



Asset Management Plan

Kerb and Gutter

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1. EXECUTIVE SUMMARY

There are ongoing requests from residents for the provision of new kerb & gutter (K&G). The major benefits are drainage control, improved access, reduction in sedimentation and improved residential amenity.

Many of the older subdivision areas are without kerb & gutter and this has led to a backlog in provision particularly as funding levels have traditionally been low.

Council's current *Resourcing Strategy* indicates a low priority for funding for new K&G and a high priority for K&G Renewal. Funding for new K&G is not expected to exceed \$100,000/annum in future years and this would result in it taking about 620 years before all K&G requirements have been satisfied. This is considered to be a low Level of Service with an ideal Level of Service being over a 50 year period at an estimated cost of \$1,200,000/annum. However, this level of funding is unlikely.

Based on current condition data, current funding levels for renewal and repairs are sustainable and reasonable. Additional funding of \$100,000/annum for renewal would be an Ideal Level of Service.

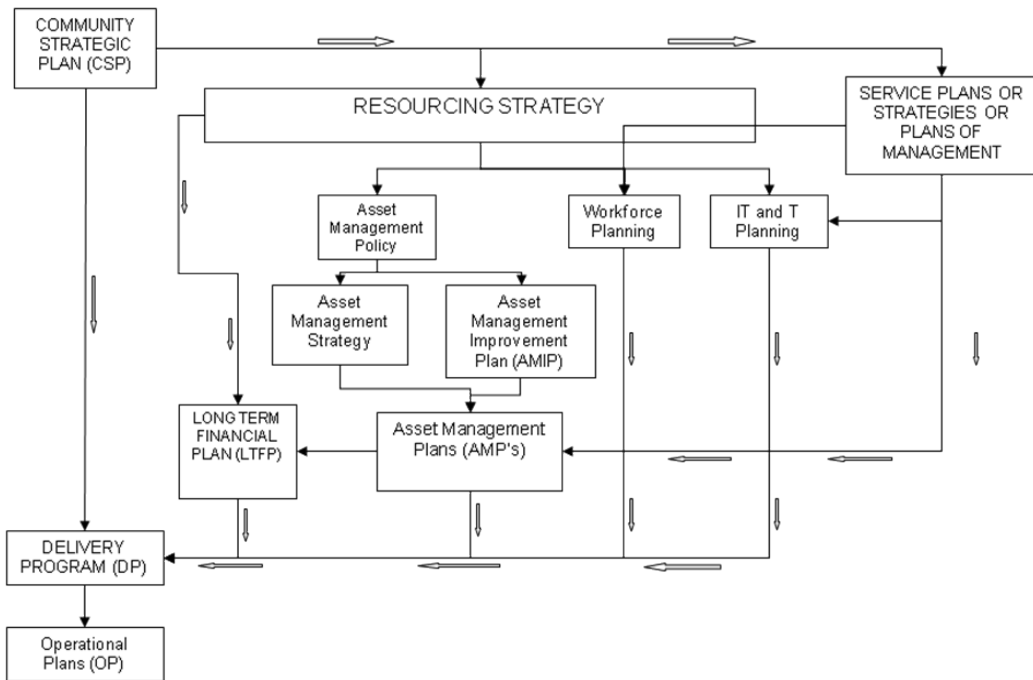
1.1. The Purpose of the Plan

This Asset Management Plan (AMP) is to assist Council to meet its goals and objectives in a way that best serves the community. It provides a framework for future management and provision of kerb & gutter within the Council area based on current and historical information.

Council has approximately thirty (30) Asset Management Plans which are divided based on each asset type. The following flow chart indicates the role Asset Management Plans play within Council's integrated planning framework.

This Asset Management Plan only applies to K&G located within road reserves. K&G also exists with Recreation Reserves, car parks, tourist parks, etc and these other assets are considered in the other Asset Plans. It is also to be noted that Council is not responsible for K&G located within rural areas of the State Highway network of Moss Vale Rd and the Princes Highway.

*Shoalhaven City Council
Asset Management Plan – Kerb and Gutter*



Kerb and Gutter is generally seen by residents as basic infrastructure and there is ongoing demand for installation. It is considered that this demand is primarily based on perception of aesthetics and also access improvement.

K&G may not be the optimal solution for all locations and grass swales should be considered where feasible, especially if it conforms to the existing village character. e.g. at Berry, Bawley Point and the older area of Narrawallee. This has been identified as a strategy in some Estuary Management Plans (e.g. Narrawallee) especially where the sandy soil structure allows for a high level of absorption and subsequent filtering of soluble pollutants from stormwater.

1.2. Asset Description

The Kerb & Gutter asset type includes all kerb types that are located within road reserves under the management of Council. Kerb & Gutter in car parks and other non-road locations is not considered in this Asset Management Plan.

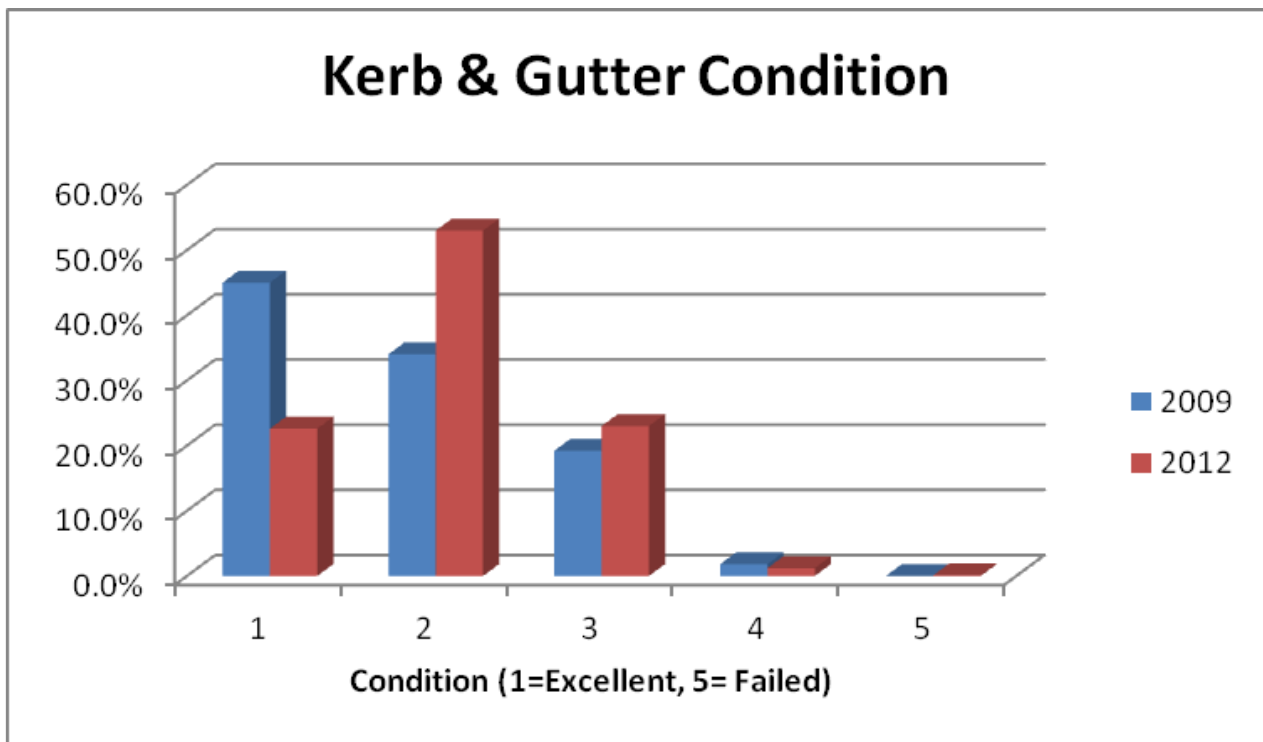
Kerb & Gutter assets are listed in the computerised Roads Asset Register. There are about 6,380 segments of Kerb & Gutter and hence a detailed list is not attached to this Plan.

In 2003, the total length of Kerb & Gutter was reported as 745.91Km. The 2009 and 2012 data is shown in the following table.

Ker & Gutter Type	2009 (Km)	2012 (Km)
Standard upright profile (150mm)	595.00	616.73
Standard upright profile (200mm)	7.91	9.18
Roll Top or mountable kerb	209.21	88.60
Kerb only	1.17	4.88
Concrete Edge Strip	14.55	17.87
Dish Drain	3.99	11.12
Total	831.83	748.38

This is a significant variation in data on asset extent. The 2009 data was estimated based on a survey that was still in progress with 64% of the road network inspected. The data collected was then extrapolated to give a total network length. This may be one of the reasons for the discrepancy. The road re-valuations in 2010 was based on approximately 812Km. The discrepancy is under review.

Asset condition is indicated in the following chart.



1.3. Levels of Service

There are no defined Levels of Service. The current Levels of Service are –

- Number of years to provide all identified requirements for new K&G
 - 620 years
- Extent of K&G network in Condition 3 or better
 - 98.6%
- Kerb & Gutter that is clear and free of sediments and gross pollutants
 - 7 customer requests per annum
- All access problems over K&G to be resolved within 5 working days
 - Not currently measured

The desired Levels of Service are –

- Number of years to provide all identified requirements for new K&G
 - 50 years
- Extent of K&G network in Condition 3 or better
 - 99%
- Kerb & Gutter that is clear and free of sediments and gross pollutants
 - < 5 customer requests per annum
- All access problems over K&G to be resolved within 5 working days

It is not economically feasible to provide a desired or ideal Level of Service for the provision of new K&G.

1.4. Future Demand

It is expected that up to 220Km of K&G is required to provide K&G to all locations. This extent is not expected to increase and may possibly decrease as 'greener' options become more acceptable. All new developments/subdivisions include the provision of K&G (or grass swales) as consent conditions. So population growth is not expected to increase demand.

The current strategies for managing the demand for new K&G are –

- Refer residents to the “Construction of Kerb & Gutter – Resident Financing Policy” (refer Appendix 6)
- If the request for new K&G is due to access issues, then to remind the resident that the provision of all-weather access is the responsibility of the property owner and
- Advise the resident of the forward program for the provision of new K&G and rank and include the location in the forward program if the need is warranted.

The major programs (refer to Section 5 for details) including 2012/13 budgets are –

Maintenance & Operating

- | | |
|---------------------------------------|----------|
| • Kerb & Gutter – Repair (programmed) | \$80,000 |
| • Kerb & Gutter – Repair (urgent) | \$80,000 |
| • Kerb & Gutter Sweep/Clear | \$70,000 |
| • Kerb & Gutter – Other | \$4,000 |

Capital

- | | |
|---------------------------------------|-----------|
| • Kerb & Gutter – New | \$85,000 |
| • Kerb & Gutter – Residents Financing | \$15,000 |
| • Kerb & Gutter – Renewal | \$141,063 |

1.5. Lifecycle Management Plan

1.5.1. Infrastructure Risk Management Plan

There have been minimal public liability claims arising from incidents with Kerb&Gutter. There was one in 2010/11, one in 2011/12 and 3 to date in 2012/13. All claims have been denied except for one (2012/13) that is still open. The claims have all been for damage to tyres. It is considered that public risk is minimal with regard to Kerb&Gutter condition.

The Council adopted *Defect and Risk Management Inspection Procedure* specifies the following inspection frequencies for Kerb&Gutter -

- Defect & Condition Inspections - every 5 years
- Risk Management Inspections – monthly in CBDs and following customer reporting for roads other than CBDs.

Any hazards identified will be prioritised and undertaken as either “Urgent Maintenance” or listed in the Defects Register and undertaken as annual “Programmed Maintenance”.

1.5.2. Routine Operations and Maintenance Plan

1.5.2.1. Operations and Maintenance Plan

Maintenance and Operational activities consist of the following –

- Repair Kerb & Gutter
 - Repair generally entails sections less than 20lm in length. Sections over this length are considered as Capital Renewal and funded in the annual capital works program.
- Clear/sweep Kerb & Gutter (outside of regular CBD cleansing schedules) and
- Kerb & Gutter - Other activities (such as asphalt in front of shoved K&G to maintain functionality).

