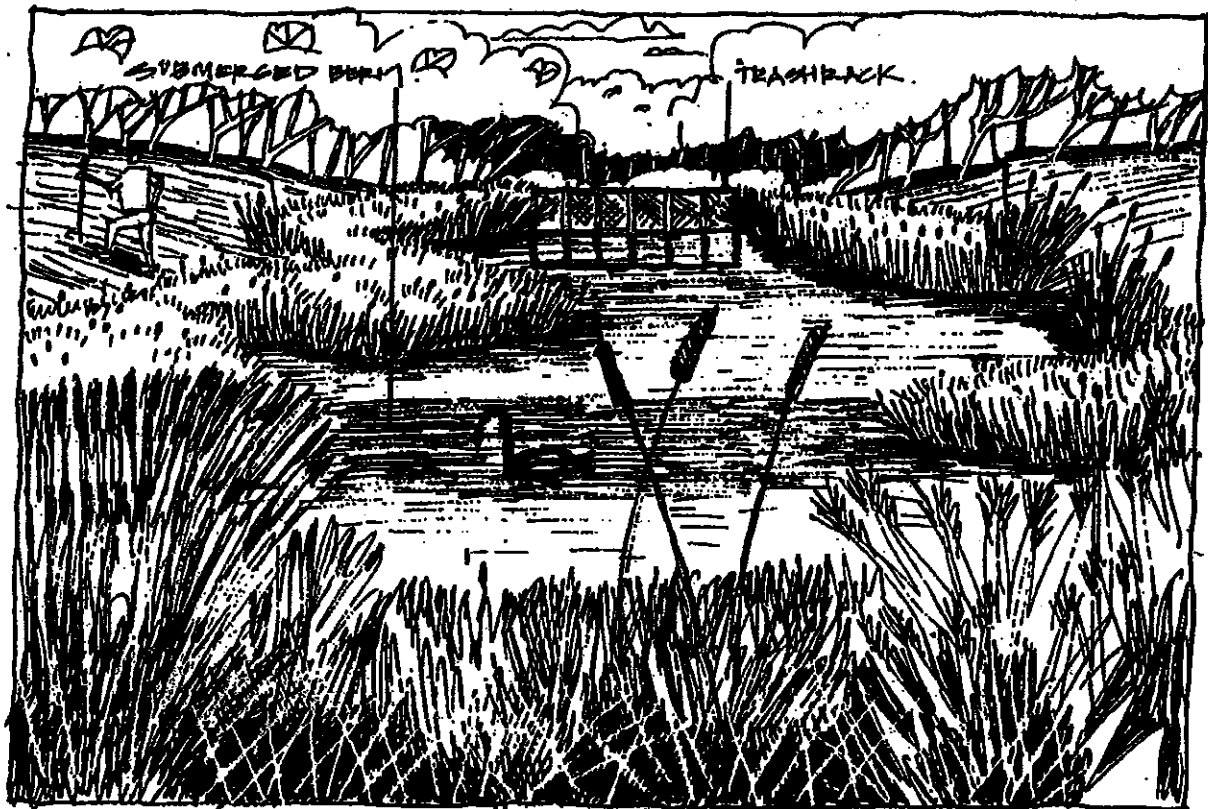




December 1997  
Maclean Shire Council



# Gulmarrad Stormwater Management Contributions Plan 1997

**PART A - SUMMARY**

This contribution plan enables Maclean Shire Council to levy Section 64 contributions for Stormwater Management Works in Gulmarrad.

The Maclean Local Environmental Plan makes provision for an additional 925 rural residential lots to be developed in Gulmarrad which will result in a total of 1,175 lots in Gulmarrad.

As a consequence of this additional development, it will be necessary to provide a range of stormwater management measures as described in the "Stormwater Management Plan Background Report" 1997 for Gulmarrad prepared by Greg Alderson and Associates.

The management measures have been recommended with consideration of the type and extent of development proposed for Gulmarrad and existing stormwater facilities. The cost of these stormwater management measures will be met in part from new development in Gulmarrad and in part by Maclean Shire Council.

