Southampton City Council

Transport Asset Management Plan *Lite*

A brief guide to Asset Management and a summary of the full TAMP

SOUTHAMPTON CITY COUNCIL

OPUS INTERNATIONAL CONSULTANTS

1 Introduction

Asset management can be defined as "a strategic approach that identifies the optimal allocation of resources for the management, operation, preservation and enhancement of the transport infrastructure to meet the needs of current and future residents".

SCC has produced a Transport Asset Management Plan (TAMP) in order to provide the framework for implementation of an asset management approach. The TAMP is the first step towards an asset management approach. It does not attempt to provide all of the answers. The TAMP is a living document that details how the transport assets are managed now and in the future, identifies aspects for improvement across the service areas and provides us with tools to make more informed decisions and managed the network in a more proactive way.

2 SCC's Highway Infrastructure

> "Good transport is essential for a successful economy and society. It provides access to jobs, services and schools, gets goods to the shops and allows us to make the most of our free time. Local roads are at the heart of the transport network, and have a key role to play in ensuring that transport delivers the services people need or want"
>
> (*Forward – Maintaining a Vital Asset)*

Good quality highway infrastructure is essential to the prosperity of a community. In 2008/09 the city council will be delivering its largest works programme in excess of £22 million.

The highway asset is one of the most valuable assets for which SCC is responsible, both in terms of monetary value and impact on economic prosperity.

It is essential that the highway network is management in an efficient and effective manor in order to deliver an affordable quality of service that the public require and that represents value for money.

3 Drivers for Asset Management

Managing and maintaining the highway asset is perhaps the most important element of SCC's responsibility to ensure the accessibility and safety of the public.

In 2004 the County Surveyors Society published "Framework for Asset Management". This saw the start of local authorities seeking a better understanding of the benefits asset management principles could bring to the management of highways.

The TAMP will complement and support the goals and objectives from the Local Transport Plan (LTP2), focus on investment and ensure that our highway assets are managed and maintained in the most efficient way for the benefit of our residents. The over-arching goals and objectives are:-

- Tackling deprivation and inequalities
- Promoting life-long learning for all people
- Improving community safety and reducing crime and disorder
- Improving the street scene and t5he environment
- Promoting independent living

The LTP2 requires all highway authorities to report on their progress in developing a TAMP. The Department for Transport clearly signals support of asset management and the TAMP is presented as Southampton City Council's initial response to this requirement.

.

4 Principles of Asset Management

The TAMP is broken down into several chapters which cover the following principles of asset management:

- Effective use and management of **asset inventory and condition data**.
- Assigning target **levels of service**.
- Appropriate use of **risk management** to allow informed decisions to be made in deciding upon target levels of service.
- Assist in providing justifiable informed decisions for **budget allocations** ensuring that money is being spent in the right places.
- To produce individual asset groups **lifecycle management plans** which look at how we currently manage our assets throughout their entire life and how we can improve on doing so.
- **Valuation** of the highway assets will help us with planning work in advance by understanding how the asset is depreciating and how this can be prevented. Therefore spending money now to save money in the future.
- To develop long-term **forward works programmes** enabling a move away from reactive to proactive management therefore saving the public money.
- To identify current areas of weakness in management practice so that **improvement actions** can be identified, prioritised and implemented.

Much of the remainder of this document is dedicated to explaining the fundamentals of these principles and in identifying SCC's current position with regard to them.

5 Inventory and Condition Data

To provide effective asset management planning we require knowledge of an asset, its condition and its use. This entails the collection and importantly maintenance of asset data.

Possession of reliable data empowers asset managers to:

- Assess the performance of the asset.
- Assess the maintenance requirements of the asset and develop long-term, costed, forward works programmes.
- Value the asset and analyse depreciation over time.
- Enable efficient inspection and repair regimes.
- Track and respond to customer queries effectively.

5.1 SCC Current Data Status

A survey of the extent and reliability of the asset data currently held highlighted a number of existing data deficiencies. There is insufficient asset inventory data for many of the asset groups. Where there is asset data, it cannot always be considered as reliable.

Whilst there are a number of procedures in place for elements of the data held, a consistent data management regime does not exist. Collection of this information is an expensive exercise and one which requires prioritisation.

5.2 SCC Proposed Future Data Status

Although some asset data does exist there is much that does not. It would not be cost effective or indeed necessary to collect every piece of *missing* asset data. A specification of required asset data needs to be developed which targets the collection of the most critical items of data.

5.3 Data Management

Data management procedures will need to be developed to ensure that all asset data is kept up-to-date. Additional attributes may be added to the inventory as continuous updating procedures are implemented. Accuracy of the inventory data must be rigorously maintained, as degradation of data quality will have a significant and detrimental effect on the validity of the results of management procedures. These procedures are essential to develop the tools required to deliver the key aspects of asset management.

