

Transport Asset Management Plan Summary

2010/11–2019/20



Absolutely

POSITIVELY

ME HEKE KI PŌNEKE
WELLINGTON CITY COUNCIL **Wellington**

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1.0 Overview

1.1 Why Asset Management

Infrastructure assets -water supply, waste disposal and transport systems- support the platform for economic development and community well being in Wellington. The development of these assets represents major historic investment.

Applying best practice asset management ensures the assets continue to provide for the long term needs of the community in a cost effective and efficient manner.

Asset management planning demonstrates responsible management of the transportation activity and associated assets.

1.2 The Transport Activity

The Transport service and the assets associated with this activity are primarily focused on the efficient, effective and safe transport of people and goods around the City and adjoining region. This includes the provision of physical formations for driving, walking and cycling as well as the provision of safety, and traffic control services.

The Transport assets owned and managed by Council include:

- **Vehicle Network** (road pavements, bridges and tunnels)
- **Pedestrian Network** (pathways and malls, shared driveways, pedestrian bridges, canopies and associated structures)
- **Corridor infrastructure** (retaining walls, sea walls, kerbs and channels, sumps, leads and culverts)
- **Cycleway Network** (cycleways)
- **Roads Open Space** (unformed, planted or vegetated areas)
- **Network Control and Management** (traffic signals, signs and road markings)
- **Safety** (streetlights, fences, handrails and guardrails)
- **Parking** (on- and off- street controlled parking spaces)
- **Passenger Transport Network** (bus stops/shelters and associated infrastructure).

The replacement cost of these assets is approximately \$937,747, 000 excluding land (as at 30 June 2008).

This Plan covers the 10 year planning period from 2010/11 to 2019/20 and a longer term strategic planning horizon.

1.3 Council Involvement

The City Council manages Wellington's transport infrastructure because under the Local Government Act (2002) and Land transport Management Act (2003) it has a legal obligation to ratepayers to manage the Council assets to provide a specified standard of service in a cost-effective manner.

Legislation requires that the Council, in order to support its financial plans and funding decisions, develops asset management plans (AMP's) that will provide the framework for the Council to manage its assets.

This AMP focuses on the provision of the transportation activities that the assets cumulatively provide not just the management of the assets themselves.

1.4 Relationship with Council direction and other plans

In order to ensure alignment with the Council's strategic goals this AMP makes clear links, where relevant, with organisational plans and other asset management plans, for effective management of the city's physical assets.

The Transport activity and associated assets are linked with other Council activities and assets; this includes the urban form considerations, parks and gardens and drainage and water activities.

Urban development projects have a major impact on the assets in this plan.

1.5 Significant Negative Effects

The potential significant negative effects of the Transport activity include:

- **Environmental:**

- The intensification of stormwater runoff from roads that discharges into streams and coastal waters.
- Air and particle pollution from motor vehicles.
- Contribution to climate change- the impact of greenhouse gas emissions associated with road building, operation and use and maintenance.

- **Social:**

- Noise from busy roads.
- Social costs of road congestion, accidents and injuries.
- Land use for transport infrastructure, including aggregate sources
- Major roads may divide communities.

- **Economic:**

- The economic cost to the community as a result of road congestion.

The Council mitigates these potential negative effects through a mix of:

- Asset development and planning work
- Demand management initiatives
- Safety initiatives
- Public education
- Environmentally sympathetic design.

2.0 Strategic Environment

2.1 Community and Council Outcomes

Under the Local Government Act (2002) the Council is required to develop and respond to Wellington's community outcomes. Community outcomes are the community's overall aspirations for Wellington's future. They relate to all aspects of the city – its environment, economy, transport system, and social, recreational and cultural wellbeing.

The community outcomes that relate directly to the Transport activity are;

- Wellington's transport system will be designed to meet the needs of its people efficiently and sustainably.
- The public transport system will be accessible and affordable for all.
- Wellington will be pedestrian and cyclist friendly.
- Traffic will flow smoothly through and around the city and its suburbs.
- Links by land, air and sea will meet the needs of people and enterprises.

The Community Outcomes guide the development of Councils own 'Council outcomes' and decisions about which services to provide and activities to support.

The council outcomes that relate directly to the Transport activity are;

- **Better connected:** Wellington will have a highly interconnected public transport, road and street system that support its urban development and social strategies.
- **More prosperous:** Wellington will have a coherent and efficient transport system that aids economic development.
- **More sustainable:** Minimise the environmental effects of transport and support the environmental strategy (and the Climate Change Action Plan).
- **Healthier:** Wellington's transport system will contribute to healthy communities and social interaction.
- **Safer:** Improve the safety and security of its people as they move around the city and region.
- **More liveable:** Wellington will be easy to get around, pedestrian-friendly and offer quality transport choices.

The Council has developed seven strategies to meet Council and community outcomes.

- Transport
- Urban Development
- Economic Development
- Environment
- Cultural Wellbeing
- Social and Recreation
- Governance

Each strategy has three year strategic priorities that act as 'stepping stones' to achieving the outcomes.

Along with legislative and stakeholder requirements, current and future demand information and risk issues, these Outcomes and Strategies form a key input into the Asset Management Plan.

2.2 Transport Strategy

The Transport Strategy aims to ensure that Wellington's transport system supports the city's vision for its future growth and function. It also encourages a transition towards greater use of public transport and other alternatives to private cars. This approach aims to manage congestion, and also make the transport system healthier, safer and more sustainable.

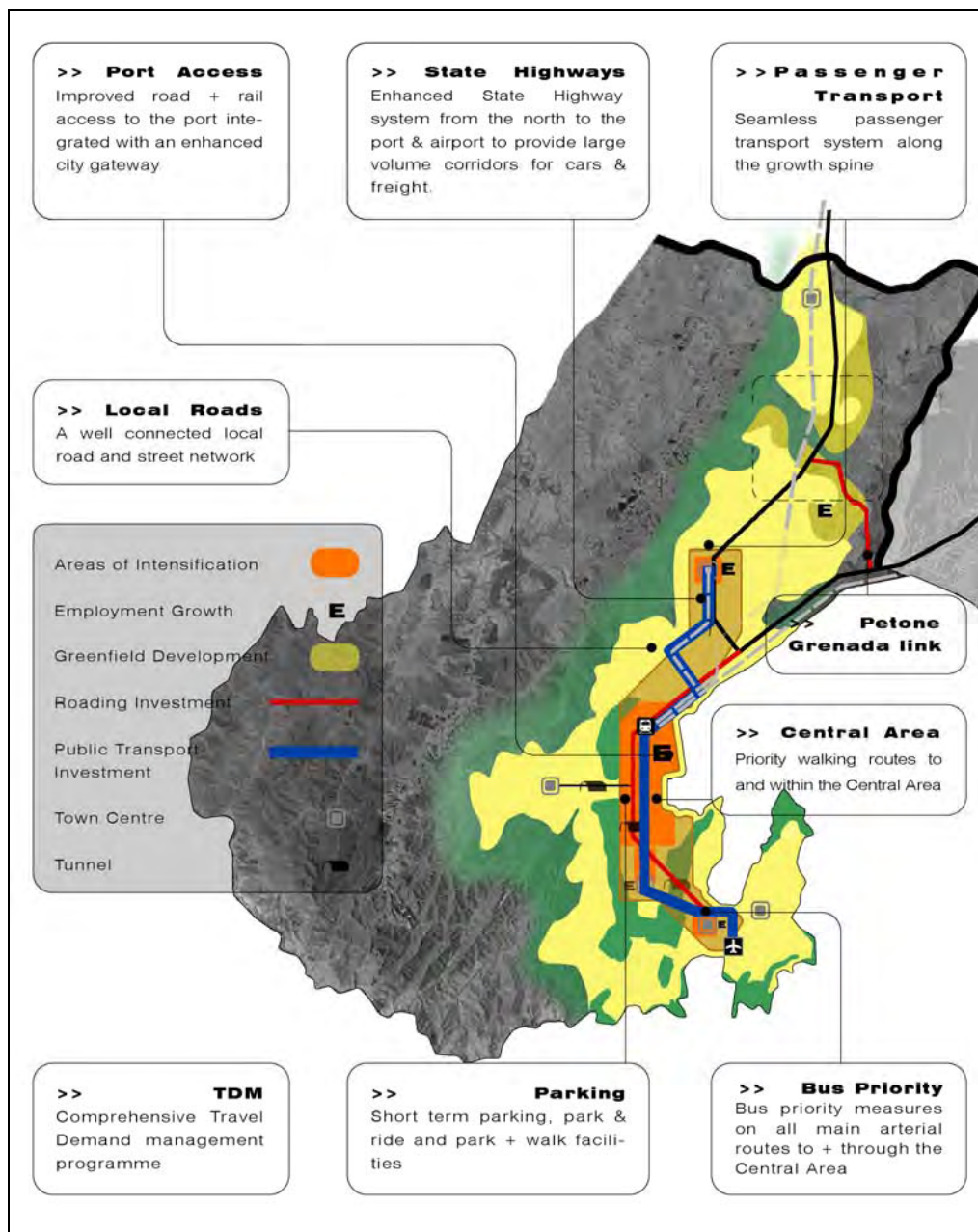


Figure 1: The long term direction for transportation 2006 – 2016

The Transport Strategy supports the Urban Development Strategy. By focusing more intensive residential development around places of work, shops and other facilities in key centres, we can improve access to public transport and also reduce the need to travel.

The strategy identifies four priorities-

- The Council will improve the performance of the city's transport system through travel demand management
- The Council will advocate for and facilitate investment in the city's State Highway network
- It will improve the performance of the city's passenger transport system through bus priority measures
- It will work to resolve the conflict between access to the port, and access to the central city and beyond

The strategy's overarching framework provides direction for Council decisions on management of the transport activities and assets. The priorities feed directly into the transportation activities, performance measures and project funding.

The Strategy resulted in the following key transport planning projects-

- Ngauranga to Airport Corridor Plan (with New Zealand Transport Agency and Greater Wellington Regional Council)
- The Ngauranga Triangle Strategic Transport Study (in collaboration with NZTA and Hutt City Council).
- The Golden Mile Bus lane improvements
- Upgrading Adelaide Road strretscape
- Improvement to Waterloo Quay and Hinemoa Street as key linkages to the Port
- Progressing strategic cycle routes.

The outcomes and Transport Strategy priorities are delivered through three transport activities. In turn the transportation assets which contribute to the activities are shown below.

Legislation and Strategies		Community Outcomes	Council Outcomes	Transport Strategy	Transport Activity	Transport Assets	
Local Government Act (2002)	Land Transport Management Act 2003 (plus LTMA Amendment Act 2008)	New Zealand Transport Strategy 2008	Wellington's long term environmental health will be protected by well-planned and well maintained infrastructure	Better connected: Wellington will have a highly interconnected public transport, road and street system that supports its urban development and social strategies.	The Council will advocate for and facilitate investment in the city's State Highway network	Transport Planning and policy	Transport Planning
			Policy, Planning and Assets				
		Ports access					
		Vehicle network					
		Corridor Infrastructure					
		Cycle network					
	Regional Land Transport Strategy	Road Safety to 2010	s."Links by land, sea and air will meet the needs of people and enterprises"	More prosperous: Wellington will have a coherent and efficient transport system that aids economic development.	The Council will work to resolve the conflict between access to the port, and access to the central area and beyond	Transport Networks	Pedestrian network
			s."Wellington's traffic will flow smoothly through and around the city and its suburbs"	More sustainable: Wellington will minimize the environmental effects of transport and support the environmental strategy (and the Climate Change Action Plan).	The Council will improve the performance of the city's passenger transport system through bus priority measures		Passenger transport network
			s."Wellington will have clear directional signage"	Healthier: Wellington's transport system will contribute to healthy communities and social interaction.	The Council will improve the performance of the transport system through Travel Demand Management		Network wide control and management
		s."Wellington will be pedestrian and cyclist friendly"	Safer: Wellington will seek to improve the safety and security of its citizens as they move around the city and region.	Road Safety			
		s."Wellington's public transport system will be accessible and affordable for all"	More liveable: Wellington will be easy to get around, pedestrian-friendly and offer quality transport choices.		Roads open spaces		
		Wellingtonians will feel safe in all parts of the city			Car Parking		
Wellington's transport system will be designed to meet the needs of its people efficiently and sustainably.							

Table 1 The link between legislation, Council's outcomes, Transport Strategy and the transport assets.

3.0 Level of service

3.1 Broad approach

The level of service is the defined service quality for a particular activity (transport networks) or asset component (corridor infrastructure) against which service performance can be measured. Service levels can relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost.

