Footpath & Shared Path Asset Management Plan

June 2016

Executive Summary

Knox City Council has an extensive pathway network which it manages on behalf of the community. This pathway network assists in delivering sustainable transport options and providing connectivity across the Knox municipality. In addition to this, the network also supports a number of other services provided by Council. As stated in *Asset Management Policy*:

> *Assets enable the provision of services to the community […] Sustainable service outcomes for the community are very much dependent on the performance of the assets that support those services* (Knox City Council 2013a, p. 2).

The network currently consists of approximately 1,220km of footpaths and 89km of shared paths. These pathways represent not only an important community asset but also a significant financial asset, with a 2015 current replacement cost of $133M. It is therefore important that Council exercise effective and responsible management of these assets.

Management of infrastructure assets is a constant balance between the various lifecycle stages that assets progress through, as indicated in the diagram below.

Balancing expenditure between these lifecycle phases is critical to ensuring both effective and sustainable management of Council's pathway network. In order to determine how funding is divided between these four stages, a firm understanding of the level of service is required.

The service that Council intends to deliver through its pathway network is:

> *To provide a **quality** pathway network that meets the **functional** and **capacity** requirements of the community.*

Footpath & Shared Path Asset Management Plan

Linked to each of these three service attributes are both *customer* and *technical* performance measures. Council's proposed performance measures are as follows:

Customer Performance Measures	Technical Performance Measures
Quality	
C1.1 Customer satisfaction relating to the quality of pathways **C1.2** Fewer than 500 customer maintenance requests for pathways annually **C1.3** Fewer than 20 insurance claims annually related to pathway assets	**T1.1** 100% of pathways with quality (condition) rating of 1, 2 or 3 (very good, good or fair) **T1.2** 100% of routine hazard inspections conducted on time **T1.3** 100% of routine maintenance tasks completed on time **T1.4** 90% of reactive maintenance tasks completed on time
Functionality	
C2.1 Customer satisfaction relating to the functionality of pathways **C2.2** Customer requests relating to universal access (ie missing pram crossings)	**T2.1** 90% of pathways with functionality rating of 1, 2 or 3 (very good, good or fair) **T2.2** $100k of mobility upgrades completed annually
Capacity	
C3.1 Customer satisfaction relating to the capacity of pathways **C3.2** Customer requests related to missing links annually	**T3.1** 90% of pathways with capacity rating of 1, 2 or 3 (very good, good or fair) **T3.2** 2.0km of new/upgrade paths constructed annually

In 2014/15 Council was meeting or exceeding the majority of the proposed *technical* performance measures (see Chapter 4), with significant improvement since the previous *Footpath and Shared Path Asset Management Plan* (FSAMP) in 2005 (particularly with respects to the condition of both footpaths and shared paths, see below). This is evidence that Council's current practices have been effective in managing the network from a technical perspective.
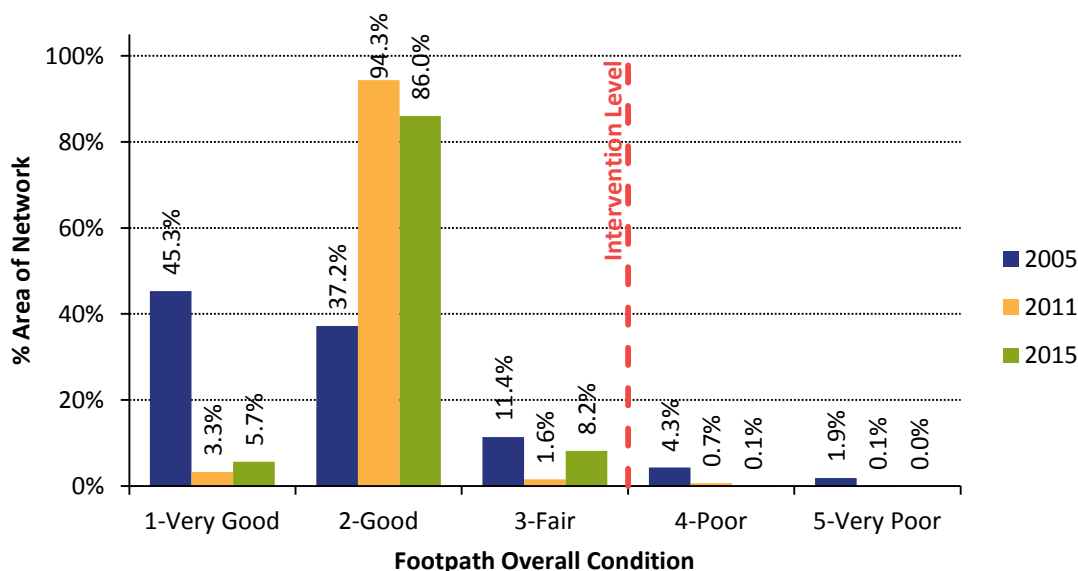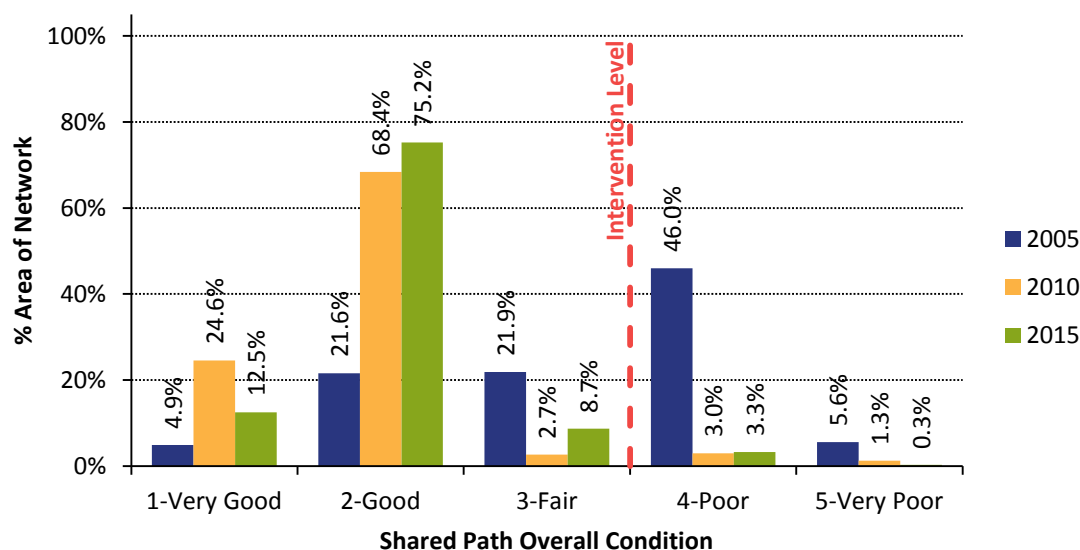
With respect to the *customer* performance measures, there is currently not sufficient community engagement to allow Council to measure its current performance.

Council spent a total of $2,647k on footpaths and $802k of shared paths in the 2014/15 financial year (detailed breakdown provided in Section 6.2). This expenditure was spent on construction of new pathways, renewal of deteriorated pathways, and general maintenance of the network (such as grinding, asphalt wedging, sweeping, etc). Council's practices with regard to these works are outlined in more detail in Section 6.3.

The improvement seen in the pathway network since the last FSAMP is due to the implementation of these practices and the commitment of Council to fund them. This improvement has also resulted in a reduction in the maintenance budget for pathways in recent years. A commitment to fund the practices outlined in this plan will ensure ongoing sustainable management of the pathway network, and that the network continues to deliver a good service to the community. The forecast future funding requirements to achieve this have been provided in Chapter 7.

This plan also identifies a number of areas for improvement in Council's current management practices. These improvements are aimed at addressing several gaps that were identified in the development of this plan. They are:

- Levels of service are proposed only, and require more community consultation in order to develop agreed levels of service
- Insufficient community engagement for Council to effectively monitor *customer* performance measures
- Current audits of the network focus on the condition (quality) of the path but do not significantly consider serviceability (functionality and capacity) factors

There were also a number of internal processes which have been highlighted as areas of opportunity, to further improve Council's practices.

Footpath & Shared Path Asset Management Plan

The main gaps around community engagement can be resolved through more actively seeking community input and feedback relating to how Council is delivering the pathway service and what aspects of the service are of most importance to the community.

Whilst inclusion of serviceability parameters into pathway condition audits will allow Council to more closely monitor and report on the network's performance with respect to the functionality and capacity of the paths.

An improvement plan has been included in Table 28 (Page 74) which gives more detail in how Council is aiming to address the improvements identified.

Table of Contents

Footpath & Shared Path Asset Management Plan

List of Attachments

1. Plan compliance to NAMAF and IIMM frameworks
2. Status of recommendations from Footpath & Shared Path Asset Management Plan (2005)
3. Overview of Council's Risk Management Process
4. Routine and Reactive Maintenance Activities
5. Financial Modelling Results

List of Tables

List of Figures

Chapter 1:
Introduction

1. 1 Plan Overview

Knox City Council (Council) is responsible for the management of an extensive pathway network on behalf of the community, which supports the broader services of delivering sustainable transport options, supporting recreation and leisure activities and providing connectivity across the Knox municipality. This pathway network consists of approximately 1,220km of footpaths and 89km of shared paths, representing not only a significant community asset, but also a significant financial asset for Council (with a current replacement value reported as $118M and $15M for footpaths and shared paths respectively (Knox City Council 2015)).

Effective management of the pathway network is therefore important, both due to the financial implications, but also because of the services that pathways support. As stated in Council's *Asset Management Policy*:

> Assets enable the provision of services to the community […] Sustainable service outcomes for the community are very much dependent on the performance of the assets that support those services (Knox City Council 2013a, p. 2).

The **purpose** of this plan is therefore to:

- Demonstrate responsible management of Council's pathway network
- Meet expectations outlined in Council's Vision, policies and strategies
- Document the level of service Council aims to provide to the community in relation to the pathway network
- Outline Council's service delivery requirements for the pathway network
- Provide a central framework for management and decision making relating to Council's pathway assets
- Communicate and justify sustainable funding requirements for pathway assets
- Meet the National Asset Management Assessment Framework expectations, as monitored by the Municipal Association of Victoria (MAV)

The plan has been structured as follows:

SETTING THE CONTEXT (Chapters 1 and 2)	MANAGEMENT PRACTICES (Chapters 3 to 6)	FUTURE DIRECTION & RECOMMENDATIONS (Chapters 7 and 8)
• Introduction • Asset Knowledge	• Levels of Service • Current Asset Performance • Demand Management • Integrated Service & Asset Lifecycle Management	• Financial Sustainability • Improvement Program
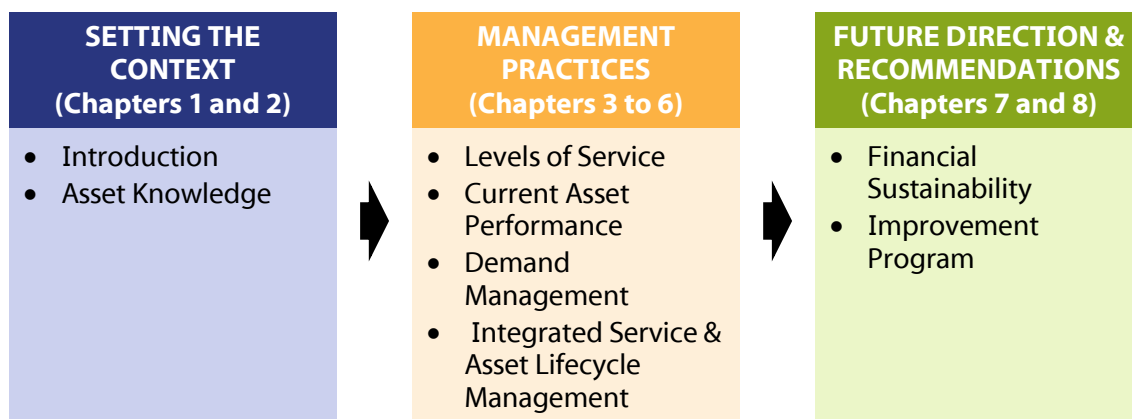
Figure 1   Asset Management Plan framework

1. 2 Drivers of Strategic Asset Management

1. 2. 1 Internal Drivers

1. 2. 1. 1 City Vision, City Plan and Council Plan

The *City Plan 2013-17* is a description of objectives and strategies for the City as a whole to support attainment of the *City Vision*. These are shared with, and implemented by, multiple agencies and stakeholders. The *City Plan* also incorporates the *Council Plan*, which outlines Council's contribution to the delivery of the *City Plan* and identifies priorities for Council's activities for the next four years.

Figure 2, below, outlines the objectives and strategies from these plans that are supported by this asset management plan.

1. 2. 1. 2 Asset Management Policy

Council's *Asset Management Policy* (2013) articulates Council's overarching commitment to asset management. A key policy statement is that "Council will continue to invest in improving its asset management knowledge and planning, and commit to further research and development of asset management plans for individual asset classes".

1. 2. 1. 3 Strategic Asset Management Plan

Council's *Strategic Asset Management Plan* (2014) notes that "it is critical that Asset Management Plans continue to align with the recommended structure, as outlined in the *International Infrastructure Management Manual*, meet the provisions of the National Asset Management Assessment Framework and start to better integrate with Council service planning processes".

The review of the *Footpath & Shared Path Asset Management Plan* also aims to address recommendation SAMP 3 from the *Strategic Asset Management Plan*.

Table 1 Recommendation SAMP 3 from Strategic Asset Management Plan

Recommendation SAMP 3
(a) Continue to review and update Asset Management Plans, to maintain their currency and validity in accordance with the program in Attachment 3.
(b) Develop enhancements to the Asset Management Plans, to facilitate progression from core to advanced status, in line with the requirements of the MAV STEP program. Reviewing of AMPs, to have a greater focus on: • Identifying future asset requirements, in line with service planning. • Validation of service levels, in consultation with community requirements. • Advancing understanding of the intrinsic relationship between maintenance, and optimised renewal funding. • Creating a framework for the recognition, analysis, and reporting of new asset categories not previously identified by Council. • Exploring models of management that recognise different ownership options, for managing services other than Council owned infrastructure (particularly buildings).
(c) Continue to centralise the recording and monitoring of AMP recommendations.

Source: Council's Strategic Asset Management Plan (2014)

Knox Vision	City Plan	Council Plan
THEME 1: Healthy, Connected Communities …active, vibrant, resilient and sustainable community	• *Objective 1. 1* The Knox community benefits from good health and wellbeing at all life stages. *Strategy: Increase walking and cycling networks that encourage physical activity and provide viable transport choices.*	
THEME 3: Vibrant and Sustainable Built Environments …access to a full range of urban facilities and services …strong functioning network of bicycle and walking paths	• *Objective 3. 1* The changing needs of a diverse community are supported through planned growth and change in housing and infrastructure that respects both built form and natural systems, as well as resource availability. *Strategy: Public infrastructure and open space is maintained and improved to support a vibrant community life in Knox.* • *Objective 3. 3* Infrastructure networks provide transport choice, affordability and connectivity. *Strategy: Significantly improved integrated and sustainable transport systems and infrastructure are provided to improve opportunity, choice and access for all.*	*Objective:* Improve the connections between existing shared paths and footpaths, especially to key places. *Strategies: Identify key places for bike and footpath connectivity; Identify gaps between existing bike and footpaths and key places; Prioritise upgrades and renewals for connectivity* *Objective:* Reduce the funding gap for renewal of infrastructure under the stewardship of Council. *Strategy: Implement a financial strategy to reduce the funding gap for the renewal of infrastructure under Council's stewardship*
THEME 4: Culturally Rich and Active Communities …public open space is accessible and plentiful …access to shared open spaces and facilities	• *Objective 4. 2* Increase use of public spaces and infrastructure for the purposes of cultural expression and physical activity. *Strategy: Promote accessible opportunities to participate in leisure and recreation activities, through provision of public infrastructure and support to sporting and leisure groups in Knox.*	
THEME 5: Democratic and Engaged Communities …processes that are transparent and accountable …exercises sound financial management	• *Objective 5. 3* Ensure Council is well governed and demonstrates effective leadership. *Strategy: Maintain accountable and transparent governance practices, and Council's sound stewardship of the community's finances and assets.*	

Source: Council's City Plan *incorporating the* Council Plan *2013-17*

Figure 2   Relevant *City Vision*, *City Plan* and *Council Plan* objectives and strategies

1. 2. 2   External Drivers

1. 2. 2. 1   National Asset Management Assessment Framework

In 2009, in order to foster a nationally consistent approach to asset management, the Local Government and Planning Ministers' Council developed a National Asset Management Assessment Framework to focus on long term assets managed by local governments. For some time, most Victorian Councils have been part of the Municipal Association of Victoria's (MAV) asset management capacity building approach, the STEP program. The development of a National Asset Management and Financial Planning Assessment Framework for Local Government provides the assessment framework of the STEP program, and enables benchmarking and reporting to be undertaken at both State and National levels. One of the eleven elements of this assessment framework is the requirement for Councils to work towards preparing documented asset management plans for all material asset categories. The framework also outlines key inclusions and components of a typical asset management plan, which are consistent with the recommendations of the *International Infrastructure Management Manual*.

1. 2. 2. 2   ISO 55000: 2014 Asset Management

Since the last iteration of *Footpath and Shared Path Asset Management Plan* there has also been the introduction of ISO55000: 2014 Asset Management (ISO 2014). The standard is intended to assist asset managers in the establishment, implementation, maintenance and advancement of an asset management system. It also provides a process by which organisations can become accredited in their asset management practices, although this is not currently required of local governments.

1. 2. 2. 3   Rate Capping

The final external driver, for Council to improve its asset management practices, is the introduction of rate capping by the State Government, due to be initiated in July 2016. Rate capping will require a greater level of strategic management of Council's infrastructure assets to ensure that Council can find a balance between sustainable levels of funding whilst meeting agreed service levels.

1. 3   Plan Framework & Asset Management Approach

This plan has been developed based on guidance provided by the *International Infrastructure Management Manual* (IIMM, NAMS and IPWEA 2011) and the National Asset Management Assessment Framework (NAMAF). How this Plan complies with both the IIMM and the NAMAF guidelines relating to Asset Management Plans is documented in Attachment 1.

As this plan is a revision of Council's first *Footpath & Shared Path Asset Management Plan* (FSAMP), it is intended that it will build upon the first FSAMP and enable Council to begin to move from *core* to *advanced* asset management maturity (NAMS and IPWEA 2011).

1.4   Related Documents

1.4.1   Asset Management Plans

This *Footpath & Shared Path Asset Management Plan* forms part of Council's suite of Asset Management Plans. Plans already adopted by Council are as follows:

- Road Asset Management Plan (2007)
- Building Asset Management Plan (2009)
- Drainage Asset Management Plan (2010)
- Open Space Asset Management Plan (2011)
- Car Park Asset Management Plan (2013)
- Bridge Asset Management Plan (2013)
- Playground Asset Management Plan (2013)
- Street Tree Asset Management Plan (2016)

1.4.2   Related Studies & Strategies

Other documents that influence the strategic direction of Council pathway asset management include:

- Pedestrian Plan (2005)
- Bicycle Plan (2008)
- Knox Mobility Study (2011)
- Open Space Plan (2012)
- Integrated Transport Plan (2014)

These documents are discussed further in Section 3.4.2.

