
Ph 07 4974 6222
Fx 07 4974 6299
info@miriamvale.qld.gov.au
www.miriamvale.qld.gov.au

Defined Water Area - Miriam Vale

Date: June 2 2005



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3.1.4 Other Water and Sewerage Infrastructure Requirements

Where buildings or other structures are proposed to be constructed over or adjacent to Council's water supply or sewerage infrastructure, the infrastructure is to be protected from physical damage, and ongoing necessary access is to be provided to Council.

Buildings or other structures are to provide at least 1.5 metres horizontal clearance from the outermost projection of the structure to the nearest edge of any existing or proposed infrastructure.

Proposals to construct within 1.5 metres of infrastructure – 150mm diameter or less

1. The Water Agency's consent is required to construct within 1.5 metres of water supply or sewerage infrastructure.

The Water Agency may consider giving consent to construct within 1.5 metres of the infrastructure subject to any or all of the following requirements:

- Submission of a structural footing design prepared and certified by a registered professional engineer, demonstrating that the building or other structure does not impose any load on the infrastructure.
- Any footings of the building or structure which are within the 'zone of influence' (as shown on Figure 1), of the infrastructure are to extend at least 300mm below Line B (refer Figure 1) either with piers or a continuous footing located a minimum horizontal distance of 1.0 metre clear of the pipe.
- Replacement of the existing pipe work with DICL (Ductile Iron Cement Lined) or an approved uPVC (Unplasticised Polyvinyl Chloride) pipe material to ensure a future life in excess of 50 years.
- Design of the building or structure to permit its easy removal for access to Miriam Vale Shire Council's infrastructure if required.

Proposals to construct within 1.5 metres of infrastructure - larger than 150mm diameter.

For infrastructure larger than 150mm diameter, building is not to occur within 1.5 metres of infrastructure. The infrastructure is to be relocated or the building designed to provide a minimum 1.5 metre horizontal clearance from the outermost projection of the structure to the nearest edge of the pipe.

Proposals to construct 1.5 metres or greater from infrastructure

The foundations of any structure, located 1.5 metres or a greater horizontal distance from water supply or sewerage infrastructure, but within Zone B (as shown on Figure 1) are to extend a minimum 300mm below Line B either with piers or a continuous footing.

There are no requirements for structures outside the 'zone of influence' (as shown on Figure 1).

Consent from Water Agency not required

The following structures do not require consent from the Water Agency:

- Any structure located 1.5 metres, or a greater horizontal distance, from water supply or sewerage infrastructure;
- Retaining walls less than 1.0m high; and
- Demountable garden sheds with wall lengths of less than 2.5m.

Other considerations

Excavation or filling is not to be undertaken over or adjacent to water supply or sewerage infrastructure without the consent of the Water Agency. Where consent is obtained, any affected maintenance holes or fittings are to be adjusted as required.

Ground surface levels must not be altered in a way causing ponding of water over any maintenance hole.

A sewer connection point must have:

- A clear area of at least 2m x 2m maintained around the sewer connection;
- A minimum horizontal clearance of 1m from any building;
- A minimum unobstructed vertical clearance of 2.4m; and
- Unrestricted access must be maintained to water supply and sewerage infrastructure at all times.