Council uses customer expectations articulated through the Council's strategic priorities, statutory requirements, institutional knowledge, best or acceptable practice and the level of service currently provided by the asset, to confirm the levels of service to be provided.

Defined levels of service are used to develop asset management approaches to deliver the transport activity and measure performance against defined targets.

The relationship between the level of service and the cost of the service can then be established. This relationship can be evaluated in consultation with the customers to determine the optimum level of service for which they are prepared to pay for.

The existing levels of service will be reviewed as part of the 2012 – 21 Long-term Council Community Plan (LTCCP) process. The levels of service will be used to inform customers of the existing and alternate types and levels of service and enable customers to assess suitability and affordability of the services offered.

The reviewed levels of service may be lowered to reflect current global financial constraints. This is to enable the customers expectations and statutory requirements to be met on tight budget constraints.

3.2 Level of service components

The identification of levels of service and performance measures for all Council activities are a key requirement. Legislation requires performance measures to be presented to a level that enable the community to meaningfully assess the service provided by the Council.

3.2.1 Level of Service

The level of service describes the target level of condition, performance or response planned. Levels of service are developed in a way that are meaningful to the community and achievable within LTCCP budgets. Levels of service present a clear picture of the activity and its contribution to community wellbeing when read in conjunction with other levels of service that apply to the activity.

The Council has four principle level levels of service in the LTCCP for the Transport activity. In this asset management plan there are nine operational levels of service which define the standard of service provided by the assets. The linkage between these levels of service is shown in the following table.

Community Outcomes	Council Outcomes	Transport Strategy	Transport Activity	Transport Assets	LTCCP Levels of Service	AMP Levels of Service
Wellington's long term environmental health will be protected by well-planned and well maintained infrastructure	Better connected: Wellington will have a highly interconnected public transport, road and street system that supports its urban development and social strategies.	The Council will advocate for and facilitate investment in the city's State Highway network	Transport Planning and Policy	Transport Planning	We carry out transport planning and policy activities to ensure we have a well-planned, sustainable and efficient transport system that allows for the easy movement of people and goods to and through the city.	Wellington's transport system will be designed to efficiently and sustainably meet the needs of its people
1. "Links by land, sea and air will meet the needs of people and enterprises"	More prosperous: Wellington will have a coherent and efficient transport system that aids economic development.	The Council will work to resolve the conflict between access to the port, and access to the central area and beyond		Policy, Planning and Assets		
2. "Wellington's traffic will flow smoothly through and around the city and its suburbs"			Ports access			
3. "Wellington will have clear directional signage"	More sustainable: Wellington will minimize the environmental effects of transport and support the environmental strategy (and the Climate Change Action Plan).	The Council will improve the performance of the city's passenger transport system through bus priority measures	Transport Networks	Vehicle network	We provide a transport network that is efficient, convenient, reliable and safe - enabling the easy movement of people and goods to and through the city.	Wellington's transport assets are well maintained and comfortable to use.
4. "Wellington will be pedestrian and cyclist friendly"				Corridor Infrastructure		Structures protecting the road corridor are sound
5. "Wellington's public transport system will be accessible and affordable for all"	Healthier: Wellington's transport system will contribute to healthy communities and social interaction.	The Council will improve the performance of the transport system through Travel Demand Management	Pedestrian network	Road Safety	Wellington will be pedestrian and cyclist friendly	Wellington's traffic will flow smoothly through and around the city and its suburbs.
Wellingtonians will feel safe in all parts of the city	Safer: Wellington will seek to improve the safety and security of its citizens as they move around the city and region.		Passenger transport network			
Wellington's transport system will be designed to meet the needs of its people efficiently and sustainably.	More liveable: Wellington will be easy to get around, pedestrian-friendly and offer quality transport choices.		Network wide control and management	Roads open spaces	We clean city and residential streets, and maintain roadside verges keeping them safe and attractive, through litter collection, planting and mowing.	Wellington's transport assets are well maintained and comfortable to use.
			Car Parking	Car Parking	We provide convenient on-street parking throughout the city ensures as many people as possible can access parking spaces.	Short term street car parks are available

Table 2 The linkage between Council's outcomes and the levels of service for the transport assets.

3.2.2 Performance measures

Performance measures provide a basis on which to assess the success or otherwise of the implementation of the levels of service. Each measure has associated reason, or reasons, for inclusion, such as statutory requirement, Council policy or customer expectation.

Emphasis has been placed on defining measures that are clear and meaningful, and can be monitored. When performance is monitored, the results are used to improve the service that the assets provide.

Performance measures for each of the transport asset levels of service are shown later in this section along with the current performance.

The technical levels of service are not reported on in this summary AMP, only the high level performance measures. The Council is currently reconciling principle and operational transport levels of service and performance measurements to cover all assets and activities and to ensure the community and Council outcomes are being met.

3.2.3 Performance targets

Using levels of service, performance measures and past performance data, performance targets describe the level of performance sought.

3.3 Communication and consultation

The Council makes many important decisions which affect a wide variety of people across the city. In order to make the best possible decisions, the Council relies on input from Wellingtonians themselves.

The Council receives the community input from:

- Customer enquiries to the Council in person, via telephone, letter or email
- Members of the public speaking at Council meetings
- Direct contact with individual Councillors
- Submissions and petitions.

The Council also communicates its activities to the community in a variety of ways;

- Regularly updated information is available via the council website.
- Weekly articles on the *Our Wellington* page in the Dominion Post.
- Other local newspapers and radio stations to disseminate information.
- Formal consultation as part of the the LTCCP and Annual plan processes.
- Regular Resident Satisfaction surveys which include questions relevant to transport.

- Many large projects involve consultation with the public. The level of notification (one of three levels – ‘standard’, ‘extensive’ or ‘major’) is outlined in the contract documents and meets Council standards.
- The Safer Roads project necessitates robust area and issue specific communication and consultation with the community. This is undertaken through city-wide promotion of the project community ‘workshops’ associated with the project.

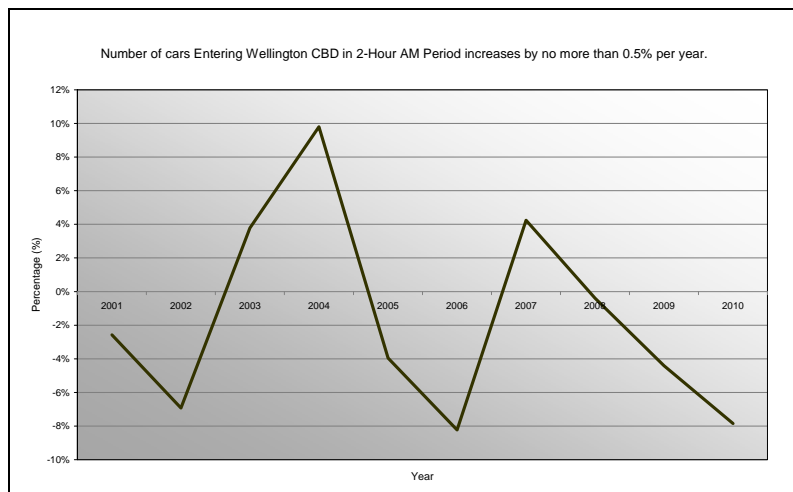
3.4 Key performance measures

Key performance measures (KPMs) are monitor the overall quality of the transport activity and are reported in the asset management plan. The Council has other technical performance measures which are not reported in the AMP.

The existing activity measures and the level of performance achieved are detailed below. An explanation of the differences between current and desired performance, and how these gaps are to be progressively closed, is also given.

Wellingtons transport system will be planned and designed to efficiently and sustainably meet the needs of its people

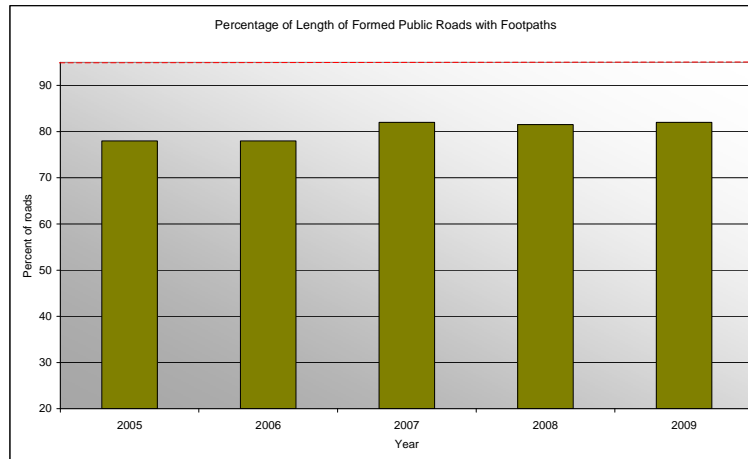
Number of cars Entering Wellington CBD in 2-Hour morning period increases by no more than 0.5% per year.



Discussion; This measure shows no obvious trend and the number of cars entering the CBD is highly variable. It was at its lowest in 2006, when petrol prices were at their most expensive and the highest numbers of commuters were seen on public transport and using active modes. Traffic levels are reaching a point where peak spreading is taking place - commuters are travelling at different times to avoid congestion.

This measure will be reassessed for its delivery criteria to ensure the measure is appropriate for the expectations and requirements.

95% of roads will have formed footpaths on at least one side of the road by 2016. Current performance is 82%.



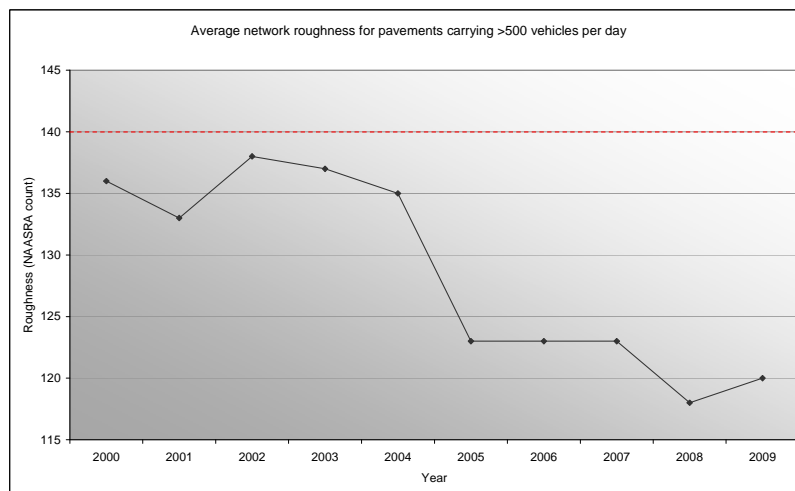
Discussion: The percentage of roads with footpaths has been increasing and this trend is set to continue. This can be attributed to the adoption and implementation of the Council's Walking Policy the purpose of which is to improve the walking environment in Wellington. The footpath extension programme has been reprioritised to align with access paths which will be constructed as part of the Council's Walking Policy.

Wellington's transport assets are well maintained and comfortable to use

Street pavements are within acceptable defect limits, RDI (Resurfacing Demand Index) no greater than 95.

Discussion *The Council is currently reviewing the use of RDI as the most appropriate measure.*

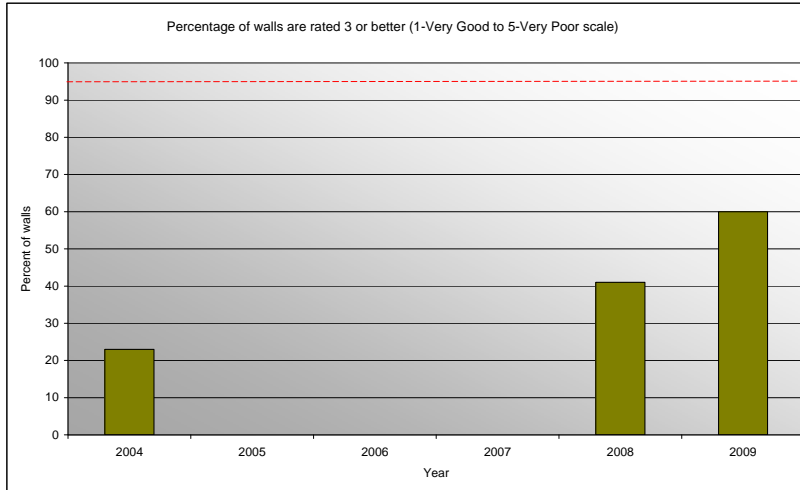
Average network roughness for pavements carrying >500 vehicles per day (NAASRA counts) no greater than 140. Current performance is 120



Discussion: Pavements in Wellington are steadily becoming smoother, reflecting the success of the seal smoothing programme and maintenance strategies. This management approach is clearly meeting the level of service. However, in comparison to other New Zealand cities, average roughness is still high. In order to meet increasing customer expectations and industry best practice it is proposed from 2011/12 to reduce the roughness performance target (NAASRA count) to 130.