The results of financial modelling, presented later in this document, will inform Council's Long Term Financial Forecast and Annual Budget.

1.5   Consultation for this Plan

A number of internal and external stakeholders provided input and feedback into the development of this *Footpath & Shared Path Asset Management Plan*.

- Councillors
- Asset Management Steering Group members
- Sustainable Infrastructure Department
- Operations Department
- Executive Management Team
- Knox Community (available for public feedback May 2016)

1.6 Implementation of Previous Plan

The 2005 *Footpath & Shared Path Asset Management Plan* (FSAMP) did not explicitly document an improvement plan. As part of Asset Management Plan monitoring introduced in 2010, a retrospective improvement plan was developed to aid in monitoring the implementation of all of Council's Asset Management Plans. This improvement plan related back to specific aspects of the FSAMP. The full list of recommendations, and their level of progress, is documented in Attachment 2.

Since 2005, these recommendations have been incorporated into various teams' business plans and actioned formally, or have been addressed, informally, through evolving practices within the organisation. As at October 2015, implementation of the 2005 FSAMP was at 86.7 percent complete – refer chart below.

Number of Recommendations			
Completed	**In Progress**	**Not Started**	**Total**
20	5	2	27
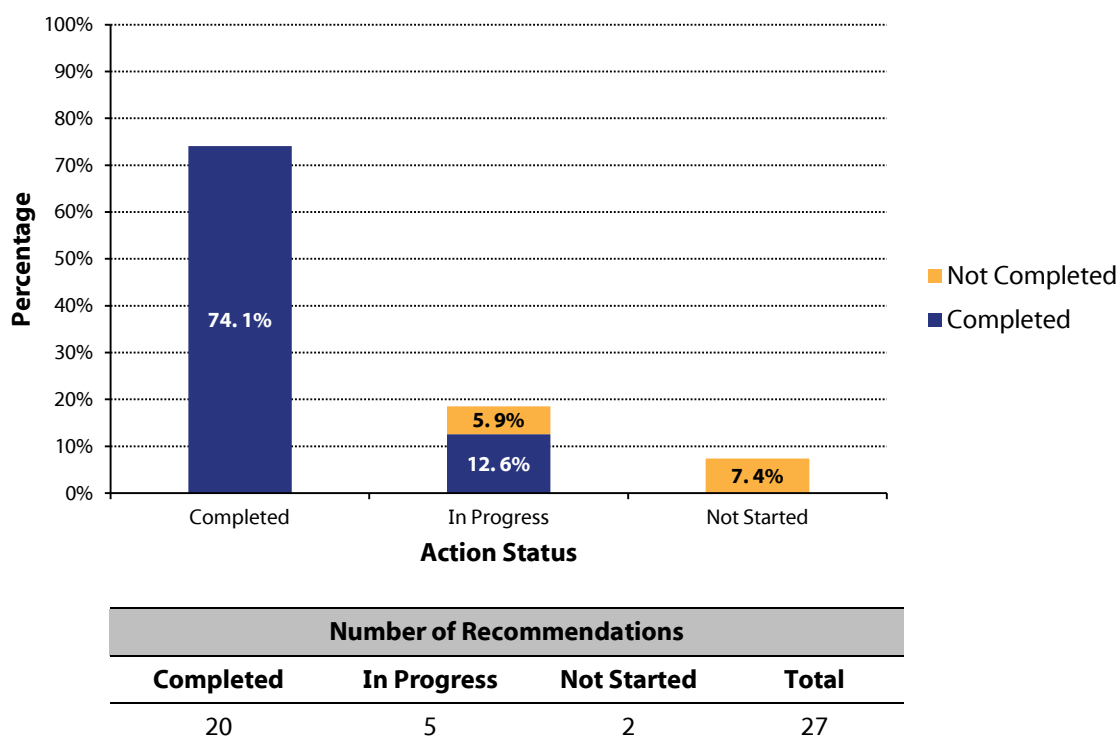
Figure 3   FSAMP (2005) implementation – October 2015

Figure 4, below, demonstrates the progress of implementation over the years. The monitoring and formal recording of implementation has only occurred since 2010. The achievement of almost 90 percent implementation of the FSAMP over a ten year period demonstrates an ongoing commitment by Council to embed some of the key asset management principles outlined in that Plan.
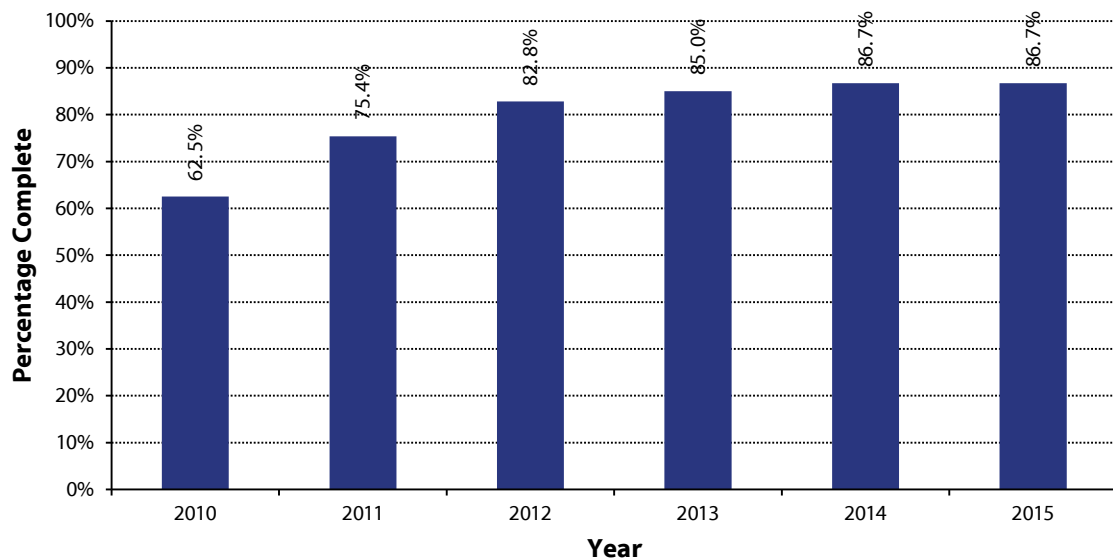
Figure 4   FSAMP (2005) implementation – 2010 to 2015

The main actions from the previous FSAMP that have yet to be fully addressed are:

- Review of insurance claims relating to pathways – Discussed in Section 4.1.3
- Undertake routine serviceability audits – Discussed in Section 6.3.3
- Consideration of path disposal – Discussed in Section 6.3.4

These will be discussed in the sections indicated above.

Chapter 2:
Asset Knowledge

2. 1 Asset Ownership and Responsibility

2. 1. 1 Pathway Assets Managed by Council

The following assets on the pathway network are considered part of Council's management responsibility:

- Footpaths and Shared Paths:
  - Located in Council road reserves (see Figure 5)
  - Located in VicRoads arterial road reserves (where Council is the responsible road authority)
  - Located in Council reserves or on Council land
  - Located on land owned by others where Council has agreed to be responsible for the pathway (e.g. on VicTrack or Melbourne Water land)

All of the above are listed in Council's Asset register and are owned and/or managed by Council. The majority of these assets are located either on Council owned land, or road reserve where Council is the Responsible Road Authority.

There are however a number of instances where the Council managed pathways are *not* located on Council land. Examples include:

- Council managed footpaths and shared paths on other public land (e.g. Melbourne Water, Parks Victoria – such as lengths of the Dandenong Creek trail). In such cases, agreements are in place to recognise Council's responsibility for the pathways.
- Council managed footpaths and shared paths on private land – there are many instances of these across the municipality where the pathway appears on title to be on private land, yet it is of a public nature (e.g. strip shopping centres where the footpath at the front of shops is on private title, not the road reserve). Council has recently developed a procedure *Capital Investment on Land Not in the Registered Ownership of Council* which guides Council in the common law definition of a public highway to ensure that these assets remain the responsibility of Council. Council may also enter into a licence agreement to enable the construction of a pathway to occur on private property.
- Council managed footpaths and shared paths in the road reserve of VicRoads arterial roads. In these instances, Council is considered the Responsible Road Authority and is responsible for these pathway assets (refer the *Road Management Act*, *Road Management Act Code of Practice for Operational Responsibility for Public Roads*, and Council's *Road Management Plan*).

Where issues arise relating to ownership and maintenance responsibilities, Council's GIS and Asset Register are predominantly used to guide decisions. The Asset Strategy and Traffic & Transport teams are also used for advice in clarifying pathway responsibilities.

Figure 5   Typical footpath in a road reserve

2. 1. 2   Pathway Assets Not Managed by Council

There are a number of pathway assets within the municipality that are the responsibility of other authorities or private entities, and therefore not considered part of Council's management responsibility. These include:

- Pathways within the municipality that are constructed on land not owned by Council, AND where Council has not agreed to accept responsibility (e.g. footpaths within private commercial developments, shared paths along Eastlink and in Parks Victoria Land).

- On-road bicycle lanes (these are considered as part of the road asset and managed in accordance with Council's *Road Asset Management Plan* and *Road Management Plan*).

- Hardstands for bus stops and footpath connections from Council pathways to bus stops (these are considered as part of the bus stop transport infrastructure and managed by Public Transport Victoria).

- Driveway infills (these sections of driveway between the footpath and the kerb layback are the responsibility of the resident in accordance with Council's *Road Management Plan*).

- Other pathways which *do not* meet the Road Management Act definition of a "pathway" –
  - o   "any path
    - ▪ which has not been constructed by a responsible road authority; or
    - ▪ which connects to other land;
      For example:
      - o   A footpath or bicycle path constructed on a road reserve by a responsible road authority for use by the general public **would be** a pathway.
      - o   A foot trodden track over roadside land or a path that connects from a roadway or footpath to privately owned land **would not be** a pathway."
        (Road Management Act (Vic) s3)

2.2 Asset Inventory

The tables below summarise Council's pathway assets. The majority (99%) of footpaths are concrete, while the majority (64%) of shared paths are asphalt.

Table 2 Footpath inventory

Path Location	Length (km)
Footpaths in Road Reserves	1,151.1
Footpaths in Reserves	59.6

Table 3 Shared Path inventory

Path Location	Length (km)
Shared Paths maintained by Council	88.1
Shared Paths not maintained by Knox (Eastlink, Parks Victoria Paths, etc)*	13.8

*These shared paths aren't included as part of this Asset Management Plan but are presented here to present a holistic picture of shared paths within Knox

2.3 Useful Lives

Useful lives indicate the expected life of an asset before it becomes unserviceable. Council adopts the following useful lives for the footpath and shared path asset categories.

Table 4 Footpath and Shared Path useful lives

Asset Category	Material	Useful Life (years)
Footpath	Concrete	50
	Asphalt	25
	Pavers	25
	Crushed Rock	2
Shared Path	Concrete	50
	Asphalt	25
	Pavers	25
	Granitic Sand	5

Benchmarking of lives with other similar councils is carried out periodically, particularly when Council undertakes condition audits, prepares Asset Management Plans or completes renewal forecasting. Despite this, there has been no change to pathway useful lives since the adoption of the previous *Footpath & Shared Path Asset Management Plan*.

2. 4 Asset Age Profile

Figure 6 presents the age profile of Council's pathway assets. The graph only shows the age distribution for concrete footpaths and asphalt shared paths as these material types make up the majority of footpaths and shared paths across the network.

It can be seen that the majority of asphalt shared paths are less than 10 years old. This accords with Council's increased commitment to shared paths in the last 10 years to address a backlog of poor assets. Concrete footpaths, on the other hand, are more evenly distributed, but with a noticeable proportion nearing (and exceeding) their useful life.

It is important to note that whilst a number of footpath assets are nearing their useful life, this does not mean that these paths will require renewal. Renewal of as pathway assets is determined based on path condition, which is more influenced by environmental considerations than asset age.
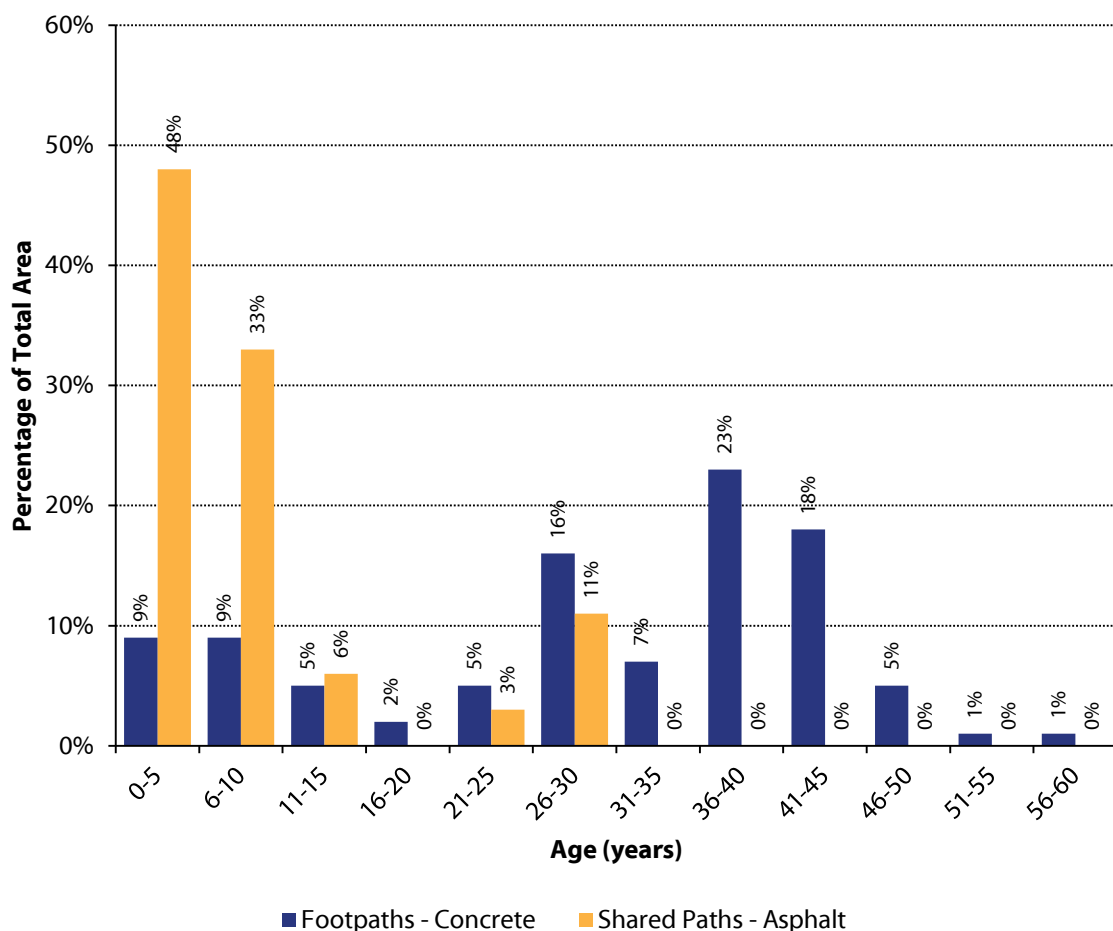
Figure 6   Current age profile (2015) of common pathway assets

2. 5   Asset Hierarchy

The *International Infrastructure Management Manual* (IIMM, NAMS and IPWEA 2015) recommends that asset management plans identify critical assets and events. Critical assets are defined as those which have a significant consequence if they become unable to deliver the expected service level. To this end, the establishment of an asset hierarchy is an important part of the process of identifying critical assets.

A pathway hierarchy has already been documented in Council's *Road Management Plan* 2015. It is used to assist Council with prioritising the inspection, maintenance, renewal and upgrade of Council's pathways.

The following table presents a hierarchy for all Council's pathways.

Table 5   Footpath and Shared Path asset hierarchy

Classification	Description	Surface	Width (m)	Desirable Functional Features
Commercial Access Routes	Footpaths surrounding, shopping strips, commercial centres, and transport hubs.	Asphalt, Concrete or Porous Paving	2.5	Provide service for commercial areas with high volumes of pedestrian traffic.
Key Access Routes	Footpaths servicing community centres, tourist attractions, religious centres, schools recreational facilities, pre-schools, childcare centres hospitals and elderly citizen facilities.	Asphalt, Concrete or Porous Paving	1.5 -2.0	Provide a supporting network service to commercial access routes and other areas with medium volume pedestrian traffic.
Industrial Access Routes	Footpaths located within Industrial precincts	Concrete or Porous Paving	1.5 -2.0	Provide network capable of withstanding additional vehicle loading within industrial precincts
Shared Paths	Designated shared paths for use by pedestrians and cyclists	Asphalt, Concrete, Gravel or Porous Paving	3.0	Provides linkage for pedestrians and/or cyclists through parkland and between major trip generators.
Reserve Access Routes	Footpaths located within and/ or adjacent to reserves	Asphalt, Concrete or Porous Paving	1.5 -2.0	Provides frontage and direct access to reserves within Knox
Local Access Routes	All other constructed footpaths within the Municipality.	Asphalt, Concrete, Gravel or Porous Paving	1.5	Provides for low volume pedestrian access to predominantly residential areas.

Source: *Knox Road Management Plan* 2015

Aside from the hierarchy, there are a number of other classification tools that assist Council in planning and prioritising works on pathways. For shared paths there is the State Government Principle Bicycle Network, whilst for footpaths the Traffic & Transport team is developing a Principle Pedestrian Network for the municipality.

It is important to note that shared paths also form part of the pedestrian network. The relationship between footpaths and shared paths will be further explored in the revisions of the bike plan and pedestrian plan.

These network classifications will further assist Council as a policy tool, allowing funds to be directed to areas of greatest benefit to the community.

2. 6   Asset Valuations

Footpath and shared path valuations are reported in Council's financial reports under the Infrastructure Asset Category. Council's annual financial reports are prepared in accordance with relevant accounting standards, including AASB 116, as well as Council's Fixed Asset Accounting Policy. In line with these standards, assets purchased or constructed which have a value above the prescribed threshold level ($5,000 for footpaths and shared paths) are recorded as non-current assets. Assets with a value below the threshold level are treated as expenditure in the year of purchase.

Formal asset valuations are undertaken on a three year cycle and are verified by the Finance Department, as well as Council's auditors, before being incorporated into Council's Annual Report. In the intervening years, unit rates are checked for any material rises and new assets are brought to account at cost.

Asset valuations are undertaken predominantly by the Sustainable Infrastructure Department which determines representative greenfield unit rates to apply to the validated asset inventory. Rates for footpaths and shared paths (per square metre) are derived from first principles. The standard straight line depreciation is then applied to determine the written down value, based on an assessment of consumed life.

The table below summarises the current and recent valuation of Council's footpath and shared path network.

