



Road pavement

Asset Management Plan

Document Control



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1. EXECUTIVE SUMMARY

What Council Provides

Council provides a Road Network to enable safe and comfortable use for our community.

Asset category	Qty
Road Pavement	630km
Kerb and Gutter	718km
Footpath/Cycleway	173km
Road Inventory Items	Including: Bus Shelter 45, bus stops, lines 170km, Signs 5588, Grail 6km, posts

What does it Cost?

There are two key indicators of cost to provide the road service.

- The life cycle cost being the average cost over the life cycle of the asset, and
- The total maintenance and capital renewal expenditure required to deliver existing service levels in the next 10 years covered by Council's long term financial plan.

Annual Forecast Maintenance	\$4,000,000
Annualised Renewal Program	\$6,075,000
Total Annual Cost	\$10,075,000

These costs do not include backlog works.

Plans for the Future

Council plans to operate and maintain the Road network to achieve the following strategic objectives.

1. Ensure the road network is maintained at a safe and functional standard as set out in this asset management plan.

2. Ensure the road works are up to date with the current road standards as set out in this asset management plan.
3. Ensure the Road network meets the demand of future growth as set out in this asset management plan and development plans.

Measuring our Performance

Quality

Road assets will be maintained in a reasonably usable condition. Defects found or reported that are outside our service standard will be repaired. See our maintenance response service levels for details of defect prioritisation and response time, as set out in the Road Risk Management Procedures 2009.

Function

Our intent is that an appropriate road network is maintained in partnership with other levels of government and stakeholders to provide and adequate and safe road network.

Road asset attributes will be maintained at a safe level and associated signage and equipment be provided as needed to ensure public safety. We need to ensure key functional objectives are met:

- Future Demand
- Future Road Loading Standards

Safety

We inspect all roads regularly and prioritise and repair defects in accordance with our inspection schedule to ensure they are safe.

The Next Steps

This actions resulting from this asset management plan are:

- Continue Formal Routine Inspections
- Community Survey of satisfaction of road service levels
- Review demand growth areas & S94 Contribution Plans

2. INTRODUCTION

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding required to provide the required levels of service.

The asset management plan is to be read with the following associated planning documents:

- Maitland 2021 Community Strategic Plan 2011
- Maitland Delivery Program 2011
- Asset Management Policy 2011
- Asset Management Strategy 2011
- Council Policy Manual
- Ten Year Finance and Revenue Plans
- Road Risk Management Procedures
- Manual of Engineering Standards
- Customer Service Manuals
- LEP and DCP
- Stormwater Asset Manuals

This asset management plan covers the following infrastructure assets:

- Local Road Network
- Regional Road Network

Table 2.1. Assets covered by this Plan

Asset category	Dimension	Replacement Value (\$M)
Road Pavement	630km	357.8
Kerb and Gutter	Concrete 718km	46.3
Footpath/Cycleway	173km	31.6
Road Inventory	Bus Shelter 45, bus stops, lines 170km, Signs 5588, Grail 6km, posts	20.9
TOTAL		\$445.9M

Key stakeholders in the preparation and implementation of this asset management plan are:

General Community	User safety, work request and satisfaction
Asset Infrastructure and Planning	Planning, design and control
City Works and Services	Provision of services
Developers	Compliance and contribution

2.2 Goals and Objectives of Asset Management

The Council exists to provide services to its community. Some of these services are provided by infrastructure assets. Council has acquired infrastructure assets by 'purchase', by contract, construction by council staff and by donation of assets constructed by developers and others to meet increased levels of service.

Council's goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,
- Understanding and meeting the demands of growth through demand management and infrastructure investment,
- Managing risks associated with asset failures,
- Sustainable use of physical resources,
- Continuous improvement in asset management practices.¹