Structures protecting the road corridor are sound

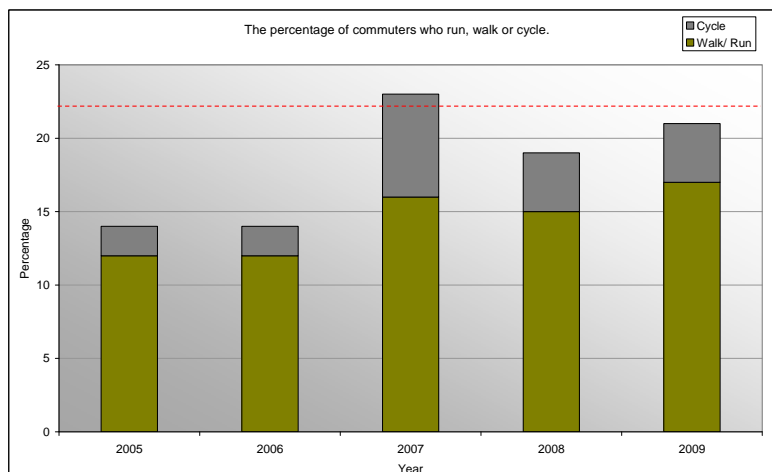
95% of walls are to be rated 3 or better (1-Very Good to 5-Very Poor) by 2020, and 100% by 2025. Current performance is 60%.



Discussion: Condition assessments for walls used to be carried out every three years. Recently walls have received increased focus- this work has affected the condition grading of the walls and is able to be reported here. The ongoing focus of the retaining wall programme remains the prioritised replacement of condition-5 retaining walls based on the degree of risk their condition represents. Improvements have been made to the overall condition of the retaining wall assets as a result of proactive maintenance.

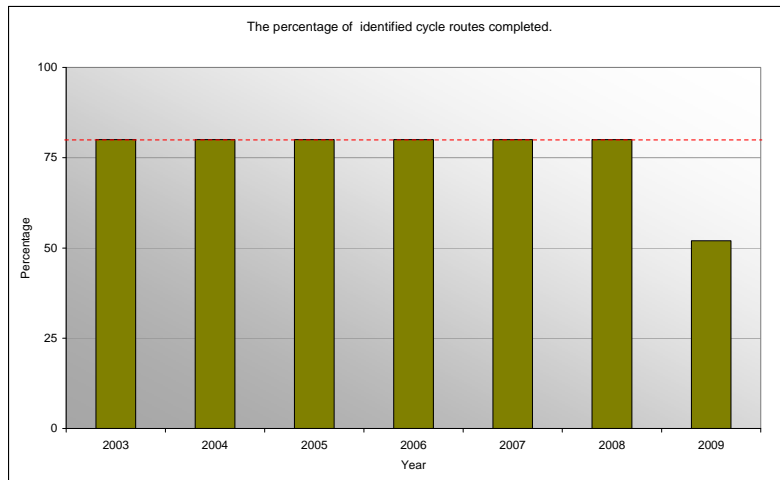
Wellington will be pedestrian and cyclist friendly

The percentage of commuters who run, walk or cycle. Target run, walk >18%. And cycle 5%. Current performance is run/walk 17%, cycle 4%.



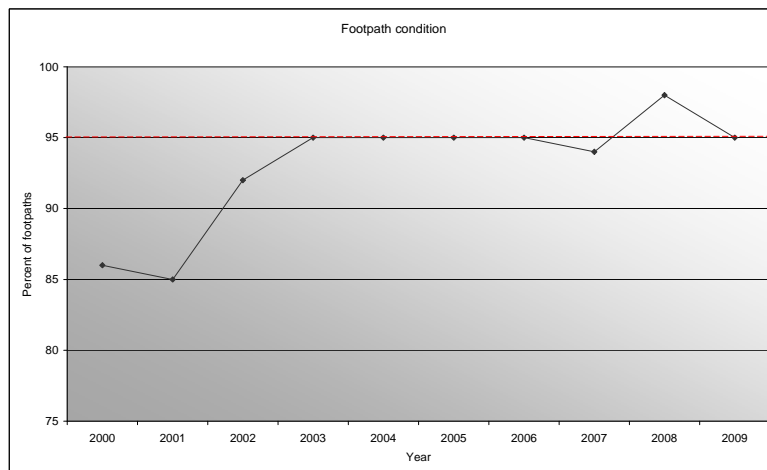
Discussion: the number of commuters using active modes is increasing and supports the Community Outcome “Wellington is pedestrian and cycle friendly”.

80% of identified cycle routes completed. Current performance is 52%.



Discussion: The fall in the number of completed cycle routes reflects the identification of more potential cycle routes as part of the implementation of the Councils' Cycling Policy. As new cycleways are progressively created performance against this measure will steadily increase.

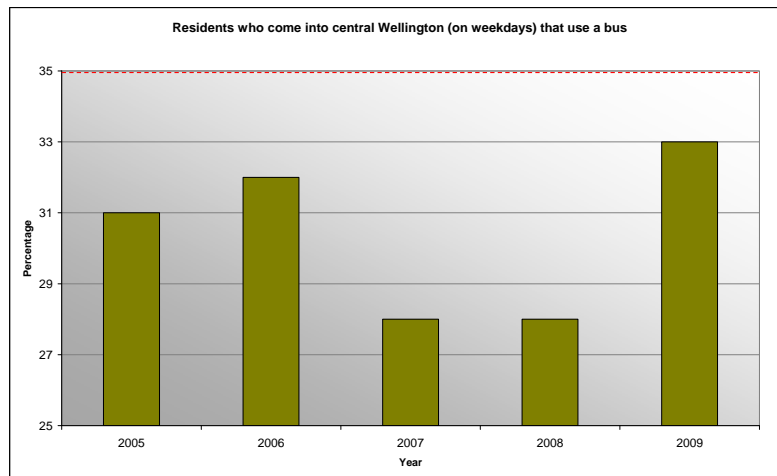
95% of footpaths are rated better than 17 as graded on a 52 point scale. Current performance is 95%.



Discussion: There has been a steady improvement in footpath standards. This can be attributed to the success of footpath maintenance contract improvement and more recently, the adoption and implementation of the Council's Walking Policy- the purpose of which is to improve the walking environment in Wellington. As the target is now met, this measure will be reassessed in the next financial year.

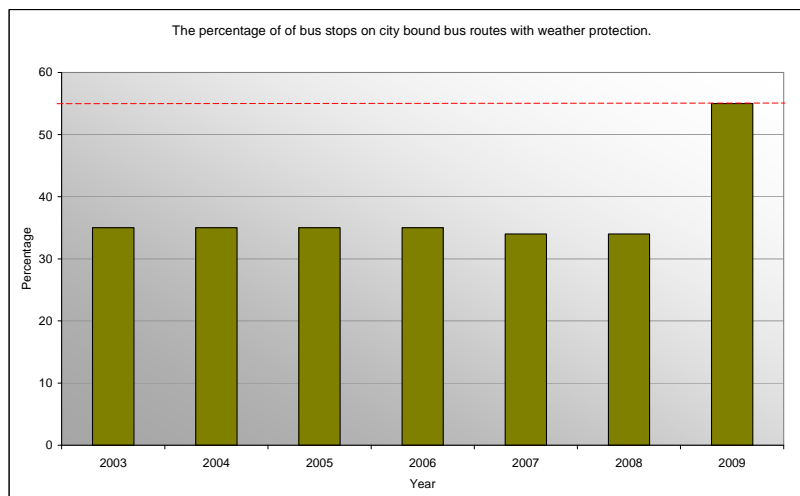
People use public transport

The percentage of residents who come into central Wellington (on weekdays) that use a bus. Target 35%. Current performance is 33%.



Discussion: After a couple of years of lower numbers of commuters using public transport, usage has increased again. This could be attributable to investment in new buses and more bus lanes making travel more convenient and reliable.

100% of all city bound bus stops will have weather protection by 2015. Current performance 55%

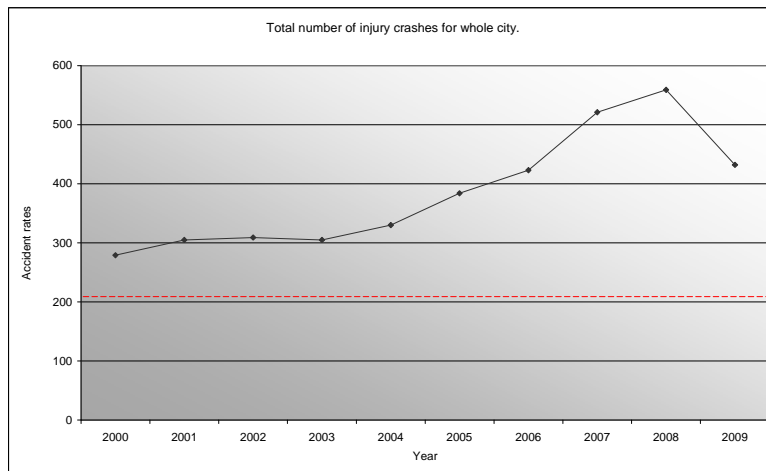


Discussion: The dramatic increase in the amount of bus stops with weather protection is due to more accurate and detailed asset data for bus shelters, as a result of better use of asset registers and information systems. Three new bus shelters were constructed in the last financial year, but this has not resulted in the 20% increase shown above.

One of the Council's strategic priorities is for bus priority measures on the Golden Mile and major arterial routes. This will include providing weather protection at bus stops to help achieve this measure.

Wellingtons transport network is safe to use.

Citywide road injury crash rates reduce by a third of 2001 rates by 2010. Target is 203. Current performance is 432.

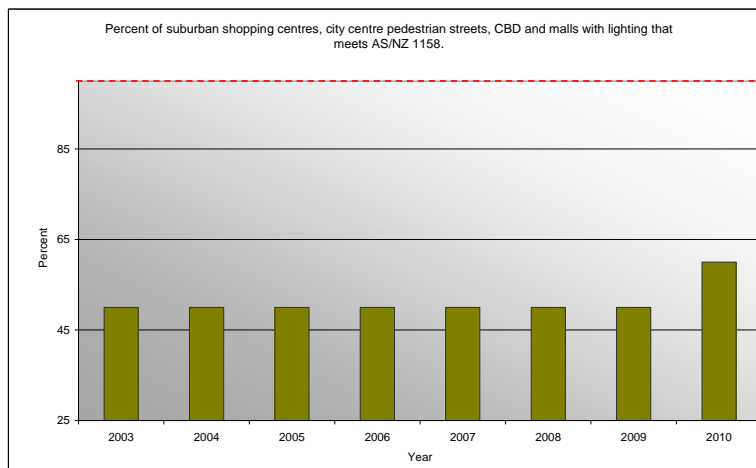


Discussion: The number of crashes on Wellington roads has increased significantly, and although the number of crashes has decreased slightly (432) this year, the target of reducing the number to 203 has not been achieved.

The Council is lowering speed limits in suburban centres, running road safety campaigns, and introducing traffic-calming measures to improve safety.

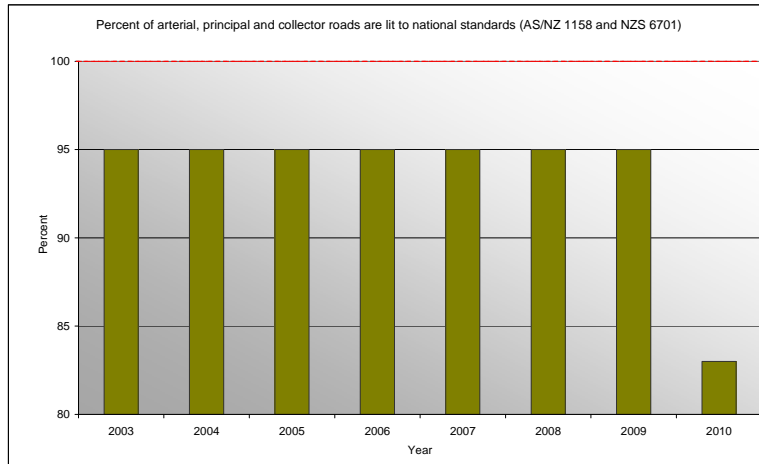
This target measure will be updated this year, which will be able to reflect the progress of safety work and track long-term trends.

100% of arterial, principal and collector roads are lit to national standards (AS/NZ 1158 and NZS 6701). Current performance is 83%.