Table 6   Footpath and Shared Path asset valuations – 2010/11 to 2014/15

Year	Footpath Network		Shared Path Network	
	Current Replacement Cost ($'000s)	Written Down Value ($'000s)	Current Replacement Cost ($'000s)	Written Down Value ($'000s)
2010/11	108,581	47,693	12,244	8,822
2011/12	109,689	48,415	13,228	9,361
2012/13	117,205	48,385	13,737	9,468
2013/14	117,692	48,243	14,290	10,654
2014/15	117,778	47,988	14,957	10,810

Source: Valuation data has been obtained from Council's Annual Reports

2. 7   Asset Management Information Systems

Council has a complete formal dataset regarding all pathway assets applicable to this Plan. Council's asset knowledge exists predominantly in the asset register of its corporate asset management information system, Lifecycle, and spatially through its Geographic Information System (GIS), IntraMaps.

Ongoing data management work is undertaken primarily by the Asset Strategy team. Data management also involves collation and verification of data discrepancies to ensure all asset data is recorded accurately and appropriately.

2. 7. 1   Lifecycle – Asset Register

Details of footpath and shared path assets are currently stored in the asset register of Council's asset management system (Lifecycle) in line with the following structure:

- Category: Pathways
- Sub Category 1: Footpaths/Shared Paths

For each footpath and shared path segment, the asset register includes the following populated fields:

- GIS Link (unique identifier)
- Road/Park Parent ID (footpaths only)
- Surface Type
- Address
- Suburb
- Hierarchy (footpaths only)
- Length
- Width
- Area
- Historical Condition
- Date of Construction/Renewal
- Date of Last Inspection
- Inspection/Maintenance (history record)

2. 7. 2   IntraMaps – GIS

Within Council's GIS software, there are a number of dedicated layers for the footpath and shared path assets that are the responsibility of Council. Each footpath and shared path segment has been assigned a unique GIS identifier (FP/xxxxx/x/x and SPxxx respectively). Footpath segments are usually a sub-segment of a parent road segment or parent park. Shared path segments are unique segments that have no relationship to road or park assets.

It is possible to view some asset attribute information in IntraMaps – this information is sourced directly from the Asset Register.

2. 7. 3   Lifecycle – Work Order System

Council's Work Order System is used to facilitate delivery and record maintenance activities undertaken by the Operations department on Council assets. In general, Work Orders are created whenever a maintenance request is received from a customer, or when a Council officer identifies a maintenance issue that exceeds intervention levels

(through proactive hazard inspections). The Work Orders created using this system are linked to the asset register by way of unique identifiers.

Historically, for footpaths, road segments have provided unique IDs where footpaths are located in Council's road reserve, and park parent numbers (or site IDs) have been used where footpaths are located on Council maintained land. Shared path assets have their own unique identifiers which are separate from road or park parent assets. All Work Orders and hazard inspections for these assets are tagged to the specific shared path ID.

2. 7. 4   Updating the Asset Register

In order for Council to be confident that it has a reliable understanding of the assets it is responsible for, robust procedures for capturing new assets and asset modifications are required.

New assets are created through Council's capital works program or via developer contributions. When new pathways are created, or an existing pathway is significantly altered, the data in the GIS and Council's Asset Register is updated by the Asset Strategy team. This occurs either via the existing subdivision handover process or through the capital works handover process (processes EI-100/1 and EI-100/2). While these processes are in place, there is still room to refine them to ensure that assets are captured as they are created, so that they can be effectively managed.

Footpath and shared path *renewals* are managed by the Construction team. Data is updated in customised renewal modules in Lifecycle by the Construction team, and later imported into the Asset Register by the Asset Strategy team.

Regular asset condition audits are used to verify and update Council's Asset Register.

Chapter 3:
Levels of Service

3. 1 Service Overview

Footpaths and shared paths service the broader community by:

- Connecting communities
- Providing a robust and safe pedestrian/cycling environment
- Offering an economic, sustainable, transport alternative
- Encouraging healthy living
- Promoting community interaction within the municipality
- Improving accessibility for people of all abilities
- Promoting features of the city not accessible via motorised vehicles
  (Knox City Council 2005)

Council's Traffic & Transport team has primary strategic responsibility for delivering this service, and ensuring that Council's pathway network meets community expectations (within legislative and financial constraints). This team therefore has responsibility to remain abreast of changes in all factors likely to affect community expectations and demand. The information presented in this plan regarding the service provided by the pathway network is intended to complement ongoing strategic demand management and integrated transport planning work undertaken by the Traffic & Transport team.

3. 2 Stakeholders – Internal & External

Aside from the Traffic & Transport team, there are a number of other internal stakeholders responsible for services that pathways support as well as the physical asset management. These include:

- Works Services
- Passive Open Space (Parks)
- Open Space & Landscape Design
- Construction
- Asset Strategy
- Community Access & Equity

As pathways are an asset for the community's benefit, it is therefore logical that the community is the biggest stakeholder external to Council. Other external stakeholders include:

- Community Groups
- VicRoads
- Contractors working on behalf of Council

3. 3   Community Expectations

Understanding Community expectations is vitally important to ensure that Council is delivery an appropriate level of service. Council investigates community expectations regarding the levels of service provided by footpaths and shared paths in a number of ways:

- Informal interactions between Council officers and the community as part of normal daily activities
- Community consultation undertaken during the development of strategic documents (ie *Road Management Plan* 2015 and *Integrated Transport Plan* 2014) or major projects
- Participation in the community satisfaction surveys (where available)
- Review of community maintenance requests
- Review of relevant legislative requirements
- Alignment with overarching strategic and corporate goals
- Outcomes of relevant service planning

3. 3. 1   Investigation of Community Needs

Community recommendations and complaints regarding pathway inventory or design are generally received by the Traffic & Transport team which has the expertise necessary to investigate the request. Community requests received vary and may include requests for improved accessibility or construction of new footpaths.

Council's Transport and Mobility Advisory Committee also assists in the identification of missing links or locations requiring improved accessibility.

Community needs are also investigated when undertaking designs for major projects. There is typically considerable engagement undertaken with the community to seek feedback and input into Council's proposals. This engagement is based on specific locations and projects, rather than a broader assessment of municipality needs.

3. 3. 2   Review of Community Satisfaction Results

Council participates in the annual Local Government Community Satisfaction Survey (LGCSS) which is coordinated by the Department of Environment, Land, Water and Planning. The LGCSS provides Council with feedback on community satisfaction each year. Council performance is benchmarked against the performance of 77 other Victorian Councils.

Unfortunately, the format of the survey was significantly changed in 2012, meaning that there is no longer a separate measure relevant to pathways. It is therefore not possible to extract anything from the current survey that relates to footpaths or shared paths. Section 4.5.1 below recommends investigating a new means for determining customer satisfaction in place of the LGCSS.

3. 3. 3   Analysis of Customer Trends

Figure 7 summarises the history of customer requests for maintenance on footpaths and shared paths.
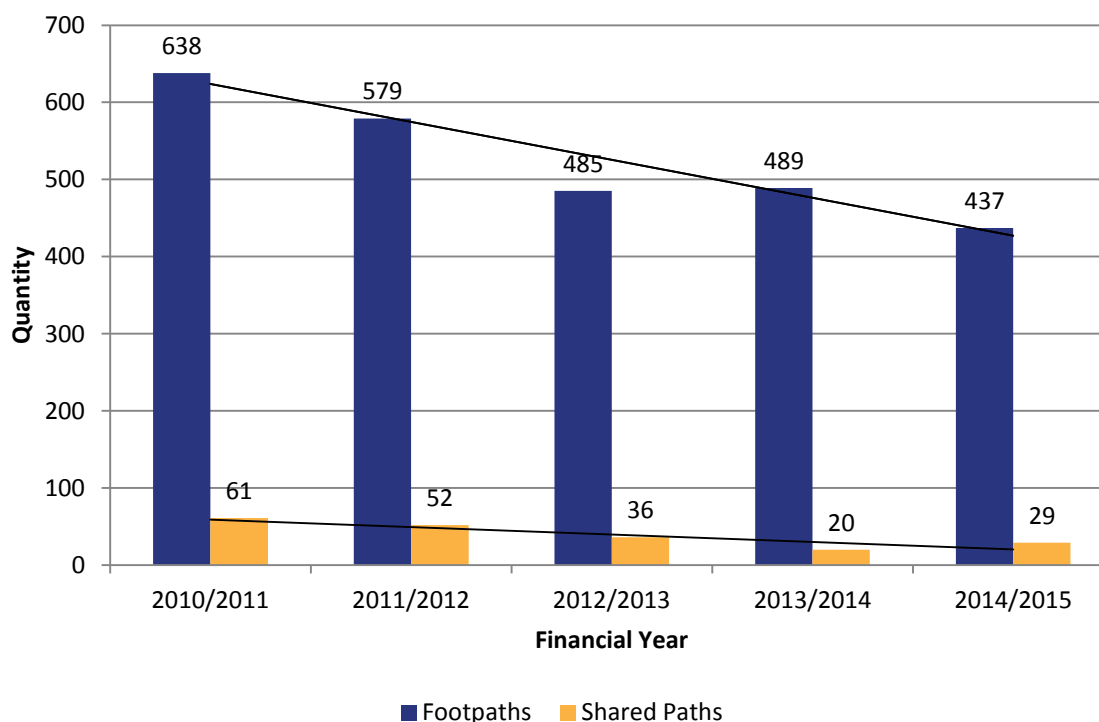
Figure 7   Work orders resulting from customer requests – 2010/11 to 2014/15

The number of community requests has been falling gradually over the last five years, equating to just over 1 request per day for footpaths and 2 requests per month for shared paths in 2014/15. This suggests satisfaction levels have improved. It should also be noted that many of the requests were ultimately deemed to be no hazard – this essentially meant that the defect didn't exceed intervention levels, that routine maintenance was deemed adequate to resolve the issue, that the issue was a duplicate request or that Council was not the responsible authority. These 'no-hazard' requests show that although customers have some dissatisfaction at the service being provided, Council is meeting its obligations from a risk management perspective.

The review of customer requests suggests a generally high level of satisfaction with Council's pathway network, particularly given the decreasing number of maintenance issues being raised by the community. There is nothing to suggest from this data that Council needs to review its service levels regarding footpaths and shared paths and genuine maintenance issues that do arise are typically readily resolved (refer analysis in Section 3.4).

3. 4   Organisational Requirements

3. 4. 1   Strategic and Corporate Goals

Section 1.2.1 outlined Council's key drivers for strategic management of infrastructure assets. Sources include the *City Plan 2013-17* (which incorporates the City *Vision* and *Council Plan 2013-17*), Council's *Asset Management Policy* and the *Strategic Asset Management Plan*. The strategies and objective of these strategic documents have been considered in developing the pathway network service levels.

3. 4. 2   Relevant Council Services and Service Planning

The services listed in Table 7 make use of Council's footpaths and shared paths.

Based on the Knox Service Planning Framework, each service owner has responsibility for preparing a Service Plan that defines the strategic direction and objectives of each service. Each Service Plan is expected to outline how Council aims to ensure that all Council programs and Council assets (including pathways) support delivery of desired service objectives. Development of the Service Plans is therefore expected to include detailed consideration of current and future community expectations. The development of the *Integrated Transport Plan* and the *Open Space Plan* provide the strategic direction and higher order objective which frame a Service Plan.

Table 7   Council services that use Footpaths and Shared Paths

Service	Service Objective	Service Owner	Relevant Plans
Transport and Traffic	This service provides local traffic management and advocacy for broad transport choices for a range of traffic and transport services provided by Council.	Sustainable Infrastructure (Traffic & Transport)	**Integrated Transport Plan:** Provides a framework for both the development and management of an integrated transport network to service the future needs of the Knox community. The *Bicycle Plan* and the *Pedestrian Plan* effectively sit beneath the Integrated Transport Plan as part of the overall transport framework – these two documents have visions for enhancing the walkability and increasing the use of bicycles for commuting and recreation. Both the *Bicycle Plan* and the *Pedestrian Plan* are currently due for renewal
Open Space Management	This service provides planning, design, consultation and implementation of passive open space. The service also includes the development of policy and provision of design expertise for other areas of Council.	Community Infrastructure (Open Space & Landscape Design)	**Open Space Plan:** Guides how open space is used and developed throughout Council (including footpaths and shared paths which form part of Knox's open spaces). There is a specific section in the document focusing on how open space can be used to connect the community, with reference made to the pathway network, and possible improvements such as way-finding signage, linemarking and lighting.

3. 4. 3   Risk Management

Council's risk management process is outlined in Attachment 3. Risk management is an integral part of good asset management. The application of sound risk management allows for continual improvement in decision making and processes and is an essential consideration in the appropriate levels of service.

There are three major risks relating to Council's pathway assets that have been identified in Council's corporate risk register. These have been outlined in Table 8.

It is not possible for Council to address all defects and eliminate all risks; however they are being minimised through the actions identified in the table below. The levels of service for maintenance and inspection have been adopted after consideration of potential risks.

Footpath & Shared Path Asset Management Plan
Chapter 3: Levels of Service

Table 8   Pathway related risks identified in Council's corporate risk register

Risk Ref.	Risk Description	Cause(s)/ Consequence(s)	Assessed Risk	Control(s)	Residual Risk	Relevant Sections in this Plan
SRa11.01	Failure to provide, maintain or manage Council assets / infrastructure that meets their functional purposes & future needs	Council has an increased number of assets to manage, which are ageing, of uncertain condition and effectiveness. This results in an increased financial burden due to maintenance and asset renewal costs, asset management costs. There is also a design capacity issue associated with this infrastructure which could lead to an increased risk of localised flooding, Out of date and inadequate facilities leading to: • Increased frequency of local flooding. • Traffic management issues and alternative transport shortages. • Facilities/assets not meeting community needs. • Higher building densities make access and opportunity for maintenance and renewal more challenging and more costly, • Councils open space assets and community buildings are unable to satisfy the recreational needs of communities, • Wellbeing of Knox citizens is compromised, • Community dissatisfaction with Council as the infrastructure is unable to meet needs, • An imbalance between designated use, ability to provide adequate infrastructure and demand for services.	EXTREME	Most asset classes have asset plans which includes condition ratings and Council standard. Road Management Plan (RMP) 2010 (reviewed in 2013) is on Council's website. It outlines methodology and approach in developing Council's road management practices, a register, road and footpath hierarchies and repair and maintenance plan and intervention levels, Building Asset Management plan 2009 which outlines the strategic approach to managing its building asset portfolio if it is to meet community needs, Maintenance standards established and implemented for Council infrastructure, Capital maintenance programs and & asset renewal programs in place (Asset renewals including those with legal requirement are prioritised (new & upgrades). Priority given to renewals and legal included in LTFF, An indicative 5 year Capital Works program which aligns with LTFF is presented annually to Council, Catchment analysis being undertaken and risk based approach for overland flooding,	LOW	Section 1.1
Ra4.04	Footpath risks	Risks of slip / trip injury or other losses arising from the condition of Council footpaths. These injuries and losses can lead to public liability claims against Council from members of the public.	HIGH	Final Road Management Plan adopted by Council Nov 2004. Pro-active footpath hazard inspections commenced October 2004 to identify risk and conducted yearly. Extreme and high hazards rectified within appropriate timeframes, others scheduled as per available budget.	LOW	Section 5.2
Ra4.09	Risks arising from bike paths.	Risk of injury arising from bike paths.	MEDIUM	Final Road Management Plan adopted by Council Nov 2004. Pro-active bike path hazard inspections commenced October 2004 to identify risk and are conducted yearly. Extreme and high hazards rectified within appropriate timeframes, others scheduled as per available budget.	LOW	Section 5.2

3. 5 Legislative Requirements

Legislative requirements set the framework for the minimum levels of service that footpaths and shared paths are required to meet. The table below provides an outline of the applicable legislation and the main legislative requirements relevant to footpath and shared paths which have been considered in the development of this Plan.

Table 9 Legislative requirements relevant to pathway management

Legislation	Relevant Requirements
Local Government Act 1989	Sets out the purpose and responsibilities of local governments, including: • ensuring that resources are used efficiently and effectively and services are provided in accordance with the Best Value Principles to best meet the needs of the local community; • planning for and providing services and facilities for the local community; and • providing and maintaining community infrastructure in the municipal district. Outlines Council's powers in relation to roads (which includes footpath and shared path infrastructure) in Sections 203 to 208. Also sets out Council's requirement to prepare a long term financial plan which incorporates funding the management of infrastructure assets.
Road Management Act 2004	Defines Council as the Responsible Authority in relation to the management of local roads. This includes footpaths and shared paths (pathways) which form part of the road network under the act. It also states Council, as the Responsible Authority, has a statutory duty to inspect, maintain and repair the road network (including pathways) to the standard specified in Council's Road Management Plan.
Transport Integration Act 2010	Integrates the legislation contained within: • Transport (Compliance and Miscellaneous) Act 1983; • Road Management Act 2004; and • Road Safety Act 1986. Also outlines Council's responsibility to manage financial risk in relation to the management and maintenance of pathway assets.
Disability Discrimination Act 1992	Outlines Responsible Authorities are to ensure that persons with disabilities have the same rights as the rest of the community. Legislates the requirement for standards such as tactile markers and gradients on footpaths.
All other State and Federal Acts and Regulations	For example: Financial Management Act 1994, Road Safety Act 1986, etc

3. 6   Levels of Service

The service that Council intends to deliver through its pathway network is:

> *To provide a **quality** pathway network that meets the **functional** and **capacity** requirements of the community.*

Each footpath segment on the network will be assigned a rating from 1 (very poor) through to 5 (very good) for each of the three service attributes of **quality**, **functionality** and **capacity**. This rating will assist in demonstrate the service Council is providing in relation to these three service attributes.

Also associated with the service attributes are *customer* and *technical* performance measures, which enable Council to monitor delivery of the service and facilitate decision making. The setting and monitoring of performance measures allows Council to balance priorities and assess the ongoing performance of management strategies.

3. 6. 1   Quality Service Attribute

The quality service attribute relates to the physical condition of the pathway network. This takes into account both the deterioration of the asset as it ages and also the presence of hazards to pathway users.

Table 10 outlines the descriptions used to rate the quality (condition) of Council's pathway assets. This aligns with the generic condition descriptors used by Council for all infrastructure assets.

Table 10   Council quality (condition) rating descriptions

Condition Rating	Description	% Remaining Life (approx.)
1 – Very Good	Pathway is as new, near perfect condition	95%
2 – Good	Pathway is functional and displays superficial defects only	75%
3 – Fair	Pathway is functional but shows signs of moderate wear and tear	50%
4 – Poor	Pathway functionality is reduced. Asset has significant defects affecting the fabric of the asset.	25%
5 – Very Poor	Pathway is not functional, severely deteriorated	5%

In order to monitor the quality of the pathway service, the following *customer* and *technical* performance measures are proposed:

Customer Performance Measures

> **C1. 1**   Customer satisfaction relating to the quality of pathways
>
> **C1. 2**   Fewer than 500 customer maintenance requests for pathways annually
>
> **C1. 3**   Fewer than 20 insurance claims annually related to pathway assets

Technical Performance Measures

T1. 1   100% of pathways in Condition 1, 2 or 3 (very good, good or fair)

T1. 2   100% of routine hazard inspections conducted on time

T1. 3   100% of routine maintenance tasks completed on time

T1. 4   90% of reactive maintenance tasks completed on time

3. 6. 2   Functionality Service Attribute

The functionality service attribute relates to how the pathway network is providing its intended function. This takes into account universal access issues, whether there is a clear path of travel available, crossfall/gradient of the path and whether the surface matches the path hierarchy.