The majority of these activities are undertaken following customer request except that about 50% of repairs are determined from defect and condition data identified during the 5 yearly cyclic inspections.

1.5.3. Operations and Maintenance Strategies

Repair Kerb & Gutter

A Condition & Defect audit completed in 2012 indicated that –

- There are 442 lm of K&G requiring repair where the repair length is less than 20lm (maintenance) at an estimated cost of \$208,000 and
- 2.23Km of K&G requires repair/renewal where the repair length is greater than 20lm (capital renewal) at an estimated cost of \$1,005,000.

The 2012/13 budget for repairs is \$160,000 and this is considered satisfactory. With \$80,000 of this funding allocated for 'programmed repairs', the 'programmed maintenance' repair list will be completed in about 2.5 years. It is suggested that the extent of funding be reviewed following the next condition/defect audit in 2017.

Clear/sweep Kerb & Gutter

Regular sweeping is undertaken for both aesthetic and environmental reasons. Sweeping consists of - a regular CBD cleansing program (refer Streetscape Asset Management Plan) and urgent cleaning of sediment deposits identified from Risk Management Inspections or customer reporting. Although not specified in any Service Agreement it is understood that some locations other than CBDs are regularly sweep based on 'past practice'.

In the previous version of this Asset Plan it was stated that the need for regular sweeping at other than CBD locations would be investigated. This has not occurred. The need for this review is still required.

The 2011/12 expenditure for this activity was \$124,500 and the 2013/14 budget is \$70,000 with expected expenditure to be in the order of \$100,000

A review is required and should consider –

- Streets regularly swept. It is suggested that the route of street sweepers be tracked using GPS technology and the outcomes be used to identify streets that are regularly swept.
- Environmental benefits e.g. amount of collected sediments/litter
- Usage of street sweepers and whether plant could be reduced
- Whether a satisfactory service could be provided based on customer requests and risk inspections

Kerb & Gutter - Other activities

An allowance needs to be made for other urgent works identified from Risk Management Inspections and customer reporting. This includes, as example, works such as asphalt in front of “shoved” kerb where access or drainage flow is interrupted. An annual allowance of \$4,000 should be allocated for this purpose based on past annual expenditures..

1.5.4. Summary of Future Costs

The expected ongoing budgetary needs are –

• Kerb & Gutter Repairs (Programmed Maintenance)	\$80,000
• Kerb & Gutter Repairs (Urgent Repairs)	\$80,000
• Kerb & Gutter Sweeping/Clearing	\$70,000
• Kerb & Gutter Other	\$4,000
• Total	\$234,000

However, it is to be noted that

- the expenditure for Sweeping/Clearing is currently higher but the Level of Service should be reduced and
- the funding level for repairs should be reviewed in 5 years following the next condition/defect audit.

1.5.5. Renewal / Replacement Plan

The main risks arising from failed K&G are trip hazards (particularly in CBDs) and failure to contain stormwater flow (only on rare occasions). Defects in K&G can also allow water penetration into the adjacent pavement and lead to pavement deterioration.

Major repairs/renewal of K&G will also involve the renewal of up to a one metre width of road pavement alongside the K&G. Accordingly, some councils make it a practice of programming K&G renewals to the same time as the road pavement is renewed. Where feasible this practice should be followed.

However, Shoalhaven Council has been concentrating on renewing very poor sections of K&G where there is significant risk and water flow is compromised. It is considered the worst of these failures has now been renewed.

Accordingly, the following practices are now recommended –

- All K&G shall be repaired/renewed in a road segment when road resealing/resurfacing is being undertaken and such works shall be budgeted for within the reseal budget
- All K&G shall be repaired/renewed in a road segment when pavement renewal is being undertaken and such repairs/renewals shall be budgeted for in the Road Pavement Renewal Budget.
- An annual capital budget for K&G Renewal shall be made for renewal of (isolated) sections of K&G (greater than 20lm in length) that are not within road sections subject to pavement reseal or renewal.
- Of the annual maintenance/repair funding, 50% shall be used for ‘programmed maintenance’ identified from the 5 yearly condition/defect audits and 50% shall be used for minor repairs to be undertaken to high risk hazards identified by regular risk inspections (refer Section 5.2) or by customer request

The 2012 K&G audit identified 2.23Km (over 20 lm in length) of Kerb & Gutter requiring renewal at an estimated cost of \$1,005,000. The current 10 year Financial Plan identifies an annual budget of \$146,000 for renewal. Based on this level of funding, it will take 7 years to renew all currently identified repairs/renewals. It is considered that a satisfactory level of service would be for all identified sections to be renewed within 4 years. That is, by the time the next audit is due. This would require annual funding of \$250,000. This is additional funding of \$100,000/annum. At this stage the funding levels are considered satisfactory.

The failure modes used to identify sections requiring replacement (or repairs) and the intervention level for those failure modes were –

- Uplifting or settlement greater than 50 mm
- Rotation or tilting greater than 50 mm
- Severe cracking and chipping cracking (>3mm width) with sections missing
- Ponding ponding encroaching onto road pavement.

The majority of identified repair/renewal needs were arising from rotation/uplifting of K&G due to heavy vehicle loading alongside the K&G. This is primarily from kerbside waste collection vehicles. The option of charging the Waste Fund for a proportion of these repairs should be considered. It is suggested that an amount of \$100,000 per annum would be appropriate.

1.5.6. Renewal Strategies

A Kerb & Gutter Replacement Strategy was adopted by Council on the 28th January, 2003. It has been progressively updated and the revised Strategy was included in the 2009 K&G Asset Plan. The last K&G audit included listing by GPS of all sections of failure. This listing has been reviewed and forms the basis for future Renewal & Repair Programs. However, the ranking methodology has been reviewed to give more emphasis on condition and less on traffic & pedestrian volumes.

The revised Replacement Strategy is shown at Appendix 2 and a Repair Program is shown at Appendix 3. These lists will be cross referenced against future annual Pavement Reseal and Renewal Programs and any K&G works will be included in those Programs. K&G Renewal and Repair programs will then be issued from the amended listings following the guidelines in Section 5.4.

1.5.7. Creation / Acquisition / Augmentation Plan

The original Kerb & Gutter Provision Strategy was adopted by Council on 20th April, 1999 and a revised Strategy was adopted with the previous version of this Plan in 2009. The updated strategy is shown at Appendix 1.

In 1999 it was reported that there is an expected need of provision of 250Km of K&G to satisfy all demands. Today it is expected that the demand is for 220Km of K&G. This equates to a total expenditure of about \$62Million.

An Ideal Level of Service for the provision of new K&G is for all needs to be satisfied over a 50 year period and this would entail an annual budget allowance of \$1,200,000. The average annual funding indicated in the current 10 Year Financial Plan is \$100,000; this equates to fulfilling demand in about 620 years.

The provision of new K&G is not a high priority under Council’s Resourcing Strategy not is it an identified priority in the Community Strategic Plan. There are a significant number of customer requests regarding access problems and this is considered the main reason for customer demand for new K&G.

Council currently has a Policy (Resident Participation Scheme) where residents can fund K&G provision in advance of Council’s programs with Council repaying to the residents 50% of the cost after a 5year period. The current financial impost to council under this Policy is \$183,000 over the next 4 years. As there is a lack of funding for council’s programs, it is considered that the use of this Policy should be minimal.

Alternate lower cost options for gravel shoulder treatment have been considered and are being implemented. These include grassing and sealing without kerb & gutter. These methods have been used to treat gravel shoulders at St Georges Basin and other locations and are a successful treatment to prevent gravel shoulder erosion.

The provision of grass swales to stabilize road shoulders is also used where suitable such as where there is negligible vehicle parking, medium grades and medium stormwater flow. However, in high traffic volume urban streets, kerb & gutter is the preferred option. The 2012/13 maintenance budget includes funds of \$160,000 for Shoulder Sealing.

Accordingly, there is expected to be benefit in –

- Developing a Driveway Policy that facilitates improved access onto private property in locations of no K&G and that minimizes cost imposition to council.
- Minimising the use of the Policy for Resident Financing of K&G and
- Undertaking additional shoulder grassing and shoulder sealing projects in maintenance programs.

1.6. Financial Summary

A summary of funding needs for the next 10 years is shown below in the following Table. It is to be noted that funding needs for the following 10 years is expected to increase with regard to Capital Renewal and then subsequently increase significantly.

Activity	Sustainable Annual Funding	Ideal Annual Funding	Current Funding
<u>Maintenance</u>			
K&G Sweep\Clear	\$70,000	\$120,000	\$70,000
K&G Repair (Programmed)	\$80,000	\$80,000	\$80,000
K&G Repair (Urgent)	\$80,000	\$80,000	\$80,000
K&G Other	\$4,000	\$10,000	\$4,000
<u>Capital</u>			
K&G Replacement	\$150,000	\$250,000	\$141,000
New K&G	\$ 600,000	\$1,200,000	\$100,000
Resident Participation Scheme	\$5,000	\$25,000	\$15,000
Totals:	\$989,000	\$1,765,000	\$490,000

1.7. Asset Management Practices

Current practices are considered reasonable with asset data used to prepare annual 'programmed maintenance' work lists with asset defects being mapped via GPS. All assets are also mapped.

1.8. Monitoring and Improvement Programme

Details of proposed improvement actions are shown in the following table.

Task No	Task	Responsibility	Resources Required	Timeline
1	Review the needs for the sweeping of K&G outside of CBDs and prepare clear schedule and/or guidelines. <ul style="list-style-type: none"> • Use GPS to define current practices • Review needs with Community Groups 	Roads Asset Manager	Existing staff	December, 2013
2	Prepare K&G Defect & Condition Inspection Guideline	Roads Asset Manager	Existing staff	December, 2013
3	Issue Repair List to W&S staff for action over 2013/15	Roads Asset Manager	Existing staff	May, 2013
4	Review K&G asset data, investigate length discrepancy over current data with past years data and update asset data where applicable.	Facilities and Asset Manager	Existing staff	June, 2013
5	Prepare a "Residential Driveway Policy" to guide staff and the public on access responsibilities, ensure good design & construction practices and provide advice on actions to improve access.	Roads Asset Manager	Existing staff	December, 2013
6	Prepare a Policy for K&G Provision that defines the locations where K&G is not the preferred option	Roads Asset Manager	Existing staff	December, 2013
7	Investigate the option of the Waste Fund contributing to K&G Renewal due to waste vehicles being the main source of failures	Infrastructure Planning Manager	Existing staff	December, 2013
8	When undertaking road pavement renewals/reseals, repair/renew K&G as required under the road funding	Roads Asset Manager, Maintenance Manager	Existing staff	2013/14

The following measures can be used as a guide to monitor performance of the Kerb & Gutter Program -

- Annual number of community action requests (currently 51 - 2011/12)
- Number and value of public liability claims
- Extent of K&G in Condition 3 or better. The measure is 98.6% as at 30/06/2012.

2. INTRODUCTION

The provision of kerb & gutter (K&G) is seen as a priority for service provision. The major benefits are drainage control, reduction in sedimentation and residential amenity. Many of the older subdivision areas are without kerb & gutter and this has led to a backlog in provision.