The calculated contribution rate for these stormwater management measures is \$1,059 per lot in Gulmarrad. The proposed works program and calculation of the contribution rate is shown in Appendix B.

## **PART B - ADMINISTRATION AND ACCOUNTING**

### **1. What is the Name of this Plan?**

This plan shall be referred to as the **Gulmarrad Stormwater Management Contributions Plan 1997.**

### **2. What is the purpose of this plan?**

2.1 The primary purpose of this plan is to enable Council to require a contribution towards Stormwater Management Measures for Gulmarrad that are required as a consequence of the development of Gulmarrad.

2.2 Other purposes of this plan are to:

- a) To ensure that an adequate level of public infrastructure is provided to cater for the existing and future development of Gulmarrad;
- b) To help ensure that the development of Gulmarrad is sustainable by minimising the impact on the quantity and quality of stormwater runoff from the development.
- c) Provide a comprehensive strategy for the assessment, collection, expenditure, accounting and review of development contributions on an equitable basis for the Gulmarrad area until the year 2030.
- d) To ensure that other communities in the shire are not unfairly burdened by the provision of stormwater management works required as a result of future development in Gulmarrad.

### **3. To what area does this plan apply?**

This plan applies to the Gulmarrad area as illustrated on the map shown in Appendix A.

### **4. What is its relationship to other plans and policies?**

This contribution plan supersedes all previous plans and policies relating to stormwater drainage contributions for Gulmarrad.

This plan complies with Council's Management Plan which contains the following objectives for Stormwater Drainage Systems:-

- a) *Provide improved drainage systems which meet community expectations and perform to recognised standards.*
- b) *Provide systems for stormwater pollution control in accordance with Environmental protection Authority requirements, and best practice.*

This contribution plan is a result of Council's adoption of the "Stormwater Management Plan Background Report" which has been prepared as part of a Development Control Plan for Gulmarrad by Greg Alderson & Associates, August 1997.

**5. How does the plan operate?**

In determining a development application, Council may impose a condition requiring the payment of a monetary contribution and / or dedication of land in accordance with the provisions of this plan.

The general procedure for the levying of contributions is as follows:-

- A development application for subdivision of land is received by Council;
- Where it is deemed reasonable, Council will apply a condition to the development consent that requires dedication of land and or monetary contributions in accordance with this Contributions Plan;
- Prior to the release of the linen plan, the stipulated contribution and / or dedication of land shall be made to Council;
- Council will consider applications for deferred or periodic payments in accordance with this Contribution Plan.
- Contributions are credited to the Gulmarrad Stormwater Management Plan Section 64 account.
- Contributions are used to fund works described in the works program.

**6. What formula is used to determine the contribution.**

The calculation of the contribution rate is show in Appendix B.

The program and cost of works is shown in the top part of the table. These works will be funded with the contributions received and with loan funds which will be paid off by future contributions.

As 20.85% of the Gulmarrad area is already developed or approved to be developed, Council will need to meet 20.85% of the cost of the works, and developers will fund the remaining 79.15%.

The schedule of expected contributions, loan borrowing's and loan instalments is shown on the bottom part of the table.

The total scheme cost including interest is \$1,269,879. The developer contribution rate needed to fund 79.15% of the total scheme costs (\$1,005,109) is \$1,059 per lot. Council's 20.85% of the scheme costs is \$264,770. Council's costs will be funded from grants, subsidies and any other sources of revenue available to Council.

**7: When are contributions payable?**

Contributions are payable prior to the release of the linen plan of subdivision.

**8. Can deferred or periodic payments be made?**

Council will generally not accept periodic payment of contributions. Council may accept the deferred payment of a contribution if the applicant can demonstrate that compliance with the provisions relating to when contributions are payable is unreasonable or unnecessary in the circumstances of the case.

The decision to accept a deferred payment is at the sole discretion of the Council. The Director of Engineering Services has delegated authority to decide to accept deferred payments for this plan.

If Council decides to accept a deferred payment of a contribution, the applicant shall lodge with Council an unconditional bank guarantee or investment term deposit in favour of Council for the full amount of the total contribution payable.