2.3 Plan Framework

Key elements of the plan are

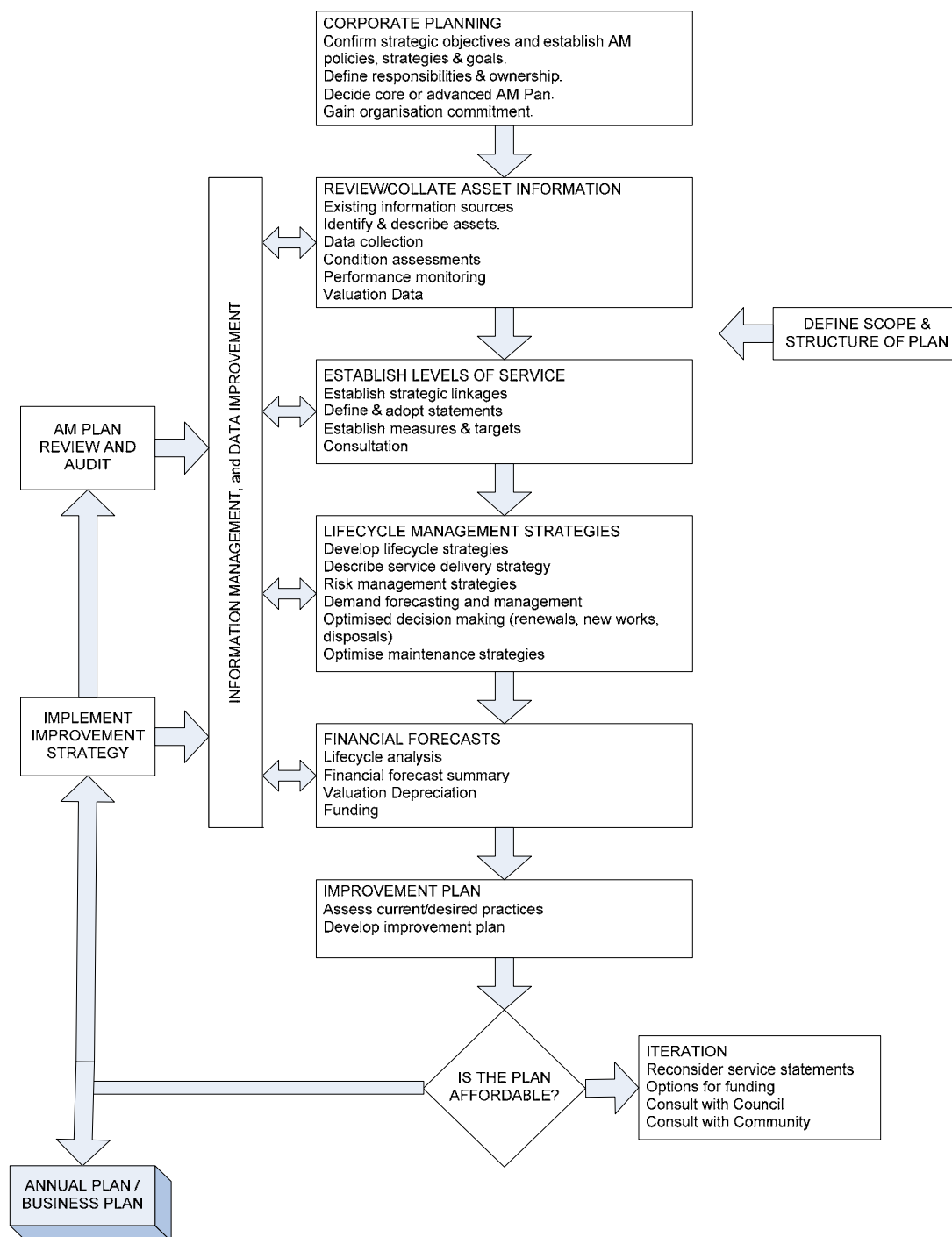
- Levels of service – specifies the services and levels of service to be provided by council.
- Future demand – how this will impact on future service delivery and how this is to be met.
- Life cycle management – how Council will manage its existing and future assets to provide the required services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

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

¹ IIMM 2006 Sec 1.1.3, p 1.3

Road Map for preparing an Asset Management Plan

Source: IIMM Fig 1.5.1, p 1.11



2.4 Core and Advanced Asset Management

This asset management plan is prepared as an 'advanced' asset management plan for road pavement and 'core' asset management for road inventory in accordance with the International Infrastructure Management Manual. It is prepared to meet legislative and organisational 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 'network' level. This approach has been used on some sub asset categories.

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

3. LEVELS OF SERVICE

Council has defined service levels in two terms. Community levels of service and technical level of service.

Community Levels of Service relate to how the community receives the service in terms that may include safety, quality, quantity, reliability, responsiveness, cost/efficiency and legislative compliance.

Council in the past has conducted Local Government Customer Satisfaction survey. These surveys poll a sample of residents on their level of satisfaction with Council's services. Recent customer satisfaction survey reported satisfaction levels for the following services

Table 3.1. Community ranking of area of most concern

Performance Measure	Most of Concern				
	2006	2005	2004	2003	2002
Community Priority Ranking for Road Safety	Rank 1	Rank 3	Rank 5	Rank 4	Rank 4
Community Priority Ranking for Road Maintenance	Rank 4	Rank 1	Rank 4	Rank 1	Rank 5

Over the surveyed period the results indicate that road condition and safety is usually in the top 5 of community concern. Typically roads are used by most residents on a regular basis and therefore are a service that Council is frequently judged upon. The road network is in good condition, however it only takes the memory of a few poor road sections that adversely influences the perception of condition.

While community perception is of high importance, other objective road health measures are needed to determine the actual level of service being delivered.

Supporting the community service levels are operational or technical measures of performance developed to ensure that the minimum community levels of service are met. These technical measures relate to service criteria such as:

Service Criteria	Technical measures relate to
Quality	Pavement Condition Indexes
Request/Defect	Number of outstanding maintenance works
Safety	Number of injury and/or accidents

Council uses both community and technical service level measures in developing the Rolling Works Program component of the annual Management Plan of Council.