Some assessment of the functional requirements for pathways has already been undertaken in the Knox Mobility Study (2011). This study identified issues that can present a barrier to a pedestrian using mobility equipment (eg a wheelchair), such as the lack of a pram ramp. These considerations have been incorporated into the descriptors used to determine the functional performance of the pathway network.

Table 11 outlines the descriptions used to rate the functionality of Council's pathway assets. Although not included in Table 11, there are a number of other considerations, such as available seating or shade, which may influence the function of the pathway network. However it is the condition of pram crossings, vegetation overhang, crossfall/gradients and path surface types which have been deemed to be most important when considering the functionality of footpaths and shared paths.

Table 11   Council functional rating descriptions

Functional Rating	Description			
	Pram Crossings	Vegetation Overhang	Crossfall and Gradient	Path Surface Type
1 – Very Good	Pram crossings are present (if required) and comply with universal access requirements	Path of travel is clear of vegetation	There is minimal crossfall/ gradient on the path	Surface type is suitable for path location and matches the desired surfaces from asset hierarchy
2 – Good	Pram crossings are present (if required) but may be poorly aligned	Path of travel has minor vegetation overgrowth that does not impact on travel	Crossfall/ gradient $\leq$1%	
3 – Fair	Pram crossings are present (if required) but have bull noses	Path of travel is has vegetation overgrowth that causes minor impact on travel	Crossfall/ gradient $\leq$2%	
4 – Poor	Pram crossings are present (if required) but have bull noses and are poorly aligned	Path of travel is has significant vegetation overgrowth that causes impact on travel	Crossfall/ gradient $\leq$5%	Surface type not suitable for path location and differs from desired surfaces from asset hierarchy
5 – Very Poor	Pram crossing is not present (but is required at the location)	Path of travel is completely obstructed by vegetation	Crossfall/ gradient >5%	

The overall functional score of a pathway will be the highest score it receives from any one of the four functional categories above.

In order to monitor the functionality of the pathway service, the following *customer* and *technical* performance measures are proposed:

Customer Performance Measures

C2. 1 Customer satisfaction relating to the functionality of pathways

C2. 2 Customer requests relating to universal access (ie missing pram crossings)*

Technical Performance Measures

T2. 1 90% of pathways with functionality rating of 1, 2 or 3 (very good, good or fair)

T2. 2 $100k spent on mobility upgrades completed annually

3. 6. 3 Capacity Service Attribute

The capacity service attribute incorporates both the capacity of individual pathways, as well as the pathway network as a whole.

For individual pathways, capacity refers to the path's ability to cope with expected usage (ie traffic volumes, likelihood of opposing traffic). An individual pathways capacity is primarily a function of the width of the pathway.

For the network overall, the capacity relates to the ability of the network to provide connections between key places and is primarily a function of whether there are any missing links in the network.

Table 12 outlines the descriptions used to rate the capacity of Council's pathway assets.

Table 12 Council capacity rating descriptions

Capacity Rating	Description
1 – Very Good	Path width exceeds desired width for path hierarchy.
2 – Good	Path width meets desired width for path hierarchy.
3 – Fair	Path width is 1.4m for footpaths or 2.4m for shared paths.
4 – Poor	Path width is <1.4m for footpaths or <2.4m for shared paths. Missing link along access road, industrial road or in a reserve.
5 – Very Poor	Missing link along arterial, link or collector road.

In order to monitor the capacity of the pathway service, the following *customer* and *technical* performance measures are proposed:

Customer Performance Measures

C3. 1 Customer satisfaction relating to the capacity of pathways

C3. 2 Customer requests related to missing links annually

Technical Performance Measures

T3. 1 90% of pathways with capacity rating of 1, 2 or 3 (very good, good or fair)

T3. 2 2.0km of new/upgrade paths constructed annually

3. 6. 4   Summary of Levels of Service

Figure 8 provides a summary of the proposed levels of service and performance measures for Council's pathway assets.

Customer Performance Measures	Technical Performance Measures
Quality	
C1. 1 Customer satisfaction relating to the quality of pathways **C1. 2** Fewer than 500 customer maintenance requests for pathways annually **C1. 3** Fewer than 20 insurance claims annually related to pathway assets	**T1. 1** 100% of pathways with quality (condition) rating of 1, 2 or 3 (very good, good or fair) **T1. 2** 100% of routine hazard inspections conducted on time **T1. 3** 100% of routine maintenance tasks completed on time **T1. 4** 90% of reactive maintenance tasks completed on time
Functionality	
C2. 1 Customer satisfaction relating to the functionality of pathways **C2. 2** Customer requests relating to universal access (ie missing pram crossings)	**T2. 1** 90% of pathways with functionality rating of 1, 2 or 3 (very good, good or fair) **T2. 2** $100k of mobility upgrades completed annually
Capacity	
C3. 1 Customer satisfaction relating to the capacity of pathways **C3. 2** Customer requests related to missing links annually	**T3. 1** 90% of pathways with capacity rating of 1, 2 or 3 (very good, good or fair) **T3. 2** 2.0km of new/upgrade paths constructed annually

Figure 8   Summary of proposed Levels of Service and performance measures

It should be noted that the above levels of service are proposed levels only, based on past practices and available levels of funding. In future these service levels will require testing through community consultation to reach agreed levels of service.

RECOMMENDATION – Levels of Service Consultation
Consultation with the community regarding levels of service
Why? There is a need to understand if the levels of service proposed meet community expectations in order to ensure that Council is delivering the service as desired
How? Undertake community survey/forum around the above proposed levels of service seeking feedback and agreement

Chapter 4:
Current Asset Performance

4. 1   Customer Performance Measures

4. 1. 1   Customer Satisfaction

From Chapter 3, there are a number of proposed customer performance measures, relating to customer satisfaction, for which data is not currently available. These are customer performance measures **C1. 1**, **C2. 1** and **C3. 1**.

The closest data that Council has relating to these performance measures currently is the annual Local Government Community Satisfaction Survey conducted by the Department of Environment, Land Water and Planning. Within this survey there is a performance measure relating to *sealed local roads* which incorporates footpath condition. In 2015 Council scored an overall rating of 70.

This measure however also incorporates other factors such as road condition, road drainage, etc. It is therefore recommended to investigate a method for gauging the community's satisfaction specifically in relation to the pathway focusing on quality, functionality and capacity.

RECOMMENDATION – Customer Satisfaction Survey
Undertake some form of customer satisfaction survey on the pathway network
Why? Need to be able to measure customer satisfaction of the pathway network in relation to quality, functionality and capacity
How? Undertake a customer survey either sent out with the annual customer satisfaction survey, or with a specific asset satisfaction survey, to measure customer satisfaction with regards to Council's proposed service levels.

4. 1. 2   Customer Maintenance Requests

Figure 9 details the number of customer maintenance requests received by Council relating to pathway asset in the last five years.

The number of maintenance requests received relates to customer performance measure **C1. 2** with Council's target to receive fewer than 500 requests annually.

	2010/11	2011/12	2012/13	2013/14	2014/15
Total	699	631	521	509	466
■ Footpath	638	579	485	489	437
■ Shared Path	61	52	36	20	29
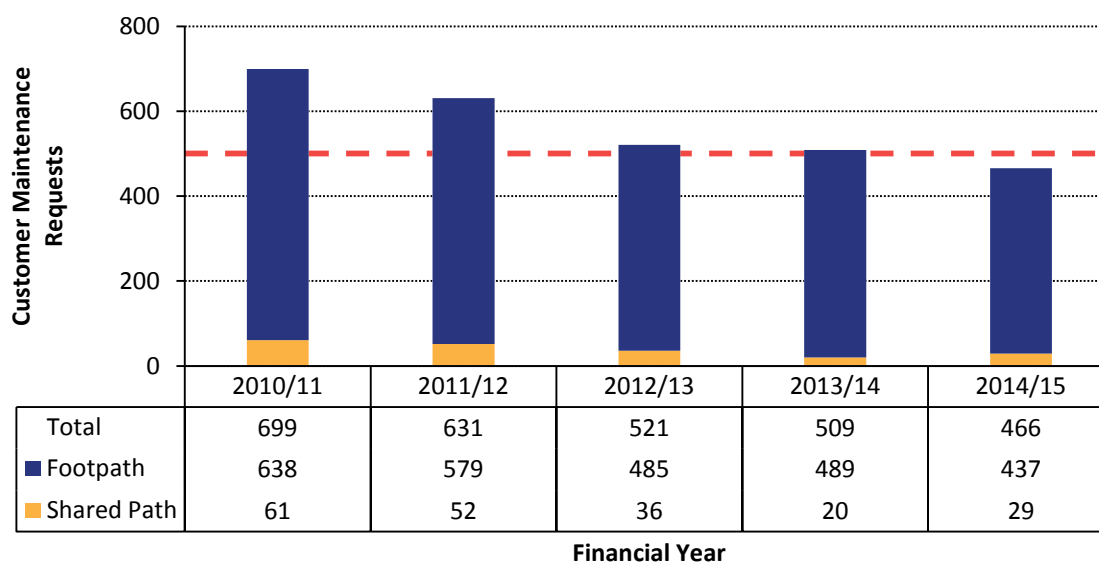
Figure 9   Customer maintenance requests – 2010/11 to 2014/15

4. 1. 3   Insurance Claims History

Insurance claims are managed by Council's Safety, Risk and Wellbeing team. Claims are separated into two categories:

- Public Liability – where a person has been injured or property has been damaged and the claimant is seeking damages from Council
- Property – claims made for loss or damage to Council's infrastructure

Insurance claims relate to customer performance measure **C1. 3** with Council's target to receive fewer than 20 insurance claims annually.

4. 1. 3. 1   Public Liability

Public liability claims typically arise when the following three conditions are met:
1. Council has a clear duty of care regarding the issue in question
2. Evidence of loss experienced by a member of the public
3. Demonstration that Council has breached the duty of care outlined in (1)

An analysis was undertaken for all over-excess (greater than $10,000 up until 2012/13, greater than $20,000 currently) and under-excess public liability claims received in the five year period from 2009/10 through to 2013/14.

a) **Over-excess** public liability claims are managed by Council's insurer, MAV Insurance. To date, there have been three over-excess claims made against Council in relation to the pathway assets from 2010 to date. A summary of these claims is provided in the table below:

Footpath & Shared Path Asset Management Plan
Chapter 4: Current Asset Performance

Table 13 Over-excess claims since 2010

Year	Cause	Description	Gross Paid	Gross Incurred*
2011	Road Surface/ Potholes	Claimant was walking on footpath at the front of a coffee shop when her foot became caught in a pot hole and tripped over	$3,448	$50,000
2011	Uneven Surface	Claimant tripped on some rough bitumen and fell and landed on her left hand	$13,605	$215,000
2012	Uneven Surface	Claimant was riding her bike on a footpath and there was a drop in level and she hit this, she lost control of her bike	$3,448	$80,000

*Gross incurred amount is a sum of the gross paid and an estimate on the likely additional costs/damages which *may* need to be paid in the future (gross estimate)

It is interesting to note that the previous *Footpath & Shared Path Asset Management Plan* documented how Council used to have an average of 6 over-excess footpath claims *per year* up until 2003.

b)   **Under-excess** claims are managed by Echelon on behalf of Council. The following table shows a summary of claims under-excess over the five year period from 2009/10 to 2013/14. Over this time Council has paid out a total of $3,733 in under excess claims, from 74 claims totalling $150,503.

Table 14 Under-excess claims 2009/10 to 2013/14

Year	Claims Received	Claims Finalised	Claims Outstanding	Claims Denied	Amount Claimed	Amount Paid
2009/10	15	11	4	12	$15,312	$0
2010/11	11	6	5	6	$63,175	$0
2011/12	21	17	4	18	$26,842	$0
2012/13	8	3	5	2	$13,019	$0
2013/14	19	18	1	14	$32,153	$3,730

The data presented for both over and under-excess claims shows that, despite Council receiving numerous claims regarding its pathways, the vast majority are denied. Although the reasons for these denials are various, in most cases it is due to Council demonstrating and adhering to its processes and practices regarding pathway management.

4. 1. 3. 2   Property

Property claims lend themselves more to building and open space assets, rather than civil infrastructure. Council does not have any records of claiming for damages caused to its pathway assets. Council's asset protection processes allow for recourse against residents and builders that can be proven to have damaged Council's assets.

4. 2 Technical Performance Measures

4. 2. 1 Quality Service Attribute

4. 2. 1. 1 Path Condition

The last condition audit conducted on Council's pathway assets was in 2015 for footpaths and 2014 for shared paths. The data collected from this audit can be compared to that from past audits conducted in 2004/05 and 2010/11 for footpath assets and 2004/05 and 2009/10 for shared path assets in order to track the performance of Council's assets over time. Audits should continue to be undertaken at 4 yearly intervals with the next audits scheduled in 2016/17 for shared path assets and 2018/19 for footpath assets.

The condition audit results relate to technical performance measure **T1. 1** with Council's target to have all pathway assets in either Condition 1, 2 or 3 (very good, good or fair).

Figure 10 and Figure 11 below present the overall condition scores (as a percentage of the network area), from the past three condition audits, for footpaths and shared paths respectively.
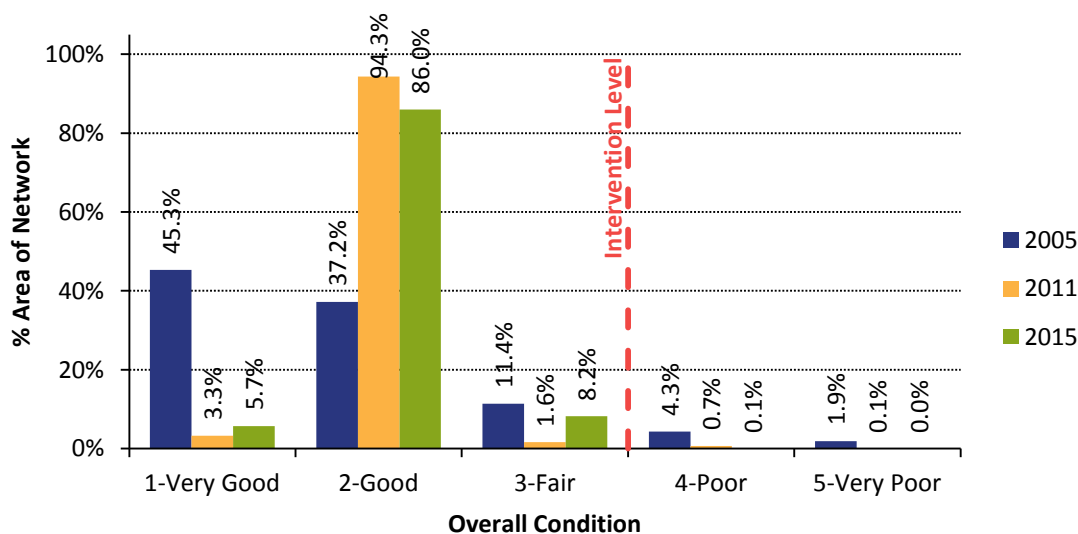
Figure 10 Footpath overall condition data (2005-2015)

Figure 10 demonstrates that Council's footpath assets are in a generally good condition. Since the last condition audit in 2011 there has been a reduction in the number of assets in Condition States 4 and 5. There has been an increase in footpath segments in Condition State 3. However, this increase is expected as the assets age over time and is in line with the deterioration predicted when the last renewal modelling was undertaken in 2011 (which predicted 9.3% of the footpath network would be in Condition State 3 by 2015).
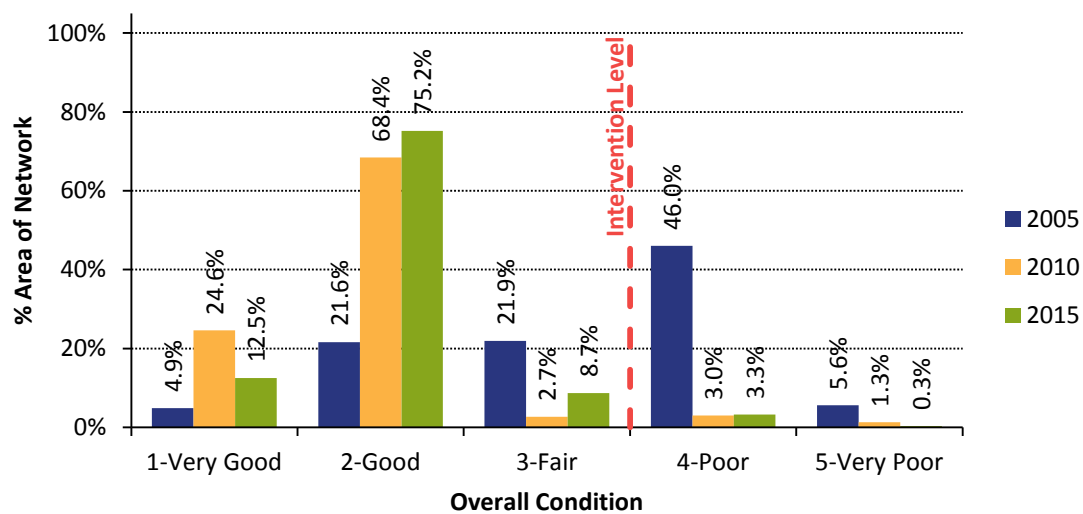
Figure 11 Shared Path overall condition data (2005-2014)

The graph above shows that there has been a significant improvement in the condition of Council's shared paths since 2005. In 2005 over 50% of the shared path network was in a poor or worse condition. As of the last condition audit in 2014 the condition of the shared paths has improved dramatically, with less than 4% of the network in a poor or worse state.

A comparison between the audit in 2010 and 2014 shows a drop of approximately 12% of paths in Condition State 1. The drop is balanced by an increase of nearly 13% in shared path segments in condition states 2 and 3. This is indicative of the deterioration of paths from very good condition to a good or fair condition as they age. As the paths continue to age they will move into a poor condition state, at which time they will be placed on the renewal program to be upgraded back to Condition 1.

It is worth noting that since the audit in 2005 there has been a dramatic improvement in Council's asset management practices with the introduction of the Road Management Act 2004 and implementation of Council's first *Footpath and Shared Path Asset Management Plan*. The success of this improvement in the management of Council's assets is evident in the figures above.

4. 2. 1. 2   Routine Hazard Inspections

In accordance with Council's *Road Management Plan*, all footpaths and shared paths in road reserves are proactively inspected for hazards. The scope and frequency of the routine hazard inspections is documented in Council's *Road Management Plan*. In addition, shared paths in reserves are also proactively inspected (however footpaths in reserves are only managed reactively). Hazard inspections are recorded in Council's Work Order System (Lifecycle). Identified hazards that exceed Council's intervention levels automatically generate Work Orders to enable the hazard to be rectified. Analysis of data stored in the Work Order System shows that these assets have a high success rate of being inspected in accordance with Council timeframes.

Footpath & Shared Path Asset Management Plan
Chapter 4: Current Asset Performance

The routine hazard inspections relate to technical performance measure **T1. 2** with Council's target to have 100% of routine hazard inspections completed on time.

Figure 12 details Council's performance for hazard inspections over the past five years.