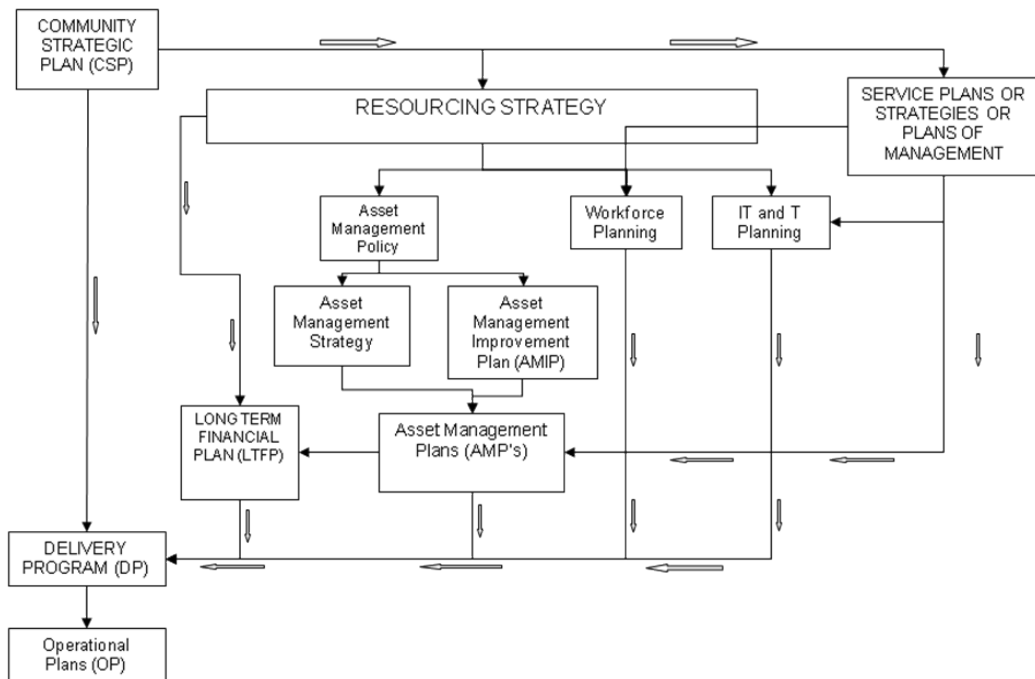
Additional funding was provided over the past 5 years from a Special Rate Levy to reduce this backlog. However, there is continuing demand from residents for the provision of kerb & gutter and it is unlikely that resident expectations will be met except in the long term.

2.1. Background

This Asset Management Plan (AMP) is to assist Council to meet its goals and objectives in a way that best serves the community. It provides a framework for future management and provision of kerb & gutter within the Council area based on current and historical information.

Council has approximately thirty (30) Asset Management Plans which are divided based on each asset type. The following flow chart indicates the role Asset Management Plans play within Council's integrated planning framework.

This Asset management Plan only applies to K&G located within road reserves. K&G also exists with Recreation Reserves, car parks, tourist parks, etc and these other assets are considered in the other Asset Plans. It is also to be noted that Council is not responsible for K&G located within rural areas of the State Highway network of Moss Vale Rd and the Princes Highway.



2.2. Goals and Objectives of Asset Ownership

Kerb and Gutter is generally seen by residents as basic infrastructure and there is ongoing demand for installation. It is considered that this demand is primarily based on perception of aesthetics and also access improvement. However, Kerb and Gutter (K&G) also provides other benefits that need to be considered in determining corporate priorities, funding needs and forward programs.

Purpose

- To collect and convey stormwater along the roadway on a non-erodable surface.
- To provide lateral support to the edge of the road pavement.
- To provide a clear definition between pedestrians and vehicles.
- To provide delineation for the parking of vehicles in a manner that optimises safety for through traffic.

Benefits

- Reduction in siltation to watercourses
- Reduction of blockages to drainage systems and maximizing inflow into drainage pits.
- Reduction in maintenance costs and customer action requests.
- Reduction in flooding to private property.
- Improvement in civic appearance.
- Improvement in property values.

Disadvantages

- Quicker stormwater flow into watercourses
- Less absorption of stormwater and hence increase in stormwater runoff.
- Less filtering of sediments and soluble pollutants.
- A more formal appearance that may detract from 'village character' in some localities.
- Possible reduction in fauna habitat. E.g. frogs in open drains at Culburra Beach.

Accordingly, K&G may not be the optimal solution for all locations and grass swales should be considered where feasible, especially if it conforms to the existing village character. For example, at Berry, Bawley Point and the older area of Narrawallee. This has been identified as a strategy in some Estuary Management Plans (e.g. Narrawallee) especially where the sandy soil structure allows for a high level of absorption and subsequent filtering of soluble pollutants from stormwater.

A future action is to identify locations/localities where it is considered kerb & gutter should not be provided.

2.3. Plan Framework

The key guiding documents for this AMP are:

Council's Asset Management Policy

The policy is used as a base of principles and requirements to create an AMP that is in accordance with the organisation's strategic plan and following the guidelines of the 2011, International Infrastructure Management Manual.

Council's Asset Management Strategy

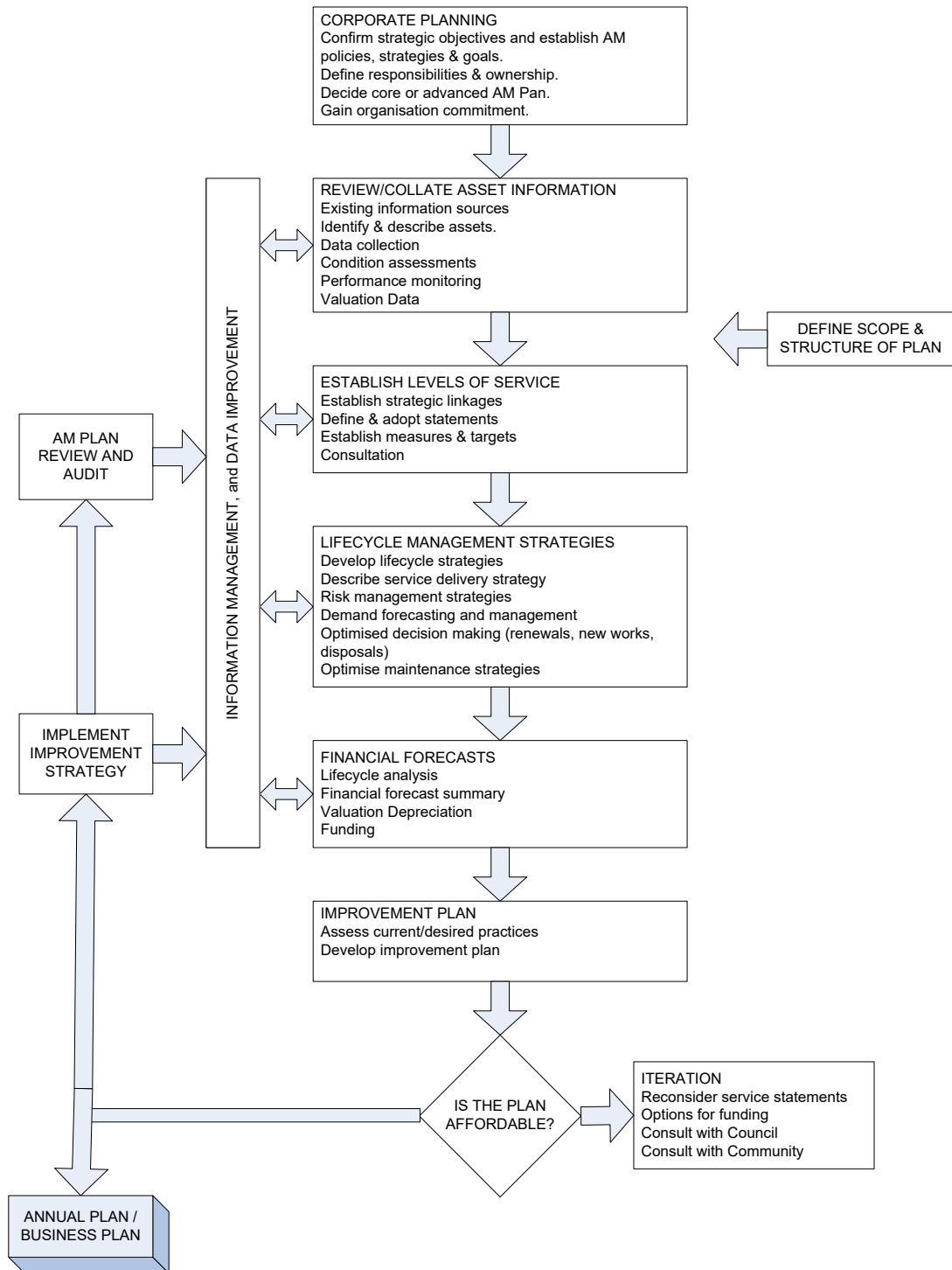
A strategy for asset management covering development and implementation of plans and programs for asset creation, operation, maintenance, rehabilitation/replacement, disposal and performance monitoring to ensure desired level of service and other operational objectives are achieved at optimum cost.

The basic key elements of the AMP consist of:

- Level of service – specifying the services and levels of service to be provided by Council
- Future demand – how this will impact on future service delivery and how this is to be met
- Life cycle management – how Council will manage its existing and future assets to provide the required services
- Financial summary – what funds are required to provide the services
- Plan Improvement and Monitoring – how the plan will be monitored to ensure it is meeting Council's objectives

A road map for preparing an asset management plan is shown below:

Shoalhaven City Council
Asset Management Plan – Kerb and Gutter



Road Map for preparing an Asset Management Plan

Source: IPWEA, 2011, IIMM, Fig 1.5.1, p 1.11.

2.4. Core and Advanced AM

This asset management plan is prepared as a ‘core’ plan in accordance with the *International Infrastructure Management Manual, 2011*. It is prepared to meet minimum requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a ‘top down’ approach where analysis is applied at the ‘system’ or ‘network’ level.

Future revisions of this plan will move towards 'advanced' asset management using a 'bottom up' approach for gathering asset information to support the optimisation of activities and programs to meet agreed service levels.

There are limitations in the Plan due to a need to improve condition data and to ensure all inspections are undertaken in accordance with IPWEA-NAMS – *Inspection Performance Measurement Guidelines – Practice Note 2 – Kerb and Gutter*.

3. LEVELS OF SERVICE

3.1. Customer Research and Expectations

Community consultation is undertaken in the implementation of projects for new kerb & gutter as well as Public Exhibition of the Asset Management Plan. Opportunities to add value with community consultation are limited with regard to maintenance.

There has been no customer research as to expectations for sweeping or condition of K&G. However, it is noted that the annual average for customer requests is about 7 for sweeping and 35 for repairs. The main driver for the repair requests has been access problems rather than a 'comment' on condition.

3.2. Strategic and Corporate Goals

The AMP provides clear guidelines for the effective management of the assets owned and by Council. Local Authorities exist principally to supply core services that meet the needs of their communities. There are no definitive strategic goals for the provision of K&G.

Council's goal in managing assets is to meet the required level of service in a sustainable manner for present and future stakeholders. The key elements to strategic goals of asset management are:

- Demonstrating responsible stewardship;
- Taking a life cycle approach to asset ownership;
- Defining the infrastructure assets physically and financially;
- Providing a defined Level of Service and monitoring the performance against service levels and service expectations;
- Understanding and meeting the demands of growth through demand management and infrastructure investment;
- Managing risks associated with asset failure; and
- Support long term financial planning.

Council objective is to ensure financial strategies underpin Council's asset management policies and strategic. Its goal is to have long term vision for sustainability. In order to do so, the action that can be done is to prepare and review the Council's short and medium term financial plans for Risk Management; Plant & Equipment, Information Technology, Section 94; Asset Management Plans and case reverses.

Acting as a leader in the delivery of social, financial, environmental, and operational objectives, Council needs to ensure good governance and administrative support for the Council and organization.

Council's other goals are to plan, manage and fund Council's public assets to meet the community expectations and defined levels of services. Furthermore, the safety of the community is paramount and is acknowledged and supported through proactive policies, programs and strategies.

3.3. Legislative Requirements

There are no Legislative requirements for the provision or maintenance of kerb & gutter.

3.4. Current Level of Service

There are no defined Levels of Service. The proposed Levels of Service and current levels are –

- Number of years to provide all identified requirements for new K&G
 - 620 years
- Extent of K&G network in Condition 3 or better
 - 98.6%
- Kerb & Gutter that is clear and free of sediments and gross pollutants
 - 7 customer requests per annum
- All access problems over K&G to be resolved within 5 working days
 - Not currently measured

3.5. Desired Level of Service

The desired Levels of Service are –

- Number of years to provide all identified requirements for new K&G
 - 50 years
- Extent of K&G network in Condition 3 or better
 - 99%
- Kerb & Gutter that is clear and free of sediments and gross pollutants
 - < 5 customer requests per annum
- All access problems over K&G to be resolved within 5 working days

It is not economically feasible to provide a desired or ideal Level of Service for the provision of new K&G.

Additional funding will be sourced where possible to undertake more renewal projects. The additional funding required is about \$100,000.