3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. These include:

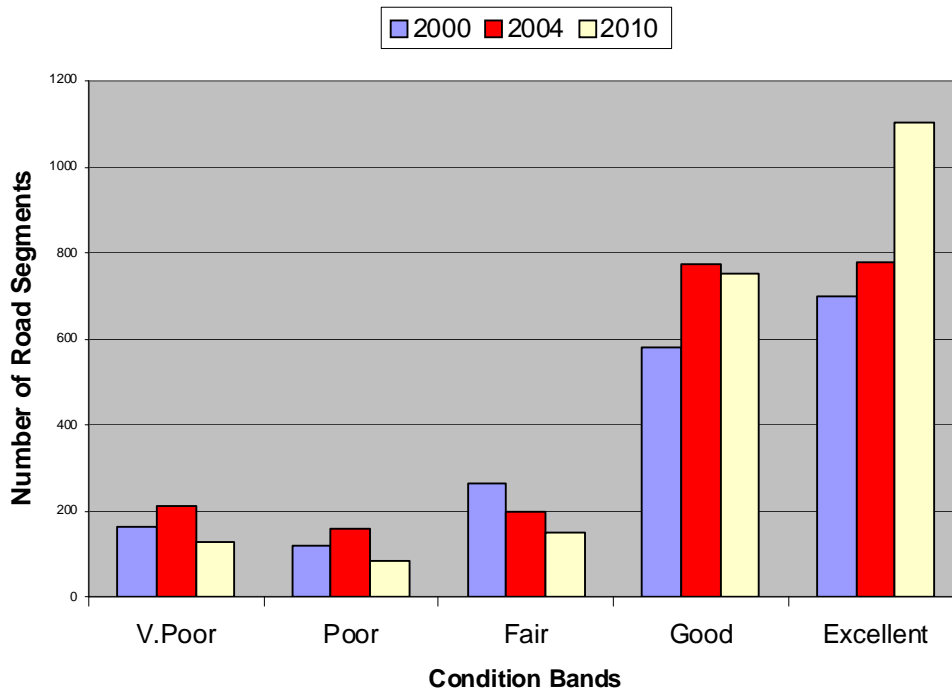
Table 3.2. Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Roads Act	Sets out role, purpose, responsibilities and powers with respect to roads.
Environmental Legislation	Responsible measures to protect environmental issues
OHS	Sets out responsibility to provide a safe and healthy workplace

3.3 Current Levels of Service

Current Pavement Quality from advance modelling using a Pavement Management System: The graph below shows the overall network condition in bands from very poor to excellent. While the average pavement condition index is around 7 out of 10 and is quite acceptable, there has been no real improvement in the number of road sections cycling in the poor condition band. On averaging the condition index, the road network is in good condition and represents a primary service level measure.

Past 10 years Snapshot (Actual) - Pavement Condition Summary



Graph interpretation suggests that:

1. The historic funding level as derived from the first 10-year plan has kept the network in a steady condition. However, with a high network growth and prolonged wet weather deterioration need to be carefully monitored.
2. There is a backlog of works, represented in the poor and very poor bands.
3. Additional funding is required to actually improve the network. Community expectation relating to road standard increases over time and construction costs has increased by 30% above CPI in the last five years, according to BIS Shrapnel (2008).

Road inventory service level:

Road Inventory items are inspected on regular bases. Maintenance is generated from customer request and inspections. This ensures that any high hazard defects are treated as soon as possible. While there is a reactive component customer request is effective.

The road capital works programs renew inventory items. Over a quarter of the road allocation will renew items such as kerb and gutter, Linemarking and signs. (Especially in the reseal and rehabilitation program areas)

Generally the measures of service level for road inventory items are:

1. The ration of current value to replacement value – approximately “6 out of 10”
2. The number of customer request receive per year – slight increasing trend
3. The number of accidents reported - stable

As formulated in Councils Annual Report and reaffirmed using the SMEC PMS, the funding required to lift road pavements and inventory to a satisfactory condition is in the order of \$45 Million. (Does not include improving the road standard)

3.4 Desired Levels of Service Options

Option	Service Level over 10 years	Funding Level Required	Comments
1	Keep average road condition index above 8 and No. of poor section less than 100	Injection of \$45 Mill over 10 years on top of existing funding.	This level has direct financial implications and will be determined by a successful revenue strategy.
2	Keep average road condition index above 7	Indexed to Growth. This is naturally funded by City's growth. CPI & growth rate Increase.	This level has only minor financial implications. But must remain a budgetary policy.
3	Keep average pavement condition index and valuation ratios above 6	Current Funding plus CPI	This level will have implication on the network condition in subsequent years and therefore higher financial implications.

The desired level of service is to improve the overall network condition and related benefits over time. Option 2 is the most pragmatic and the minimum service level given community expectations.

4. FUTURE DEMAND

4.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc.

Demand factor trends and impacts on service delivery over the next 10 years are summarised in Table 4.1.

Table 4.1. Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on services
Population	60,000	2026 – 96,000	Increased deterioration on older collector, distributor and arterial roads
Expectation	Smooth, defect free pavement and inventory	Proactive and reaction times improved. Greater consideration of aesthetics & appearances	Construction, road works Standards, Development surveillance & request actions.
Construction Costs	Has increased by 5% above CPI in the last 5 years	Will increase above CPI by 2% over next 5 years.	Reduction in scope of works. Less road sections treated.

4.2 Changes in Technology

Technology changes are forecast to have little effect on the delivery of services covered by this plan. Attention is paid to advances and where appropriate trials and application will be conducted.