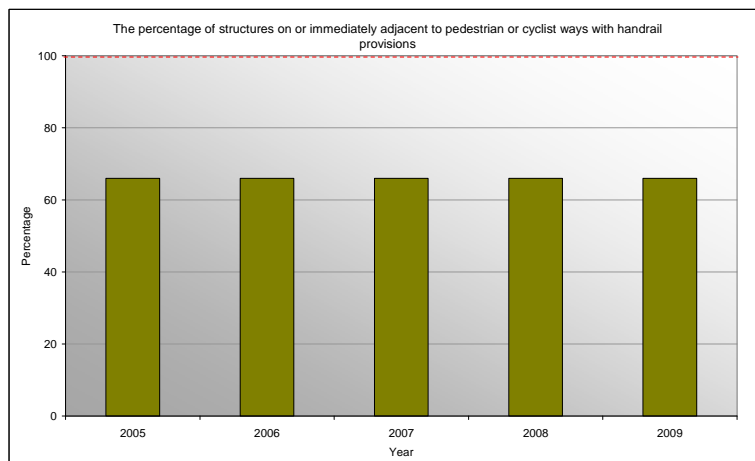
Discussion: The increase in performance is due to improved asset management practices. Street lighting asset information has been successfully migrated into the RAMM database improving both contract and asset management practices.

100% of suburban shopping centres, city centre pedestrian streets, CBD and malls with lighting that meets AS/NZ 1158. Current performance 60%.



Discussion: The drop in standard is due to more accurate and detailed asset data for street lighting being collected as part of citywide review of streetlights including better use of asset registers and information systems. Improved lighting is proposed for the Golden Mile next year which will help improve performance against this measure.

100% of structures on, or immediately adjacent to, pedestrian or cycle ways are to have handrails. Current performance is 66%.



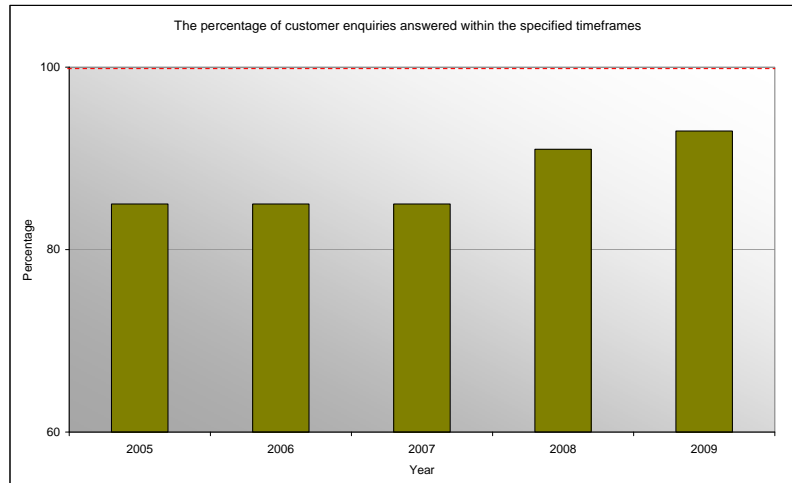
Discussion: there has been no progress with this performance measure over the past 5 years. This is because the measure is misunderstood and poorly worded.

A new measure for safety rails will be devised this year and will take into account work proposed to implement the walking policies and the pedestrian structure prioritisation work which aims to improve the overall condition of pedestrian structures.

On 100% of occasions, unless not required or inappropriate:

- Acknowledge written requests within three days of receipt.
- Give substantial response within fifteen days of receipt.
- Provide telephone confirmation to customer that work has been completed within 8 hours of making safe a dangerous hazard.

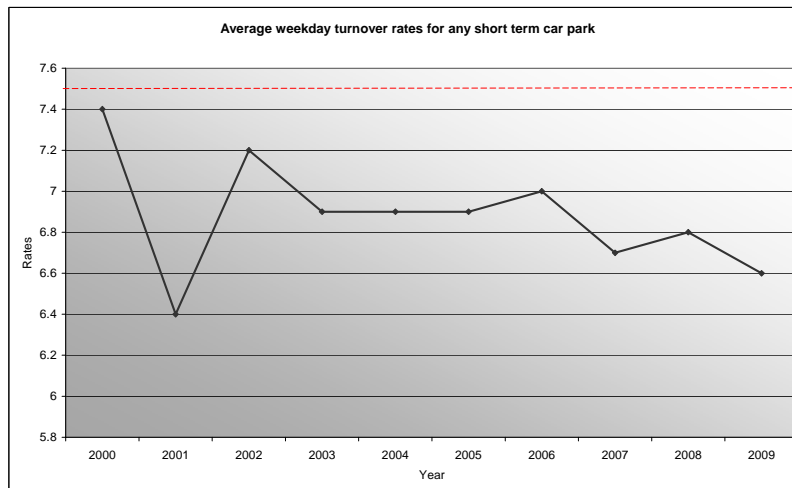
Current performance is 93%.



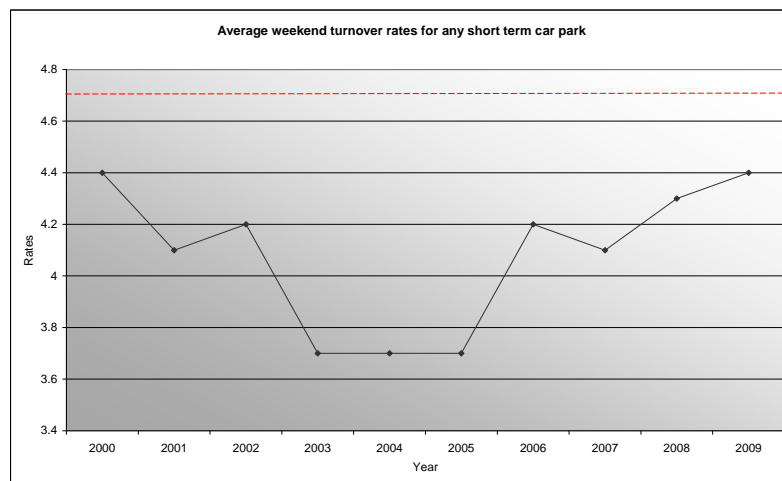
Discussion: The response rate to customer enquiries is continues to improve, nearing the performance target. This trend should continue due to the increased emphasis put on timely customer response.

Short term street car parks are available

Turnover rates for any short-term car park on **weekdays** is 7.5 cars/day or greater. Current performance is 6.6 cars/day.



Turnover rates for any short-term car park at **weekends** is 4.7 cars/day or greater. Current performance is 4.4 cars/day.



Discussion; The 'turn-over rate' is still below target, meaning the level of service for providing convenient parking throughout the city to ensure as many people as possible can access parking spaces has not been met.

Work to improve this turnover rate includes managing parking where demand exceeds supply through revising the coupon parking and resident parking restrictions and introducing a time limit for on-street parks on Sundays.

3.5 Community satisfaction

As well as monitoring performance against the above measures, the Council conducts resident satisfaction surveys to understand residents perceptions of the work we do and our contribution the overall wellbeing of Wellington and its residents. The views of residents on Transport are detailed below.

Better connected/healthier – Wellington will have a highly interconnected public transport, road and street system that supports its urban development and social strategies. Wellington's transport system will contribute to healthy communities and social interaction.

Most residents believe that public transport is safe and affordable, and most are satisfied with frequency and reliability. Perceptions of frequency have improved since 2007, partly as a result of bus lanes and other priority measures.

However, the number of residents who think public transport is affordable has declined since 2007 (to 72%), and the number who are satisfied with frequency (68%) and reliability (64%) remains well below 2005 and 2006 levels. Peak hour travel times on key routes across the city increased during the year but remain lower than in 2006.

More sustainable – Wellington will minimise the environmental effects of transport and support the environmental strategy.

Just 36% of Wellingtonians use private cars to come into the central city during the week, while 33% use buses and 17% walk. The proportion using private cars has dropped from 45% in 2007, while the proportion using buses and walking has grown. Wellingtonians continue to be the least dependent on their cars and the highest users of public transport in the country.

Safer – Wellington will seek to improve the safety and security of its citizens as they move around the city and region.

12% of residents rate traffic safety as one of the city's most serious safety issues. However the number of residents who rate dangerous driving as one of the city's most serious safety issues has decreased.

More liveable – Wellington will be easy to get around, pedestrian friendly, and offer quality transport choices.

80% of residents think the transport system allows easy access from the suburbs to the city, and 75% believe it allows easy movement around the city. Among pedestrians, 93% believe the transport system allows easy movement around the city. All of these results have improved since 2007. Some 64% of residents believe that peak traffic volumes are acceptable. This is an improvement from 55% in 2007.

25% of residents say there are barriers to using their preferred mode of transport.

39% of children walk to school every day, while 30% never walk. Both results are improvements from 2008.

82% of residents believe the city's road reserves and street cleaning is appropriately managed.

3.6 Current levels of service

Determining the current performance also enables the gap between levels of service currently being provided, and the levels of service sought by customers, to be quantified, and strategies devised to close these gaps.

The above performance measures have been consistent over time and have trends that have been tracked. However there are Transport assets and activities without performance measures. Measures for these assets shall be developed, before the production of the next full transport AMP. They will be relevant, reflect annual progress and consistent with the Council's strategic direction.

The following sections will discuss what is planned in order to manage and operate the assets to the agreed levels of service while anticipating demand and optimising lifecycle costs.

4.0 Managing demand

Understanding current demand, identifying demand drivers and forecasting future demand are fundamental aspects of successful asset management. This information is used for planning to provide the agreed level of service to the community, now and into the future in the optimum manner.

4.1 Current demand

The transport activity is generally performing well to meet current demand.

Wellington's transport needs are continuing to increase in line with economic expansion, the increase in vehicle ownership/use and population growth. These changes place added demands on the transport assets needed to support the city and ensure that it remains efficient.

In specific locations Wellington faces transport challenges with current peak hour traffic volumes often exceeding the capacity of some sections of the road network.

Wellington does have high levels of travel by public transport and walking. Similarly the numbers of cyclists is increasing. Safety, particularly for pedestrians and cyclists, is a growing issue.

At the weekend people who normally use public or active modes of transport drive their cars resulting in increased congestion at specific locations and heavy demand on free parking in the CBD.

4.2 Changing demand

Transport growth is influenced by a number of factors. Although the population is currently increasing by some 0.7% per year, vehicle ownership is increasing by some 3-4% a year. Further, the increase in disposable income, the price of oil, changes in the local economy, vehicle ownership and social and urban demographics will affect the volumes and characteristics of traffic movement.

In the next few years, the city will face some challenges. Along with other cities, we will be called on to respond to:

- the global economic slowdown
- pressure on household budgets
- a changing climate and the first real steps towards lower-carbon lifestyles
- the need to engage with citizens about decisions that affect their lives
- competition from other cities
- a population that is growing, and ageing, and has more diverse wants and needs, and
- changing technology, which is influencing lifestyles and public expectations.

Congestion is likely to become an increasing concern as the city's population grows and car ownership levels remain high. Also impacting on congestion is increased competition for road space from buses, cars, pedestrians and cyclists

The city's terrain and location means there are few options to simply expand the roading network so other solutions are required to ensure goods and services can move in and out of the city with ease and so people and businesses can connect.

Transport activities both influence climate change and are affected by the changes to the climate. Greenhouse gas emissions associated with road building, use, operation and maintenance contribute to global climate change.

There is growing community understanding of the impact transport choices can have on the environment and of the fluctuations in the price of fuel.

4.3 Key issues with changing demand

Predicting percentage increases into the future is difficult. As a planning tool it is presumed that trips will increase but will be tempered by natural congestion forcing behaviour modification. Increasing the capacity of the network to match demand has limitations. However efficiencies are introduced wherever possible to enable maximum traffic use of the network.

As the city grows, so the quantity of assets to maintain and renew increases, as does the demand on 'central' assets. Increasing population implies increasing numbers of people moving throughout the city, and therefore increasing numbers of motorists, pedestrians, cyclists, public transport users and parking all competing for space on narrow, hilly streets.

There are also environmental reasons for reducing demand on the transport network. Vehicles contribute to noise, water and air pollution and carbon emissions.

The effects of climate change may affect transportation activity significantly. If extreme weather events become more frequent and/or severe as predicted, the costs and damages associated with them are also likely to increase; replacing or repairing damaged roads, bridges, and stormwater drains, and dealing with increased soil erosion and slips.

Changes in demand may require changes being made to the asset base and consequently to levels of service, operations and maintenance strategies and funding the activities. Any change in the asset base required to deliver the services affects the future renewals requirements.