Financial Year	2010/11	2011/12	2012/13	2013/14	2014/15
Footpaths	97%	98%	98%	99%	99%
Shared Paths	97%	97%	93%	100%	97%
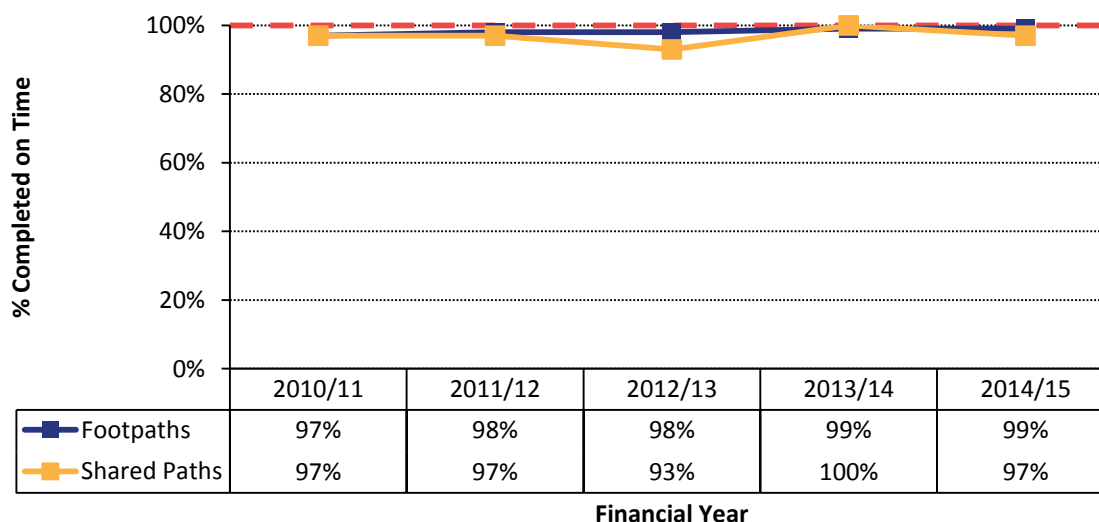
Figure 12   Routine hazard inspection performance – 2010/11 to 2014/15

4. 2. 1. 3   Routine Maintenance

Although Council does undertake routine maintenance activities for footpaths and shared paths (such as concrete grinding), this information is managed outside of Lifecycle, making it difficult to analyse for performance.

These routine maintenance activities largely focus on grinding of concrete footpaths.

Routine maintenance works relate to technical performance measure **T1. 3**. As the data is not currently available we cannot analyse current performance in relation to this technical performance measure. It is recommended to start monitoring routine maintenance works in Lifecycle to allow performance to be measured.

> **RECOMMENDATION – Management of Routine Maintenance in Lifecycle**
>
> Investigate options for managing routine maintenance activities through Lifecycle
>
> **Why?** Need to have better capture of data for routine maintenance activities to enable analysis of performance
>
> **How?** Develop a new module in Lifecycle for routine maintenance activities

4. 2. 1. 4   Reactive Maintenance

The Knox Work Order System (Lifecycle) monitors the delivery of Council's reactive maintenance service levels. There are two types of reactive maintenance tasks that are completed following the creation of a work order. These are temporary works (which aim to provide short term treatment of a hazard) and rectification works (which aim to provide a permanent treatment measure for a hazard).

The completion of reactive maintenance works relates to technical performance measure **T1. 4** with Council's target to complete 90% of reactive maintenance works on time.

Figure 13 and Figure 14 detail Council's performance for reactive maintenance tasks over the past five years for temporary works and rectification works respectively.

	2010/11	2011/12	2012/13	2013/14	2014/15
Footpaths	87%	93%	96%	96%	99%
Shared Paths	97%	91%	100%	80%	92%
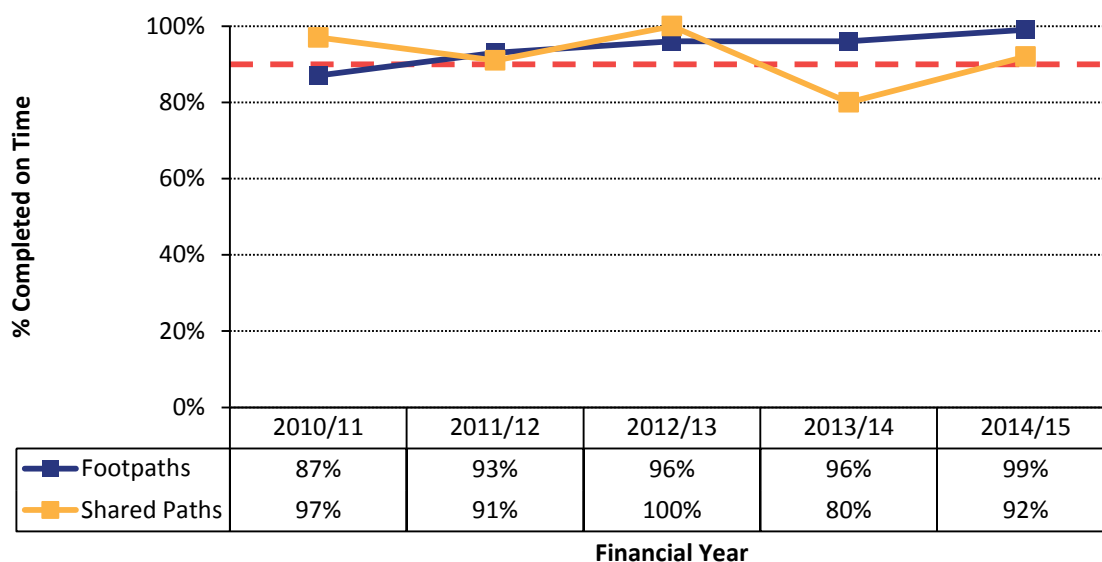
Figure 13 Reactive Maintenance (temporary) performance – 2010/11 to 2014/15

	2010/11	2011/12	2012/13	2013/14	2014/15
Footpaths	73%	91%	97%	82%	98%
Shared Paths	36%	94%	97%	100%	89%
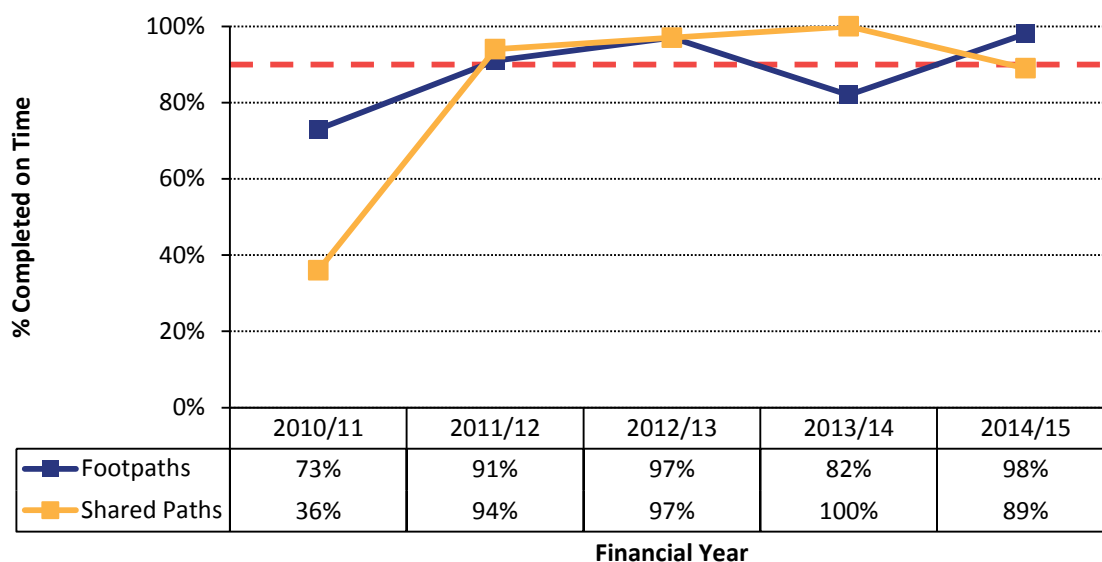
Figure 14 Reactive Maintenance (rectification) performance – 2010/11 to 2014/15

In general, Council is performing reasonably well in meeting its service standards.

The relatively low performance of shared path rectification works was due to some operational issues identified when Council last reviewed its *Road Management Plan*. These issues have been addressed as evidenced by the significant improvement since this time.

Also, the performance of footpath rectification works was skewed the past due to a practice of keeping work orders open that had been referred for renewal. This process has been revised, resulting in a performance improvement in completing reactive maintenance works on time.

Table 15 shows the source of maintenance work orders generated from hazard inspections and customer requests. It is clear that the vast majority of maintenance issues are raised proactively by Council staff, rather than by the community. This is the fundamental basis of sound asset management and proactive risk management, and validates Council's shift in this direction over the last decade. The data also gives some insight into the main concerns for the community regarding the pathway network.

Table 15 Work order reactive maintenance source – 2010/11 to 2014/15

Asset Class	Maintenance Activity	% Council generated	% Customer generated	Quantity Work Orders
Footpaths	Concrete Footpath Maintenance	67.7%	22.2%	8135
	Footpath Sweeping/ Cleaning	0.5%	1.9%	211
	Edge/ Shoulder Repair	0.4%	1.9%	207
	Asphalt Footpath Maintenance	1.3%	0.3%	139
	Litter Clearing/ Dumped Rubbish	0.4%	1.0%	122
	Unsealed Footpath Maintenance	0.2%	1.1%	111
	Brick Paved Footpath Maintenance	0.7%	0.4%	98
	Graffiti Removal	0.0%	0.3%	25
	Subtotal			**9048**
Shared Paths	Asphalt Shared Path Maintenance	20.0%	13.0%	137
	Shared Path Sweeping/ Cleaning	4.8%	19.5%	101
	Sign Maintenance-Regulatory/Warning	12.8%	3.9%	69
	Graffiti Removal	5.1%	2.9%	33
	Concrete Shared Path Maintenance	4.3%	3.1%	31
	Unsealed Shared Path Maintenance	1.7%	1.9%	15
	Edge/ Shoulder Repair	1.2%	2.2%	14
	Sign Maintenance-Directional/Special Purpose	2.2%	0.2%	10
	Pruning - Sign Obstruction	0.2%	1.0%	5
	Subtotal			**415**
Total				**9463**

Source: Work Order System (Lifecycle) July 2010 to June 2015

Note 1: Council generated refers to work orders that are generated through hazard inspections or adhoc inspections (i.e. proactively from Council staff). Customer generated refers to work orders that are received as requests to Council's Customer Service Centre from members of the community

4. 2. 2   Functionality Service Attribute

Although Council does currently collect some information relating to the functionality of the pathway assets through our audit process, the information is not currently sufficient to measure the functional performance of Council's assets as outlined in this plan. It is recommended to introduce more of a focus on collecting functional data during the next audits on conducted on the footpath and shared path assets (in 2018/19 and 2016/17 respectively), to allow Council to better understand the functional performance of the pathway network.

RECOMMENDATION – Functionality Parameters in Condition Audits

Collection of data relating to functional attributes of pathways during audits

Why? Allows decisions regarding pathway renewals and upgrades to be made with consideration to the functional attributes of the pathway

How? Update scope of condition audit documents to include the collection of functional data such as overgrown vegetation, DDA considerations, etc.

4. 2. 3   Capacity Service Attribute

The graph below shows Council's current performance in relation to the technical performance measure **T3. 1**, which relates to the capacity of Council's pathway network. Council's target is to have 90% pathway assets with a capacity rating of 1, 2 or 3 (very good, good or fair). Currently there are 94% of pathway assets with a capacity rating of 1, 2 or 3.
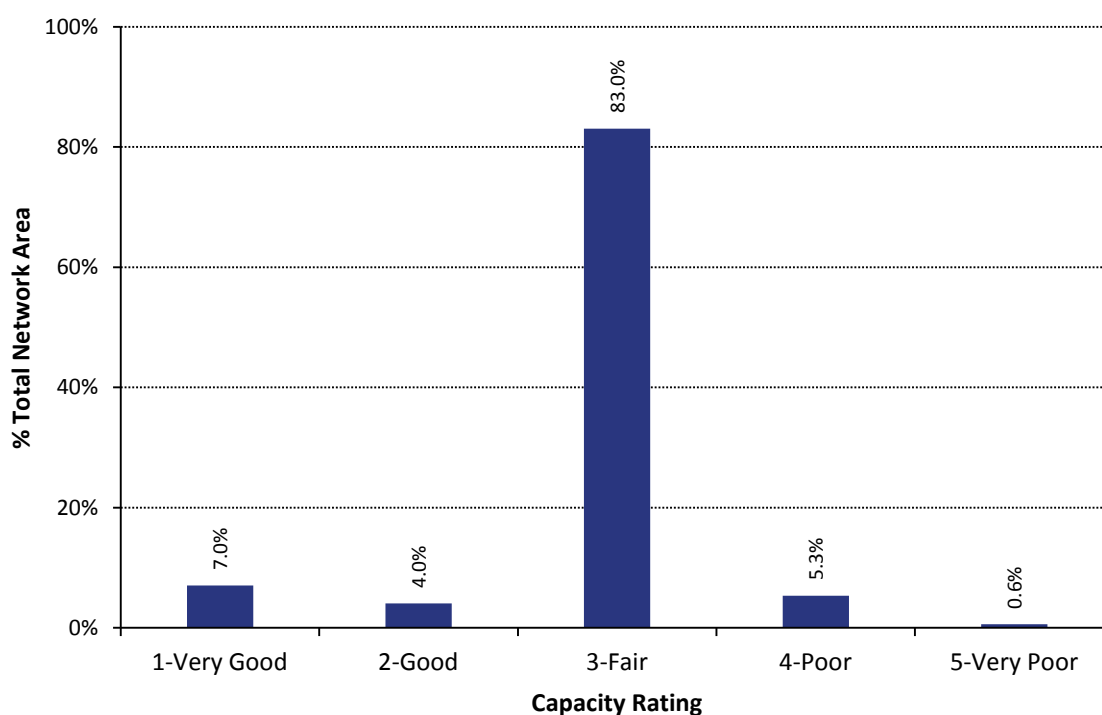
Figure 15 Pathway network overall capacity ratings (2015)

4.3 Summary of Current Performance

Table 16 gives a summary of Council's current performance in relation to the customer and technical performance measures for the pathway network.

Table 16 Summary of current performance – 2014/15

Customer Performance Measures			
Service Attribute	*Measure*	*Target*	*2014/15 Performance*
Safety	C1.1	Customer satisfaction relating to the quality of pathways	70*
	C1.2	Fewer than 500 customer maintenance requests for pathways annually	466
	C1.3	Fewer than 20 insurance claims annually related to pathway assets	19
Functionality	C2.1	Customer satisfaction relating to the functionality of pathways	70*
	C2.2	Customer requests relating to universal access (ie missing pram crossings)	Not available
Capacity	C3.1	Customer satisfaction relating to the capacity of pathways	70*
	C3.2	Customer requests related to missing links annually	Not available
Technical Performance Measures			
Service Attribute	*Measure*	*Target*	*2014/15 Performance*
Safety	T1.1	100% of pathways with quality (condition) rating of 1, 2 or 3 (very good, good or fair)	99% footpaths 96.4% shared paths
	T1.2	100% of routine hazard inspections conducted on time	99% footpaths 97% shared paths
	T1.3	100% of routine maintenance tasks completed on time	Not available
	T1.4	90% of reactive maintenance tasks completed on time	98% footpaths 95% shared paths
Functionality	T2.1	90% of pathways with functionality rating of 1, 2 or 3 (very good, good or fair)	Not available
	T2.2	$100k of mobility upgrades completed annually	$100k
Capacity	T3.1	90% of pathways with capacity rating of 1, 2 or 3 (very good, good or fair)	94%
	T3.2	2.0km of new/upgrade paths constructed annually	To be advised

*Rating is from annual Local Government Community Satisfaction Survey for sealed local roads. It is recommended that a new method for gauging the community's satisfaction (specifically in relation to the pathway focusing on quality, functionality and capacity) be developed.

Chapter 5:
Future Demand

5. 1 Future Demand

Council recognises the importance of understanding future demand in ensuring appropriate management of infrastructure assets.

5. 1. 1   Factors Influencing Demand

In order to be able to forecast what demand might be in the future it is important to be able to identify the major influencing factors. Council has identified the following as key factors which may contribute to a change in future demand for pathway assets:

- Ageing assets
- Ageing Population
- Increase in mobility equipment users
- Social isolation
- Population growth
- Public transport options
- Increased dwelling density
- Increased environmental, health and wellbeing awareness

The first of these factors affects Council's provision of the service to the community, whilst the remaining five impact on the community's utilisation of the network.

5. 1. 2   Review of Asset Utilisation Data

Council has undertaken some measurement of utilisation of the footpath and shared path network. These surveys usually focus on selected sites of interest and generally not the network as a whole. From the data collected, there are no signs of over-utilisation at the sites surveyed.

As the data currently collected is for specific sites, there is no information on how utilisation is changing with time across the network. This is something that is aimed to be addressed with the introduction of the Principle Pedestrian Network as outlined in Section 2.5. Establishment of the network will involve undertaking pedestrian counts in order to identify key routes, which can then be monitored in the future to establish trends in demand.

5. 1. 3   Demand Impact on Assets

Although there is expected to be an increase in demand on the footpath and shared path network in the near future (due to the items listed in Section 5.1.1), it is unlikely that this will have a significant impact on the network. The majority of the network is assumed to have sufficient capacity to cope with an increase in utilisation. Minor upgrades of the network to provide missing links and/or increase capacity of footpaths and shared paths locally may be required. However, these works will generally be undertaken within the footpath and shared path new/upgrade programs.

Therefore it is not expected that increases in demand will significantly impact current management practices for the footpath and shared path networks.

5. 1. 4   Demand Management Strategies

Demand management is the notion that asset solutions (i.e. building new infrastructure) are not necessarily the only way to satisfy community demand. Managing increasing demand, and hence funding requirements, can be achieved by optimising the utilisation of existing assets or through the consideration of operations, regulations, incentives, education or substitution.

Given that there are no apparent (or reasonably foreseeable) capacity issues in relation to Council's footpath and shared path network, a demand management strategy for these assets is not considered necessary at this time.

Chapter 6:
Integrated Service & Asset Lifecycle Management

6. 1 Asset Lifecycle Stages

In order to effectively manage infrastructure assets it is important to have an understanding of the intrinsic relationship between all stages of the asset lifecycle. Financial sustainability and effective asset management requires a balance between the maintenance, renewal and disposal of existing assets and the delivery of new and ungraded assets.

Figure 16   Asset Lifecycle Stages

6. 2 Past Expenditure

Funding allocations at each stage of the asset lifecycle impact on the standard to which the asset class is able to perform.

- *Maintenance expenditure* is required to ensure Council's asset network is safe and functional. It is recurrent operational expenditure to ensure that an asset achieves its useful life and provides the required level of service.
- *Renewal expenditure* is required to reinstate or rehabilitate existing assets that have deteriorated to such an extent that they have become unserviceable. It is capital expenditure used to return the service potential or the life of an asset up to that which it had originally.
- *New/Upgrade expenditure* results from ongoing strategic assessment of the functionality of the network. Upgrades enable an increase in the level of service that can be provided, an increase in the size of the network or an increase in the life or function of the asset beyond that which it had originally.
- *Disposal costs* are generally absorbed into the expenditure for asset renewal or upgrades.