4.3 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

CSR & customer communication eg sync of procedures CSR - inspection - determination – priority – efficiency etc.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this asset and other management plans.

Table 4.3. Demand Management Plan Summary

Service Activity	Demand Management Plan	Priority
Index annual capital and maintenance budget increases with growth rate & construction costs index on top of CPI	Funded from rate revenue in association with growth.	1
CSR Procedures	Continue priority based maintenance effort and increase planned maintenance activity	1
Update works program in development Sec 94 contribution plans	Synchronisation of works such that the Rolling Works program forms part of the MCC contribution required by the Sec 94 plan.(77% Nexus works)	1

Revision Assets costs within Council's 10 Financial Plan.	Ensure realistic lifecycle cost form part of the longer term financial implication and planning	1
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4.4 New Assets from Growth

New assets required to meet growth will be acquired from land developments and re-construction needed as a result of growth by developer contribution and Council budgets. Land Developments are managed by Councils development contribution plans (Sec 94) and conditions imposed with development approvals.

Acquiring these new assets will commit council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operating and maintenance costs. The formation of annual budgets must include a growth rate on top of construction inflationary budget adjustments. It is of high importance that the associated increase in new rate revenue each year contribute to budget increases, both maintenance and renewal.

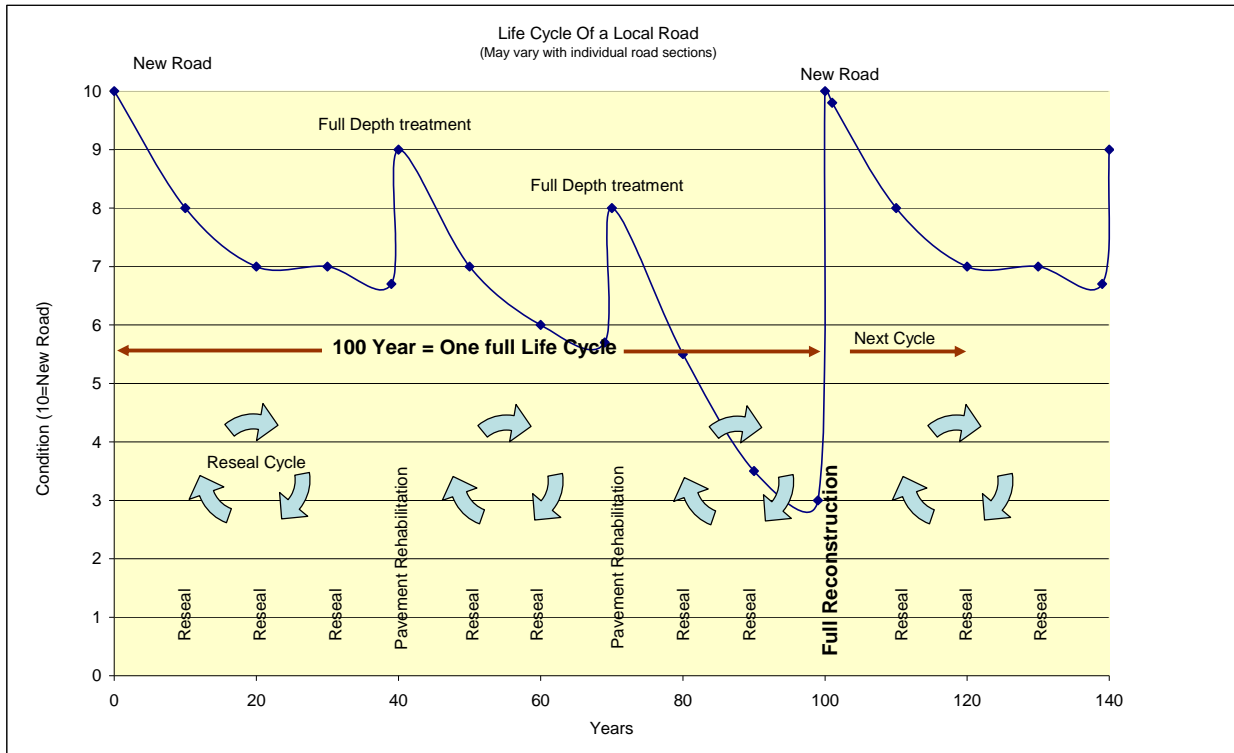
5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in section 3) while optimising life cycle costs.

5.1 Background Data

The whole of life cycle from construction to re-construction generally involves a sub cycle of reseal/resurfacing and a sub cycle of in-situ pavement rehabilitation. Eventually the sub cycles cannot achieve life extension and the pavement material will need to be removed and a new pavement installed.

The principle behind the lifecycle of the road pavement asset is generalised in the following diagram:



5.1.2 Asset capacity and performance

Council's services are generally provided to meet design standards where these are reasonable. The application of the ideal standard or adequate standard is a discussion of cost versus benefit and mitigation.

Locations where deficiencies in major roads are known are detailed in Appendix C Road Needs Survey on Collector Roads.