6 Levels of Service

6.1 What are Levels of Service?

Understanding what the road user and resident want from the highway asset is essential to providing a good quality service. Presenting these desires in language that can be actioned by engineers and understood by users is essential in ensuring investment is placed where it is expected and needed.

Levels of service can be defined as the service standard for a given asset or service area against which performance can be measured to the benefit of its residents.

Levels of service may relate to any number of factors and demands such as quality, quantity, reliability, responsiveness, environmental effect, cost and performance.

Levels of service will be closely linked with asset condition (both existing and desired) and demand aspirations (what it is expected to deliver now and right through its life cycle).

The aspirations of the residents are likely to focus on aesthetics and safety related condition whereas engineering need will be based on detailed, and often complex, condition surveys coupled with knowledge and experience of how assets behave over time.

6.2 Use of Levels of Service

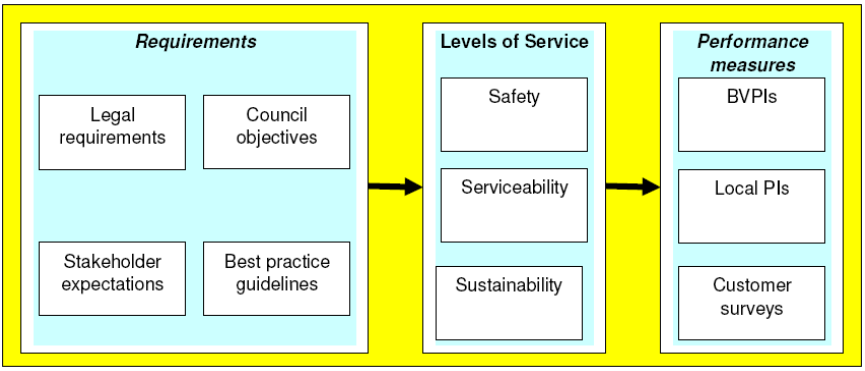
Levels of service can be used as follows:

- As a focus for developing future strategy against an accepted level of service by directly influencing how priorities are assessed, how funding need is identified, how funding is distributed and whether effective spend (value for money) has been achieved.
- To identify the costs and benefits of the services offered, to be able to assess the costs of delivering different levels of service and to be able to make more informed choices between the options available.
- As a measure of the effectiveness of this TAMP creating a means of assessing the benefit of using asset management planning as opposed

to current practices. This will mean setting targets for what is specifically expected and monitoring whether these have been achieved.

- To inform residents of the proposed type and level of service to be offered providing detailed information about the level of service that can be expected.

6.3 Development of Levels of Service



6.4 Service Option Identification

The determination of level of service considers a number of generic service options as follows:

- **Poor:** that which is less than the minimum legislative requirement or acceptable standard.
- **Fair:** that which satisfies the minimum legislative requirement or acceptable standard.
- **Good:** that which satisfies Code of Practice standards or reaches an economical level of service.
- **Excellent:** that which exceeds Code of Practice standards and fully supports an asset management approach.

6.5 Determination of Optimum (Attainable) Service Options

It is anticipated that following evaluation of the selection of service options outlined above, using the risk management techniques described below and their subsequent review and approval by senior officers and Cabinet, a set of Optimum or Attainable Service Options will be determined for each asset group. This may be one of the levels of service outlined or, more likely, will be a mix of options that makes the most efficient use of current funding and resources to provide the best long-term solution for the management of the asset.

Once this has been undertaken, the lifecycle planning process is utilised to develop the Forward Works Programmes necessary to deliver the Optimum service option. Performance measures will then be put in place to monitor actual asset performance against that targeted.

7 Risk Management

7.1 Importance of Risk Management

Risk plays a huge part in managing the highway asset. SCC have a fundamental duty under the Highways Act 1980 to maintain the highway. This requires the highway to be safe and fit for purpose.

Within asset management the awareness of risk aligned with delivery of the expected levels of service will provide a better understanding of the influencers of the service both in terms of user expectation and engineering need – which are not necessarily the same thing.

An appreciation and understanding of risk in the asset management framework therefore provides a strong base to help determine where funds should be directed and helps to maintain the highway assets, mindful of levels of service expected and risk impact of such an approach. Such information will provide the decision makers with important and robust information that ensure the outcome delivery of the transport infrastructure is aligned with the corporate goals and objectives.

7.2 Risk Rating

Risks associated with various service options are assessed in a consistent manner to give a balanced view of the risk levels associated with different assets and levels of service. Quantitative methods of risk analysis are used as it makes it easier to compare large numbers of risk rankings.