A summary of the key impacts on the management of the transport activities and assets by the above issues is shown in the table below:

Issues	Impact on assets
Population growth and sub-divisional activity	<ul style="list-style-type: none"> Increasing population is increasing numbers of motorists, pedestrians, cyclists and public transport users. Congestion is likely to become an increasing concern as the city's population grows and car ownership levels remain high.
Change in user decisions and community expectations	<ul style="list-style-type: none"> Increased vehicle ownership and greater mobility of the population has led to traffic growth exceeding population growth rates, and associated congestion issues. Some residents are wanting smoother road surfaces, although it is more expensive. There is good usage of alternative transport modes, and these users now warrant improved facilities- dedicated cycle ways, bus lanes etc. Levels of pollutants associated with vehicle use, such as carbon monoxide and particulates, are increasing although are still low. It is expected that work will be required in the future to manage the effects of urban stormwater runoff before the water is discharged to stream and coastal waters.
Commercial and industrial change	<ul style="list-style-type: none"> Growth in the tourist sector may contribute to increased traffic volumes. Recognition of the economic benefits from increasing tourism has contributed to urban upgrades and additional maintenance requirements. Maintaining a vibrant character in Wellington has helped maintain retail success against malls outside Wellington. These urban upgrades have increased maintenance implications.
Climate change	<ul style="list-style-type: none"> Increasing rainfall frequency and intensity will increase requirements for road drainage and dealing with increased soil erosion and slips. Sea level rise and increased storm surge and wave action will increase requirements for coastal protection to transport assets, especially sea walls and coastal roads. Decrease in greenhouse gases emissions associated with road building, use, operation and maintenance to help reduce the city's emissions
Peak oil	<ul style="list-style-type: none"> The availability of affordable oil and oil based products such as petrol and bitumen may have a substantial impact on the demand for Transport and the ways services are provided and the material used.

Table 3 Key consideration for the future management of transport activity.

4.4 Meeting demand

The Council's approach to transport focuses on ensuring that the system works as efficiently as possible while accommodating all modes of transport and encouraging and supporting a transition towards more use of public transport, cycling, walking

and other initiatives such as car pooling. By taking this approach, we aim to manage congestion, and also make the transport system healthier, safer and more sustainable.

The Council will accommodate future growth and increased demand through a mix of:

- Demand management initiatives.
- Operational strategies to maximise the potential of the network.
- Maintenance and renewal programmes to ensure assets perform to their potential.
- Capital development strategies. Demand is managed through a programme of incremental capacity upgrades, through the implementation of the Cycling and Walking Policies and public transport projects.
- Working with regional and national agencies that have responsibilities over transportation networks to ensure that collectively provide reliable services to accommodate and support a desire to change travel behaviours.

4.5 Demand management initiatives

One of the priorities in the Transport Strategy is the improvement of the performance of the city's transport system through Travel Demand Management.

Travel demand management is an essential component of any modern city's transport strategy. It involves non-asset development approaches aimed at reducing demand for a service, for example reducing peak capacity of the roading network.

Demand management can provide the means to ease congestion through reducing traffic levels by up to 5%, which can be critical to the efficient functioning of the network.

The Council currently implements the following demand management techniques:

- **Regulation -**
 - The Councils' Walking and Cycling Policies promote healthy alternatives to vehicular travel
 - Traffic bylaws (parking and speed limits).
- **Education –**
 - Travel planning
 - Promotion of alternative modes of transport, particularly for travelling to and from work and school
 - Road safety.
- **Incentives -**
 - Encourage public transport patronage through asset creation and public space development initiatives
 - increased development along the 'growth spine' from Johnsonville to Kilbirnie

- better connection to and between regional facilities, airport, hospital, recreational facilities, and tourist attractions
- bus priority on all radial routes

- **Advocate –**
 - closer integration of bus routes with a “park and ride” strategy from suburban and CBD hubs
 - transfer ticketing on city public transport services and promote integrated ticketing between service providers
 - enhanced frequency of bus service between the CBD and suburbs
 - circular bus services in the CBD and the inner city and possibly the larger suburbs

- **Demand substitution encouraging use of different routes –**
 - Geometrics to restrict vehicle speed, access by large vehicles etc;
 - Signals and controls (e.g. medians restricting movement).
 - CBD redevelopment (bus priority measures, relocated parking areas etc).

5.0 Life-cycle management of the assets

The following sections outline the planning in place to manage and operate the assets to the agreed level of service whilst optimising lifecycle costs.

5.1 Asset management model

The asset management process implemented by the Council is as follows:

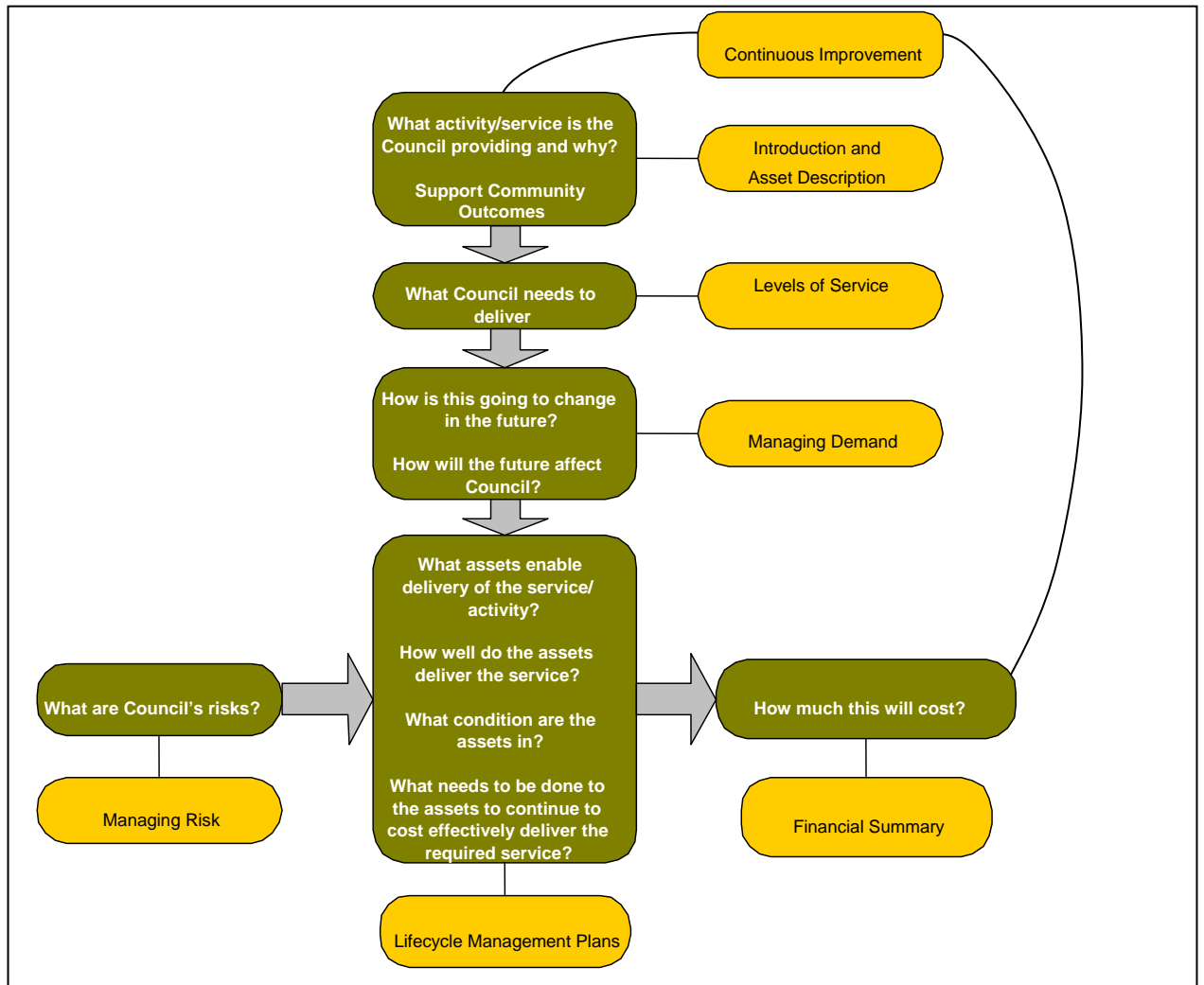


Figure 2: Asset Management Process

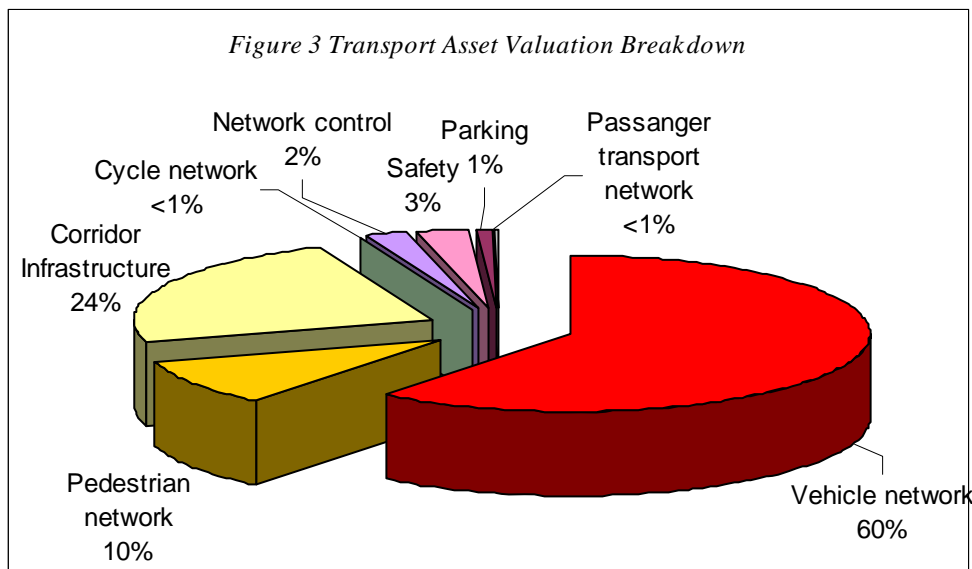
5.2 Scope and Value of Assets

The asset components which enable the transport activity (as of 17 September 2010) are:

Activity	Asset	Asset Components		
Transport Networks	Vehicle Network	Road Pavements	686.4	km
		Road Bridges and Cable Car bridges	74	No.
		Tunnels	5	No.
		Shared Driveways (Tawa only)	42	No.
	Corridor Infrastructure	Retaining Walls	2495	No.
		Sea Walls	269	No.
		Kerbs and channels	1,169	km
		Sumps and Leads	12,743	No.
		Culverts	638	No.
	Cycleway Network	Cycleways	24.2	km
	Pedestrian Network	Footpaths	853	km
		Pedestrian Bridges	12	No.
		Public Access Paths	65	km
		Street Furniture	3416	No.
Malls		14	No.	
Canopies & Associated Structures		8	No.	
Passenger Transport Network	Bus Stops	1320	No.	
	Shelters	258	No.	
	Interchange	1	No.	
Network Control & Mgmt	Traffic signals	111	No.	
	Traffic signs	20,283	No.	
	Road markings	827	km	
Safety	Streetlights	18,005	No.	
	Fences, handrails and guardrails	116.7	km	
Roads Open Space	Operational activities only	68	ha	
Car Parking	Parking	Central City Controlled Parking Spaces	11,861	No.
		Metered Spaces	3,390	No.
		Resident/ Coupon Spaces	8,500	No.
		Off street parking spaces	673	No.

Table 5 The Transport Asset Portfolio as of 17 September 2010

Infrastructure asset valuations are currently carried out every three years. As at 30 June 2008 the transport assets has a total replacement value \$937,747, 000 excluding land. This is shown in the figure below.



5.3 Asset condition and performance

The transport assets have to be maintained to good condition to protect health and safety, but also to meet customer levels of service. Established asset management practices ensure this and that associated budgets are in place.

The following tables document the condition and performance of the assets based on best information currently available. Reference is also made to how this fits with the target levels of service, maintenance and renewal or replacement plans.