Infrastructure owning organisations are increasingly focusing on the adequate provision of renewal funding to address backlogs in asset investment and to indicate a sustainable level of asset capital funding. Financial sustainability also relies on having an appropriate network size.

The figures presented in this section of the report summarise recent trends in Council expenditure for maintenance, renewal and new/upgrades of Council's footpath and shared path assets.

6. 2. 1   New/Upgrade Expenditure

New footpaths and shared paths (as well as upgrades) are typically undertaken under the capital works programs *4006 – New Footpath Construction Program* and *4009 – New Bicycle/Shared Paths* respectively, and are administered by Council's Traffic & Transport team. Ranking criteria are used to develop a rolling prioritised list.

Recent new/upgrade capital expenditure levels are summarised in the table below. The data represents actual expenditure, which sometimes differs from fully expended budgets. The reason for this is the post-processing undertaken by Finance whereby works are either capitalised or expensed, and allocated to the most appropriate asset class.

Table 17   Footpath and Shared Path new/upgrade expenditure – 2010/11 to 2015/16

Year	Footpath Network ($'000s)	Shared Path Network ($'000s)
2010/11	153	973
2011/12	449	277
2012/13	205	152
2013/14	39	51
2014/15	369	147
2015/16	*300*	*223*

Source: All expenditure data has been obtained from Council Annual Reports and verified by Finance

* Data for 2015/16 is forecast data only

Due to *Council Plan* priorities, funding for new footpaths has increased in recent years.

This section only deals with Council expenditure from the 4006 and 4007 capital works programs. New pathway assets are also created as part of various developments, which are ultimately handed over to Council as contributed assets or through other capital works programs.

6. 2. 2   Maintenance Expenditure

The operational accounts used for the maintenance of pathway assets include:
* 34382 – Footpath maintenance
* 34313 – Bike path maintenance
* 34025 – Works management & administration (general overheads)

The total Footpath and Shared Path expenditure charged to the above accounts is summarised in Table 18 for the last five years. This expenditure includes:
* Reactive maintenance costs
* Routine maintenance works (ie footpath grinding)
* A percentage of operational staff wages (ie hazard inspectors)

Table 18 Footpath and Shared Path maintenance expenditure – 2010/11 to 2015/16

Year	Footpath Network		Shared Path Network	
	Budget ($'000)	Expenditure ($'000)	Budget ($'000)	Expenditure ($'000)
2010/11	401	178	235	247
2011/12	417	270	244	106
2012/13	341	123	249	91
2013/14	380	364	201	74
2014/15	387	178	207	136
2015/16	396	N/A	212	N/A

Source: All expenditure data has been obtained from Council Annual Reports and verified by Finance

6. 2. 3   Renewal Expenditure

Renewal works for footpath and shared path assets are typically undertaken under the capital works programs *1004 – Footpaths* and *1005 – Bicycle/Shared Paths* respectively, and are administered by Council's Construction team. Condition audit data collected on the assets are used as the basis of prioritising the works.

Recent renewal expenditure levels are summarised in the table below. The data shows how footpath renewal funding has increased then plateaued in the last five years. On the other hand, shared path funding has been decreased to recognise the good progress in reaching renewal targets ahead of schedule.

Table 19 Footpath and Shared Path renewal expenditure – 2010/11 to 2015/16

Year	Footpath Network		Shared Path Network	
	Budget ($'000)	Expenditure ($'000)	Budget ($'000)	Expenditure ($'000)
2010/11	2,445	2,547	800	769
2011/12	2,900	3,218	857	707
2012/13	2,900	2,570	355	358
2013/14	3,000	3,067	576	576
2014/15	2,000	2,100	549	519
2015/16	1,975	N/A	475	N/A

Source: All expenditure data has been obtained from Council Annual Reports and verified by Finance

6.3 Asset Lifecycle Management and Prioritisation

6.3.1 New/Upgrades

6.3.1.1 Asset Option Analysis

Council creates new footpaths and shared paths when a gap in the network has been identified or when a new footpath is requested by the community.

All locations identified as requiring a new path are entered into a list. The paths in this list are then assessed against ranking criteria (Table 20 and Table 21 below) so that they can be included in the Capital Works Program. The ranking criteria give Council the ability to prioritise works so that paths that will provide the greatest benefit are constructed as a priority.

Currently, only proposals for new paths are prioritised. It is recommended to introduce ranking criteria for path upgrades as well. This will allow for planning and prioritisation of these works, as there are a number of paths which do not currently meet Council's desired path widths.

RECOMMENDATION – Ranking Criteria for Path Upgrades
Introducing path upgrades into ranking criteria.
Why? There is a need to include path upgrades in the renewal ranking in order to ensure that Council is appropriately ranking proposed path upgrades.
How? Create a new ranking criterion for pathway upgrades that can allow them to be prioritised against new proposed paths.

Table 20   Ranking criteria for new/upgrade Footpaths

Assessment Criteria for New Footpath Construction Program and Pedestrian Facilities (4006)	Rating	Score
Governance		
Path/facility identified in Pedestrian Plan	High	15
	High-medium	10
	Other missing footpath	8
	Medium	8
	Medium-low	6
	Low priority	4
	No	0
Path identified in Mobility Study	Yes	10
	No	0
Social / Community Engagement / Community Benefit		
Road Hierarchy	Arterial	15
	Link	10
	Collector	10
	Industrial	8
	Access	4
Is path/facility with 400m of significant pedestrian generator? e.g. education, shops, retirement village	Yes	10
	No	0
Accessibility need e.g. path links to bus stop, train station, rest stop	Yes	7
	No	0
Existing path	Informal crushed rock	12
	Worn track	12
	Formal crushed rock	7
	None	0
Is there an alternative path? (excluding local access roads)	Yes	0
	No	10
Customer requests for new path/facility	More than 3	4
	1 to 2	2
	0	0
Links to existing path	Yes	7
	No	0
Environmental		
Does the path impact on a Site of Biological Significance? ie. trees or native grass would be affected? (National, State, Regional or Local Significance, Dandenong Ranges Buffer, Remnant Trees)	Yes	0
	No	10
Maximum Possible Score		**100**

Table 21   Ranking criteria for new/upgrade Shared Paths

Assessment Criteria for New Bicycle/Shared Paths Projects (4009)	Rating	Score
Governance		
Path identified on Bicycle Plan	Yes and links to an activity centre	15
	Yes	10
	No but identified missing link	8
	No	
		0
Social / Community Engagement / Community Benefit		
Road hierarchy	Arterial	15
	Link	10
	Collector	10
	Industrial	8
	Access	4
Path links to activity centre/schools/shops/sporting grounds (within 800m of activity centre)	Yes	10
	No	0
Existing path	Informal crushed rock	12
	Worn track (no crushed rock)	12
	Formal crushed rock	7
	Footpath	3
	None	0
Accessibility need eg. path links to bus stop, train station, rest stop	Yes	7
	No	0
Customer requests for new path	More than 3	4
	1 to 3	2
	0	0
Links to existing bike/shared path	Yes	7
	No	0
Environmental		
Does the path impact on a Site of Biological Significance? ie. trees or native grass would be affected? (National, State, Regional or Local Significance, Dandenong Ranges Buffer, Remnant Trees)	Yes	0
	No	10
Economic / Financial Impact		
Available contribution from another source	Yes	20
	No	0
Maximum Possible Score		**100**

6. 3. 1. 2   Design

The design process for Council's new footpath and shared path assets involves two phases:

- Strategic / Preliminary / Concept Design
- Advanced / Detailed Design (if required)

Both phases are generally managed by the Program Coordinator responsible for the relevant capital works program.

Concept Design

The concept design phase for large, high-profile projects tends to involve extensive master planning and consultation with the community and affected stakeholders. Limited concept design work is undertaken for smaller, lower profile footpaths and shared paths.

Detailed Design

Detailed design of footpaths and shared paths is generally undertaken internally by the Project Delivery team. Depending on the complexity of the project, detailed design may not be required and the Construction team will build the path based on the concept alignment and standard designs.

Council has in place a design standard for footpaths and shared paths (Standard Drawing Series 311). These drawings are applicable for all footpaths and shared paths created or upgraded within the municipality.

Council's standard drawings are currently administered by the Sustainable Infrastructure Department. The Sustainable Infrastructure Department convenes the Standards Committee, which is made up of representatives from Sustainable Infrastructure, Community Infrastructure, Operations, Planning and City Futures.

Occasionally, footpath and shared path assets are contributed by developers through subdivision works. When this occurs the path is designed by the developer (to Council standards) and approved by Council through the planning referral process. Before a permit is issued, relevant Council departments have the opportunity to review the design drawings and specifications.

6. 3. 1. 3   Creation

The creation or upgrade of footpaths and shared paths is typically delivered under the following capital works programs, both of which are managed by the Traffic & Transport team:

- 4006 – New Footpath Construction Program and Pedestrian Facilities
- 4009 – New Bicycle/Shared Paths

Implementation of Council's *Asset Management Policy* and *Untied Funding Allocation Policy* has meant that Council's capital works process includes project ranking and

ensures lifecycle funds are allocated to enable sustainable future maintenance and renewal of created and upgraded assets.

Although pathways are typically created under these two programs, the reality is that they can also be created as a component of other capital works programs such as:

- 4000 – Structured Sporting Facilities
- 4001 – Cultural and Library Facilities
- 4003 – Family and Children's Services Buildings and Facilities
- 4004 – Aged Care Buildings
- 4005 – Community Buildings and Facilities for Others
- 4007 – Road and Bridge Construction
- 4010 – Local Road Safety Initiatives
- 4011 – Public Transport Infrastructure
- 4014 – Unstructured Recreation
- 4015 – Place Management
- 4019 – Civic & Corporate Buildings and Facility Upgrades

Currently, due to the numerous different programs through which pathway assets can be created, there are a number of assets which aren't captured in Council's asset management system until sometime after the asset is constructed. It is recommended that a review be undertaken on the assert handover process. This will ensure new assets are captured so that they can be included in routine works.

RECOMMENDATION – Improve Asset Handover Process
Look to improve the current asset handover process.
Why? Review handover process and ensure assets are promptly entered into the Asset Register when they are created, so that they can be programmed for inspection and maintenance works.
How? Review handover process and ensure assets are promptly entered into the Asset Register when they are created, so that they can be programmed for inspection and maintenance works.

6. 3. 1. 4   Contributed Assets

As part of larger developments footpath and shared path assets are often contributed by private developers. In the instances of contributed assets, asset creation occurs via the existing subdivision handover process. Asset data is updated in Council's GIS and Lifecycle systems in accordance with this process. This ensures all new assets are included in subsequent asset valuations, the Asset Register and maintenance/inspection programs.

All contributed assets should be constructed in accordance with Council's standards.

6. 3. 2 Maintenance (incl Inspections)

Council's Works Services team is responsible for the proactive inspection and maintenance of Council's sealed pathway assets, whilst crushed rock paths are maintained by the Parks Services team. The inspection and maintenance activities, and frequencies with which they are undertaken, have been developed using risk management principles defined in Council's *Road Management Plan* 2015.

6. 3. 2. 1 Hazard Inspections

A summary of the frequency of hazard inspections for footpath and shared path assets is provided in the following table.

Currently there are no proactive hazard inspections that are conducted on Footpaths in reserves as mentioned in Section 2.2.3. It is recommended that routine inspections for footpaths be expanded to include footpaths in reserves. Shared paths in reserves are proactively inspected.

Table 22   Routine hazard inspection frequencies for Footpaths and Shared Paths

Asset Type	Hierarchy	Frequency
Footpath	Commercial Access Routes	6 month cycle
Footpath	Key Access Routes	1 year cycle
Footpath	Local Access and Industrial Routes	2 year cycle
Shared Path	All	1 year cycle

RECOMMENDATION – Hazard Inspections for Footpaths not in Road Reserves

Investigate option for recording hazard inspections against footpath segments not located in the road reserve (ie footpaths in reserves).

Why? Currently are not undertaking hazard inspections on footpaths not in the road reserve.

How? Develop functionality in Lifecycle to record hazard inspections against park parent for reserve footpaths to ensure that they are being proactively inspected and maintained.

---

6. 3. 2. 2 Asset Preservation Inspections

Asset preservation inspections are inspections conducted before and after a development is constructed. The inspections aim to ensure that Council assets are adequately protected during construction works and that any damage done to the asset due to the construction is repaired at a cost to the developer.

These inspections are conducted by the Asset Preservation Team.

6.3.2.3   Routine Maintenance

Routine maintenance activities are maintenance works that are conducted periodically, and are a proactive way of managing Council's assets. The routine maintenance activities that are currently undertaken on footpath and shared path assets are outlined in the *Road Management Plan* 2015 and summarised in Appendix 4.

As stated in Section 4.2.1.3, Routine Maintenance is not currently managed in Lifecycle making it difficult to analyse. It has been recommended in Section 4.2.1.3 that a module for managing routine maintenance be developed in Lifecycle.

6.3.2.4   Reactive Maintenance

Reactive maintenance activities are generated either through Council's routine hazard inspections, ad-hoc inspections or through customer service requests. All reactive maintenance is managed in Council's Work Order System (Lifecycle). The current maintenance activities and response times related to footpaths and shared paths are summarised in Appendix 4.

Council has recently introduced functionality in Lifecycle to allow work orders that have satisfied maintenance requirements to be referred for renewal if these additional works are beyond maintenance service levels. In particular, it allows a path in poor condition to be rectified by asphalt wedging (a satisfactory maintenance outcome to eliminate hazards) but still to be considered for capital renewal.

6.3.3   Renewal

Footpath and shared path renewals are funded under the Capital Renewal programs 1004 and 1005 respectively. The program is administered and delivered by the Construction team.

As discussed earlier, condition data is routinely collected on the footpath and shared path assets via audits scheduled to occur on a 4 year cycle. These audits focus on collecting footpath and shared path condition. It was recommended in Section 4.2.2 to expand the scope of these audits to include serviceability attributes of the pathways to bring them in line with the levels of service.

Council's renewal program is driven by the results of these condition audits. Although Council's renewal program is driven by the condition audit results, in reality there are a significant proportion of renewals that occur each year as a result of referrals from Work Services (identified during hazard inspections and CRS requests).

The table below outlines Council's current renewal ranking criteria. It incorporates path location, condition and defect extent in order to prioritise renewal works and expenditure within budget constraints. Footpaths and shared paths are ranked separately as their budgets for renewal come from separate programs.

Table 23   Renewal ranking criteria for concrete footpaths

Renewal Ranking Criterion	Score	Data Source
Location		
On a route identified as Commercial Access	10	
On a route identified as Key Access	8	
Within a Reserve	6	Asset Register
On a route identified as Local Access	4	
On a route identified as Industrial	2	
Condition		
Condition rating 1 – Very Good	-20	
Condition rating 2 - Good	-10	
Condition rating 3 - Fair	10	Condition Audit
Condition rating 4 - Poor	20	
Condition rating 5 – Very Poor	30	
Extent		
Very small - Failed area 0 to 5.6 m^2 (up to 2 bays)	0	
Small - Failed area 5.6 to 9.2 m^2 (2 to 4 bays)	3	Condition Audit
Moderate - Failed area 9.2 to 24 m^2 (4 to 10 bays)	6	
High - Failed area >24 m^2 (more than 10 bays)	10	
Total possible score	**50**	

Table 24   Renewal ranking criteria for asphalt shared paths

Renewal Ranking Criterion	Score	Data Source
Location		
All	10	Asset Register
Condition		
Condition rating 1 – Very Good	-20	
Condition rating 2 - Good	-10	
Condition rating 3 - Fair	10	Condition Audit
Condition rating 4 - Poor	20	
Condition rating 5 – Very Poor	30	
Extent		
Very small - Failed area 0 to 5.6 m^2	0	
Small - Failed area 5.6 to 30 m^2 (2 tonne asphalt required)	3	Condition Audit
Moderate - Failed area 30 to 90 m^2 (2-6 tonne asphalt required)	6	
High - Failed area >90 m^2 (>6 tonne asphalt required)	10	
Total possible score	**50**	

The current ranking criteria focus only on condition of the asset to determine prioritisation. However, as there is only currently three aspects to the ranking criteria it is difficult to sufficiently prioritise which paths need renewal. It is recommended that these criteria be reviewed to incorporate serviceability aspects in the criteria (ie DDA compliance) to better distinguish between paths renewal rankings.

RECOMMENDATION – Renewal Ranking Criteria Update
Review the renewal ranking criteria for footpaths and shared paths
Why? To allow for greater distinction of pathway assets in renewal prioritisations
How? Introduce criteria relating to universal access compliance, serviceability considerations, etc., into renewal ranking criteria.

6. 3. 4   Disposal

Financial sustainability requires a balance between the maintenance, renewal and disposal of existing assets and the delivery of new and upgraded assets. The purpose of asset disposal is therefore to ensure that Council resources are not spent on maintaining and renewing assets that are no longer required. Effective asset disposal enables Council to use its limited resources for maximum community benefit. The principles relating to disposal are outlined in Council's *Asset Management Policy*.

In practice, disposal of footpath and shared path assets rarely occurs. Council does not currently have a formalised methodology in place for determining whether footpath or shared path assets should be disposed of or not.

6. 4   Asset Lifecycle Responsibilities

The table below summarises the current understanding of asset lifecycle responsibilities as they relate to the management of Council's pathway assets.

Table 25   Footpath and shared path asset management responsibilities

Asset Class	Asset Lifecycle Phase					
	Asset Option Analysis	Design	Creation (incl. upgrades)	Maintenance	Renewal	Disposal
Footpaths	Traffic & Transport/ Landscape	Project Delivery	Construction/ Landscape	Works Services/ Passive Open Space	Construction	Construction
Shared Paths	Traffic & Transport	Project Delivery	Construction	Works Services/ Passive Open Space	Construction	Construction

Chapter 7:
Financial Sustainability

7.1 Introduction

In pursuit of good governance, Council must ensure pathways are managed in a way that is financially sustainable and caters for community expectations and demand. Funding allocations at each stage of the lifecycle impact the standard to which Council assets perform. This Chapter explores funding requirements to enable Council to deliver the levels of service outlined in this Plan.

7.2 Funding Sources

Council has access to a number of funding sources to support delivery of this *Footpath & Shared Path Asset Management Plan*. Funding sources include:

- Rates
- Federal and State Government Grants
- Private and Public Partnerships
- Borrowings
- Earnings from Asset Disposals

Council's *Asset Management Policy* recommends that Council proactively seek grants and partnership opportunities, as well as consider the disposal of surplus or obsolete assets, to supplement investment in asset provision management.

7.3 Financial Model

A financial model has been prepared for this plan to analyse the appropriate level of funding required to deliver on the levels of service outlined in Section 4.5 above.

The model is most critical from the perspective of renewals. Using the present condition distribution of the assets as a starting point, the model calculates the renewal expenditure required to retain a desired minimum asset condition in line with the specified levels of service.