The consequence of an adverse event on the highway network can have a wide range of impacts. SCC have elected to asses the impacts using the following criteria:

- **Safety** – impact of a safety related incident resulting in personal injury or property damage.
- **Network Disruption** – impact of an incident on the ability to use the network without undue disruption.
- **Cost** – actual cost of an incident to the authority, this does not include cost to society.
- **Reputation** – impact of an incident on the reputation of the authority.

8 Lifecycle Management Planning

8.1 What is Lifecycle Management Planning?

Lifecycle plans are effectively mini asset management plans developed to aid efficient management of each asset group. Each asset group has its own individual management requirements and these are taken account of in the lifecycle plans whilst ensuring consistency. They also support development of individual and collective business cases with consideration of level of service options and associated risks.

8.2 Phases of an Assets Lifecycle

Transport assets have lifecycles that include the following phases:

- Creation/Acquisition
- Maintenance
- Renewal or Replacement
- Upgrading
- Disposal or Decommissioning

Consideration of each of the above phases will help drive a shift towards longer-term asset management and planning. Such a longer-term approach is a key element of the asset management approach.

8.3 What each lifecycle plan shows in detail

Each identified asset group has the following information against it showing how it is managed throughout it's lifecycle:

Inventory: Information detailing the extent of the asset, split into relevant groups. Includes important data deficiencies or systems issues.

Condition: Sets out the current condition of each asset. Details the inspection methods and survey regimes used, the data collected, where it is stored and the degree of confidence in the data

Performance Gaps: The gaps between present condition and that which is desired.

Option Appraisal: Details how options are identified and appraised for each phase of an asset's life.

Budget Optimisation: Reviews how budgets are currently distributed between assets and the processes in place for assessing competing demands upon available budgets.

9 Valuing SCC's Transport Assets

The government is working towards a more commercial style of accounting with the introduction of Whole of Government Accounts. This will lead to the production of accounts on an accruals basis and using Generally Accepted Accounting Principles (GAAP). This form of accounting is known as Resource Accounting and Budgeting (RAB) and under these requirements local authorities will be required to value their highway assets, as a private business is required to value its assets.

Asset valuation directly supports an asset management approach in that once the first valuation has been conducted, analysis of the annual change in value becomes a most useful tool in assessing the effectiveness of asset management, whether value for money is being achieved and whether funding levels are appropriate.

Valuation of the assets is thus a key part of the asset management process. The first valuation of all of SCC's highway assets is currently underway and is due to be completed in Spring 2008.An initial Gross Replacement Cost of the assets has been calculated at £975 million.

10 Forward Works Programme

The development of a forward works programme is an inherently iterative process where consideration is given towards the political and management decision making processes that form part of programme development.

The length of the forward works programme will be dependant on several factors including asset data availability, security of funding levels and advancement of levels of service. Forward works programmes will be developed for each asset group based on the evaluation and ranking of alternative improvement projects and maintenance treatments, and including all cyclic routine maintenance functions. These individual programmes will subsequently be amalgamated to form an Integrated Works Programme (IWP), which will include all assets and services as well as input from other organisations who may have an interest in, or an affect on, the management of the highway network.

The IWP will integrate the works required from all of the funding streams and initiatives, and by bringing all of the proposed works on the network into one location enable co-ordination of works to take place. It will be able to assist with both short-term road space/traffic management issues and longer term planning.

10.1 Carriageway Forward Works Programme

SCC has recently conducted deterioration modelling on all of the council roads to produce forward works programmes. The modelling has, for the first time allowed the council to move away from a short-term, worst first approach to a longer-term needs based approach that considers predicted deterioration over time and the most cost effect times to intervene with maintenance treatments. The modelling also takes account of corporate objectives and any synergies that can be formed with other scheduled projects.

This modelling represents a considerable advance from previous programming methods. The modelling used does however have limitations and SCC envisage using more sophisticated techniques in the future to further optimise the decision making process and ultimately role this out across all asset groups.

11 Improvement Actions

As stated at the beginning of this document, the TAMP does not aim to provide all of the answers for transport asset management, but intents to provide a framework and tools for improvements to be made.

As such transport asset management at SCC will be a continuously evolving area supported by the TAMP.

SCC has established a TAMP Improvement Action Steering Group. It is intended that this group identifies and prioritises areas of improvement, and seeks necessary approvals and drives implementation.

The group have initially identified the following areas as immediate priorities for development:

- Identify inventory and condition data need and prioritise for collection.
- Develop the levels of service framework for all asset groups backed-up by robust risk assessment to support decision making processes.
- Development of modelling techniques and whole life costing to produce needs based forward works programmes for all transport asset groups.