The maximum term for deferred payment shall be 12 months. Following this 12 month period, Council will give two notices to the applicant advising that payment must be made, prior to calling in the bank guarantee or term deposit. All interest earned on bank guarantees or term deposits shall be paid to this Section 64 fund at the end of the term.

Bank guarantees or term deposits shall be with an Australian Bank. The guarantee shall require the bank to pay the guaranteed amount unconditionally to Council where it so demands in writing.

**9. Can "Works in Kind" (WIK) contributions be made?**

Council may accept an applicants offer to make a contribution by way of a WIK contribution for an item included in the works schedule. The applicant must be able to demonstrate that:-

- a) Payment of the contribution in accordance with the plan is unreasonable or unnecessary in the circumstances of the case;
- b) The WIK contribution will not prejudice the timing or the manner of the provision of stormwater drainage facilities for which the contribution is required;
- c) The value of works to be undertaken are at least equal to the value of the assessed contribution.
- d) A works program and an estimate of cost of the works must be submitted to Council.
- e) Public liability insurance must be taken out in the joint names of the applicant and Council prior to the start of any works.

**10. How will the contribution rates be adjusted?**

It is Council's practice to review contribution rates to ensure that the monetary contributions reflect the true costs associated with the provision of stormwater facilities.

The contribution rate will be reviewed annually on the basis of the Implicit Price Deflator as published by the Australian Bureau of Statistics. Revised contribution rates will be published in Council's adopted Schedule of Fees and Charges.

Contributions will remain fixed for a period of 12 months from the date of development consent. Thereafter, the indexed contribution rate will be applicable as stipulated in Council's adopted Schedule of Fees and Charges.

**PART C - STRATEGY PLANS****11. What is the expected future development in Gulmarrad?**

Residential development in Gulmarrad is expected to be restricted to rural residential development for at least the time frame of this plan.

From the "Stormwater Management Plan Background Report" 1997, prepared by Greg Alderson & Associates, there is a potential for an additional 925 lots to be developed in Gulmarrad. There are approximately 250 lots currently developed or have already been given development consent. Thus the total development potential for Gulmarrad is expected to be 1175 lots.

The growth rate of Gulmarrad is estimated to be 4%. This is based on records of growth rates in population and records of building approvals. This figure has also been adopted for the growth rate of Gulmarrad in the Clarence Valley Joint Strategy and in projections for Sewerage facilities.

Expected growth in residential lots in Gulmarrad is shown Appendix B. Based on a growth rate of 4%, it is expected that all current residential zoned land in Gulmarrad will become fully developed in the year 2029.

**12. What is the relationship between the development of Gulmarrad and the provision of Stormwater Management Measures?**

Council engaged Consultants Greg Alderson & Associates to prepare a Stormwater Management Plan Background Report for Gulmarrad. A copy of this report may be obtained from Council upon request.

The aims of this report were to:-

- Identify all catchment, subcatchments boundaries and existing stormwater infrastructure;
- Undertake calculations and analysis of all existing stormwater runoff for the 1:5, 1:20 and 1:100 storms;
- Identify all possible sources of stormwater pollution;
- Identification of all options of stormwater management for both quantity and quality control based on current best practices;
- Undertake an assessment of all options, including costings;
- Recommend preferred stormwater management options;
- Calculate design flows based on the installation of all recommended stormwater management measures;
- Identify levels and areas that are inundated by local 1:100year storms;
- Provide an implementation program of all upgrading works.

With the assistance of a Technical Working Group which included community representation, the report was completed in August 1997.

The report found that:-

- a) That development of Gulmarrad will increase the amount of impervious surfaces and the provision of formal drainage channels within developments combine to cause an increase in peak stormwater flows and an increase in the rate of stormwater flows. Rainfall that previously infiltrated into the soil or flowed off catchments at a slow rate will flow off the catchment quickly at greater volumes.
- b) That the principal form of pollution in developing residential areas is diffuse source pollution, primarily nutrients. The development process will increase the phosphorus in the soil, and runoff from pervious surfaces will increase phosphorous and nitrogen levels. The sources of nutrients during and as a result of development are principally sewage and stormwater runoff.