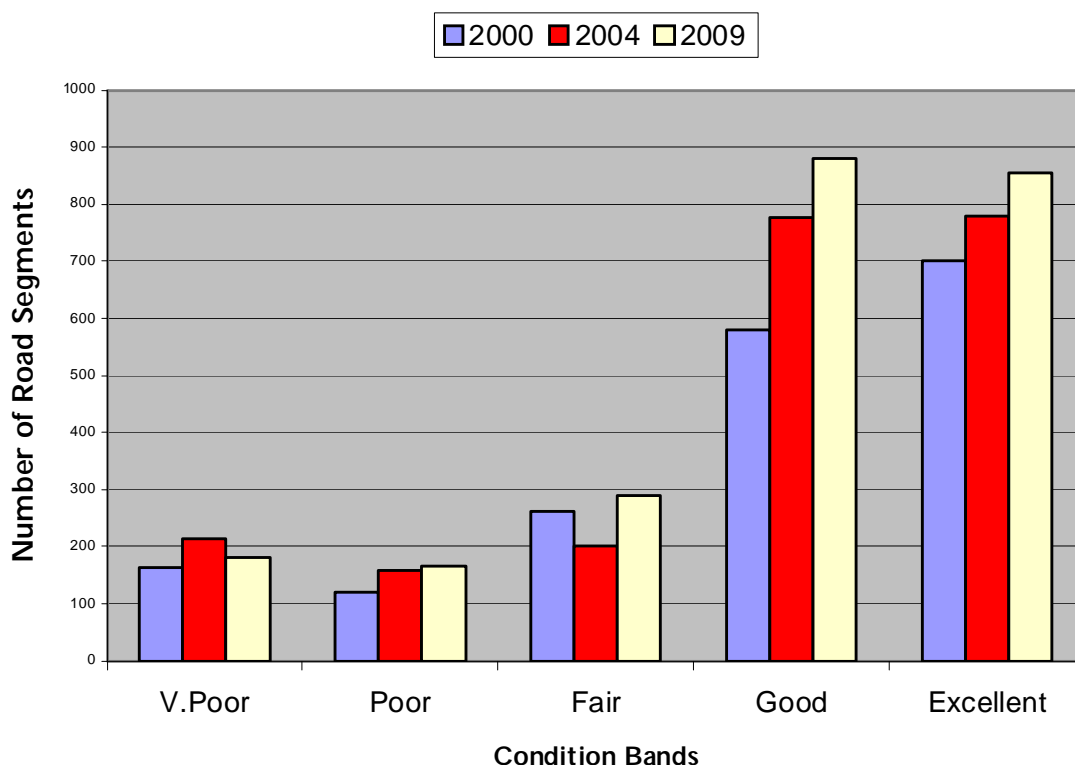
The service deficiencies mainly relate to poor pavements and /or road standards on Collector roads and above. The timing or works must be prioritised by need and risk and forms the Major Road works in the rolling works program of Council's annual Management Plan.

5.1.3 Asset condition

The condition profile of Council's road assets is shown below.

Fig 3. Asset Condition

Past 10 years Snapshot (Actual) - Condition Bands of Network



Condition is measured using a rating system calculated by sophisticated algorithms used in Council's pavement management systems (PMS). This is called the Pavement Condition Index (PCI) and is banded into the following:

Rating	Description of Condition
10	Excellent condition: Only planned maintenance required.
8	Good: Minor maintenance required.
6	Fair: Regular maintenance intervention required.
4	Poor: Significant maintenance intervention required
2 & below	Very Poor: Road requires rehabilitation or re-construction

The amount of road pavement deteriorating into poorer condition is approximately 95,000 square metres every year or about 45 road segments out of 2500 segments. To keep this in check, reconstructions, rehabilitation and reseals need to be funded to approximately \$4.5 million per year.

The current condition/backlog of works can also be determined by first principle calculation as detailed below:

From this hierarchy, a simplified status of Council's roads can be defined as follows:

<u>Satisfactory</u>	Very good, good and fair (PCI > 5)
<u>Upgrading Required</u>	Poor and very poor (failed) (PCI ≤ 5)

As at the end of the 2010/2011 financial year, the following lengths of Council's sealed roads have been considered satisfactory or in need of upgrading – by first principles:

Table 5.1.3a – Condition Status of Maitland Council's Local Road Pavement

Condition	Road Pavement 2007/2008 Overall Condition Based Assessment	Last Financial Year
Satisfactory	81% (457km)	81%
Upgrading required	19% (107km)	19%

Estimate of Upgrading Costs to Bring **Local** Roads up to Satisfactory Condition:

Based on data above, the estimate of upgrading costs to bring roads up to a satisfactory condition with the existing service level is:

1/3 x 107,000m x 8.4m x \$59.10per m ² =	\$17,700,000 Reconstructions
2/3 x 107,000m x 8.4m x \$13.43per m ² =	\$ 8,050,000 Rehabilitation
TOTAL	<u>\$25,750,000</u>

This is based on the following: - Reconstruction of Road Pavement

Excavate 300, gravel, 2 coat seal	\$50.50/m ²
Excavate 300, gravel, 50mm AC	\$69.90/m ²
Average (70%/30% balance + CPI)	\$59.10/m ²
Rehabilitation of Road Pavement +CPI	\$13.43/m ²
One third needing Reconstruction, two thirds rehabilitation	

The aim for the overall road network, not just the local roads, is to have 85% in condition rating 3 – 5, and 15% 1 – 2. We are very close to this currently.