Vehicular Network	
Pavements	
Condition	Performance
<p>The average roughness levels have been progressively improving. This trend reflects the incremental success of the sealed smoothing programme and maintenance strategies.</p> <p>The level of roughness is still high in comparison to other major cities. To address this, from 2011/12 Council will change the roughness performance measure target (NAASRA count) from 140 to 130.</p> <p>The improvement in roughness has contributed to an increase in Smooth Travel Exposure (STE) especially in the urban areas. STE has a direct</p>	<p>Minor changes to pavement treatments have been made improving the long term lifecycle maintenance option for the carriageway.</p> <p>Chipseal is the best resurfacing technique available for most Wellington roads. It is flexible so is able to withstand the movements caused by the relatively low quality road foundation whilst maintaining the water proof seal critical to the performance of roads. It provides good</p>

<p>impact on vehicle maintenance costs. An increase in STE contributes to improved savings to private and public transport.</p>	<p>skid resistance due to the nature of the locally provided chips and is relatively cheap.</p> <p>Asphalt surfaces are smooth and favoured by most residents. Lower noise levels and greater life (on suitable roads) are the main advantages. Low traffic volume roads i.e. cul de sacs with asphalt surfaces encourage use of road areas for other purposes by residents, particularly children. Asphalt is better able to withstand the shear stresses from vehicles turning sharply than chip seal, which can loosen chips on corners and in slow vehicle manoeuvring areas as a consequence. However, the costs are more than 5 times the cost of chipsealing and additional use of asphalt would be unlikely to attract further Land Transport New Zealand subsidy.</p>
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Vehicular Network Tunnels	
Condition	Performance
<p>The tunnels are currently structurally sound.</p> <p>The tunnels are inspected for structural integrity every five years. An annual condition grade survey will be completed in 2011 for all tunnels.</p> <p>Geotechnical investigations are underway at the bus tunnel in Hataitai and Karori Tunnel to determine the best solution to channel away water ingress damaging the tunnel barrel.</p>	<p>Seismic assessment concludes that tunnel portals could sustain significant damage in a major Wellington fault earthquake. One to two months closure of the tunnel is anticipated to enable the necessary repairs or replacement to be implemented. Investigations are underway for seismic upgrading of tunnel portals.</p> <p>The slope batters in the vicinity of the tunnel are more vulnerable in a large earthquake, particularly if it is associated with the Wellington Fault. Short term road closure of will be necessary to clear the debris in this event.</p>

Vehicular Network	
Bridges	
Condition	Performance
<p>Council carries out a condition maintenance inspection of all bridges every five years. The latest was carried out in April 2009. The general findings from this report are:</p> <ul style="list-style-type: none"> • the majority of the maintenance cost is for the repair of older reinforced concrete bridge stock requiring erosion protection, painting and the repair of steel and timber structures. • the majority of bridges in the northern and western suburbs are reinforced concrete over 70 years old with some corrosion. 	<p>Aotea Quay Overbridge – repair of structural cracking to abutments, concrete spalling, steel corrosion, joint replacement and resurfacing of pavement surface.</p> <p>Surrey St, Tawa – significant erosion protection is required to the abutments. Geotechnical assessment is currently underway.</p> <p>Box Hill, Khandallah – replacement of failed bearings and maintenance of handrails.</p> <p>Jervois Quay pedestrian overbridge – maintenance (i.e.: cleaning and repainting) of heavily corroded steel deck is required to meet current standards. Plus replacement of northern support beam to abutment due to structural failure.</p> <p>Kelburn Viaduct – investigations have identified the need for repairs of some localised areas of main beams, maintaining joints and the need to eliminate some water seepage through the deck.</p>

Corridor Infrastructure	
Walls	
Condition	Performance
<p>The Retaining Wall Condition grade survey carried out in May 2010 confirms that as a consequence of an effective maintenance and renewal program the vast majority (69%) of retaining walls are in excellent condition with no significant remedial work required (Figure 4). 10% and 12% have been assessed as being in good and average condition with only aesthetic defects or minor structural defects respectively. Approximately 6% are considered poor condition and could lead to the significant loss of the property section. 2% have failed and are being replaced.</p>	<p>Most of the walls perform satisfactorily. The ongoing focus of the retaining wall programme remains the prioritised replacement of condition 5 retaining walls based upon the degree of risk their condition represents. Improvements have been made to the overall condition of the retaining wall asset stock as a result of proactive maintenance.</p>

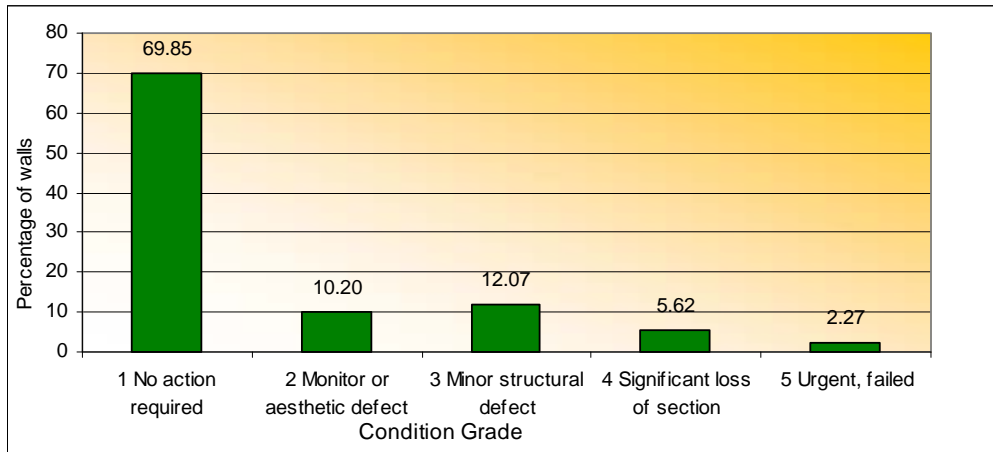


Figure 4 Retaining walls condition grade as at 24 May 2010

Corridor Infrastructure	
Seawalls	
Condition	Performance
<p>About 50% of seawalls have been identified as being in poor to very poor condition with significant works required in the next five years. About 3% require urgent rehabilitation or replacement</p>	<p>The Seawalls Five Year Plan and Updated Database Report (July 2007) assessed the condition of 50 of the Council's 250 Seawalls. The remaining seawalls will be inspected in the next 5 years. A 5-Year Plan based upon the above assessment has been completed and an expenditure forecast developed for the renewal of seawalls.</p> <p>The Council is working on a detailed 'city vulnerability assessment' to determine the potential impacts of rising sea levels on infrastructure including sea walls and coastal roads.</p>

Corridor Infrastructure	
Drainage provisions (kerb and channel, sumps and leads, and culverts)	
Condition	Performance
<p>Drainage provisions include kerb and channel (generally extruded concrete, sumps and leads, and culverts).</p> <p>Using the data in RAMM there are approximately 10% (120km) of kerb and channel with defects in Wellington City. These are programmed for repair.</p>	<p>Many roading culverts do not have adequate capacity to manage the 10 year ARI (Average Rainfall Intensity) rainfall event.</p> <p>Prevention of flooding on private properties resulting from road run-off remains the key focus of the kerb and channel maintenance programme.</p> <p>Trials have been completed for proposed the cycle-friendly grates. Results confirm the hydraulic performance is the same if not better than current standard sump design. These new grates will be progressively installed on all identified cycle routes, before being rolled out across the city.</p>

Cycleway Network	
Condition	Performance
<p>Generally current cycle routes have been created on a section of the carriageway or on a shared footpath which has been delineated with signs and markings. The condition is recorded as part of the carriageway or pedestrian networks.</p> <p>As a result of the Cycling Policy, investigations have begun into options to improve the level of service for dedicated cycle ways. Options include investigation of more appropriate surface treatments.</p> <p>To progress the existing cycleway network, improvements have been made including signage, safety (traffic calming devices), and road markings. These measures will be automatically implemented as new cycle ways are created.</p>	<p>The cycling policy (2008) aims to make cycling safer and more convenient throughout the city.</p> <p>To meet these aims the Council has committed to the development of a Porirua Stream walkway with stage one of construction scheduled for 2010/11</p> <p>Where possible, cyclists are able to use either dedicated cycle lanes or bus lanes on main transport corridors. Other initiatives to make cycling safer and more convenient include better surfaces for cycling (for example, by introducing cycle-friendly grates on sumps) and improved parking for cycles.</p>

Pedestrian Network	
Footpaths, including pedestrian accessways	
Condition	Performance
<p>The condition of the footpath network is generally good. It has steadily improved and</p>	<p>The high use of segmented pavers as part of urban upgrades continues to increase</p>

<p>is now at the target level.</p> <p>The 2009/2010 accessway condition grading results confirm that of the 80% of the network is in excellent condition. We are continuing to meet the current levels of service and have made steady improvements in improving condition grade 4 and 5's.</p>	<p>maintenance and renewal costs. A key aim of the draft public space design manual currently being finalised is to reduce the variation in the types of pavers being used to minimise costs.</p> <p>The current footpath extension programme has been reprioritised to align with access paths which will be constructed as part of Council's Walking Policy.</p>
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Pedestrian Network
Pedestrian Structures

Condition	Performance
<p>A Project Prioritisation System (PPS) has been developed for the renewal and maintenance of pedestrian structures which support and protect pedestrian accessways.</p> <p>The PPS identifies a representative cross sample of the 230 pedestrian structures to determine their overall condition. The overall condition of these structures is good. A 10 Year Plan has been developed listing those structures which require renewal or repair in order of priority. The Plan will be extended to include other pedestrian structures as future inspections are undertaken.</p>	<p>The maintenance and replacement of pedestrian canopies in key locations such as the railway station and Midland Park has been a key focus in preparation for the 2011 Rugby World Cup.</p>

Passenger Transport Network	
Condition	Performance
<p>A condition grading survey has been completed for the bus shelters (excluding verandas associated with retail frontages). The survey identifies that 12% are in excellent condition, 40% good condition, 24% average condition, 22% poor condition and 2% in very poor condition requiring immediate replacement.</p> <p>A condition grading of the Lambton Interchange facility identified a backlog in reactive maintenance, scheduled maintenance and renewals. This work will be partially funded by GWRC.</p>	<p>The Council supports public transport through bus priority measures such as bus lanes, priority traffic light phasing and providing bus shelters. Public transport has a relatively high user rate.</p> <p>Our long-term plan is for bus priority measures throughout the Golden Mile and on major arterial routes, to the Airport and Hospital and key suburban centres including Newtown, Hataitai, Kilbirnie, Brooklyn, Karori, Island Bay and Miramar.</p> <p>Our long-term target is to install bus shelters on all bus stops on city-bound routes (750). Towards this target the Council plans to</p>

Passenger Transport Network	
Condition	Performance
	install shelters at 50 priority sites in the next two years. Over the next decade in conjunction with bus priority measures on key routes new shelters will be installed (an average of 10 per year). Based upon deterioration modelling Council will also replace about four bus shelters per year for the next 10 years.

Network Control and Management	
Traffic signs and markings	
Condition	Performance
<p>Traffic signs and markings are generally in satisfactory condition.</p> <p>The standard of road marking has improved as higher quality thermoplastic paints have been applied.</p>	<p>A new type of thermo paint is now used with a longer life in comparison to the cheaper non-oil based type paint. This thermo-paint has proved cost effective lasting longer over time. This paint type is currently being piloted to determine whether it can extend the life of annual, biennial or triennial road markings. In addition to cost savings, thermo paint provides a higher reflectivity standard enhancing the brightness, contrast of the road marking while reducing glare.</p>
Network Control and Management	
Traffic signals	
Condition	Performance
<p>Traffic signals are also considered to be in generally good condition, although no formal condition surveys have been undertaken yet. 100% of the installations are less than 10 years old and their functionality is continually monitored through SCATS.</p>	<p>The recent NZTA rule on traffic control devices (signs, signals, traffic calming devices etc) will determine future expenditure on signs and signals.</p>

Safety	
Streetlights	
Condition	Performance
<p>Street lighting network condition grading is over 90% complete. When complete this</p>	<p>The performance of the street lighting network continues to improve. A key focus</p>

Safety	
Streetlights	
Condition	Performance
<p>work will help develop a robust renewals and planned maintenance programmes and more suitable performance measures programme.</p> <p>The Council are currently undertaking planned renewal for all condition grade-5 poles, brackets and lanterns.</p> <p>A lighting strategy is being developed to ensure street lighting is designed, constructed and maintained to national standards citywide. This approach aims to achieve integrated and effective lighting making people feel safer in the city at night.</p>	<p>has improving the efficiency of the existing lights and the reliability of the electricity supply. Increased network investment by Wellington Electricity has led to the replacement of damaged and aged cabling. As a result a number of long term reoccurring network outages have been resolved.</p>

Safety	
Hand and guard rails	
Condition	Performance
<p>A survey to develop an inventory of guardrail types, locations and condition is now completed and has been rationalised to improve the quality of the data held.</p>	<p>The city's topography means that access to a significant number of properties is through inclined footpaths and steps. The Council has clarified the approach to the maintenance of public and joint ownership access ways. This has resulted in increased demand for reactive maintenance/repairs to damaged safety rails. Additional funding has been sought and allows us to meet obligations as a responsible property owner.</p>

Road Open Space	
Condition	Performance
Street cleaning and soft assets such as bedding, trees, grass, vegetation and bush are currently not condition-assessed. Each of these is maintained to standards set in service level agreements.	<p>New contracts for vegetation management have increased aesthetic and safety levels of service, particularly with respect to removal of hazardous trees, maintenance of vehicular sight lines, prevention of damage to structures from vegetation, and management of noxious weeds.</p> <p>As more people live and use the CBD, the demand for street cleaning is exceeding our current cleaning capacity. To meet this increased demand an additional \$225,000 in 2010/11 (increasing to \$450,000 per annum in future years) has been budgeted for.</p>

Parking	
Condition	Performance
<p>All pay and display equipment is in good condition and less than 10 years old.</p> <p>All of the parking meters are over 10 years old. The condition of this equipment is variable.</p>	<p>Eleven new motor cycle bays have been installed around the CBD to minimise the number of motor cycles parking on footpaths.</p> <p>Council are planning to install electronic signs on key transport routes to inform drivers about availability of vacant parking spaces in publicly accessible car parks. This would help drivers to head directly to the most convenient park with available spaces, reducing the congestion, and emissions that would otherwise result from drivers looking around for parks.</p> <p>The Council plans to proceed if it can share costs with owners of private car parks.</p>

5.4 Risk management

The Council's current approach to risk management can be summarised as:

- Identify and assess the risks, implement and assess controls, evaluate and treat risks.
- Address the known critical risks with new management/operational strategies and/or a forward programme of remedial works, with priorities based on a risk matrix system.