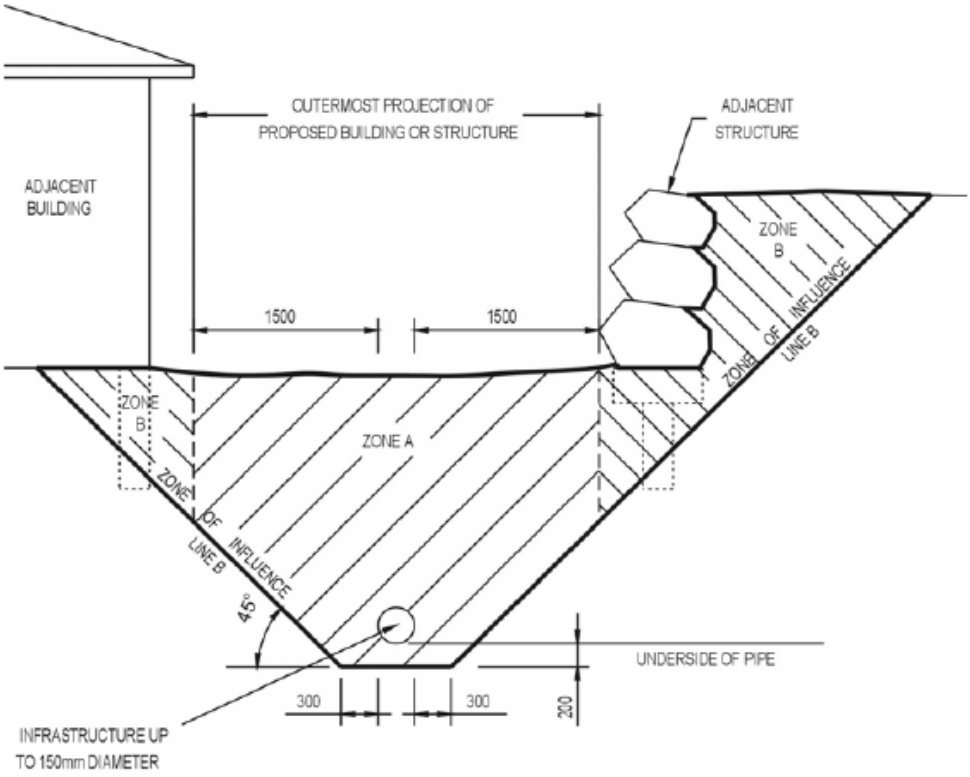


FIGURE 1

3.2 Flood Management Standards

Explanatory Note:
Prior to construction of an access driveway a "Permit to Construct a Driveway" is required. Contact Council's Customer Service Centre for a copy of the Application for a "Permit to Construct a Driveway".

3.2.1 Flood Immunity for Land Uses and Lots

Where in the Rural and Rural Character Zones

For areas in the Rural Zone, a minimum of 600m2 of each lot is to be located above the 100 year ARI flood level, and suitable for a building platform.

For areas in the Rural Character Zone, where portions of the allotment are below the 100 year ARI flood level, a drainage easement may be required by Council.

Access to habitable buildings in the Rural Character Zone and the Rural Zone is to ensure that a low hazard criteria is met. The safety of the site can be determined by the following equation for calculating Low Hazard:

Low Hazard:

$D + 0.3V \leq 0.8$

where:

D = depth of floodwater in 100 year ARI event (m) and must be less than 0.8m and

V = velocity of floodwater in 100 year ARI event (m/s) and must be less than 2m/s

3.2.2 Flood Immunity for Certain Infrastructure

Emergency Services and Residential and Commercial Land Uses

Lot levels for the following activities (as defined in Part 1 of the Planning Scheme) are to be above the 100 year ARI flood level:

- Community Facilities (including all defined uses such as emergency services);
- Hospital;
- Residential uses, being Dwelling House and Home Occupation;
- Commercial uses, being Commercial Premises, Local Shop and Shop; and
- Indoor Recreation.

Mechanical and Electrical Works

Mechanical and electrical works are to be located above the 100 year ARI flood level.

Roads

The flood immunity for roads is to be provided in accordance with *the Queensland Urban Drainage Manual* (QUDM) except for the Bruce Highway, which is to be above 100 year ARI flood levels.

Agriculture and Farming Activities

Agriculture, Forestry, Grazing and Stockyard activities (as defined in Part 1 of the Planning Scheme) in the Fred Haig Dam Water Catchment (as defined on the Planning Scheme Maps) are confined to areas above the 10 year ARI flood level.

3.2.3 Minimum Building Floor Levels

For Dwelling House and Home Occupation:

Buildings are to have a minimum floor level of at least:

(a) 2.5m AHD to provide protection from storm surge events;

(b) 400mm above the 100 year ARI flood level or 600mm above the highest recorded flood level which ever is greater.

(Explanatory Note: Enquiries regarding Miriam Vale Shire Council's historical flood records may be made through the customer service centre).

For all other building types:

Buildings are to have a minimum floor level of at least:

- 2.5m AHD to provide protection from storm surge events.

AND

- Floor levels of Community Facilities (being emergency services) and Hospitals are a minimum of 1000mm above the 100 year ARI flood level or 1000mm above the highest recorded flood level in areas where no design flood levels have been determined.