For road inventory based on estimated useful life the amount of capital expenditure per year is as follows:

Table 5.1.3b – Condition Status of Maitland Council's Road Inventory

Asset Type	Replacement Required Per Year	Upgrade Required	Cost to bring up to Satisfactory Condition
Linemarking	\$250,000	20% require upgrade	\$202,000
Footpath/Cycleways	\$300,000	5.5km require upgrade	\$840,000
Signs	\$150,000	838 require upgrade	\$167,000
Bus stops	\$65,000	13 require upgrade	\$175,000
Kerb	\$720,000	Approx 10 km require upgrade	\$1,204,000
Total	\$1,385,000	Total	\$2,588,000

Total Cost to bring the road assets to a satisfactory condition is \$35.6 Million.

5.1.4 Asset valuations

The value of assets as at 30 June 2010 covered by this asset management plan is summarised below.

Table 5.1.4 – Valuation Status of Maitland Council’s Roads

Asset	Current Written Down Value	Current Replacement Value
Road Pavement	\$282,402,000	\$357,788,000

Table 5.1.4 b– Valuation Status of Maitland Council’s Road Inventory

Asset	Current Written Down Value	Current Replacement Value
Footpath/Cycleway	22,459,371	31,595,743
Kerb and Gutter	31,957,420	46,343,353
Lines & Pave Marks	13,000,000	13,705,647
Signs	4,764,580	5,580,000
Bus Shelters	1,450,000	1,575,000
Total Inventory	\$73,632,000	\$98,799,743

For all roads including inventory assets (Local and regional)

Current Replacement Cost	\$456.6M
Depreciable Amount	\$410.9M
Depreciated Replacement Cost	\$356.0M
Annual Depreciation Expense	\$2.9M

5.2 Risk Management Plan and Procedures

An assessment of risks² associated with service delivery from infrastructure assets has identified critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks. Please see Appendix A

5.3 Routine Maintenance Plan

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

² Maitland City Council Road Risk Management Policy and Procedures Attached Appendix A

5.3.1 Maintenance plan – Risk Management Procedures

Maintenance includes reactive, planned and cyclic maintenance work activities and is largely dictated by the Maitland City Council Road Risk Management Policy and Procedures Attached Appendix A

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance. Council uses a MMS for maintenance activities and includes regular monthly meetings to synchronise priorities that originate for customer requests and from formal inspections.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including heavy patching, vegetation control etc. This work generally falls under planned maintenance and to some extent resealing capital works for the road network asset.

Maintenance expenditure levels have not been deemed either adequate or inadequate to meet required service levels due to CSR led priority. However the condition of the road is generally of high concern for the community. Future revision of this asset management plan will include links to required maintenance expenditures with required service levels.

Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement. Redefinition of request/defect handling will improve maintenance effectiveness.

5.3.2 Standards and specifications

Maintenance work on major roads is carried out in accordance with MCC and RTA Standards and Specifications. Local road maintenance standards are also defined in the Road Risk Management Procedures 2009.

5.3.3 Summary of future maintenance expenditures

Future maintenance expenditure is a function of growth, industry cost factors, amount of renewal and unexpected events. Annual acquisition of assets must be accountable in budget allocation.

The maintenance required for road pavement and road inventory is determined by the current expenditure level and the cost to keep the current number of maintenance crews active. It has been derived that approximately \$2.05 Million is required for the road pavement and \$1.05 for road inventory – as a minimum. However this is relatively a subjective estimate and further defect and risk analysis is required. It should be noted that much of the kerb and gutter and Linemarking maintenance is done under the capital rehabilitation and reseal programs.

Deferred maintenance, ie works that are identified for maintenance and unable to be funded are to be included in the risk assessment process in the road risk management plan.

Maintenance is funded from Council's operating budget and grants where available.

5.4 Renewal/Replacement Plan

Renewal expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

5.4.1 Renewal plan

Assets requiring renewal are identified from estimates of remaining life obtained from the pavement management system and field inspection. Candidate proposals are inspected to verify accuracy of remaining life estimate and to

develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes.

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost. (E.g. Road Rehabilitation)

Deferred renewal and backlog works, i.e. those assets identified for renewal and not scheduled for renewal in capital works programs are to be included in the risk assessment process in the risk management plan – and holding treatments applied.

Renewals are to be funded from Council's capital works program and grants where available. This is a discussion in Councils Revenue Plan.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed below.

5.5.2 Standards and specifications

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

New assets and services are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal is yet to be defined. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any.

In practical terms the reconstruction process includes the cost of pavement disposal where necessary.