4. FUTURE DEMANDS

4.1. Demand Drivers

There is ongoing demand for the provision of new kerb & gutter. Based on the type of customer requests for maintenance the main customer demand drivers are for improved access, drainage control and to a lesser extent aesthetics.

4.2. Demand Forecasts

It is expected that up to 220Km of K&G is required to provide K&G to all locations. This extent is not expected to increase and may possibly decrease as 'greener' options become

more acceptable. All new developments/subdivisions include the provision of K&G (or grass swales) as consent conditions. So population growth is not expected to increase demand.

4.3. Demand Impacts on Assets

Demand does not impact on asset condition.

4.4. Demand Management Plan

The current strategies for managing the demand for new K&G are –

- Refer residents to the “Construction of Kerb & Gutter – Resident Financing Policy” (refer Appendix 6)
- If the request for new K&G is due to access issues, then to remind the resident that the provision of all-weather access is the responsibility of the property owner and
- Advise the resident of the forward program for the provision of new K&G and rank and include the location in the forward program if the need is warranted.

4.5. Asset Programmes to Meet Demand

The major programs (refer to Section 5 for details) including 2012/13 budgets are –

Maintenance & Operating

- | | |
|---------------------------------------|----------|
| • Kerb & Gutter – Repair (programmed) | \$80,000 |
| • Kerb & Gutter – Repair (urgent) | \$80,000 |
| • Kerb & Gutter Sweep/Clear | \$70,000 |
| • Kerb & Gutter – Other | \$4,000 |

Capital

- | | |
|---------------------------------------|-----------|
| • Kerb & Gutter – New | \$85,000 |
| • Kerb & Gutter – Residents Financing | \$15,000 |
| • Kerb & Gutter – Renewal | \$141,063 |

5. LIFECYCLE MANAGEMENT PLAN

5.1. Background Data

5.1.1. Physical Parameters

In 2003, the total length of Kerb&Gutter was reported as 745.91Km. The 2009 and 2012 data is shown in the following table.

Ker & Gutter Type	2009 (Km)	2012 (Km)
Standard upright profile (150mm)	595.00	616.73
Standard upright profile (200mm)	7.91	9.18
Roll Top or mountable kerb	209.21	88.60
Kerb only	1.17	4.88
Concrete Edge Strip	14.55	17.87
Dish Drain	3.99	11.12
Total	831.83	748.38

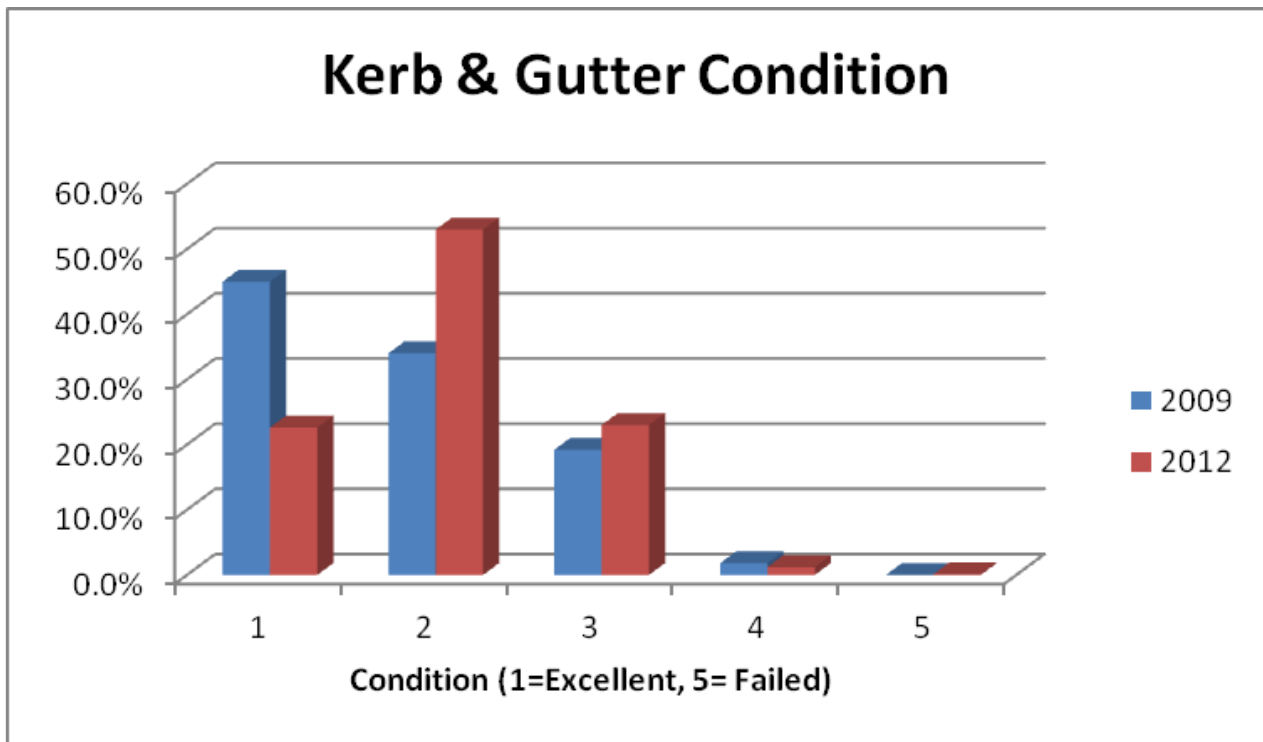
This is a significant variation in data on asset extent. The 2009 data was estimated based on a survey that was still in progress with 64% of the road network inspected. The data collected was then extrapolated to give a total network length. This may be one of the reasons for the discrepancy. The road re-valuations in 2010 was based on approximately 812Km. The discrepancy is under review.

5.1.2. Asset Capacity / Performance

Capacity is not an issue for kerb & gutter. If stormwater carrying capacity is identified as an issue the matter would be referred to the drainage program.

5.1.3. Asset Condition

The following chart indicates the overall network condition since 2009. Although there is a difference in the extent of network in Condition 1 & 2, the extent of the network in Condition 3 or better are almost equal. Future condition assessments will be based on the IPWEA-NAMS Guidelines *Practice Note 2 – Kerb and Gutter*. The condition definitions of this Guideline is shown at Appendix 4.



5.1.4. Asset Valuations

The revaluation for the 30th June, 2010 included the following figures –

- Depreciable amount \$228,166,000
- Accumulated Depreciation \$37,843,000
- Depreciated Replacement Cost \$190,322,000
- Annual Depreciation \$3,257,000

The valuations were based on the following assumptions –

Kerb & Gutter			
Kerb & gutter-150mm	\$282,000/Km	70	Rate based on past SCC costs for K&G replacement in Currumbene St, Huskisson. Life based on median of SA Council current practices. (Tonkin - March,2009)
Kerb & gutter-200mm	\$282,000/Km	70	Rate based on past SCC costs for K&G replacement. Assume will be replaced with 150mm gutter. Life based on median of SA Council current practices. (Tonkin March,2009)
Kerb & gutter-dish drain	\$240,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009)
Kerb & gutter-mountable	\$282,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009)
Kerb & gutter-mountain drain	\$240,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009)
Kerb-brick	\$282,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009). Assume will be replaced with standard 150mm kerb.
Kerb-edge strip	\$240,000/Km	70	Rate based on past SCC costs for K&G replacement. Life

*Shoalhaven City Council
Asset Management Plan – Kerb and Gutter*

			based on median of SA Council current practices. (Tonkin March,2009)
Kerb-only	\$240,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009)
Kerb-semi mountable	\$282,000/Km	70	Rate based on past SCC costs for K&G replacement. Life based on median of SA Council current practices. (Tonkin March,2009)

Asset Age was based on condition data (1 to 5) as follows and was based on NAMS PLUS Guidelines (IPWEA)–

Condition	Description	Age as % Useful Life
1	Excellent	0%
2	Very Good	25%
3	Good	50%
4	Average	75%
5	Poor	100%

5.1.5. Historical Data

Past expenditure data is as shown in the following table.

Activity	2008/09	2009/10	2010/11	2011/12	2012/13 (Budget)	Average past 4 Years
Maintenance/Operating						
K&G Repair	\$147,180	\$44,830	\$82,416	\$55,224	\$160,000	\$82,418
K&G Sweep/Clear (non-CBD)	\$55,210	\$83,125	\$92,595	\$124,489	\$70,000	\$88,855
K&G Other	\$4,673	\$1,549	\$2,823	\$6,949	\$4,000	\$3,999
Total Maintenance/Operating Capital	\$207,063	\$129,504	\$177,834	\$186,662	\$234,000	\$175,272
K&G Renewal	\$84,629	\$0	\$127,264	\$5,892	\$141,063	\$54,446
K&G New	\$586,070	\$1,198,969	\$556,364	\$421,427	\$85,000	\$690,708
K&G New (Resident Participation Scheme)	\$40,147	\$70,075	\$15,923	\$81,018	\$73,231	\$51,791
Total Capital	\$710,846	\$1,269,044	\$699,551	\$508,337	\$299,294	\$796,945
Programme Total	\$917,909	\$1,398,548	\$877,385	\$694,999	\$533,294	\$972,217

It is noted that under the current 10 Year Financial Plan, the annual Capital Expenditures for Kerb & Gutter are proposed from 2013/14 as –

- Renewal - \$146,000
- New - \$100,000
- New (RPA) - \$15,000

5.2. Infrastructure Risk Management Plan

There have been minimal public liability claims arising from incidents with Kerb&Gutter. There was one in 2010/11, one in 2011/12 and 3 to date in 2012/13. All claims have been denied except for one (2012/13) that is still open. The claims have all been for damage to tyres. It is considered that public risk is minimal with regard to Kerb&Gutter condition.

The Council adopted *Defect and Risk Management Inspection Procedure* specifies the following inspection frequencies for Kerb&Gutter -

- Defect & Condition Inspections - every 5 years
- Risk Management Inspections – monthly in CBDs and following customer reporting for roads other than CBDs.

Any hazards identified will be prioritised and undertaken as either “Urgent Maintenance” or listed in the Defects Register and undertaken as annual “Programmed Maintenance”.

5.3. Routine Operations and Maintenance Plan

5.3.1. Operations and Maintenance Plan

Maintenance and Operational activities consist of the following –

- Repair Kerb & Gutter
 - Repair generally entails sections less than 20lm in length. Sections over this length are considered as Capital Renewal and funded in the annual capital works program.
- Clear/sweep Kerb & Gutter (outside of regular CBD cleansing schedules) and
- Kerb & Gutter - Other activities (such as asphalt in front of shoved K&G to maintain functionality).

The majority of these activities are undertaken following customer request except that about 50% of repairs are determined from defect and condition data identified during the 5 yearly cyclic inspections.

A review of past customer requests is indicated in the following Table. Although, the number of requests is not high when compared to requests for sealed roads (about 1,000 per annum), the number of requests is still considered significant. It is to be noted that about half of the requests for repairs relate to access difficulties.

Description	2009-10	2010-11	2011-12	2012/13 (to 13/02/13)
Repairs	37	34	44	18
Sweeping/Clearing of gutter	5	10	7	1
Totals	42	44	51	19

5.3.2. Operations and Maintenance Strategies

Repair Kerb & Gutter

A Condition & Defect audit completed in 2012 indicated that –

- There are 442 lm of K&G requiring repair where the repair length is less than 20lm (maintenance) at an estimated cost of \$208,000 and
- 2.23Km of K&G requires repair/renewal where the repair length is greater than 20lm (capital renewal) at an estimated cost of \$1,005,000.

The 2012/13 budget for repairs is \$160,000 and this is considered satisfactory. With \$80,000 of this funding allocated for ‘programmed repairs’, the ‘programmed maintenance’ repair list

will be completed in about 2.5 years. It is suggested that the extent of funding be reviewed following the next condition/defect audit in 2017.

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The Road Maintenance Service Agreement includes the following comments with regard to K&G repairs –

“A high level of resources is required to repair all failed sections of K&G and hence priority should be given to those areas causing drainage problems and/or public risk. Infrastructure Planning Section will prepare an annual program of works based on cyclic defect & condition audits.”