OR

- Floor levels for Commercial Premises, Shop and Local Shop are a minimum of 400mm above the 100 year ARI flood level and at least 600mm above the highest recorded level for the site. Where design flood levels have not yet been determined the floor level is to be a minimum of 600mm above the highest recorded flood level.

AND

- Openings to basement carparks have a minimum level equal to the requirements stated above.

3.3 Site Access Standards

Explanatory Note:
Prior to construction of an access driveway a "Permit to Construct a Driveway" is required. Contact Council's Customer Service Centre for a copy of the Application for a "Permit to Construct a Driveway".

General

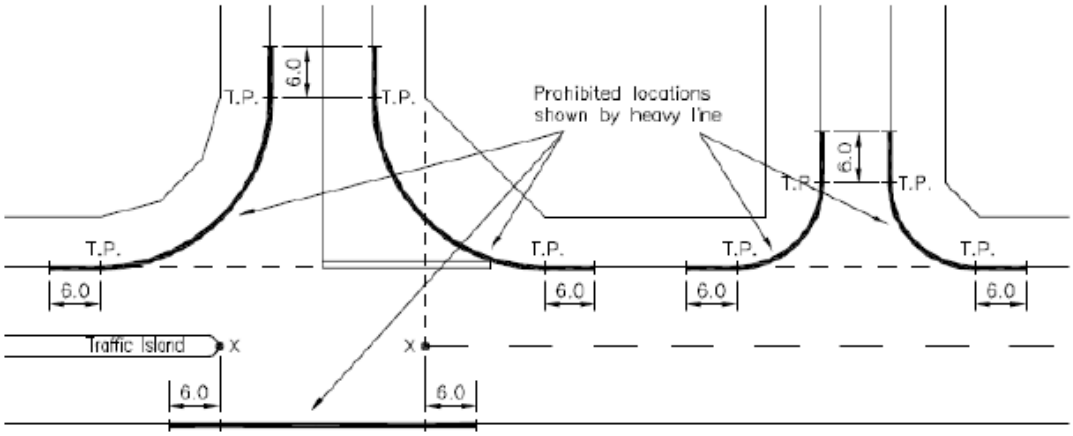
Only one site access driveway is to provide access to an individual site. Additional driveways may occur for Commercial Premises, Shop or Local Shop.
Site access driveways will be to the more minor road where a development site has frontage to two or more roads (refer to the road hierarchy shown on the Planning Scheme Maps).
Site access driveways will be required to accommodate light vehicles and service vehicles.

3.3.1 Access and Driveways

Construction of accesses and driveways is required on lots with steep slopes to building sites, on lot frontages with visibility constraints and on access strips or access easements serving allotments.
Access to lots is to be in accordance with Australian Standard 2890, MVSC Engineering Policy 3.18 or 3.19 (as attached) with driveways meeting the natural surface level at the front property boundary. The cross section of the verge is to conform to Queensland Streets as outlined in sections 2.8, 8.8, 9.8 and 10.8 of Queensland Streets.

Driveway Location

Site access driveways and their splays at the kerb line are not to extend beyond the frontage of the site (normal to the frontage) unless a joint access driveway is proposed.
Site access driveways are to be located so that driveways do not occur as shown in **Figure 2** Undesirable Locations for Driveways.



DIMENSIONS IN METRES

Note: On the above plan the prohibited driveway locations are indicated by the heavy lines and are defined in AS 2890.1

Figure 2 Undesirable Locations for Driveways

Road Planning Considerations

Access to Arterial or Sub-arterial roads (as identified on the Planning Scheme Zoning Maps) will be restricted to left-turns only.

Where access is restricted to left turns, such turns will be controlled by existing medians or through the construction of a raised concrete or appropriately landscaped median. Where it is impossible to provide a median, turns will be restricted by a combination of driveway geometry, turn prohibition signs and pavement markings.

Intersection spacing on major roads is to be in accordance with Section 4 of the Planning Scheme Policy – Engineering Standards for Development Works and the requirements of Austroads Guide to Traffic Engineering Practice Part 5, Section 5.

Where right turn ingress is proposed from Arterial and Sub-arterial roads, a separate right turn lane is required. Turn lanes are to be designed in accordance with the DMR Road Planning & Design Manual. The minimum dimensions of a left turn or right turn lane in constrained circumstances is a 20 metre taper plus a 30 metre parallel storage lane.