6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

6.1 Financial Statements and Projections

Table 6.1 Project Financial Summary

No CPI or Growth Factor applied (applied in Financial Plan)

Asset Category	Budget	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Roads	Capital	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000	\$4,590,000
	Maintenance	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000	\$2,050,000
Road Inventory	Capital	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000	\$1,385,000
	Maintenance	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000

With Growth Factor but no CPI

Asset Category	Budget	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Roads	Capital	\$4,590,000	\$4,681,800	\$4,775,436	\$4,870,945	\$4,968,364	\$5,067,731	\$5,169,086	\$5,272,467	\$5,377,917	\$5,485,475
	Maintenance	\$2,050,000	\$2,091,000	\$2,132,820	\$2,175,476	\$2,218,986	\$2,263,366	\$2,308,633	\$2,354,806	\$2,401,902	\$2,449,940
Road Inventory	Capital	\$1,385,000	\$1,412,700	\$1,440,954	\$1,469,773	\$1,499,169	\$1,529,152	\$1,559,735	\$1,590,930	\$1,622,748	\$1,655,203
	Maintenance	\$1,050,000	\$1,071,000	\$1,092,420	\$1,114,268	\$1,136,554	\$1,159,285	\$1,182,471	\$1,206,120	\$1,230,242	\$1,254,847

6.1.1 Sustainability of service delivery

There are two key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs and medium term costs over the 10 year financial planning period.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset consumption (depreciation expense). Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals.

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets they are consuming each year. The life cycle gap for services covered by this asset management plan is represented in Council's Ten Year Financial Plan. Attached in Appendix D is a benchmarking comparison of expenditure levels.

Medium term – 15 year financial planning period

This asset management plan identifies the estimated maintenance and capital expenditures required to provide an agreed level of service to the community over a 15 year period for input into a 10 year financial plan and funding plan to provide the service in a sustainable manner.

This may be compared to existing or planned expenditures in the 15 year period to identify any gap. In a core asset management plan, a gap is generally due to increasing asset renewals.

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue.

A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required to manage required service levels and funding to eliminate any funding gap.

Council will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services.

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets. The funding strategy is detailed in the Council's 10 year long term financial and revenue plan.

Achieving the financial strategy will require will require adherence to the Asset Management Strategy.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required cashflows identified in this asset management plan are incorporated into council's long term financial plan and Strategic Management;
- The degree to which 1-4 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan;

7.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 7.2.

Table 7.2 Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1.	Maintenance Expenditure monitoring	AI&P, CW&S	Nil	Annual
2.	Further PMS modelling	AI&P	Nil	Annual
3.	Further Inventory Assets Condition survey	AI&P	Nil	Annual
4.	Unit rate rationalisation for Replacement \$	AI&P, CW&S	Nil	Annual
5.	Review asset useful life estimate	AI&P	Nil	Annual
6.	Road Revaluation	AI&P, Finance	TBA	Aug 2010
7.	Increase defect inspections	AI&P	1 EFT	Dec 2010
8.				
9.				
10.				

ABBREVIATIONS

AAAC	Average annual asset consumption
AMP	Asset management plan
ARI	Average recurrence interval
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DoH	Department of Health
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SS	Suspended solids
VPH	Vehicles per hour
CPI	Consumer Price Index (Inflation)
CSR	Customer Service Request

GLOSSARY

Annual service cost (ASC)

An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset class

Grouping of assets of a similar nature and use in an entity's operations (AASB 166.37).

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset management

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Assets

Future economic benefits controlled by the entity as a result of past transactions or other past events (AAS27.12).

Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.

Average annual asset consumption (AAAC)*

The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Depreciable Amount (DA) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Depreciated Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.

Brownfield asset values**

Asset (re)valuation values based on the cost to replace the asset including demolition and restoration costs.

Capital expansion expenditure

Expenditure that extends an existing asset, at the same standard as is currently enjoyed by residents, to a new group of users. It is discretionary expenditure, which increases future operating, and maintenance costs, because it increases council's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capital new expenditure

Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.

Capital renewal expenditure

Expenditure on an existing asset, which returns the service potential or the life of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital upgrade expenditure

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operating and maintenance expenditure in the future because of the increase in the council's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, plus any costs necessary to place the asset into service. This includes one-off design and project management costs.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Current replacement cost "As New" (CRC)

The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.

Cyclic Maintenance**

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, cycle, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value (AASB 116.6)

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Greenfield asset values **

Asset (re)valuation values based on the cost to initially acquire the asset.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business (AASB 140.5)

Level of service

The defined service quality for a particular service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost).

Life Cycle Cost **

The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure **

The Life Cycle Expenditure (LCE) is the actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Expenditure to give an initial indicator of life cycle sustainability.

Loans / borrowings

Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).

Maintenance and renewal gap

Difference between estimated budgets and projected expenditures for maintenance and renewal of assets, totalled over a defined time (eg 5, 10 and 15 years).

Maintenance and renewal sustainability index

Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Maintenance expenditure

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

An item is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances.

Modern equivalent asset.

A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operating expenditure

Recurrent expenditure, which is continuously required excluding maintenance and depreciation, eg power, fuel, staff, plant equipment, on-costs and overheads.

Pavement management system

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

Planned Maintenance**

Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption*

A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal*

A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade*

A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Reactive maintenance

Unplanned repair work that carried out in response to service requests and management/supervisory directions.

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operating and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining life is economic life.

Renewal

See capital renewal expenditure definition above.

Residual value

The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.

Service potential remaining*

A measure of the remaining life of assets expressed as a percentage of economic life. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (DRC/DA).