- Manage the other current known risks within the existing strategies and work programmes.
- Where risks are unknown, develop a plan to better identify and/or quantify the risk prior to implementation of risk mitigation measures.

The Council is developing an increasing awareness of risk potential which includes programmes to improve asset knowledge. Works activities and associated expenditure requirements are being reviewed constantly as knowledge of these assets improves.

The identified risks to the ability of achieving the intended and stated objective in this AMP can be summarised as:

- Unknown information and unresolved issues (insufficient data).
- Legislative changes.
- Climatic changes and city/demand growth patterns.
- Market fluctuations and contractor delivery.
- Risk management failure.
- Business risks.

For the five key risks facing the Transport Group (as identified by the Council's Risk Assurance group) a plan has been established to develop any appropriate and/or additional risk mitigation actions where required. These are summarised in the following table.

Risk	Gap	Action to Address Gap
1	Failure to comply with key relevant legislation or subsidiary requirements such as regulations, bylaws or resource consents	
	Gaps in guidance documentation for staff.	Maintain Quality Management System to ensure availability of necessary guidance documents.
	Inadequate training of staff and knowledge sharing.	Following training staff will be asked to share knowledge with rest of team at staff meetings. Staff to share knowledge at team meetings. Biannual seminar from Philips Fox regarding legislation changes and important application and enforcement issues for specific teams.
	Inaccurate coding of projects impacting NZTA subsidy.	Continually improve NZTA coding for subsidy claims.
	Operations staff not involved in CDEM planning process.	Ensure presence of operations staff at CDEM meetings.
2	Inability to deliver key services – water, wastewater, stormwater and roads – due to a natural emergency such as floods, storms or earthquakes	
	Emergency response	Regularly review Emergency Management Plan.

	protocols are not adequate and are not understood by staff.	Train staff.
	The compatibility of the various emergency response plans for Infrastructure, Capacity and emergency services needs to be tested and practised.	Coordinate emergency plan updates. Ensure protocols exist to work with other responders. Test plans through relevant scenarios to test staff and contractor preparedness and performance. Address any gaps identified.
	Ensure the integration of Emergency considerations into other planning processes.	Include risk assessments into Asset Management Plan to ensure linkage to funding process.
	Limited relationships with Emergency Services.	Determine the best mechanism of overcoming and include in emergency management plan.
	Need for mutual aid agreement between Infrastructure and other authorities.	Investigate the requirements of a mutual aid agreement for Infrastructure and discuss with other authorities.
3	Inability to deliver contracted-out services to a satisfactory quality due to poor contractor performance, lack of suitably skilled contractors, or lack of contract management capability and capacity	
	Poor Council Project/Contract Management	Develop consistent processes for project and contract management and include in QMS.
	PMS sheets and their capture system not used consistently.	Performance monitoring of contracts – through systematic information management.
	Peer review of designs not sufficiently extensive	Peer reviews to cover all aspects of transportation services.
	Insufficient forward planning resulting in contract prices exceeding available budgets.	Estimates to be realistic and planning to be carried out in sufficient time to allow a realistic seasonalised expenditure.
4	Loss of life or serious injury to staff member, contractor or member of the public from a maintenance / construction-related accident or due to faulty or inadequate infrastructure	
	Contractors not ensuring new staff are adequately trained.	Audit Contract Management Plan.
	Contractors not supervised as regularly as desirable.	Monitor Contractors' self-audits.
	Audits not always used to improve performance.	Monitor improvements from performance audit shortcomings.
	Hazard information not always being captured or managed.	Audit hazard ID process and address gaps.
	Equipment not upgraded to match changes in industry.	Manage equipment register with bring-up system for maintenance or replacement.
5	High profile serious incident – such as sewage spill, flooding from burst water main or collapse of (or damage to) road – caused by asset failure	

Asset condition data incomplete.	Develop improvement plan for asset data.
Not all works are audited due to the large number of works.	Develop risk prioritisation process for works and audit process to be included in QMS.

Table 6: Top 5 Business Risks

5.5 Operating and maintaining the asset

The operations and maintenance strategy is intended to retain current levels of service, mitigate risk and minimise costs by implementing a balanced programme of planned and reactive works. The risk analysis has not highlighted any unacceptable risks associated with operational and maintenance activity.

The Council retains the asset management function for the transport activities and assets. Operational activities, such as planning, programming, asset stewardship, educational and non-asset demand management initiatives and traffic signal system monitoring are generally undertaken by Council staff, although the roading maintenance contract currently in place encourages increased input from the contractors. RAMM is used to assess the assets and programme work for completion through the current maintenance contract.

Both planned and reactive maintenance activities are undertaken through the term contracts currently in place.¹ These activities include response to emergencies and hazards (e.g. slips), repair of minor faults as identified (e.g. potholes, road marking), and programmed repair of more significant faults, or as preparation for renewals works (e.g. pre-seal preparation). Maintenance of roads open space is undertaken as part of the cleansing and vegetation management term contract.

5.6 Asset investment and growth

The Council aims to enhance the capability and integrity of the assets at the lowest long term costs and ensure inter-generational equity.

In terms of asset investment, this is largely driven by achievement of strategic targets. The Council plans to ensure that focus is placed on the best value projects that deliver the highest benefit per dollar spent and that the project option chosen to resolve capacity or safety issues is the best practical option.

5.6.1 Asset renewals

Asset renewal needs are identified through analysis of condition assessments and failure history. Treatment selection and work prioritisation are determined from an economic analysis of options considering all asset life cycle costs and priorities to support the Council strategies.

¹ 500 – North and CBD, and 501 - South

Tools used to assist renewals planning include RAMM for annual pavement work programmes and treatment selection, dTIMS for long term pavement renewal forecasts, SMART² for long-term footpaths and accessway renewal forecasts, and detailed reports for structures renewal needs.

5.6.2 Asset development

Asset development needs to meet demand forecasts and deliver the agreed level of service are identified from an assessment of risks, performance monitoring and demand analysis (supported by network analysis). All feasible options, including non-asset demand management options, are considered. Project selection and prioritisation is determined from an economic analysis of options considering all asset life cycle costs.

Capital development projects undertaken to meet level of service needs and growth are funded from borrowing and developer contributions respectively.

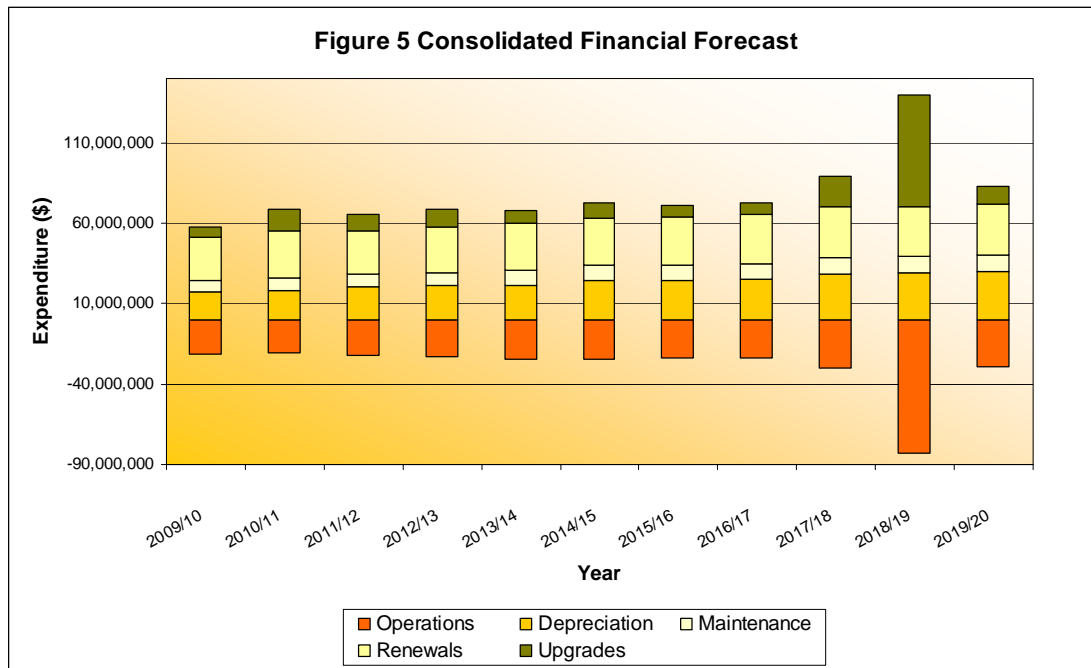
The total cost of the Council funded capital development projects programmed over the next 10 years is \$498,215,561.94.

² A predictive modelling database tool developed by Aecom Ltd

6.0 Financial requirements

6.1 Financial forecast

The consolidated 10 year financial forecasts for the transport activity are presented in Figure 5.1. All other project details are included in the appendix. The financial information provided is based on the LTCCP 2009-2020 inflated figures as at 30 June 2010.



The key features of the financial projections in this figure are:

- Operations – Many of the Infrastructure operational functions (such as road works and other regulatory responsibilities) are user funded on a cost recovery basis. The operation expenditure has an income surplus due to Parking Services income and NZTA Subsidy income for CAPEX projects exceeding expenditure and influencing the consolidated Infrastructure budget.
- Maintenance – remains reasonably constant over the planning period.
- Depreciation increases over this period from \$17.6million to \$29.6million. The depreciation funds renewals expenditure and the similar levels reflecting an appropriate renewal strategy. This could change over the period depending on future revaluation results.
- Renewals expenditure is forecast at on average, approximately \$29.6M per year.
- Capital development expenditure remains constant over the first eight years of the planning period, averaging approximately \$10.2M per year fluctuations reflecting the investment in roading in this period.
- Total expenditure remains constant over the first eight years of the planning period. The ninth year has a significant increase in the upgrades budget for

the Ngauranga Triangle Project linking Newlands with Seaview. This will be offset by NZTA subsidy income which is expected to fund this project.

6.2 Assumptions and data confidence

The following general assumptions have been made in preparing the expenditure forecasts:

- All expenditure is stated in dollar values inflated from 30 June 2010, which reflects current contract rates over the 10 year planning period.
- Development works are based on anticipated sub-divisional development and traffic growth.
- Renewal programmes have been based on available condition and performance information and treatment selection programmes from RAMM.
- The renewal programme aims to maintain the current level of service and condition of assets. This is gradually increasing to allow for new assets accrued annually and any ageing assets.
- Forecasts have been based on historic needs, present work programmes, and where possible forecasting models using all available information.
- Some assumptions have been made as to the average useful lives and average remaining lives of the asset groups, these are reviewed and accuracy improved based on actual asset deterioration.
- Future financial forecasts will be based on improved knowledge of assets and more sophisticated modelling and data analysis improving the accuracy of projections.
- The future estimates are developed to project level in the first three years and in outline for at least the next seven years.

The forecasts have been based on current NZTA funding thresholds and subsidy levels. Significant potential changes to the forecasts may result from:

- Changes in contract rates due to variations in costs and supply/demand issues, contracting policy & service delivery agreements and in NZTA's minimum intervention criteria and subsidy levels
- Anticipated traffic growth and development being exceeded
- Better information on condition & performance trends
- Changes in Council or Government policy (i.e. accounting policy, NZTA level of funding).