A wide range of measures have been recommended and adopted by Council in an effort to ameliorate the impacts of development of Gulmarrad. These are detailed in the report and summarised in Appendix C. On-site amelioration measures and minor works would be constructed by the developer as part of the subdivision. The other community wide and major works, which all future developments need to contribute to, are included in this Section 64 plan. These works are summarised in Appendix 2 and 3.

In summary, the future development of Gulmarrad will require the provision of a range of stormwater management measures as detailed in the Stormwater Management Plan Background Report for Gulmarrad. The amelioration measures have been recommended with consideration of the type and extent of development proposed for Gulmarrad and existing stormwater facilities. The cost of these stormwater management measures will be met in part from new development in Gulmarrad and part by Council.

The location of the recommended stormwater management measures are described in the Stormwater Management Plan Background Report for Gulmarrad. These have been sited having regard to the location of future development, the existing topography and the existing environmental values of the area.

The works program of all the Stormwater Management Measures is shown in Appendix B. Timing of the works has been based on projected growth in Gulmarrad in order to satisfy future demand for these facilities.

### 13. What is the contribution rate?

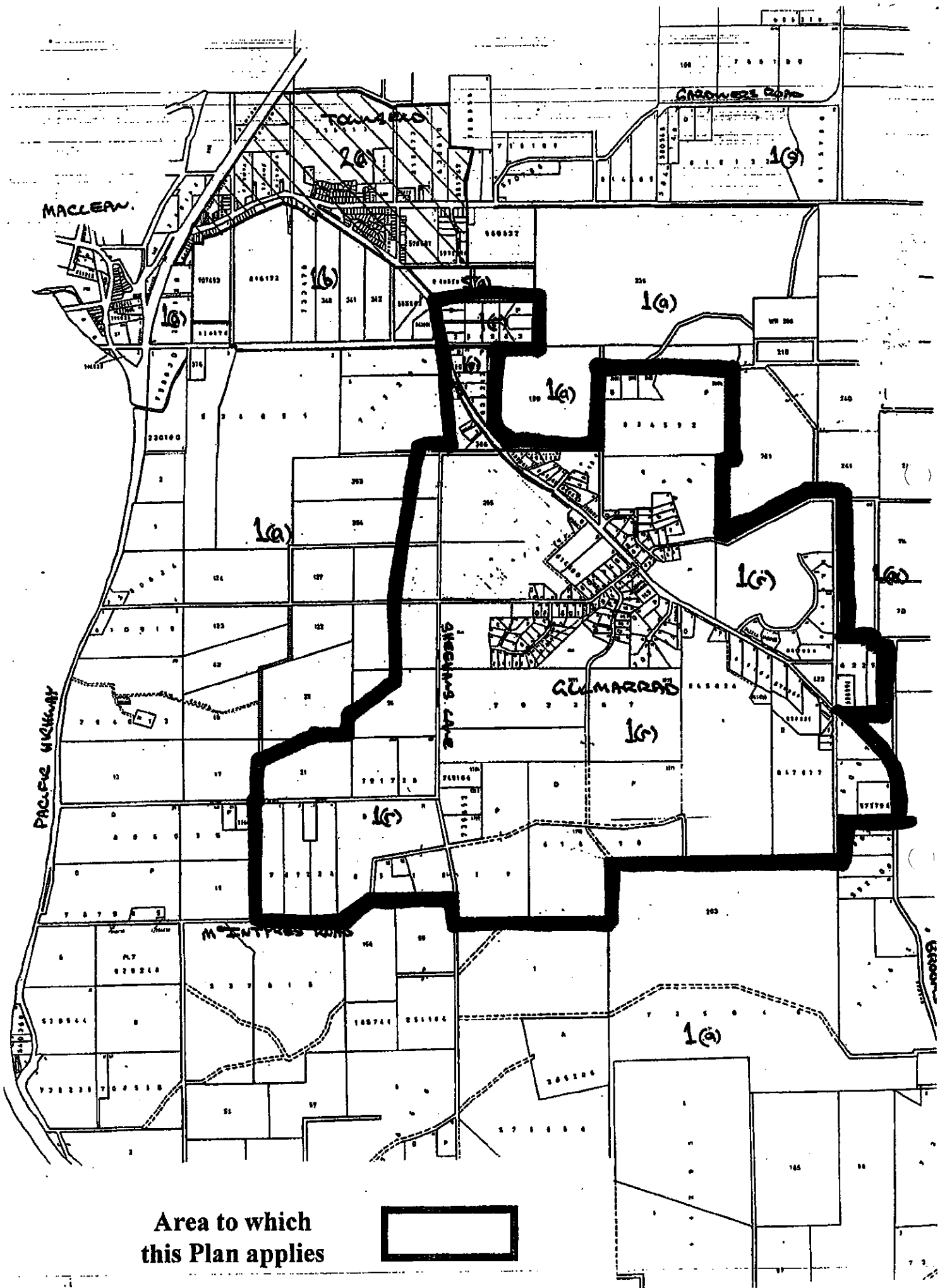
Contributions will be calculated as follows:-