Strategic Management Plan (SA)**

Documents Council objectives for a specified period (3-5 yrs), the principle activities to achieve the objectives, the means by which that will be carried out, estimated income and expenditure, measures to assess performance and how rating policy relates to the Council's objectives and activities.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the council. It is the same as the economic life.

Value in Use

The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate new cash flows, where if deprived of the asset its future economic benefits would be replaced.

Source: DVC 2006, Glossary

Note: Items shown * modified to use DA instead of CRC

Additional glossary items shown **

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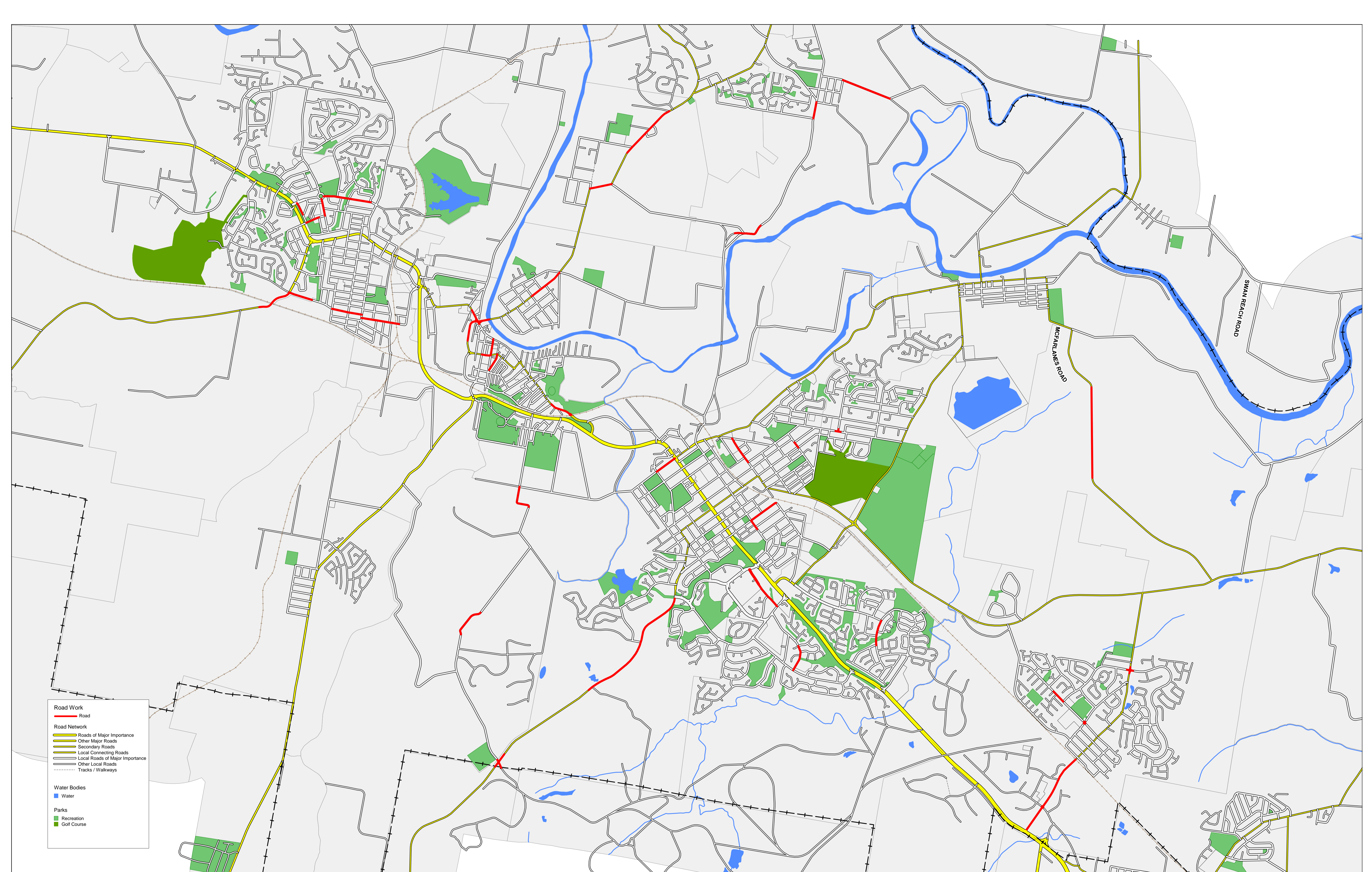
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APPENDICES

- Appendix A Risk Management Procedures and Maintenance Response Levels of Service
- Appendix B Required Capital Works in the Short to Medium Term
- Appendix C Road Need Map – Collector Road Capital Works Program and Rural Needs
- Appendix D Benchmarking Report



Road Work
 Road

Road Network
 Roads of Major Importance
 Other Major Roads
 Secondary Roads
 Local Connecting Roads
 Local Roads of Major Importance
 Other Local Roads
 Tracks / Walkways

Water Bodies
 Water

Parks
 Recreation
 Golf Course



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MAJOR CONSTRUCTION 1 - 3 YEARS (10/02/2009)

= 24 Mill

This map has been prepared on the basis of information available to Council at the date of issue. However, that information may be subject to change over a limited time and should therefore be verified with Maitland City Council