Constructed road widening and dedication of land may be necessary as a result of median construction or widening, or the provision of right or left turn lanes associated with the proposed driveway.

Sight Distance Requirements

Sight distances at driveways are to comply with the requirements of the Department of Main Roads - Road Planning & Design Manual. Reduced sight distances may be provided where there is no practical alternative and where specific traffic design or control measures have been taken to minimise hazards.

Sight distance requirements may require the tapered set-back of buildings or landscaping from the property boundary.

Further, the opening in a building constructed on the front alignment are to be set back at least 2.0 metres from each side of the driveway to allow drivers to have minimum visibility of pedestrians on the footpath.

Service vehicles, particularly large trucks require substantially longer gaps in traffic to complete turning, crossing and merging manoeuvres. Where truck volumes are significant, sight distance requirements are to be increased to take account of site-specific circumstances.

3.3.3 Provisions for Queues

Queues at Driveways

Queue lengths are to be measured along the driveway from the property boundary to the first parking space or internal intersection. Queues may occur adjacent to low turnover parking spaces in some circumstances. Each queued vehicle is to be assumed to occupy a space 6.0 metres long.

The length of a design queue is dependent on a number of factors, including:

- The form of control at the driveway intersection,

- The nature of the external road and the traffic volumes carried,
- The size of the car park and the turnover rate,
- The design of the internal traffic and parking system.

When queue lengths can reasonably be calculated using conventional intersection analysis techniques, the design queue is to be the peak design period 95th percentile queue. In the absence of appropriate queue length calculations, the minimum queue provision on entry and exit are to be as set out in **Table 3.3**. Greater queue provisions may occur in some cases.

Table 3.3 Design Queue Length Requirements

Nominal Car Park Capacity	Design Queue Length
5 - 20	1
21 - 50	2
51 - 100	3
101 - 150	4
151 - 200	5

The minimum queue provision for any driveway is to be one vehicle at entry and one vehicle at exit.

If a site has more than one driveway, the queue provisions are to be calculated on the basis of the proportion of the site served by each driveway.

Gated and Controlled Driveways

These queue requirements are based on uncontrolled entry and exit with no gates. At sites with security gates, the design queue is to be accommodated between the property boundary and the gate, and with provision for a light vehicle to turn on the site if declined entry.

Internal Queue Provisions

Queuing lanes are to be at least 3.0 metres wide (when straight) with separate provision for pedestrian service where necessary, and geometry is to facilitate easy ingress and egress. Where queue areas are curved, the queue lanes are to be widened based on the turning paths of 99th percentile cars.

APPENDIX A

POLICY FOR RAINWATER STORAGE TANKS

Intent of Policy

The intent of this policy is:

- to supplement Council's reticulated water supply by 50 litres/EP/day using stored rainwater and to manage rainwater collected in domestic tanks in a way that maximises the efficiency of the storage, intended use and quality of water supplied from these tanks.

Policy

Rain Water Storage Requirements

Reticulated Water Service Area

Every habitable building within the Shire which is proposed to be connected to a reticulated water supply shall provide rain water storage to supplement the reticulated supply.

The **Desirable Capacity** of rain water storage tanks shall be calculated at 6,875L/EP.

Table 1 below indicates the **Minimum Capacity** of rainwater tank storage to be provided:-

Class of Building	Example of Building	Minimum Rain Water Storage Requirement	
		Single Storey	Multiple Storey
1a	Single detached house	22,000 litres	22,000 litres
1b,2,3,5,6,7,8,9	All other habitable buildings	The greater of 22,000 litres or 73.3 X Roof Area in square metres	

Note: Class 4 buildings are typically care-taker units within commercial buildings and their water storage requirements are considered to be included in the storage requirement for the commercial building.

The **Installed Capacity** of rainwater tanks shall be greater than or equal to the **Minimum Capacity**.

Proponents of Class 1b, 2, 3, 5, 6, 7, 8 and 9 buildings will be required to contribute additional water supply headworks charges for any shortfall between the **Desirable Capacity** and the **Installed Capacity** of the tank that is proposed.