6.3 Development contributions

Development contributions for the transport activity are levied to recognise the investment required for;

- The ongoing citywide projects that cater for the increased traffic volumes and congestion which adversely impact traffic flows, safety, and wear and tear. A proportion of the capital works expenditure is assigned to growth to recognise

the additional capacity provided in these projects to cater for future growth in demand.

- Capital works to provide new roads in the northern suburbs.

6.4 Funding the transport activity

The activities undertaken in order to provide the Transport service are funded from:

Operations and Maintenance:

Revenue (User Charges, Development Contributions, NZTA and GW subsidies)	48.0%
○ General Residential Rate	21.3%
○ General Commercial Rate	30.6%
○ Tawa Driveways Levy	0.1%

Renewals: Depreciation (sourced from Opex) 100%

Capital Development

- Growth – Loans and Development Contributions
- Level of Service Enhancement – Loans

7.0 Asset management improvements

From the improvement tasks identified in 2006 progress has been made against the following tasks. More detailed explanation of the progress is detailed in the relevant sections in Part B of the full 2009/10- 2018/19 AMP.

Council has identified strategic and operational projects which require work as well as AMP improvements. This improvement programme results amalgamates the many improvement tasks identified within the unit and by the independent external audit in the past year.

The operational and strategic projects are shown in Part A of the full 2009/10-2018/19 AMP. Each has a draft timetable for completion.

The following table shows the improvement tasks for the AMP document. A number of the tasks are required for the plans to achieve “advanced” status as required under the LGA 2002.

No	Activity
A01	Update the improvement plan section of the AMP
A02	Update the Risk Management section of the AMP
A03	Update the Levels of Service and Performance Measurements in Appendix of AMP
A04	A more detailed analysis of the future demand for services has been identified as an area of importance by the Office of the Auditor General.
A05	Reconcile high level and operational transport Levels of Service and Performance Measurements to cover all assets and activities.
A06	Integrate new Parking Policy into AMP
A07	Key levels of service consultation.
A08	Open space data

Table 7. Asset Management Plan Improvement Activities

Appendix

OPEX

Project Description	Project	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Road protection services	C481	785,595	811,995	846,865	889,439	914,492	928,223	954,914	985,030	1,014,231	1,041,463	10,126,048
Ngaurunga to Airport Corridor Study	C681	-	188,625	65,339	-	-	-	-	-	-	-	253,964
Transport policy projects	P249	504,368	496,910	515,674	537,366	553,223	565,136	582,225	600,562	618,854	636,716	5,954,954
Road maintenance and storm cleanup	C304	1,745,035	1,791,209	1,837,405	1,884,501	1,927,642	1,969,846	2,016,565	2,065,473	2,115,574	2,166,536	21,157,914
Maintenance of Tawa shared driveways	C312	35,362	36,425	37,296	38,134	39,303	40,139	40,977	42,283	43,262	44,374	429,469
Walls, bridges and tunnel maintenance	C441	73,592	75,600	77,885	80,357	82,352	84,144	86,324	88,631	90,960	93,260	916,087
Vehicle network asset stewardship	C453	12,932,738	14,171,844	14,499,649	14,955,680	16,527,870	16,585,689	16,641,296	18,152,574	18,663,827	19,085,591	174,651,229
Drains and walls asset stewardship	C444	4,696,223	5,100,975	5,188,330	5,245,542	5,647,176	5,642,104	5,652,569	6,275,674	6,463,255	6,826,677	61,369,617
Kerb and channel maintenance	C445	487,626	499,102	511,896	524,721	536,117	547,566	560,043	573,162	586,667	600,398	5,906,738
Cycleways maintenance	C493	21,720	27,058	32,436	37,849	43,242	48,626	54,042	59,500	64,896	66,506	472,053
Cycleway asset stewardship	C577	39,537	68,995	96,432	123,508	162,747	191,225	219,255	268,394	298,146	327,428	1,822,078
Street furniture maintenance	C307	284,097	291,248	298,953	306,696	314,122	321,678	329,708	338,098	346,694	355,529	3,464,008
Footpaths asset stewardship	C377	3,788,762	4,199,968	4,355,516	4,542,230	5,074,989	4,970,924	5,152,264	5,764,872	5,949,813	6,165,729	53,600,437
Pedestrian network maintenance	C448	829,661	850,546	872,935	895,397	916,884	938,842	962,054	986,263	1,011,233	1,036,765	10,103,041
Pedestrian network structures maintenance	C492	126,193	129,411	132,930	136,483	139,829	143,191	146,784	150,563	154,455	158,374	1,541,669
Passenger transport facilities	C072A	195,706	203,759	209,726	218,523	222,659	224,744	227,392	233,637	240,375	245,657	2,321,880
Bus shelter contract income	C550	(415,869)	(428,345)	(441,237)	(454,545)	(468,268)	(481,992)	(496,547)	(511,519)	(526,906)	(542,709)	(5,087,356)
Passenger transport asset stewardship	C576	433,487	471,877	497,948	501,843	525,315	537,183	537,830	564,179	581,338	582,834	5,677,330
Bus priority plan	C655	201,709	342,947	439,930	492,650	513,895	517,454	521,780	525,758	529,279	532,695	4,737,565
Traffic signals system maintenance	A026	633,746	659,537	690,817	734,427	758,154	780,790	806,637	834,102	862,432	885,680	8,322,185
Traffic control asset stewardship	A153A	1,530,476	1,800,758	1,928,699	2,042,709	2,294,167	2,399,629	2,506,385	2,803,878	2,850,285	2,728,592	24,306,716
Road marking maintenance	C026C	497,842	509,742	522,085	536,075	547,705	558,813	571,488	584,989	598,848	612,742	6,003,224
Traffic signs maintenance	C452	412,953	434,895	449,426	465,731	477,426	486,818	499,563	513,250	527,102	540,591	5,134,111
Travel Demand Management programme	C653	135,005	132,531	135,486	138,336	140,681	143,059	145,683	148,545	151,457	154,374	1,580,044
Streetlight maintenance	C026B	1,863,324	2,035,880	2,266,134	2,752,943	2,859,468	2,981,588	3,111,573	3,249,927	3,396,373	3,547,959	29,747,556
Road safety education and promotion	C450	283,395	292,376	302,584	313,977	322,891	330,323	339,582	349,444	359,264	368,918	3,586,520
Fences and guardrails maintenance	C494	292,834	299,986	307,717	315,486	322,695	330,043	337,870	346,090	354,553	363,152	3,469,114
Safety asset stewardship	C575	1,130,461	1,205,241	1,193,479	1,184,208	1,260,219	1,241,426	1,224,620	1,310,555	1,300,740	1,287,219	13,461,976
Total		33,545,578	36,701,096	37,872,333	39,440,265	42,656,994	43,027,211	43,732,877	47,303,913	48,647,008	49,913,051	455,030,172

CAPEX

Project Description	Project ID	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Renewals												
Port and ferry access upgrade	CX493	4,580,000	6,556	2,440,694	6,588	6,843	979,782	980,418	1,858,756	-	-	10,819,663
Ngaurunga to Airport corridor	CX504	-	-	-	1,706,070	1,745,820	-	-	-	-	-	3,451,890
Walls, bridges and tunnels renewals	CX086	2,975,178	3,046,582	3,121,324	3,193,211	3,267,953	3,348,403	3,429,699	3,514,211	3,601,457	3,691,678	36,080,007
Thin asphalt road surface renewals	CX088	1,508,440	1,580,483	1,619,384	1,656,847	1,695,748	1,737,526	1,780,040	1,824,307	1,869,908	1,917,051	18,768,531
Reseals renewals	CX089	2,001,375	2,095,488	2,146,929	2,196,418	2,247,859	2,303,205	2,359,209	2,417,447	2,477,544	2,539,686	24,896,831
Preseal preparation renewals	CX090	2,764,830	2,831,186	2,900,701	2,967,581	3,037,096	3,111,878	3,187,578	3,266,305	3,347,535	3,431,530	33,004,746
Shape and camber corrections	CX092	3,896,766	4,015,888	4,114,166	4,208,599	4,306,876	4,412,842	4,519,351	4,629,937	4,744,290	4,862,565	47,781,866
Area wide road maintenance	CX383	529,710	542,423	555,707	568,477	581,762	596,078	610,492	625,465	640,939	656,943	6,460,886
Kerb and channel renewal	CX253	2,066,959	2,116,566	2,168,602	2,218,691	2,270,726	2,326,655	2,383,427	2,442,507	2,503,413	2,566,386	25,051,258
Pedestrian network structures renewals	CX091	257,195	127,687	130,845	133,891	137,048	140,428	143,901	147,526	151,249	155,097	1,770,338
Pedestrian network footpath renewals	CX094	2,969,257	3,681,012	4,498,068	4,601,649	4,709,348	4,825,280	4,942,405	5,064,159	5,189,859	5,319,847	49,146,162
Street furniture renewals	CX108	351,382	359,815	368,759	377,406	386,350	395,891	405,805	416,177	426,794	437,762	4,273,656
Pedestrian network accessways	CX109	376,140	249,488	255,776	261,887	268,175	274,819	281,924	289,405	296,997	304,833	3,332,877
Bus priority plan	CX492	2,038,203	2,058,304	1,336,391	1,351,919	1,052,073	1,077,185	1,101,712	1,127,322	1,183,443	1,211,150	17,451,636
Traffic and street signs renewals	CX095	2,059,282	1,788,713	1,767,351	1,808,260	1,850,733	1,896,334	1,942,778	1,991,148	2,040,962	2,092,460	20,908,384
Traffic signal renewals @ 70%	CX353	342,455	350,674	359,313	367,636	376,275	385,548	395,002	404,850	414,989	425,470	4,169,824
Safety street lighting renewal	CX096	369,756	378,630	388,030	397,334	406,054	416,078	426,465	437,325	448,451	459,946	4,468,238
Fences and guardrails renewals	CX352	592,655	606,879	621,909	636,185	651,115	667,155	683,460	700,433	717,924	736,007	7,194,623
Parking Asset Renewal	CX102	-	1,010,743	-	868,954	889,200	911,065	932,931	955,606	979,091	1,003,386	7,550,976
Capital development- growth												
Footpath extensions @ 50%	CX099	268,205	274,641	281,444	288,011	294,814	302,088	309,589	317,424	325,462	333,768	3,199,291
Traffic signal renewals @ 30%	CX353	146,767	150,289	153,991	157,558	161,261	165,235	169,286	173,507	177,852	182,344	1,787,067
Capital development- level of service												
Service Lane Improvements	CX101	152,441	156,100	65,006	66,560	68,160	69,849	71,657	73,561	75,494	77,488	1,023,452
Vehicle network new roads	CX311	5,822,326	2,305,025	662,369	109,173	2,036,294	114,779	118,201	6,417,698	61,639,441	129,246	79,354,553
Sumps flood protection & mitigation	CX093	387,645	396,948	406,696	416,075	425,823	436,308	446,925	457,968	469,361	481,141	4,713,186
Road corridor new walls	CX098	1,254,477	1,284,584	1,316,163	1,346,559	1,378,138	1,412,081	1,446,529	1,482,377	1,519,334	1,557,546	15,249,197
Tunnel and Bridges Improvements	CX165	690,516	440,923	451,828	496,148	473,254	484,926	496,925	509,448	560,392	574,628	5,680,408
Wall and embankment improvements	CX350	730,098	922,278	587,253	784,103	802,658	822,472	842,994	864,448	886,429	909,141	8,796,428
Footpath extensions @ 50%	CX099	268,205	274,641	281,444	288,011	294,814	302,088	309,589	317,424	325,462	333,768	3,199,291
Cycle network improvements	CX112	711,260	717,535	723,445	730,106	737,296	744,274	751,570	759,310	766,267	786,055	7,901,743
Roading capacity projects	CX377	1,550,000	1,500,055	4,000,934	1,262,973	185	204	322	5,003,737	685	2,501,754	16,799,348
Minor safety projects	CX171	651,642	667,281	684,068	700,368	717,154	734,913	753,829	773,726	792,299	813,129	7,901,787
SaferRoads project	CX445	751,328	1,102,160	1,129,332	1,155,515	1,182,687	1,211,836	1,241,600	1,272,617	1,304,534	1,337,527	12,738,286
Roadside parking improvements	CX319	268,779	275,230	282,051	288,638	295,459	302,750	310,280	318,146	326,212	334,548	3,289,134
Total		43,333,270	37,301,697	39,819,876	37,604,224	38,741,365	36,909,953	37,775,895	50,854,277	100,204,067	42,163,879	498,215,562