The following assumptions have been made in the model:

- Time Period – the model analyses asset performance over a 20 year period
- Asset Growth Rate – 0.2% (consisting of both newly constructed paths and contributed assets from developments)
- Unit rates for renewal and average asset service life as outlined in Table 26
- Current operational maintenance budget is sufficient to deliver proposed inspection and maintenance practices
- New/upgrade funding in line with current Long Term Financial Forecast (LTFF) and Capital Works Program (adjusted for inflation)
- Condition audits are conducted on a four yearly basis with footpath and shared path audits offset by two years
- Yearly inflation of 3.0%

Table 26   Lifecycle Cost – Unit rates and Service Life

Asset Type	Renewal Unit Rate ($/m²)	Asset Service Life (Years)
Concrete Pathway	$85	50
Asphalt Pathway	$100	25

The results of the modelling can be found in Attachment 5. These results will be routinely updated, following the completion of condition audits providing new data for the model.

7. 4   Recommended Funding Levels

To achieve improved asset management outcomes, a sustained commitment to the provision of adequate funding for asset renewal, maintenance, new and upgrade works is required. The funding targets necessary to deliver sound asset management for the next five years based on the financial model are summarised in Table 27.

This table also compares the current funding levels set out in the Long Term Financial Forecast (LTFF) to the recommended optimal levels and identifies the annual funding shortfalls in both the capital and operating budgets.

From Table 27, it is clear that the funding allowed for in the current LTFF is satisfactory to deliver the current management practices outlined in Chapter 5 of this plan.

The funding in the LTFF is reviewed on a biannual basis, taking into account recent condition audit results, and funding requirements from the other asset renewal programs. Through discussion between Asset Strategy and Finance the funding can be adjusted to ensure all renewal programs receive appropriate levels of funding to meet renewal requirements.

Funding decisions should be based on information that justifies initial expenditure and demonstrates the longer term benefits and costs. It must be noted however that sound asset management and sustainability are not solely reliant on the provision of funds. Continual assessment and improvement of Council's asset management practices is required to ensure assets deliver the agreed level of service in the most cost effective manner.

Table 27 Recommended Funding Levels

	PROPOSED FUNDING ($,000)				
	2016/17	**2017/18**	**2018/19**	**2019/20**	**2020/21**
Capital Works – New/Upgrade					
Recommended Funding Footpaths	452	344	339	362	331
Recommended Funding Shared Paths	300	292	357	330	380
Total Recommended Funding Level	**752**	**636**	**696**	**692**	**711**
Current LTFF	**752**	**636**	**696**	**692**	**711**
Funding Shortfall	0	0	0	0	0
Capital Works – Renewals					
Recommended Funding Footpaths	1,573	1,999	2,424	2,815	3,175
Recommended Funding Shared Paths	483	544	629	705	792
Total Recommended Funding Level	**2,021**	**2,543**	**3,053**	**3,520**	**3,966**
Current LTFF	**2,400**	**2,740**	**3,025**	**3,500**	**3,990**
Funding Shortfall	-379	-197	28	20	-24
Operating Budget – Maintenance					
Recommended Funding Footpaths	399	401	411	422	433
Recommended Funding Shared Paths	213	214	219	225	231
Total Recommended Funding Level	**612**	**615**	**631**	**647**	**663**
Current LTFF	**612**	**615**	**631**	**647**	**663**
Funding Shortfall	0	0	0	0	0
Operating Budget – Operational Costs					
Recommended Funding Footpaths	0	0	70	0	0
Recommended Funding Shared Paths	20	0	0	0	23
Total Recommended Funding Level	**20**	**0**	**70**	**0**	**23**
Current LTFF	**20**	**0**	**70**	**0**	**23**
Funding Shortfall	0	0	0	0	0

Chapter 8:
Improvement Program

8. 1 Introduction

This chapter collates and summarises the recommendations from the Plan, into an implementation program of asset management practice improvements.

The implementation program is intended to be resourced through existing operational budgets, and business planning processes.

While the majority of the implementation will be facilitated by the Asset Strategy team, and Sustainable Infrastructure Department, it is expected that cross-organisational support, and resourcing, will be required to continue to embed asset management principles.

8. 2 Improvement Recommendations

There are eight recommendations for improvement that have been identified in the development of this plan. These recommendations are listed below.

Chapter 3
- Recommendation 1 – Levels of Service Consultation (Section 3.6.4)

Chapter 4
- Recommendation 2 – Customer Satisfaction Survey (Section 4.1.1)
- Recommendation 3 – Management of Routine Maintenance in Lifecycle (Section 4.2.3)
- Recommendation 4 – Functional Parameters in Condition Audits (Section 4.2.2)

Chapter 6
- Recommendation 5 – Ranking Criteria for Path Upgrades (Section 6.3.1)
- Recommendation 6 – Improve Asset Handover Process (Section 6.3.1)
- Recommendation 7 – Hazard Inspections for Footpaths not in Road Reserves (Section 6.3.2)
- Recommendation 8 – Renewal Ranking Criteria Upgrades (Section 6.3.3)

8. 3 Implementation of Improvement Recommendations

Table 28, below, summaries the improvement recommendations, highlighting the following:

- Recommended actions
- Priority
- Key responsibility
- Target Timeframes
- References to NAMAF elements and City Plan Objectives

The team responsible for each of the improvement recommendations should incorporate the project into their annual business plans.

It is expected that the improvement recommendations can all be implemented through regular business practices and there is therefore no funds allocated to their implementation.

8. 4 FSAMP Implementation and Review

All internal stakeholders have a significant role to play in the delivery of sustainable asset management and the implementation of improvement recommendations.

The Asset Strategy team is responsible for the review and updating of this Plan.

Implementation of the improvement recommendations, set out in Table 28, should be monitored on an annual basis and used to inform business planning activities and budget priorities in subsequent years.

Review of this Plan should occur at 5 yearly intervals and focus on updating asset performance, the model and the applicability of outstanding improvement projects. The model presented in Chapter 6 should be updated to reflect impacts of new works and improvements in Council's asset knowledge. Updates of the financial model should incorporate:

- Future condition audit results
- Changes to the improvement project priorities and expected costs
- Asset changes resulting from renewal works
- Asset changes resulting from capital upgrades
- New developments

Chapter 7: Improvement Program

Table 28   Improvement recommendations

Action ID	Recommended Action	Priority	FSAMP Reference	Reference to NAMAF elements	Key responsibility	Support from	Target Timeframe	City Plan Objective
FSAMP 1	**Levels of Service Consultation** Undertake community survey/forum around the above proposed levels of service seeking feedback and agreement.	High	Section 3.6.4	8 – Levels of Service	Asset Strategy	Traffic & Transport Operations		3.1 3.3 5.3
FSAMP 2	**Customer Satisfaction Survey** Undertake a customer survey either sent out with the annual customer satisfaction survey, or with a specific asset satisfaction survey, to measure customer satisfaction in relation to delivery of the proposed levels of service.	High	Section 4.1.1	8 – Levels of Service 11 – Evaluation	Asset Strategy	Traffic & Transport Access & Equity		3.1 3.3 5.3
FSAMP 3	**Management of Routine Maintenance in Lifecycle** Develop a new module in Lifecycle for routine maintenance activities.	Medium	Section 4.2.3	9 – Data & Systems	Asset Strategy	Operations		5.3
FSAMP 4	**Functional Parameters in Condition Audits** Update scope of condition audit documents to include the collection of functional data such as overgrown vegetation, universal access considerations, etc.	Medium	Section 6.3.3	6 – Asset Management Plans 8 – Levels of Service	Asset Strategy	Traffic & Transport	2016/17 (shared paths) 2018/19 (footpaths)	1.1 3.1 3.3
FSAMP 5	**Ranking Criteria for Path Upgrades** Create a new ranking criterion for pathway upgrades that can allow them to be prioritised against new proposed paths.	Medium	Section 6.3.1	6 – Asset Management Plans	Traffic & Transport	Asset Strategy	Oct 2016	3.1 5.3

Footpath & Shared Path Asset Management Plan
Chapter 7: Improvement Program

Action ID	Recommended Action	Priority	FSAMP Reference	Reference to NAMAF elements	Key responsibility	Support from	Target Timeframe	City Plan Objective
FSAMP 6	**Improve Asset Handover Process** Review handover process and ensure assets are promptly entered into the Asset Register when they are created, so that they can be programmed for inspection and maintenance works.	Medium	Section 6.3.1	9 – Data & Systems	Capital Works	Asset Strategy		5.3
FSAMP 7	**Hazard Inspections for Footpaths not in Road Reserves** Develop functionality in Lifecycle to record hazard inspections against park parent for reserve footpaths to ensure that they are being proactively inspected and maintained.	High	Section 6.3.2	9 – Data & Systems	Asset Strategy	Operations		3.1 4.2 5.3
FSAMP 8	**Renewal Ranking Criteria** Introduce criteria relating to universal access, serviceability considerations, etc., into renewal ranking criteria.	Low	Section 6.3.3	6 – Asset Management Plans	Asset Strategy	Traffic & Transport Operations	Oct 2016	3.1 5.3

Bibliography

ISO 2014a, ISO 55000: 2014 Asset Management – Overview, principles and terminology, International Organization for Standardization, Switzerland.

ISO 2014b, ISO 55001: 2014 Asset Management –Management systems: Requirements, International Organization for Standardization, Switzerland.

ISO 2014c, ISO 55002: 2014 Asset Management – Management systems – Guidelines for the application of ISO 55001, International Organization for Standardization, Switzerland.

Knox City Council 2005, Footpath & Shared Path Asset Management Plan, Knox City Council, Victoria.

Knox City Council 2013, Asset Management Policy, Knox City Council, Victoria.

Knox City Council 2014a, Service Planning Policy, Knox City Council, Victoria.

Knox City Council 2014b, Strategic Asset Management Plan, Knox City Council, Victoria.

Knox City Council 2015, Annual Report 2014-15, Knox City Council, Victoria.

Municipal Association of Victoria (MAV) 2010, National Financial and Asset Management Assessment Framework for Local Government – Victorian Model (Version 1.2 12 July 2010), Melbourne.

NAMS and IPWEA 2011, International Infrastructure Management Manual, New Zealand National Asset Management Steering Group and the Institute of Public Works Engineering Australia, Wellington.
Road Management Act 2004 (Victoria)

Attachments

Knox City Council

ATTACHMENT 1

Compliance to NAMAF and IIMM Frameworks

(Appendix is current at June 2016)

A) National Asset Management Assessment Framework expectations of Asset Management Plans

NAMAF Question	Typical evidence required	Reference in this Asset Management Plan
The Asset Management Plans define which asset groups are covered by each Plan in accordance with a clearly documented Infrastructure Asset Hierarchy.	1. Asset structure (Asset Plan/Group/Category/Component) documented in AMP	Section 2.1
With respect to the content of the Asset Management Plans, they:		
a. Refer to Council's Asset Management Policy and Asset Management Strategy;	1. AMP makes reference to AM Policy & AM Strategy 2. AMP describes relationship between AM Policy, AM Strategy and AMP.	Section 1.2
b. Include all assets and document asset inventory information for the asset group/category as recorded in the asset register;	1. Asset structure documented that covers all council assets 2. AMPs document asset system/register applicable as reference for asset inventory information 3. AMP lists all asset inventory information	Sections 2.1 and 2.2
c. Document the asset hierarchy within each asset group;	1. Asset functional (service) hierarchies are documented for each asset Category level 2. Asset classifications, as required, are documented	Section 2.5
d. Document the current condition of assets;	1. Reference is made to the location of condition graphs or tables 2. Condition graphs or tables are included in the plan 3. Comments by exception are provided in the AMP	Section 4.2
e. Document the adopted useful lives of assets;	1. Reference is made to the location of the useful lives of the assets 2. Asset lives are documented in the plan 3. Comments on factors effecting asset useful lives are included in the plan	Section 2.3
f. Include risk assessment and criticality profiles;	1. Definition of critical assets is provided 2. Critical assets are identified and listed in the plan 3. Asset risks are identified and listed in the plan 4. A risk assessment of the identified risks has been included in a Risk Register	Section 2.5 and 3.4
g. Provide information about assets, including particular actions and costs to provide a defined (current and/or target) level of service in the most cost effective manner.;	1. Service plans clearly articulate the assets required to deliver the desired level of service 2. Asset replacement costs, to achieve the level of service, are assessed on a regular basis (Valuations Attachment) 3. Renewal forecasts for all assets completed 4. Capital works programs developed 5. Capital works programs and maintenance costs are documented in the service plan	Sections 6.2, 6.3 and 7.4

NAMAF Question	Typical evidence required	Reference in this Asset Management Plan
h. Include demand management forecasts;	1. Population and demographic forecasts have been documented 2. Factors effecting demand on each asset group have been identifed and listed 3. The impact of the identified factors has been determined and documented 4. Actions (eg works programs, improvement actions) have been identified	Section 5.1
i. Address life cycle costs of assets;	1. The AMP includes within the Lifecycle Management section renewal, maintenance, new and upgrade and asset operational planning and costs	Sections 6.2, 7.2, 7.3 and 7.4
j. Include forward programs identifying cash flow forecasts projected for:		
i. Asset Renewals;	1. The AMP identifies asset renewal capital works programs 2. Establishes how renewal programs are prioritised 3. Documents a current capital works program in priority order covering a minimum 10 years period 4. Includes indicative timing and costs	Sections 6.3 and 7.4
ii. New Assets and Upgrades of existing assets;	1. The AMP identifies asset new and upgrade capital works programs 2. Establishes how the programs are prioritised 3. Documents a current capital works program in priority order covering a minimum 10 years period 4. Includes indicative timing and costs	Sections 6.3 and 7.4
iii. Maintenance expenditure;	1. The AMP identifies or references maintenance activities 2. Documents current maintenance costs 3. Includes forecasts of future maintenance costs covering a minimum 10 year period	Sections 6.3 and 7.4
iv. Operational expenditure (including depreciation expense);	1. The AMP identifies asset operational activities 2. Identifies current asset operational costs 3. Includes forecasts of future operational costs covering a minimum 10 year period 4. ~~Depreciation expense N/a Non cash entry~~	Sections 6.3 and 7.4
k. Address asset performance and utilisation measures and associated targets as linked to levels of service;	1. Relevant Technical Levels of Service are documented in the AMP 2. The AMP identifies assets that do not meet the target LoS (assets under-capacity)	Sections 3.6, 4.2 and 4.3
l. Include an asset rationalisation and disposal program; and	1. Potential rationlisation/disposal opportunities are identified and lised in the plan	Section 6.3
m. Include an asset management improvement plan.	1. Each AMP identifies improvement actions through its development 2. Improvement actions are collated and assigned a timeframe, responsibility, resources	Chapter 8

NAMAF Question	Typical evidence required	Reference in this Asset Management Plan
n. Include consideration of non-asset service delivery solutions (leasing private/public partnerships)	1. Service Plans consider non-asset delivery solutions 2. Service plans document Levels of Service which clearly identifies the assets required to meet the LoS target	Section 3.6
o. Recognise changes in service potential of assets through projections of asset replacement costs, depreciated replacement cost and depreciation expense.	1. Council regularly assesses asset replacement costs (Valuation Attachment) 2. Council undertakes renewal forecasts and refers to LTFP 3. Council has Capital Works Programs that are referred to the LTFP 4. Funded capital projects are listed in the Service Plan 5. Service Plans detail the cost of the service 6. Service plans develop actions required to continue to deliver the service	Sections 7.3 and 7.4
The Asset Management Plans link to the Council's Asset Management Policy, Asset Management Strategy, Strategic Longer Term Plan, Long Term Financial Plan and other relevant Council Policy objectives.	1. General AMP describes related documents and the relationship between each	Sections 1.2 and 1.4
The Asset Management Plans have all been prepared in association with community consultation.	1. Council has an adopted community engagement plan for services 2. Service plans have been completed and address community expectations	Section 1.5

B) International Infrastructure Management Manual (2011)
Section 4. 2. 6 – Example of an Asset Management Plan Structure

Structure of an Asset Management Plan	Reference in this Asset Management Plan
1. Executive Summary	
1.1 Purpose of the Plan	Executive Summary
1.2 Asset Description	Executive Summary
1.3 Levels of Service	Executive Summary
1.4 Future Demand	Executive Summary
1.5 Lifecycle Management Plan	Executive Summary
1.6 Financial Summary	Executive Summary
1.7 Asset Management Practices	Executive Summary
1.8 Monitoring and Improvement Programme	Executive Summary
2. Introduction	
2.1 Background	Sections 1.1 to 1.6
2.2 Goals and Objectives of Asset Ownership	Sections 1.1 and 1.2
2.3 Plan Framework	Section 1.3
2.4 Core and Advanced AM	Section 1.3
3. Levels of Service	
3.1 Customer Research and Expectations	Section 3.3
3.2 Strategic and Corporate Goals	Section 3.4
3.3 Legislative Requirements	Section 3.5
3.4 Current Levels of Service	Sections 3.6, 4.1 and 4.2
3.5 Desired Levels of Service	Section 3.6
4. Future Demand	
4.1 Demand Drivers	Section 5.1
4.2 Demand Forecasts	Section 5.1
4.3 Demand Impact on Assets	Section 5.1
4.4 Demand Management Plan	Section 5.1
4.5 Asset Programmes to meet Demand	Section 5.1
5. Lifecycle Management Plan	
5.1 Background Data	
5.1.1 Physical Parameters	Sections 2.1, 2.2 and 2.4
5.1.2 Asset Capacity/Performance	Section 4.2
5.1.3 Asset Condition	Section 4.2
5.1.4 Asset Valuations	Section 2.6
5.1.5 Historical Data	Section 2.7 and 4.2
5.2 Infrastructure Risk Management Plan	Section 3.4
5.3 Routine Operations and Maintenance Plan	
5.3.1 Operations and Maintenance Plan	Section 6.3

Structure of an Asset Management Plan	Reference in this Asset Management Plan
5.3.2 Operations and Maintenance Strategies	Section 6.3
5.3.3 Summary of Future Costs	Section 6.3
5.4 Renewal/Replacement Plan	
5.4.1 Renewal Plan	Section 6.3
5.4.2 Renewal Strategies	Section 6.3
5.4.3 Summary of Future Costs	Section 6.3
5.5 Creation/Acquisition/Augmentation Plan	
5.5.1 Selection Criteria	Section 6.3
5.5.2 Capital Investment Strategies	Section 6.3
5.5.3 Summary of Future Costs	Section 6.3
5.6 Disposal Plan	Section 6.3
6. Financial Summary	
6.1 Financial Statements and Projections	Section 7.4
6.2 Funding Strategy	Section 7.2
6.3 Valuation Forecasts	Section 7.4
6.4 Key Assumptions Made in Financial Forecasts	Section 7.3
6.5 Forecast Reliability and Confidence	Section 7.3
7. Plan Improvement and Monitoring	
7.1 Status of AM Practices	Section 1.3
7.2 Improvement Programme	Section 8.2
7.3 Monitoring and Review Procedures	Section 8.3
7.4 Performance Measures	Section 8.3
8. References	Bibliography
9. Appendices	Appendices

ATTACHMENT 2

Footpath & Shared Path Asset Management Plan 2005

Status of Recommendations 2015

(Appendix is current at June 2016)