The outcome of the 2012 audit will be used to prepare a priority list of repairs (programmed maintenance) for 2013/14 for the estimated cost of \$80,000. The remaining budget allocation of \$80,000 will be used to undertake urgent repairs identified by monthly CBD inspections or customer reporting.

Clear/sweep Kerb & Gutter

Regular sweeping is undertaken for both aesthetic and environmental reasons. Sweeping consists of - a regular CBD cleansing program (refer Streetscape Asset Management Plan) and urgent cleaning of sediment deposits identified from Risk Management Inspections or customer reporting. Although not specified in any Service Agreement it is understood that some locations other than CBDs are regularly sweep based on 'past practice'.

In the previous version of this Asset Plan it was stated that the need for regular sweeping at other than CBD locations would be investigated. This has not occurred. The need for this review is still required.

The 2011/12 expenditure for this activity was \$124,500 and the 2013/14 budget is \$70,000 with expected expenditure to be in the order of \$100,000

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A review is required and should consider –

- Streets regularly swept. It is suggested that the route of street sweepers be tracked using GPS technology and the outcomes be used to identify streets that are regularly swept.
- Environmental benefits e.g. amount of collected sediments/litter
- Usage of street sweepers and whether plant could be reduced
- Whether a satisfactory service could be provided based on customer requests and risk inspections

Kerb & Gutter - Other activities

An allowance needs to be made for other urgent works identified from Risk Management Inspections and customer reporting. This includes, as example, works such as asphalt in front of “shoved” kerb where access or drainage flow is interrupted. An annual allowance of \$4,000 should be allocated for this purpose based on past annual expenditures..

5.3.3. Summary of Future Costs

The expected ongoing budgetary needs are –

- | | |
|--|-----------|
| • Kerb & Gutter Repairs (Programmed Maintenance) | \$80,000 |
| • Kerb & Gutter Repairs (Urgent Repairs) | \$80,000 |
| • Kerb & Gutter Sweeping/Clearing | \$70,000 |
| • Kerb & Gutter Other | \$4,000 |
| • Total | \$234,000 |

However, it is to be noted that

- the expenditure for Sweeping/Clearing is currently higher but the Level of Service should be reduced and
- the funding level for repairs should be reviewed in 5 years following the next condition/defect audit.

5.4. Renewal / Replacement Plan

The main risks arising from failed K&G are trip hazards (particularly in CBDs) and failure to contain stormwater flow (only on rare occasions). Defects in K&G can also allow water penetration into the adjacent pavement and lead to pavement deterioration.

Major repairs/renewal of K&G will also involve the renewal of up to a one metre width of road pavement alongside the K&G. Accordingly, some councils make it a practice of programming K&G renewals to the same time as the road pavement is renewed. Where feasible this practice should be followed.

However, Shoalhaven Council has been concentrating on renewing very poor sections of K&G where there is significant risk and water flow is compromised. It is considered the worst of these failures has now been renewed.

Accordingly, the following practices are now recommended –

- All K&G shall be repaired/renewed in a road segment when road resealing/resurfacing is being undertaken and such works shall be budgeted for within the reseal budget
- All K&G shall be repaired/renewed in a road segment when pavement renewal is being undertaken and such repairs/renewals shall be budgeted for in the Road Pavement Renewal Budget.
- An annual capital budget for K&G Renewal shall be made for renewal of (isolated) sections of K&G (greater than 20m in length) that are not within road sections subject to pavement reseal or renewal.
- Of the annual maintenance/repair funding, 50% shall be used for 'programmed maintenance' identified from the 5 yearly condition/defect audits and 50% shall be used for minor repairs to be undertaken to high risk hazards identified by regular risk inspections (refer Section 5.2) or by customer request

It is to be noted that the last financial re-valuation of K&G indicated an annual depreciation of \$3.3Million. This level of funding cannot be provided nor sustained and any strategy will need to focus on repairing/renewing high risk failures only.

5.4.1. Renewal Plan

The 2012 K&G audit identified 2.23Km (over 20 lm in length) of Kerb & Gutter requiring renewal at an estimated cost of \$1,005,000. The current 10 year Financial Plan identifies an annual budget of \$146,000 for renewal. Based on this level of funding, it will take 7 years to renew all currently identified repairs/renewals. It is considered that a satisfactory level of service would be for all identified sections to be renewed within 4 years. That is, by the time the next audit is due. This would require annual funding of \$250,000. This is additional funding of \$100,000/annum. At this stage the funding levels are considered satisfactory.

The failure modes used to identify sections requiring replacement (or repairs) and the intervention level for those failure modes were –

- Uplifting or settlement greater than 50 mm
- Rotation or tilting greater than 50 mm
- Severe cracking and chipping cracking (>3mm width) with sections missing
- Ponding ponding encroaching onto road pavement.

The majority of identified repair/renewal needs were arising from rotation/uplifting of K&G due to heavy vehicle loading alongside the K&G. This is primarily from kerbside waste collection vehicles. The option of charging the Waste Fund for a proportion of these repairs should be considered. It is suggested that an amount of \$100,000 per annum would be appropriate.

5.4.2. Renewal Strategies

A Kerb & Gutter Replacement Strategy was adopted by Council on the 28th January, 2003. It has been progressively updated and the revised Strategy was included in the 2009 K&G Asset Plan. The last K&G audit included listing by GPS of all sections of failure. This listing has been reviewed and forms the basis for future Renewal & Repair Programs.

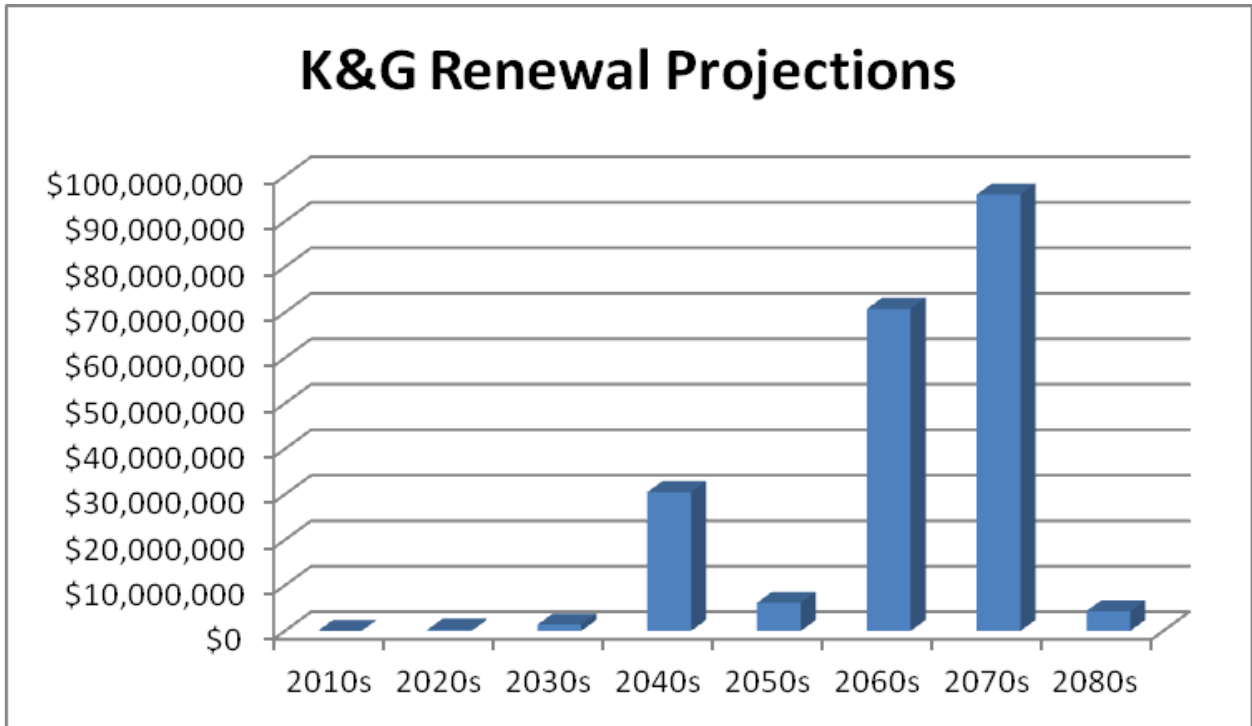
However the review indicated that more emphasis was required for condition in the priority ranking methodology. The revised ranking methodology is to give a score of 1 to 3 for the following factors and to multiply the score by the weighting. The sum of the weighted scores is the priority ranking. The factors are –

- K&G condition weighting 4
- Adjacent pavement condition weighting 1
- Road traffic volume (the higher the volume the greater the risk to cars) weighting 2
- Expected pedestrian volume (an indicator of risk to pedestrians) weighting 2
- Slope of road (flat kerb allows higher water penetration to road pavement) weighting 2

The revised Replacement Strategy is shown at Appendix 2 and a Repair Program is shown at Appendix 3. These lists will be cross referenced against future annual Pavement Reseal and Renewal Programs and any K&G works will be included in those Programs. K&G Renewal and Repair programs will then be issued from the amended listings following the guidelines in Section 5.4.

5.4.3. Summary of Future Costs

The following chart indicates expected future renewal funding forecasts based on available age data. It is evident that major funding for renewal will not be needed for some time.



5.5. Creation / Acquisition / Augmentation Plan

The original Kerb & Gutter Provision Strategy was adopted by Council on 20th April, 1999 and a revised Strategy was adopted with the previous version of this Plan in 2009. The updated strategy is shown at Appendix 1.

In 1999 it was reported that there is an expected need of provision of 250Km of K&G to satisfy all demands. Today it is expected that the demand is for 220Km of K&G. This equates to a total expenditure of about \$62Million.

An Ideal Level of Service for the provision of new K&G is for all needs to be satisfied over a 50 year period and this would entail an annual budget allowance of \$1,200,000. The average annual funding indicated in the current 10 Year Financial Plan is \$100,000; this equates to fulfilling demand in about 620 years.

The provision of new K&G is not a high priority under Council's Resourcing Strategy not is it an identified priority in the Community Strategic Plan. There are a significant number of customer requests regarding access problems and this is considered the main reason for customer demand for new K&G.

Council currently has a Policy (Resident Participation Scheme) where residents can fund K&G provision in advance of Council's programs with Council repaying to the residents 50% of the cost after a 5year period. The current financial impost to council under this Policy is \$183,000 over the next 4 years. As there is a lack of funding for council's programs, it is considered that the use of this Policy should be minimal.

Alternate lower cost options for gravel shoulder treatment have been considered and are being implemented. These include grassing and sealing without kerb & gutter. These methods have been used to treat gravel shoulders at St Georges Basin and other locations and are a successful treatment to prevent gravel shoulder erosion.

The provision of grass swales to stabilize road shoulders is also used where suitable such as where there is negligible vehicle parking, medium grades and medium stormwater flow. However, in high traffic volume urban streets, kerb & gutter is the preferred option. The 2012/13 maintenance budget includes funds of \$160,000 for Shoulder Sealing.

Accordingly, there is expected to be benefit in –

- Developing a Driveway Policy that facilitates improved access onto private property in locations of no K&G and that minimizes cost imposition to council.
- Minimising the use of the Policy for Resident Financing of K&G and
- Undertaking additional shoulder grassing and shoulder sealing projects in maintenance programs.

5.5.1. Selection Criteria

The ranking of projects for provision of new K&G is by use of the following methodology –

- Rank with score of 1 to 10; multiply by the weighting factor and sum the total of the weighted scores the following factors
 - Number of adjacent dwellings; weighting - 2
 - Environmental sensitivity of adjacent watercourses; weighting – 2
 - Drainage volume in gutter line; weighting – 0.5
 - Traffic volume; weighting – 2.5
 - Property risk (from stormwater); weighting – 4
 - Special Factors (eg at school, shops); weighting – 0.5
 - Pedestrian Density; weighting – 1.5.

The list has been populated over a period by resident requests and staff suggestions especially known drainage problem and erosion locations. The list is not exhaustive (about 12% of total needs) and indicates known priority locations. Additional priority projects will be added as identified.