Contribution = Contribution Rate x No of lots.

The contribution rate is \$1,059 per lot.







Area to which  
this Plan applies



**APPENDIX B**

**Gulmarrad Stormwater Management**

	1997-1998	1999-1999	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Residential Growth Rate	4.00%													
Loan Interest Rate	7.00%													
Contribution Rate per lot	\$1,059													
Interest on Investments	5.00%													
<b>Year</b>														
<b>Estimated Cost</b>														
<b>Works Program</b>														
Prepare Stormwater Management Plan	\$20,000													
Preparation of Sections 4 & 6 Plan	\$5,000													
Revision of Section 4 & 6 Plan	\$30,000	\$3,000							\$3,000					
Replace Culvert under Brooms Head Rd (less contributions already received)	\$40,000													
Purchase Wetlands and Drainage Reserves	\$375,000	\$90,000	\$35,000	\$10,000	\$10,000	\$35,000	\$50,000	\$95,000	\$50,000	\$50,000				
Water Quality Monitoring	\$57,400	\$3,400	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Enhance Existing Wetland Areas	\$40,000		\$10,000	\$10,000	\$10,000				\$20,000					
Education Program	\$33,000		\$5,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
<b>Total</b>	\$600,400	\$43,400	\$81,800	\$21,800	\$23,800	\$39,800	\$53,800	\$96,800	\$56,800	\$21,800	\$4,800	\$4,800	\$2,000	\$1,800
<b>Developer Contributions</b>														
No of Residential Lots in Gulmarrad	235	286	300	318	337	356	376	397	419	442	466	490	516	543
Annual increase in lots	15,000	16,000	17,31	18,00	18,72	19,47	20,25	21,05	21,90	22,77	23,66	24,63	25,62	26,64
Annual increase in lots rounded	15	16	17	18	19	19	20	21	22	23	24	25	26	27
Developer Contribution Rate per lot	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059	\$1,059
Total Developer Contributions	\$16,944	\$18,093	\$18,003	\$19,062	\$20,121	\$20,121	\$21,180	\$22,239	\$23,298	\$24,357	\$25,416	\$26,475	\$27,534	\$28,593
Interest on Contributions	\$424	\$450	\$450	\$477	\$503	\$503	\$530	\$556	\$582	\$609	\$635	\$662	\$688	\$715
<b>Total Income</b>	\$1,005,150	\$17,368	\$18,453	\$19,539	\$20,624	\$20,624	\$21,710	\$22,795	\$23,880	\$24,966	\$26,051	\$27,137	\$28,222	\$29,308
<b>Loan Schedule</b>														
New Loans	\$205,000			\$236,000					\$99,600					
Loan 1 Installments	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288	\$16,288
Loan 2 Installments	\$499,000	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960	\$19,960
Loan 3 Installments	\$185,260								\$9,263	\$9,263	\$9,263	\$9,263	\$9,263	\$9,263
Loan 4 Installments	\$96,990													
Total Loan Installments	\$1,269,879	\$16,288	\$16,288	\$36,248	\$36,248	\$36,248	\$36,248	\$36,248	\$45,511	\$45,511	\$45,511	\$45,511	\$45,511	\$45,511
Council Cost	\$264,729	(\$1,080)	(\$2,165)	\$16,709	\$15,624	\$15,624	\$14,538	\$13,453	\$21,630	\$20,545	\$19,459	\$18,374	\$17,288	\$16,203
Council Responsibility (20.65%)														
Developer Responsibility (79.15%)														
Note: Council may alter the borrowing schedule to suit Council's financial plans.														