The method for the calculation of any additional water supply headworks charges shall be in accordance with the following:

A = Equivalent Persons represented by storage shortfall

= (**Desirable Capacity** - **Installed Capacity**) ÷ 6875L/EP

B = Water Supply Headworks contribution per EP

C = Rainwater storage supplement factor = 0.25

Additional headworks contribution required for shortfall = A x B x C

Note: The rainwater storage supplement factor is based on the desirable proportion of the overall water supply provided by rainwater ie 50 litres/EP/day out of a total supply of 200 litres/EP/day = 0.25.

Non Serviced Areas

The **Minimum Capacity** of rainwater tank storage to be provided is the same as the minimum required in a reticulated water service area.

However, it should be noted that this amount of storage is not indicative of a reliable water supply. In non serviced areas, it is the responsibility of the developer to provide to Council through provision of written documentation that a reliable water supply can be provided. As a minimum this water supply shall provide 150 litres/EP/day based on the full occupancy of the development throughout the year. For Commercial Developments, a reliable water supply shall be one with a failure rate not exceeding 2%. Water Quality standards shall meet the National Health and Medical Research Council (NHMRC) Guidelines for Drinking Water Quality in Australia.

Rain Water Tank System Management

General for all Tank Systems

1. All pipes and fittings connecting rainwater tanks to the roof, household fixtures and stormwater system must be installed by a licensed plumber in accordance with plumbing and building standards.

2. The materials and installation methods used in the collection, storage, and reticulation of rainwater shall be the same as potable water and comply with the relevant Australian Standards. They shall also comply with AS/NZS 3500 1.2 Section 4.2.5. Alternative Water Supplies. (Note signage and marking of distribution pipes.)

3. Where downpipes charging rainwater tanks create water traps, pipes shall be:

   (a) Laid to grade.

   (b) Have provisions for flushing.

   (c) Be screened to prevent mosquito breeding.

4. Self cleaning rainwater heads and first flush devices shall be installed with a minimum diversion of 15litres/100m^2 of roof area.

Tank Systems for Class 1 Buildings in Reticulated Water Service Areas

1. Rainwater storage tanks shall be connected to all hose cocks, water closets and the cold water supply to the washing machine.

2. Rainwater tanks shall be provided with a back-up supply from Council's reticulated town water supply. The back-up shall ensure all fixtures retain a water supply as long as Council's reticulated supply remains available. The supply backup system shall be installed with:

    (a) A connection at the pump with an appropriate backflow prevention valve, and an automatic changeover in the event of no rainwater or electrical interruptions

    or

    (b) Provide for the charging of the rainwater tanks to a maximum of 20% of the tank capacity. This backup connection shall be provided with an air gap complying with the requirements of Section 8 and Table 4.3 of AS/NZS 3500.1. The air gap shall be readily visible to inspection.

3. Water restriction notices shall apply to garden taps that are connected to the rainwater tank.

Tank Systems for Class 2, 3, & 4 Buildings in Reticulated Water Service Areas

1. Rainwater storage tanks shall be connected to all hose cocks, water closets and the cold water supply to washing machines.

2. Rainwater tanks shall be provided with a back-up supply from Council's reticulated town water supply. The back-up shall ensure all fixtures retain a water supply as long as Council's reticulated supply remains available. The supply backup system shall be installed with an appropriate backflow prevention valve and an automatic changeover to utilise Council's reticulated supply in the event of no rainwater or electrical interruptions. No charging of the storage tank shall be permitted from the reticulated supply.

3. Water restriction notices shall apply to garden taps that are connected to the rainwater tank.

Fixed Sprinkler/Irrigation Systems for all Buildings in Reticulated Water Service Areas

Fixed sprinkler/irrigation systems may be installed. All Fixed sprinkler/irrigation systems shall utilise a separate storage tank, pump, and irrigation system with no interconnection to or charging from the mains water supply.

The capacity of any storage installed for these purposes shall not be considered by Council to be included in the **Installed Capacity** providing rainwater to hose cocks, water closets and the cold water supply to washing machines.

Tanks supplying fixed sprinkler/irrigation systems may be charged only by:

- the overflow from the rainwater storage tank providing rainwater to hose cocks, water closets and the cold water supply to washing machines and/or
- from rainfall runoff from a separate building (garage, shed, etc.) and/or
- from a private bore.

Council shall be notified if a fixed sprinkler/irrigation system is installed or proposed. These shall be inspected and placed on a register. Signage, indicating “Fixed Sprinkler/Irrigation” or similar shall be displayed at the front of the property, clearly visible from the street.