5.5.2. Capital Investment Strategies

Council currently has a Policy for residents to contribute to the cost of new K&G in front of their property utilising Section 217 of the Local Government Act. These contributions are about 30% of the total project cost. The standard Kerb profiles are included in Council's Road Construction Specification (DCP 100).

Under current Procedures all residents affected by new K&G projects are notified by letter at the time of exhibition of the draft annual Operational Plan/Budget. The driver for notification at this stage is the proposed financial levy under Section 217 of the Roads Act. Further advice is forwarded prior to project commencement and once the design and extent of works have been confirmed. Designs and works will take into account the correction of any known drainage issues. Comments on the design are sought from residents prior to finalisation.

5.5.3. Summary of Future Costs

An Ideal Level of Service for the provision of new K&G entails a funding level of \$1,200,000/annum compared to the 10 Year Financial Plan forecast of \$100,000. The provision of additional funding is unlikely in the short term.

5.6. Disposal Plan

The opportunity to dispose of assets (remove and not replace) is minimal. However the need to retain assets will be reviewed on an individual case basis as the need for replacement is identified.

6. FINANCIAL SUMMARY

6.1. Financial Statements and Projections

A summary of funding needs for the next 10 years is shown below in the following Table. It is to be noted that funding needs for the following 10 years is expected to increase with regard to Capital Renewal and then subsequently increase significantly.

Activity	Sustainable Annual Funding	Ideal Annual Funding	Current Funding
<u>Maintenance</u>			
K&G Sweep\Clear	\$70,000	\$120,000	\$70,000
K&G Repair (Programmed)	\$80,000	\$80,000	\$80,000
K&G Repair (Urgent)	\$80,000	\$80,000	\$80,000
K&G Other	\$4,000	\$10,000	\$4,000
<u>Capital</u>			
K&G Replacement	\$150,000	\$250,000	\$141,000
New K&G	\$ 600,000	\$1,200,000	\$100,000
Resident Participation Scheme	\$5,000	\$25,000	\$15,000
Totals:	\$989,000	\$1,765,000	\$490,000

6.2. Funding Strategy

It is unlikely that additional funds will be available. If special grant funding becomes available then additional funding for the provision of new K&G should be considered.

Additional funding for renewals should also be considered

6.3. Valuation Forecasts

Refer to Section 5.1.4.

6.4. Key Assumptions Made in Financial Forecasts

The key assumptions used in the financial modelling are –

- \$450/lm for K&G Renewal
 - It is to be noted that \$282/lm was used for Asset Financial Re-Valuations and that Council's Auditor considered this a high rate. However, the \$450/lm is based on recent renewal projects; the rate would allow for adjacent pavement renewal and subsoil drainage, if required.
- \$470/lm for K&G Repairs.
- 70 year useful life

- Condition data and defect data from recent audit.

6.5. Forecast Reliability and Confidence

It is noted that there is a discrepancy between current data with regard to length and past data. It is essential that this discrepancy be investigated prior to the next review of this AMP. It is also noted by this author that the condition and defect data may need review. The training/qualifications of the person undertaking the next round of inspections needs to be suitable.

7. PLAN IMPROVEMENT AND MONITORING

7.1. Status of AM Practices

Current practices are considered reasonable with asset data used to prepare annual 'programmed maintenance' work lists with asset defects being mapped via GPS. All assets are also mapped.

7.2. Improvement Programme

Details of proposed improvement actions are shown in the following table.

Task No	Task	Responsibility	Resources Required	Timeline
1	Review the needs for the sweeping of K&G outside of CBDs and prepare clear schedule and/or guidelines. <ul style="list-style-type: none"> • Use GPS to define current practices • Review needs with Community Groups 	Roads Asset Manager	Existing staff	December, 2013
2	Prepare K&G Defect & Condition Inspection Guideline	Roads Asset Manager	Existing staff	December, 2013
3	Issue Repair List to W&S staff for action over 2013/15	Roads Asset Manager	Existing staff	May, 2013
4	Review K&G asset data, investigate length discrepancy over current data with past years data and update asset data where applicable.	Facilities and Asset Manager	Existing staff	June, 2013
5	Prepare a "Residential Driveway Policy" to guide staff and the public on access responsibilities, ensure good design & construction practices and provide advice on actions to improve access.	Roads Asset Manager	Existing staff	December, 2013
6	Prepare a Policy for K&G Provision that defines the	Roads Asset Manager	Existing staff	December, 2013

	locations where K&G is not the preferred option			
7	Investigate the option of the Waste Fund contributing to K&G Renewal due to waste vehicles being the main source of failures	Infrastructure Planning Manager	Existing staff	December, 2013
8	When undertaking road pavement renewals/reseals, repair/renew K&G as required under the road funding	Roads Asset Manager, Maintenance Manager	Existing staff	2013/14

7.3. Monitoring and Review Procedures

There are no review procedures currently identified.

7.4. Performance Measures

The following measures can be used as a guide to monitor performance of the Kerb & Gutter Program -

- Annual number of community action requests (currently 51 - 2011/12)
- Number and value of public liability claims
- Extent of K&G in Condition 3 or better. The measure is 98.6% as at 30/06/2012.

8. REFERENCES

- IPWEA-NAMS *Inspection Performance Measurement Guidelines - Practice Note 2 - Kerb & Gutter*
- The IPWEA, 2011, *International Infrastructure Management Manual*.

9. APPENDICES

Appendix 1	Strategy (Priority List) for New Kerb & Gutter
Appendix 2	Priority List for Kerb & Gutter Renewal
Appendix 3	Priority List for Kerb & Gutter Repairs
Appendix 4	Example of Kerb & Gutter Mapping
Appendix 5	Kerb & Gutter Condition Rating Matrix
Appendix 6	Kerb & Gutter Construction – Ratepayer Financing Policy

10. REVIEW

All Asset Management Plans are reviewed on a four yearly cycle and all reviews are undertaken within 12 months of the election of a new Council. The capital program will be reviewed annually in conjunction with the preparation of the draft Delivery Program and Operational Plan.

Shoalhaven City Council
Asset Management Plan - Kerb and Gutter

Appendix1 - Kerb & Gutter Priority List

Town	Street Name	CH Start	CH End	Length (m)	Side (L,R, Both)	Notes	Priority Rating (1-30)	Adjacent Dwellings (1-10)	Environmental Sensitivity (1-10)	Drainage Volume (1-10)	Traffic Volume (1-10)	Property Risk (1-10)	Special Factors (1-10)	Pedestrian Density (1-10)	Predesign Estimate
							(Weighting: 2)	(2)	(0.5)	(2.5)	(4)	(0.5)	(1.5)		
Vincentia	Elizabeth Dr	0.100	0.443	343	Left	GRP A - Ilfracombe Ave to Albion St	78	9	5	4	8	5	4	4	\$107,000
Vincentia	Elizabeth Dr	0.482	0.706	224	Right	GRP B - Albion St to Bayswater St	76	10	5	4	8	4	4	4	\$170,000
Vincentia	Elizabeth Dr	0.252	0.474	222	Right	GRP A - Banksia St to Albion St	76	10	5	4	8	4	4	4	\$70,000
Basin View	Tallyan Pt Rd	0.195	0.700	430	Right	Collingwood St to end K&G LHS	74	10	5	5	5	4	3	5	\$140,000
Erowal Bay	Naval Pde	0.220	0.690	470	Left	Start urban area to Second Ave	73	10	5	5	7	3	3	5	\$188,000
Basin View	Tallyan Pt Rd	0.700	1.251	1000	Both	West of Matthe St to Waterpark Rd	72	9	5	5	6	4	2	5	\$361,000
Lake Conjola	Lake Conjola Ent Rd	5.470	5.560	90	Left	Norman St towards east	72	8	5	7	6	5	2	3	\$30,000
Sanctuary Point	Fairway Dr	0.771	1.000	229	Right	0.771 To 1.000 Km Right Side	72	10	7	7	4	5	2	2	\$67,250
Sanctuary Point	Walmer Ave	0.272	0.497	225	Left	0.272 To 0.497Km Left side (Cross)	72	10	5	5	7	4	2	3	\$63,000
Vincentia	Elizabeth Dr	0.000	0.240	240	Right	GRP A - Moona Ck Bridge to Banksia St	72	9	5	4	7	4	4	4	\$130,000
Sanctuary Point	The Park Dr	1.830	2.420	1180	Both	Boronia St to Lammer Ave	72	9	5	6	7	4	2	4	\$457,200
Sanctuary Point	Walmer Ave	0.000	0.255	255	Right	0.913 To 1.050 Km Right side	72	9	5	5	6	5	3	3	\$176,250
Sanctuary Point	Walmer Ave	1.098	1.533	435	Left	1.098 To 1.533 Km Left side (Frederick)	72	7	5	5	6	6	3	3	\$121,800
Lake Conjola	Lake Conjola Ent Rd			1600	Both	Complete Both Sides In Urban Area	71	8	5	5	7	4	3	5	\$543,000
Vincentia	Elizabeth Dr	3.895	4.039	144	Left	Jervis St to S of Tharwa St	71	10	5	4	5	5	3	3	\$40,320
Basin View	Audrey Ave	0.242	0.340	98	Right	0.242 to 0.340 Km Right side (Elanora)	71	10	5	6	4	5	3	4	\$21,560
Basin View	Audrey Ave	0.097	0.232	135	Right	0.097 to 0.232 Km Right side (Carol)	71	10	5	6	4	5	3	4	\$29,700
Orient Point	Park Row	0.678	0.945	267	Left	Tern To Flora St/Side	71	10	3	4	7	5	1	3	\$90,760
Crookhaven	Prince Edward Ave	0.577	0.650	73	Right	Brighton St To Penguin Head Rd.	71	10	3	2	8	4	3	4	\$38,940
Crookhaven	Prince Edward Ave	0.683	0.864	181	Right	Penguin Head Rd To Eastwood Ave.	71	10	3	2	8	4	3	4	\$114,680
Sanctuary Point	Kerry St	0.036	0.401	365	Right	Jean to Links	71	9	5	5	6	4	3	5	\$91,250
Sanctuary Point	Walmer Ave	0.904	1.588	684	Left		71	9	5	5	7	4	4	3	\$273,500
Basin View	Watersedge Ave	0.000	0.373	790	Both	All	71	9	7	6	3	6	2	2	\$173,800
Erowal Bay	Naval Pde	0.22	0.87	650	Right	Start urban area to boat ramp access	70	10	5	5	5	4	2	4	\$191,500
Sanctuary Point	Edmund St	0.871	1.006	134	Right	0.871 To 1.006 Km Right side (end Sanctuary Pt Rd)	70	10	5	5	5	5	1	3	\$29,480
St Georges Basin	Island Point Rd	1.572	1.752	180	Left	1.572 to 1.752 Km Left side (Fiboat ramp)	70	10	6	5	4	5	2	3	\$50,400
Sanctuary Point	Sanctuary Pt Rd	1.660	1.742	82	Left	1.902 To 1.992 Km Left side (before Greville shop)	70	9	6	6	6	4	3	3	\$25,460
St Georges Basin	Tasman Rd	0.039	0.213	174	Left	(Island Pt) 0.040 To 0.164 Km Right Side (Terry)	70	9	6	6	6	4	3	3	\$81,440
Sanctuary Point	Walmer Ave	0.017	0.257	240	Right	0.017 To 0.257 Km Right side	70	9	5	5	7	4	3	3	\$67,200
Sanctuary Point	Sanctuary Pt Rd	0.000	0.787	699	Left	0.000 to 0.787 Km Left side (less 98m for reserve)	70	6	7	6	6	5	3	3	\$110,240
Sanctuary Point	Sanctuary Pt Rd	0.339	0.679	340	Right	0.338 To 0.680 Km Right Side	70	10	5	5	6	4	3	3	\$97,700
Sanctuary Point	Sanctuary Pt Rd	1.943	2.005	62	Right	1.954 To 2.006 Km Right Side	70	10	5	5	6	4	3	3	\$19,860
Bendalong	Jacaranda Ave	0.003	0.271	268	Left	Construct K & G - West Side. 0.003 To 0.271 Km Left Side.	70	9	4	2	2	8	2	3	\$80,040
Sanctuary Point	Walmer Ave	0.027	0.263	236	Left	0.027 To 0.263 Km Left side (unnamed)	70	9	5	5	7	4	2	3	\$37,760
Callala Bay	Boorahme Tce	0.000	0.221	420	Both	44 To Sheafe-Complete Awap Works.	69	10	6	4	6	3	4	4	\$128,500
Sanctuary Point	Greville Ave	2.184	2.218	34	Right	2.184 To 2.218 Km Right side (Greville shop)	69	10	5	5	5	4	4	4	\$5,440
Callala Bay	Lackersteen St	0.000	0.180	180	Right	Between Sydney & Fleet Sts No7 West S. 0 To 0.18 Km	69	10	4	4	7	3	1	6	\$58,250
Sanctuary Point	Waratah Cres	1.027	1.367	340	Left	1.027 to 1.367 Km L/Side	69	10	4	5	5	5	3	3	\$54,400
Sanctuary Point	Walmer Ave	0.895	1.066	171	Right	Frederick	69	9	5	5	5	5	3	3	\$83,750
St Georges Basin	Loralyn Ave	0.000	0.260	210	Right	Island Pt Rd to Merton St	69	10	6	7	3	5	2	3	\$58,780
St Georges Basin	The Wool Rd	0.215	0.491	276	Right	0.215 to 0.491 Km Right (Shortcut)	69	10	6	5	8	2	3	3	\$44,160
Sanctuary Point	Cessna Ave	0.194	0.270	76	Right	0.194 to 0.270 Km R/Side (Piper)	68	10	8	7	5	3	2	2	\$12,160
Sanctuary Point	Dunisia St	0.242	0.354	112	Left	0.242 to 0.354 Km Left side (Leumeah)	68	10	7	7	4	4	2	2	\$17,920
Narrawallee	Ross Avenue	0.540	0.710	340	Both	No 64 To 59 Both Sides	68	10	4	6	3	6	1	3	\$138,400