PROJECT ID	PROJECT TITLE	RECOMMENDED PROJECT LEADER	STAKEHOLDERS	STATUS (% Complete)	Comments
2.1.1: Performance Measurement (External Surveys)	Review current maintenance practices and service levels annually to meet community satisfaction targets identified through external surveys.	Works Services	Construction Traffic and Transport Asset Strategy	100%	Review of Service levels as part of RMP Review. Ongoing monitoring of customer satisfaction levels required.
2.2.1: Annual Asset Valuations	Modification of asset valuation methodology from annual depreciation rates to useful remaining life.	Asset Strategy		100%	
3.1.1: Integrate Risk Management Performance (Injury Claims)	Review and assessment of claims made against Council related to path infrastructure	Asset Strategy	Works Services	0%	To be incorporated as part of the review of the Footpath & Shared Path AM Plan.
3.2.1: Historical Path Spending	Establish clear expenditure accounts to separately capture maintenance and renewal expenditure for both footpaths and shared paths	Works Services	Asset Strategy Construction Finance	100%	Budget accounts have been set up, but not all expenditure for shared paths is being recorded accordingly.
4.1.1: New Path Criteria (Planning)	Develop a complete list of missing path links and path upgrades identified in the Integrated Transport Plan, Bicycle Plan and Pedestrian Plan as well as through the Path Condition Audit 2005. Consideration of the path hierarchy required.	Traffic & Transport		100%	Upgrade for path network not included. Program for missing links - not all ranked.
4.1.2: New Path Criteria (Planning)	Implement the proposed ranking criteria for all new/upgrade paths (missing links) as part of the CWP process	Traffic & Transport		100%	Ranking criteria used, complete program for all missing links not yet identified
4.1.3: New Path Criteria (Planning)	Development of DDA guidelines for paths related to path Hierarchy and prioritisation in CWP	Traffic & Transport	Community Wellbeing	100%	Mobility guidelines developed and within Program 4006 (New Footpaths) the ranking criteria considers the path hierarchy.
4.2.1: Amendment of Design Standards (Design/ Construction)	Review of annual planting program to address specific tree issues and effects on the path network	Parks Services	Construction Works Services Landscape Services	90%	Ranking criteria developed to consider infrastructure damage in tree planting program. To be applied.
4.2.2: Amendment of Design Standards (Design/ Construction)	Review of causes of premature pavement failure and implementation of improvement strategies.	Construction	Asset Strategy Construction Parks Services Project Delivery	50%	Occuring informally for major patching. Process to be documented
4.2.3: Amendment of Design Standards (Design/ Construction)	Review of design standards for shared paths to accommodate motorised vehicle traffic	Project Delivery	Asset Strategy Construction Works Services Parks Services	100%	

PROJECT ID	PROJECT TITLE	RECOMMENDED PROJECT LEADER	STAKEHOLDERS	STATUS (% Complete)	Comments
4.2.4: Amendment of Design Standards (Design/ Construction)	Review of design standards for shared paths in industrial areas	Project Delivery	Asset Strategy Construction Works Services Parks Services	100%	
4.2.5: Amendment of Design Standards (Design/ Construction)	Under the Road Management Act, manage works undertaken by service authorities by monitoring the consent and notification process	Asset Preservation		100%	
4.2.6: Amendment of Design Standards (Design/ Construction)	Adoption of Proposed Design Standards for Footpaths & Shared Paths - by Design Standards Committee	Project Delivery	Asset Strategy Construction	100%	Refer to Table 17 and Attachment 2
4.2.7: Amendment of Design Standards (Design/ Construction)	New construction contracts to refer to new adopted design standards	Standards Committee	Asset Strategy Project Delivery	100%	Refer to Table 17 and Attachment 2
4.3.1: Adherence To and Review of Road Management Plan (Operations and Maintenance)	Establish a nominal amount of funding within the path renewal budget to allow for repair of paths which exceed maintenance budget thresholds	Construction	Capital Works Asset Strategy Works Services	100%	Maintenance referrals funded by Renewal Program, nominal amount set in Business Case.
4.4.1: Renewal Planning (Renewal)	Develop Council Footpath and Shared Path renewal programs utilising the proposed renewal ranking criteria.	Construction	Asset Strategy	100%	
4.4.2: Renewal Planning (Renewal)	Removal of existing brick pavers in paths to be included into Renewal Program	Construction		100%	Brick pavers not replaced when due for renewal, except in shopping centres.
4.4.3: Renewal Planning (Renewal)	Recording date of renewal and updating the condition of path segments in Council's Asset Register	Construction	Asset Strategy	90%	Live update to asset register still required as well as automated update of condition.
4.5.1: Establish Disposal Criteria (Disposal)	Develop a process/program for the assessing opportunists for disposal or downgrade of paths. Consideration of the path hierarchy required.	Traffic & Transport	Asset Strategy	0%	
4.6.1: Performance monitoring and Facilitation	Review of Asset Management Plan (3-year cyclic program developed)	Asset Strategy		100%	Asset Management Plan Review timetable has programmed review for 2013/14.

PROJECT ID	PROJECT TITLE	RECOMMENDED PROJECT LEADER	STAKEHOLDERS	STATUS (% Complete)	Comments
4.6.2: Performance monitoring and Facilitation	Regular update of asset data relating to paths for new/upgrade, renewal and maintenance works.	Asset Strategy	Project Delivery Traffic & Transport Construction Works Services Parks Services	90%	
4.6.3: Performance monitoring and Facilitation	Develop a program for and undertake Routine Hazard Inspections	Works Services	Parks Services	100%	
4.6.4: Performance monitoring and Facilitation	Develop a program for and undertake routine condition audits	Asset Strategy		100%	Both footpaths and shared paths have had multiple audits and are on programs for future audits as part of revised SAMP
4.6.5: Performance monitoring and Facilitation	Develop a program for and undertake routine serviceability audits	Traffic & Transport		20%	
5.1.1: Financial Sustainability	All condition 4 & 5 Footpaths are eradicated by 2011	Asset Strategy	Construction	100%	Essentially achieved at 2011 audit, will be confirmed again in 2015 audit
5.1.2: Financial Sustainability	All condition 4 & 5 Shared paths are eradicated by 2020	Asset Strategy	Construction	100%	Achieved in 2010
5.1.3: Financial Sustainability	Improve asset condition data to confidently predict deterioration rates and asset performance for the path network	Asset Strategy		100%	Process now in place to compare previous data and renewal modelling is tested against industry recognised software.

ATTACHMENT 3

Overview of Council Risk Management Practices

(Appendix is current at June 2016)

Step 1: Identify Sources of Risk

Step 2A: Analyse Risk Consequences

Consequence	People	Environment	Financial	Safety	Technology	Operational Performance	Regulatory	Asset Management
Critical	Essential service failure that poses a critical safety risk to service users	Irreversible damage	Above $1,000,000	Death			Major breach where organisation faces criminal conviction	Condition of the asset poses a critical risk to users
Major	Essential service failure for more than 1 day

Service or provider needs to be replaced

Widespread negative coverage in media including television and papers | Harm requiring restorative work | Up to $1,000,000 | Extensive injuries | Major corruption or loss of data that can't be recovered or failure of core systems for more than 2 days | Process is so inefficient or ineffective that it must be ceased immediately | Major breach where organisation faces heavy penalties | Condition of the asset causes a significant damage to property |
| Moderate | Temporary, recoverable service failure up to 1 day

Issue raised in local community newspapers | Residual pollution requiring clean up work | Up to $250,000 | Medical Treatment | Failure of core systems up to 2 days or non core system up to 5 days | Process failure impacts service up to 1 day or requires significant injection of resources to maintain | Breach of legislation where the organisation is put under notice to remedy by external body | Inability of the asset to perform its function (service risk) |
| Minor | Brief service interruption up to half a day

Customer complaints are escalated | Temporary pollution, e.g burn off outside of Knox causes smoke to drift into Knox area for short period and dissipates | Up to $50,000 | First Aid Treatment | Failure of core systems for up to half a day or non core system up to 2 days | Process failure impacts service up to half a day | Systemic non compliance with legislation that is identified and remedied in house | Failure to preserve the ongoing value of the asset (investment risk) |
| Negligible | Negligible impact, brief reduction/loss of service

Customer complaints resolved in day-to-day management | Brief, non hazardous, transient pollution | Up to $5,000 | No Injuries | Failure of non core system up to a day | Brief interruption to process that has negligible impact on service | Non systemic incidents which are recognised and rectified during normal operations | Minor impact to the value of an asset at the end of its life cycle (investment risks) |

Step 2B: Analyse Risk Likelihood

Likelihood	Description
Almost Certain	The event is expected to occur in most circumstances
Likely	The event will probably occur in most circumstances possible
Possible	The event should occur at some time
Unlikely	The event could occur at some time
Rare	The event may occur only in exceptional circumstances

Step 3: Evaluate the Risk

Consequence	Negligible	Minor	Moderate	Major	Critical
Likelihood					
Almost Certain	Medium	Medium	High	High	Extreme
Likely	Low	Medium	Medium	High	Extreme
Possible	Low	Low	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

Step 4: Treat the Risk

Extreme Risks	Must be eliminated/mitigated immediately
High Risks	Need urgent action within one month
Medium Risks	Need action within six months
Low Risks	May not require immediate action but will be reviewed annually

Step 5: Monitor and Review Risks

- Record actions in the Business Plans and follow up
- Refer residual risks with a rating of medium or above to Corporate Risk Register

ATTACHMENT 4

Routine and Reactive Maintenance Activities

(Appendix is current at June 2016)

A) Routine Maintenance Activities

Maintenance Code	Maintenance Activity	Description	Rectification	Frequency
FP-ROU-027	Concrete Footpath Maintenance	Grind interfaces of concrete footpath bays to address unevenness.	Grind when vertical displacement between bays is between 10 and 20mm.	1 year cycle (Commercial routes only)
FP-ROU-013	Litter Clearing / Dumped Rubbish	Removal of litter / debris from footpaths	Removal of litter / dumped rubbish (excluding cigarette butts & gum) - for selected Shopping Centres only.	1 week cycle
SP-ROU-012	Shared Path Sweeping / Cleaning	Sweeping of DDA infrastructure and spoon drains along shared paths and all Council underpasses.	Inspection for siltation and removal of all obstructions and glass for Council underpasses.	1 week cycle
SP-ROU-019	Weed Control / Edge Trimming	Treatment to remove grass and/or weeds encroaching onto shared paths and remove weeds growing within constructed (asphalt/brick paved or unsealed) shared paths	a) Edge trim grass/weeds extending >200mm onto shared path - for All shared paths; b) Remove weeds within constructed shared path area - for All shared paths.	3 month cycle

B) Reactive Maintenance Activities

Maintenance Code	Maintenance Activity	Description	Rectification	Target Time for Initial Response	Target Time for Rectification
FP-REA-027	Concrete Footpath Maintenance	Wedge interfaces of concrete footpath bays to address unevenness.	Provide temporary wedge when vertical displacement between bays exceeds 20mm and/or existing wedge has been dislodged. Treatment may be with asphalt or other appropriate material.	3 days	50 days
FP-REA-023	Unsealed Footpath Maintenance	Grading to reduce corrugations and restore surface condition of unsealed footpaths.	Provide temporary and/or permanent repair of surface if corrugations and/or potholes >50mm deep. May include spot gravelling with crushed rock.	3 days	64 days

Maintenance Code	Maintenance Activity	Description	Rectification	Target Time for Initial Response	Target Time for Rectification
FP-REA-008	Brick Paved Footpath Maintenance	Treatment to replace, repair and or/regulate damaged, dislodged, settled or missing paved areas.	Provide temporary and/or permanent repairs of loose, missing or dislodged pavers; repair vertical displacement >20mm; fill gaps between pavers >10mm. May include temporary or permanent reinstatement with an alternative material. Distressed areas >1m^2 are managed to mitigate risk and programmed for renewal.	3 days	50 days
FP-REA-029	Asphalt Footpath Maintenance	Treatment to repair potholes, distressed / lifted sections and/or edge breaks on asphalt footpaths to restore surface condition.	Provide temporary and/or permanent repair of: a) holes/subsided areas greater than 30mm deep and/or distressed areas <2m^2; b) pavement edge failures >50mm deep over a length of 150mm. Distressed areas >2m^2 are managed to mitigate risk and programmed for renewal.	3 days	50 days
FP-REA-046	Edge / Shoulder Repair	Treatment to reduce depressions / holes at the interface (edge/shoulder) of constructed asphalt, concrete or brick paved footpaths.	Provide temporary and/or permanent repairs of depressions (with topsoil, gravel or sand) at the interface of the nature strip and surrounding constructed paths for: a) depressions >50mm for Commercial routes b) depressions >75mm for other routes	5 days	64 days
FP-REA-005	Graffiti Removal	Removal of graffiti from footpath surface.	Removal of offensive graffiti in line with Graffiti and Vandalism Management Plan and other graffiti within rectification timeframes.	1 day for offensive 5 days for other	32 days
FP-REA-013	Litter Clearing / Dumper Rubbish	Removal of litter / debris from footpaths	Removal of litter / dumped rubbish that poses a hazard to pedestrians and/or obstructs stormwater flows and traffic movements (excluding cigarette butts & gum). Temporary works may include placement of litter / dumped rubbish on nature strips until litter can be removed.	3 days	7 days
SP-REA-027	Concrete Shared Path Maintenance	Wedge interfaces of concrete shared path bays to address unevenness.	Provide temporary wedge when vertical displacement between bays exceeds 20mm and/or existing wedge has been dislodged. Treatment may be with asphalt or other appropriate material.	3 days	45 days

Maintenance Code	Maintenance Activity	Description	Rectification	Target Time for Initial Response	Target Time for Rectification
SP-REA-023	Unsealed Shared Path Maintenance	Grading to reduce corrugations and restore surface condition of unsealed shared path.	Provide temporary and/or permanent repair of surface if corrugations and/or potholes >50mm deep. May include spot gravelling with crushed rock.	3 days	45 days
SP-REA-008	Brick Paved Shared Path Maintenance	Treatment to replace, repair and or/regulate damaged, dislodged, settled or missing paved areas.	Provide temporary and/or permanent repairs of loose, missing or dislodged pavers; repair vertical displacement >20mm; fill gaps between pavers >10mm. May include temporary or permanent reinstatement with an alternative material. Distressed areas >2m^2 are managed to mitigate risk and programmed for renewal.	3 days	50 days
SP-REA-029	Asphalt Shared Path Maintenance	Treatment to repair potholes, distressed / lifted sections and/or edge breaks on asphalt shared paths to restore surface condition.	Provide temporary and/or permanent repair of: a) holes/subsided areas >50mm deep; b) mounding >100mm Distressed areas >2m^2 are managed to mitigate risk and programmed for renewal.	3 days	45 days
SP-REA-046	Edge / Shoulder Repair	Treatment to reduce depressions / holes at the interface (edge/nature strips) of constructed shared paths.	Provide temporary repairs only if depressions/gaps >75mm are present at the interface of the nature strip and adjacent constructed paths	3 days	64 days
SP-REA-012	Shared Path Sweeping / Cleaning	Sweeping of DDA infrastructure and spoon drains along shared paths and all Council underpasses.	Clear dirt, silt & debris that is likely to cause slipping or obstruction of stormwater flow into spoon drains.	3 days	32 days
SP-REA-030	Sign Maintenance - Regulatory / Warning	Cleaning / repair / replacement of damaged / missing and/or deteriorated regulatory and warning signs & posts and overhead rubber protective strips.	a) Provide temporary and/or permanent repair if sign is damaged to the extent that the message is unreadable; b) Straighten sign posts when it becomes noticeable that it is not vertical, or replace when damage renders sign ineffective.	5 days	96 days

Maintenance Code	Maintenance Activity	Description	Rectification	Target Time for Initial Response	Target Time for Rectification
SP-REA-020A	Pruning - Sign Obstruction	Prune foliage obstructing regulatory, warning and directional / special purpose signage.	Prune foliage obstructing regulatory, warning and directional / special purpose signage for sign obstructions as per Austroads Guidelines Part 5 - Intersections at Grade (Table 5.1).	5 days	45 days
SP-REA-005	Graffiti Removal	a) Removal of all graffiti and unauthorised material (eg. Posters, balloons, garage sale signs, etc) attached to signs along shared paths; b) Removal of graffiti from shared path surface.	Remove offensive graffiti in line with Graffiti and Vandalism Management Plan and other graffiti within rectification timeframes	1 day for offensive 5 days for other	32 days

ATTACHMENT 5

Financial Modelling Results

(Appendix is current at June 2016)

| Financial Year | Footpath Asset Expenditure ($,000) | | | | | | TOTAL |
| | Capital Works | | | Operations | | | |
	New/Upgrade	Renewals	TOTAL	Maintenance	Operational	TOTAL	
2016/17	452	1537	1989	399	0	399	**2388**
2017/18	344	1999	2343	401	0	401	**2744**
2018/19	339	2424	2763	411	70	481	**3244**
2019/20	362	2815	3177	422	0	422	**3598**
2020/21	331	3175	3506	433	0	433	**3938**
2021/22	341	3506	3847	444	0	444	**4291**
2022/23	351	3813	4164	456	79	535	**4698**
2023/24	362	4096	4458	468	0	468	**4925**
2024/25	373	4359	4731	480	0	480	**5211**
2025/26	384	4603	4987	493	0	493	**5480**
2026/27	395	4832	5228	508	89	596	**5824**
2027/28	407	5048	5455	523	0	523	**5978**
2028/29	419	5251	5671	539	0	539	**6209**
2029/30	432	5445	5877	555	0	555	**6432**
2030/31	445	5631	6076	571	100	671	**6747**
2031/32	458	5811	6269	589	0	589	**6857**
2032/33	472	5985	6457	606	0	606	**7064**
2033/34	486	6157	6643	624	0	624	**7268**
2034/35	501	6326	6827	643	112	755	**7583**
2035/36	516	6495	7011	662	0	662	**7673**

* Modelling assumes an annual inflation of 3.0%

| Financial Year | Shared Path Asset Expenditure ($,000) | | | | | | TOTAL |
| | Capital Works | | | Operations | | | |
	New/Upgrade	Renewals	TOTAL	Maintenance	Operational	TOTAL	
2016/17	300	483	783	213	20	233	**1017**
2017/18	292	544	836	214	0	214	**1050**
2018/19	357	629	986	219	0	219	**1206**
2019/20	330	705	1035	225	0	225	**1260**
2020/21	380	792	1172	231	23	253	**1425**
2021/22	391	864	1255	237	0	237	**1492**
2022/23	403	922	1326	243	0	243	**1568**
2023/24	415	969	1384	249	0	249	**1634**
2024/25	428	1007	1434	256	25	281	**1715**
2025/26	441	1037	1477	262	0	262	**1739**
2026/27	454	1061	1515	270	0	270	**1785**
2027/28	467	1083	1551	278	0	278	**1829**
2028/29	481	1104	1585	287	29	315	**1901**
2029/30	496	1125	1621	295	0	295	**1916**
2030/31	511	1148	1658	304	0	304	**1962**
2031/32	526	1173	1699	313	0	313	**2012**
2032/33	542	1201	1742	323	32	355	**2097**
2033/34	558	1232	1790	332	0	332	**2122**
2034/35	575	1267	1842	342	0	342	**2184**
2035/36	592	1305	1897	353	0	353	**2250**

* Modelling assumes an annual inflation of 3.0%