**APPENDIX C**

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## EXECUTIVE SUMMARY

### Introduction

Maclean Shire Council have commissioned Greg Alderson & Associates to undertake a Stormwater Management Plan (SMP) for the ultimate rural-residential development of Gulmarrad, located south of the town of Maclean. The SMP will form part of a Development Control Plan (DCP) for future development in this area. The draft report was placed on public exhibition and public submissions invited. Council's working group considered the submissions, and this final report incorporates recommendations from the working group.

This background report examines potential changes to both water quantity and water quality resulting from future development, and proposes amelioration measures to minimise adverse downstream effects. Surface runoff from the study area drains to several streams, all of which discharge into the Clarence River. The majority of the development area is within the catchment area of James Creek. As part of the investigations, maximum development of "1 acre" lots was examined to test sustainable amelioration options.

### Landscape Descriptions

The study area is gently undulating, with slopes generally less than 5percent. The soils within the study area are Yellow Podzolic Soils (Northcote Coding Dy 3.41) and Grey-Brown Podzolic Soil (Northcote Coding Dy 5.61) groups. These soils are strongly sodic and acidic which predisposes nutrient deficiencies, principally nitrogen and phosphorous, and the Grey-Brown Podzolic soils may be structurally unstable in relation to earthworks.

### Existing Drainage Catchments

The catchments in the study area drain to several streams, all of which discharge into the Clarence River, with the majority of the study area draining to James Creek. Catchments to the West of the study area drain to an unnamed creek, which is a tributary of Edwards Creek. The existing catchments are primarily natural streams, except where open channels have been formed within existing rural residential subdivisions.

The upper section of James Creek is bisected by Brooms Head Road, which forms an embankment across the catchment. Two major culverts are located under Brooms Head Road, a four cell 900mm pipe culvert and a five cell 3600x1800mm box culvert. A natural wetland is located immediately upstream of this culvert. A single 900mm culvert is located under the access road to the sand quarries east of Kingfisher Drive.

No water quality data was available for the study area.

### Impacts of Development

#### a) Water Quantity

The increase in impervious surfaces and the provision of formal drainage channels within developments combine to cause an increase in peak flows and a decrease in the time to peak flow. Runoff will occur from events where previously all water infiltrated into the ground.

#### b) Water Quality

The principal form of pollution in developing residential areas is diffuse source pollution, primarily nutrients. The urbanisation process will increase the phosphorus in the soil, and runoff from pervious surfaces in urbanised areas will also increase phosphorous and nitrogen levels. Sources of nutrients

during and as a result of urbanisation are principally sewage and urban runoff, with nutrients principally associated with particulate matter. On-site wastewater disposal areas are potentially the largest source of nutrients.

#### **Proposed Amelioration Measures**

It is proposed that the following measures be adopted for future development in the Gulmarrad rural-residential release area:

- where possible the existing natural streams be retained as trunk drainage lines without structural improvements,
- trunk drainage lines have an undisturbed buffer zone which is the lower of 30metres on each side of the creek or the 1 in 20year flood level (as defined in Section D.8) . Within the buffer, all existing trees and shrubs and a good understorey grass cover shall be retained.
- where the 1 in 20year flood level is 60metres width or less, that a 60metre drainage reserve be purchased by Council, except where this would involved the purchase of land already approved for subdivision.
- where the 1 in 20year flood level exceeds 60metres width, a central drainage reserve of 60metres width be purchased by Council, with the remainder of land below the 1 in 20year flood level purchased as a drainage easement, except where this would involved the purchase of land already approved for subdivision. Where land has already been approved for subdivision, building restrictions shall be placed on land below the 1 in 20year flood level.
- buildings would be prohibited below the 1 in 100year flood level
- Council purchase existing wetland areas upstream of the two culverts under Brooms Head Road and upstream of the culvert under Clyde Essex Drive, which shall be retained and enhanced for nutrient removal and flood mitigation purposes. The existing wetland areas will be enhanced by the installation of gross pollution traps incorporating a trash rack at the upstream end of the wetland,
- land required to be purchased under this Plan be bought at market value,
- through the DMU process, Council make developers aware of erosion and sediment control issues in determining the layout of roads and lot boundaries. Suggested measures could include constructing road drainage and minor drainage lines as grassed swales incorporating velocity restriction and erosion control, encouraging the use of porous pavements for minor roadways to decrease the area of impervious surfaces, and providing wetland filters at the outlet of all minor drainage lines into the trunk drainage,
- runoff from each developed lot, or combination of lots where combined amelioration measures are proposed, be restricted to the pre-development runoff for all duration events for the 1 in 5, 1 in 20 and 1 in 100year design events. Amelioration measures which may be provided to meet the permissible post-development peak runoff include, but are not limited to, combinations of limiting impervious area, providing sedimentation/detention basins and stormwater storage in a roofwater harvesting tank.
- either detailed hydrologic and hydraulic design of the runoff from each development be undertaken using a model approved by Council to optimise the size of the storages and the outlets, or that total discharge from each lot be limited to 225L/s/ha (total lot area) with a volume of storage determined from Table D.2.1 in either a sedimentation basin, roofwater tank or combination of the two.
- for on-site wastewater disposal, a detailed site evaluation of the disposal area be undertaken, addressing the specific requirements of Section 11.2 of the draft NSW government Guidelines including that disposal areas be located so that they are not overshadowed by buildings or existing vegetation and that diversion banks be provided around disposal areas to direct runoff from upslope around the disposal areas. A restriction-as-to-user pursuant to the Conveyancing Act should be



placed on the title of all lots requiring landowners to follow a Plan of Management for their on-site system.

- temporary measures for soil erosion be employed control during construction
- A regular maintenance programme be instituted to ensure the continuing efficiency of the proposed amelioration measures, including mowing and cleaning of grassed swales, regular inspection and cleaning of gross pollutant traps, removal of sediment and harvesting of plants from wetland filters, and active control of plant species in disturbed areas and trunk drainage lines.
- A continuing water quality monitoring programme of minimum five years duration should be developed to monitor the effect of development.
- Develop a community education programme, emphasising the impact of pollutants on the drainage systems and the importance of the maintenance of on-site amelioration measures. This could be developed through the Clarence Catchment Management Committee and Council.

#### **Estimated Costs**

Costs for on-site amelioration works and on the minor system are related to the size and location of lots and roads and would be constructed by the developer as part of the subdivision. Hence, they have not been costed as they would not be funded by Council under Section 94.

The major costs involved in the trunk drainage network, which could be recouped from a Section 94 plan, are:

- Purchase of existing wetland areas (3) for water quality/retention basins (area required for purchase is approximately 9.0 hectares),
- Enhancement of existing wetlands including construction of Gross Pollutant Traps (estimated cost \$40,000),
- Upgrading of culvert under Brooms Head Road (estimated cost \$30,000),
- The purchase of drainage reserves over trunk drainage lines,
- Education programme (allow \$5,000 in first year and \$2,000 in subsequent years for advertising and printing information brochures)
- Monitoring programme (Allow \$5,000 in the first year and \$2,000 in subsequent years)

A preliminary estimate of Section 94 drainage contributions is \$907 per lot. This estimate is based on a preliminary valuation of the areas proposed for purchase, and also includes an allowance for legal and surveying fees.

Additionally, these will be continuing maintenance costs, and it is estimated that the annual maintenance cost will be approximately \$27,000.

#### **Conclusions**

It is possible to ameliorate the impacts from the proposed rural residential development of Gulmarrad. The increase in water quantity would be addressed primarily through on-site measures, while water quality would be addressed by a range of measures as outlined in this report.

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