Town	Street Name	CH Start	CH End	Length (m)	Side (L,R, Both)	Notes	Priority Rating (1-30)	Adjacent Dwellings (1-10)	Environmental Sensitivity (1-10)	Drainage Volume (1-10)	Traffic Volume (1-10)	Property Risk (1-10)	Special Factors (1-10)	Pedestrian Density (1-10)	Predesign Estimate
							(Weighting: 2)	(2)	(0.5)	(2.5)	(4)	(0.5)	(1.5)		
Nowra	Douglas St	0.440	0.640	200	Both	Berry St to Spring St to Osborne St	66	10	2	4	6	4	2	5	\$110,000
Vincentia	Frederick St	1.040	1.290	250	Left		65	10	5	6	2	6	3	1	\$101,950
Sanctuary Point	Fairway Dr	0.360	0.790	860	Both		65	10	4	6	5	4	2	3	\$365,500
Mollymook Beach	Mitchell Parade			350	Right	Beach Rd. to Bannister Head Rd	65	10	2	3	8	3	2	4	\$107,500
Basin View	Basin View Pde	0.150	1.680	1430	Left	Collingwood St to Tallyan Pt Rd	64	10	6	7	5	2	3	4	\$527,900
Sussex Inlet	Government Rd			297	Left	Thomson St to Verison Rd - East Side - Needs Extra Dge	64	9	4	4	6	3	2	5	\$110,660
Sussex Inlet	Government Rd			98	Left	Colverison Rd To Lakehaven Drive - East Side	60	10	2	1	7	3	3	3	\$27,440
Milton	Gordon St			588	L & R		60	9	3	3	7	2	5	4	\$94,080
St. George Basin	Panorama Road			230	south	Southern side	60	8	5	5	3	5	2	2	\$66,600
Sussex Inlet	Government Rd			381	left	Thomson St To Lakehaven Dr (West Side)	59	9	4	3	6	2	2	5	\$129,680
West Nowra	Yalwal Rd	0.700	0.900	195	Left	West from opp Depot Rd	59	8	2	4	6	4	2	3	\$59,600
Badgee	River Rd			860	Both	Suncrest Ave To Fairview Cres Both Sides	58	9	5	5	3	4	2	2	\$263,800
West Nowra	Filter Rd	0.330	0.580	230	Right	North from Stookley Cl	58	10	2	4	4	4	2	3	\$66,900
Nowra	Morton Pde	0.010	0.250	430	Both	All	57	10	3	5	2	3	2	7	\$153,150
Bomadery	Numrock St	0.010	0.160	300	Both	W Cambewarra Rd to adj Bunberra St	57	10	2	4	3	4	2	4	\$85,400
East Nowra	Jervis St (E)	0.430	0.520	90	Right	Wallace St to park	56	10	3	5	3	3	1	5	\$25,200
Bomadery	Karowa St	0.090	0.180	90	Left	Tanang St to Birreley St	55	10	2	4	3	4	2	3	\$17,100
Bomadery	Tanang St	0.210	0.400	380	Both	Karowa St to Brnawarr St	50	10	2	2	3	3	2	3	\$106,400
Lake Tabourie	River Rd	0.020	0.240	220	Left		50	9	3	2	5	1	2	5	\$150,000
Sussex Inlet	Government Rd			257	Both	Sussex Inlet Rd To Thomson St	50	9	2	2	6	2	1	2	\$81,960
Bomadery	Tallyang St	0.000	0.190	380	Both	Birreley St to Bunberra St	48	10	2	3	2	3	2	3	\$107,350
Nowra	East St	0.010	0.200	210	Both	North from Kaiandar St	48	10	2	3	2	3	2	3	\$76,700
East Nowra	Wallace St	0.200	0.370	260	Both	North from Jervis St	48	10	2	3	2	3	2	3	\$72,800
Mollymook	Turner Street			560	Both	Full length	43	10	2	3	2	2	2	2	\$169,450
Bomadery	Tanang St	0.010	0.210	200	Left	Coomea St to Karowa St	38	4	2	6	3	2	2	4	\$61,000
															\$8,019,970
REQUESTS TO BE INVESTIGATED															
Burrill Lake	Wallaroy Drive					No: 14 - Barry Huppon - Mob:0418 451 038	0								
Culburra Beach	Prince Edward Avenue					No:49 - Sam Bolbol	0								
Cunlurong Point	Alaska Street					No:17 - Andrew & Janette Kingston	0								
Greenwell Point	Greens Road					No:2 - Valdo Zacher - 0413 956 164	0								
Greenwell Point	South Street					No:18 - Mr. O'Donnell - 9616 4475	0								
Milton	Charles Street					No:14 - Roger Croft	0								
Narrawallee	Ross Avenue					No:33 - Tel:4455 5190 (Sue)	0								
Orient Point	Olway Street					No:13,Carol Strong - 4447 5119 - Mob:0416 546	0								
Sanctuary Point	Warrago Drive					No:9 - Mr. Lawrance Cassa	0								
St. George Basin	Lachlan Cres					No:8 - Albert Bartolo	0								
Sussex Inlet	Matilda Avenue					No: 5 - Mr & Mrs Boskovski	0								
Vincentia	Saunarez Street					No: 54 - Dianne Dennis - 4441 8510	0								
Vincentia	St George Avenue					Maria - 0419 402 150	0								

Shoalhaven City Council
Asset Management Plan - Kerb and Gutter

Appendix 2 – Kerb & Gutter Replacement Strategy

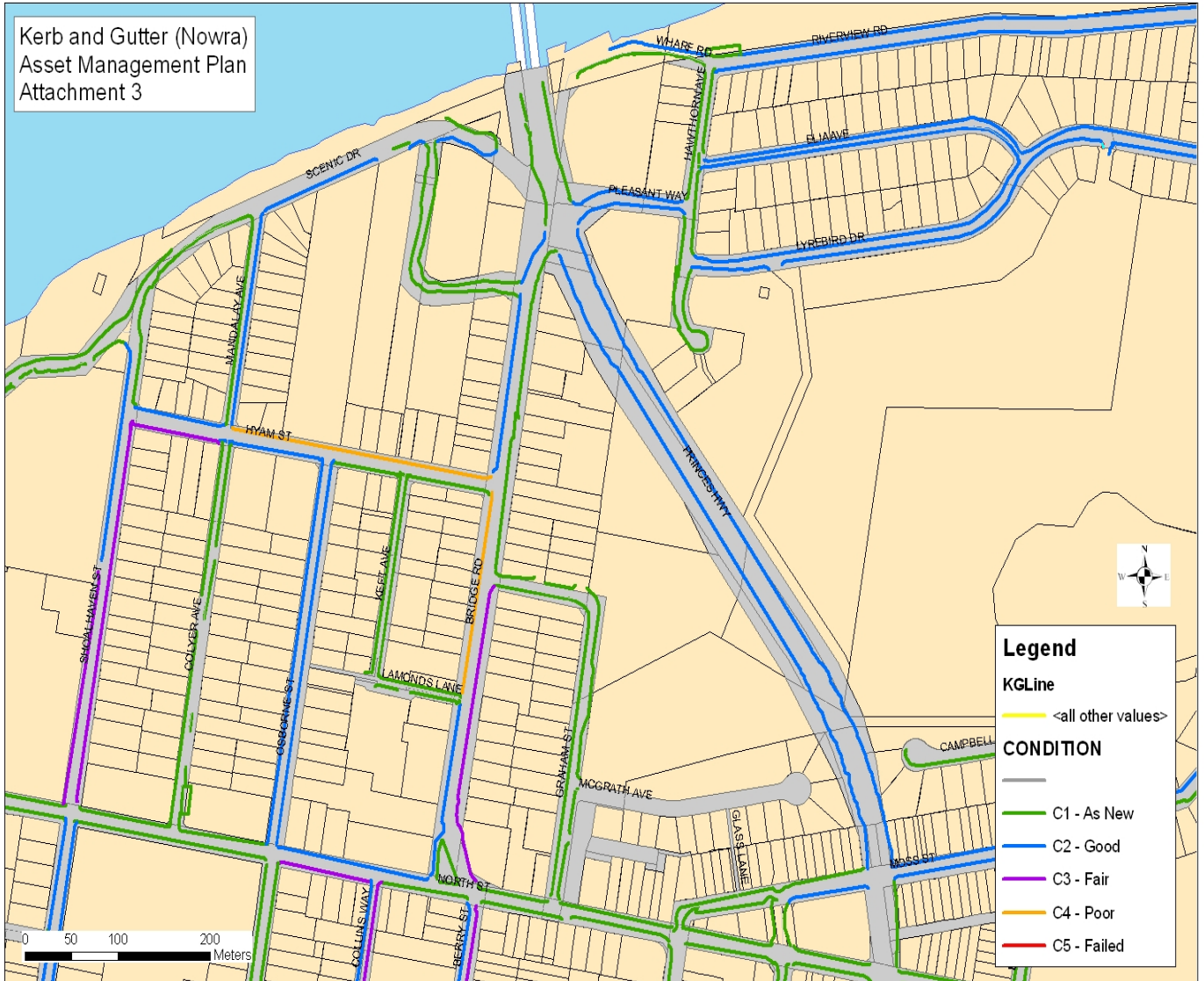
Street	Asset Location	Location Comments	Renewal Length	Preliminary Cost Estimate	Kerb Severity 1,2,3	Pavement Condition 1,2,3	Traffic Volume 1,2,3	Gradient Flat=3, Steep=1	Pedestrian Volume 1,2,3	Priority Rating
		\$450,000			4	1	2	2	2	
GOLDEN WATTLE DRIVE	ULLADULLA	NO.10 TO NO.20 (K&G has been removed)	0.060	\$27,000	3	2	2	3	1	26
CURRAMBENE ST	HUSKISSON	Ch0.087 to Ch0.213 - EAST SIDE	0.120	\$54,000	2	2	3	1	3	24
SURFERS AVE	NARRAWALLEE	AT END CAR PARK - DISH DRAIN	0.044	\$19,800	2	1	2	3	2	23
GREEN ST	ULLADULLA	AT SCHOOL BUS BAY	0.040	\$18,000	1	1	3	3	3	23
TANNERY RD	CAMBEWARRA VILLAGE	PARK TO NO.41	0.050	\$22,500	3	2	2	1	1	22
SETTLERS WAY	MOLLYMOOK	NO.66 TO NO.68	0.032	\$14,400	3	2	2	1	1	22
VALLEY VIEW CLOSE	MILTON	Ch0.000 to Ch0.049 - RHS	0.030	\$13,500	3	2	1	2	1	22
VISTA DR	DOLPHIN POINT	Ch0.000 to Ch0.124 - RHS	0.100	\$45,000	3	2	1	2	1	22
VISTA DR-Ch0.139 to Ch0.261	DOLPHIN POINT	FIRST 30lm - RHS	0.030	\$13,500	3	2	1	2	1	22
QUEENBOROUGH ST	NOWRA	NO.15 TO STUART	0.060	\$27,000	3	2	1	2	1	22
PRINCESS ST	BERRY	NO.7 TO NO.11	0.058	\$26,100	3	1	1	2	1	21
GRANT ST	NOWRA	NO.14 TO NO.113	0.035	\$15,750	3	1	1	2	1	21
PLUNKETT ST	NOWRA	AT SCHOOL	0.040	\$18,000	2	1	2	1	3	21
PRINCE ALFRED ST (STH)	BERRY	VARIOUS QUEEN TO PRINCESS	0.100	\$45,000	2	1	2	2	2	21
DONLAN RD	MOLLYMOOK	NO.48 TO NO.52	0.060	\$27,000	2	2	2	1	2	20
DONLAN RD	MOLLYMOOK	NO.69 TO NO.75	0.090	\$40,500	2	2	2	1	2	20
HIGHVIEW DR	DOLPHIN POINT	AT NO.6	0.030	\$13,500	2	2	2	2	1	20
QUEENBOROUGH ST	NOWRA	NO.7 AT PITS	0.030	\$16,500	2	2	1	3	1	20
WASON ST	MILTON	From 63 to end	0.190	\$85,500	2	1	2	2	1	19
SURFERS AVE	NARRAWALLEE	CORNER TO NO.9	0.057	\$25,650	2	2	2	1	1	18
GOORAMA DR	CAMBEWARRA VILLAGE	NO.1 TO NO.5	0.050	\$22,500	2	2	1	2	1	18
GOLF AVE	MOLLYMOOK	NO.25 TO NO.31	0.049	\$22,050	1	2	3	1	2	18
TREETOPS CRES	MOLLYMOOK	NO.25 TO NO.29	0.040	\$18,000	2	1	2	1	1	17
TREETOPS CRES	MOLLYMOOK	NO.41 TO NO.45	0.045	\$20,250	2	1	2	1	1	17
MUMBULLA DR	SOUTH NOWRA	NO.14 + 2 SMALL SECTIONS	0.040	\$18,000	2	1	1	2	1	17
KALANG AVE	ULLADULLA	NO.47 TO NO.57	0.099	\$44,550	2	1	1	2	1	17
MACLEAN ST	NOWRA	NO.7 TO NO.9	0.031	\$13,950	2	1	1	2	1	17
LEO DR	NARRAWALLEE	NO.35 TO NO.43	0.040	\$18,000	1	1	2	3	1	17
LEO DR	NARRAWALLEE	NO.87 TO NO.103	0.140	\$63,000	1	1	2	3	1	17
SETTLERS WAY	MOLLYMOOK	NO.12 TO NO.14	0.030	\$13,500	2	2	1	1	1	16
SURFERS AVE	NARRAWALLEE	NO.1 TO NO.5	0.036	\$16,200	1	2	2	1	2	16
JERRY BAILEY RD	SHOALHAVEN HEADS	NO.5 TO NO.15	0.073	\$32,850	1	1	2	2	1	15
OVAL DR	SHOALHAVEN HEADS	NO.2 TO NO.12	0.114	\$51,300	1	1	2	2	1	15
OVAL DR	SHOALHAVEN HEADS	NO.28 TO NO.34	0.073	\$32,850	1	1	2	2	1	15
PITMAN AVE	ULLADULLA	NO.32 TO NO.36	0.035	\$15,750	1	1	2	2	1	15
BOMBORA CRES	NARRAWALLEE	NO.15 TO NO.19	0.038	\$17,100	1	1	1	2	1	13
SCARLET GUM CRES	ULLADULLA	NO.9 TO NO.13	0.039	\$17,550	1	1	1	2	1	13
			2.228	\$1,005,600						

Appendix 3 – Kerb & Gutter Repair List

Kerb & Gutter Repair List February, 2013

From	To	StreetName	Village	Defect Length	Preliminary		Comments
					Cost Estimate		
-	-	Alexandra St	Berry	12	\$5,472		K&G cracked, tree root damage' opp Church
-	-	Journal St	Nowra	18	\$8,449		across from #61 journal st
At Grammar school		Croobyar Road	Milton	16	\$7,520		
105	105	Osbourne St	Nowra	9	\$4,417		osborne st out front of 105 corner of central ave and bellevue st
-	-	Central Ave	South Nowra	14	\$6,446		
7	7	Highview Dr	Dolphin Point	19	\$8,930		
149	153	Mitchell Parade	Mollymook	18	\$8,504		
RHS		Kywong Ave	Bawley Point	15	\$7,050		
RHS		Murilla Ave	Bawley Point	10	\$4,700		
45	47	Winsor Dr	Berry	11	\$5,252		Some sections in poor condition
146	148	Princes Highway	Milton	20	\$9,281		Outside #146-148
LHS		Kywong Ave	Bawley Point	15	\$7,050		
8	16	Molloy Street	Mollymook	12	\$5,640		
8	10	Devlin Ave	North Nowra	20	\$9,400		
109	109	Plunkett St	Nowra	10	\$4,872		plunket st across the road from 28
19	19	Plunkett St	Nowra	14	\$6,659		plunket st out front of 19
1	2	Riverview Rd	Nowra	15	\$6,968		out front of 2 riveview rd
80	82	Shoalhaven St	Nowra	14	\$6,509		
88	86	Shoalhaven St	Nowra	14	\$6,435		
10	12	Tarraba cr	Nowra	17	\$7,800		
26	28	Young Ave	Nowra	10	\$4,746		
36	38	Junction St	Nowra	20	\$9,400		
116	118	Scott St	Shoalhaven Heads	20	\$9,400		
16	18	Fitch Street	Ulladulla	18	\$8,460		
		Faust Close	Mollymook Beach	11	\$5,049		
2	2	Allowrie cres	Nowra	11	\$5,175		
12	8	Leatham Ave	Nowra	17	\$7,782		out front of 10
4	12	Mawson Road	Shoalhaven Heads	18	\$8,460		
1	7	Mawson Road	Shoalhaven Heads	15	\$7,050		
15	15	Cavanagh Lane	West Nowra	10	\$4,837		displaced Outside #15
						\$207,712	

Appendix 4 - Kerb & Gutter mapping example



Appendix 5 – Kerb & Gutter Condition Rating Matrix

APPENDIX 2 - KERB AND CHANNEL CONDITION RATING FACTORS

Condition Rating	General Description	Rating Factors (Any one to apply)			
		Cracking	Misalignment due to uplift / settlement / rotation	Chipping / Spalling	Ponding
1	As new – No need for intervention. No risk to public safety.	No cracks or only occasional fine surface cracks.	Nil	Nil	Nil
2	Some sign of wear and tear – No immediate intervention required. Note for review at next inspection. No risk to public safety	Isolated fine cracking at intervals.	Isolated misalignment – up to 5mm.	Minor cosmetic chipping only. No impact on performance.	Minor ponding in channel only.
3	Some isolated defects – Generally able to be addressed through routine/scheduled maintenance. Some risk to public safety and amenity.	Block cracking typically 3 to 5mm width. Up to 20% of length.	Misalignments of 5 to 15 mm with up to 30% of length affected.	Isolated chipping, max 30mm diameter. Average 5m apart.	More significant ponding but confined to channel. No more than 30% of section affected.
4	Poor condition – Extensive wear and tear – Requiring replacement of sections. Significant risk to public safety and amenity.	Block cracking but still intact. Typically 3 to 5mm width. Generally over 20% to 50% of section affected.	Misalignments 15 to 50mm with over 50% of length affected. Water infiltration to pavement.	Chipping and spalling with some water infiltration evident. No more than 50% of section affected.	Ponding encroaching onto pavement and isolated pavement damage. No more than 30% of section affected.
5	Significant defects – both in terms of severity and extent. Requires full length replacement. High risk to public safety, pavement and amenity.	Block cracking with displacement and sections missing. Water infiltrating pavement. Generally over more than 50% of section affected.	Misalignments over 50mm and over 50% of section affected. Water infiltration to pavement.	Major spalling of sections. Water infiltration common. Over 50% of length affected.	Ponding significantly encroaching onto pavement and water infiltration evident over 30% of length affected. Significant impact on adjoining pavement.

Appendix 6 – Kerb & Gutter Construction – Ratepayer Financing Policy

KERB AND GUTTER CONSTRUCTION – RATEPAYER FINANCING POLICY

Policy Number: POL08/281 • **Adopted:** 29/06/2004 • **Amended:** 25/06/2007, 25/08/2009 • **Minute Number:** MIN04.740, MIN07.822, MIN09.1143 • **File:** 16016 • **Produced By:** City Services and Operations Group • **Review Date:** 1/12/2012

1. PURPOSE

The aim of this policy is to give ratepayers and occupiers of urban land within the City the opportunity to advance the construction of kerb and gutter and associated shoulder seal fronting their property by way of ratepayer advances.

2. STATEMENT

2.1. Background

The ratepayer financing scheme allows ratepayers to fund the cost of kerb and guttering fronting their property in advance of the work being undertaken via Council's normal construction works programs.

2.2. Scope

This policy applies to all urban residential areas across the City where Council ultimately intends to provide kerb and guttering.

2.3. Relationship to Other Documents

This policy should be read in conjunction with the relevant section of Council's current "Management Plan – Fees and Charges"

3. PROVISIONS

3.1. Repayment of Loan Advance

Where ratepayer advances are made to fund the construction of kerb, gutter and shoulder seal, the amount advanced (less the adjoining owner's normal contribution) will be repaid on a date 5 years after the day on which the advance is made at a rate of 5% per annum simple interest.

[Note: The "adjoining owners normal contribution" is outlined in Council's current "Management Plan – Fees and Charges" for the recovery of costs in accordance with Section 217 of the Roads Act 1993.]

3.2. Criteria for Eligibility

Approval to applications for works to be carried out under this policy will be subject to the General Manager (Director City Services and Operations Group) certifying that the required work is feasible and not deleterious to any other work or property. For kerb and guttering, approval will only be issued for construction fronting two properties, two or more properties or sections of at least 30 metres in length, or shorter if infill works allow two existing sections of kerb & gutter to be joined.

3.3. Fees and Charges

For the purpose of such Ratepayers advances a standard charge per metre will be adopted, such charge to be included in Council's Fees and Charges and adjusted annually.

3.4. Additional Costs

Where additional costs will obviously be required and the work is nonetheless seen as desirable, then such additional costs will be incorporated into Council's Capital Works Programme. Additional provision will be made in the programme for these costs which should also include Council's contribution for shoulder seal.

3.5. Driveways

Council also encourages ratepayers and occupiers at their own cost, to have constructed driveway slabs or strips between the property boundary and kerb line, in accordance with Council's Private Driveway (Resident) Policy, particularly, where new kerb and guttering is being constructed.

4. IMPLEMENTATION

City Services and Operations Group staff will provide copies of this policy to ratepayers who request kerb and guttering in advance of Council's normal Capital Works program. Where interest is shown, Council staff will facilitate and encourage other property owners in the street to take advantage of the policy and to maximise the number of participants. Any viable project will be reported to Council for a resolution to enter into a Ratepayer Advance Agreement as a Legal Document.

All finances will be administered in accordance with that Agreement by the Director Finance and Corporate Services.

5. REVIEW

The City Services and Operations Group will review this policy within one year of the election of every new Council or earlier should circumstances arise to warrant revision.

6. APPLICATION OF ESD PRINCIPLES

The construction of kerb and guttering will reduce the effects of stormwater erosion in many under developed catchments.