



Timaru District Council
Activity Management Plan
Overview
2012 – 2022

Transport



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1. What we do now?

1.1. Transport Assets

With transport assets, the Timaru District Council maintains, renews, and develops the following:

- Road pavements – Sealed and unsealed;
- Bridges, culverts, and fords;
- Drainage facilities – Kerb and channel, sumps, swales, and side drains;
- Footpaths;
- Signs, traffic signals, and road markings;
- Retaining walls, and railings;
- Street furniture, and minor structures – Bus stop seats and shelters, litter bins, etc.;
- Street lightings.

1.2. Transport Activities

For transport activities, the Timaru District Council is responsible for the following:

- Airport;
- Car parks;
- Street cleaning;
- Road safety;
- Corridor management – Temporary Traffic Management (TTM), Corridor Access Request (CAR), License to occupy, etc.;
- Long term planning;
- Asset data collection – Traffic counts, bridge inspections, road roughness, and conditions.

Table 1: Cost involved for year 2011/12.

Rate Input 2011/12 (\$000s)	Asset Value 2011/12 (\$000s)	Non rate revenue 2011/12 (\$000s)	OpEx. 2011/12 (\$000s)
7,843	399,701	8,743	14,221
Note: Figures do not include parking			

2. Key Network Statistics

The following are some key network statistics information:

- Total roads in the District = 1,717 km
 - Rural = 1,479 km (86%)
 - Urban = 238 km (14%)
- Sealed roads in the District = 955 km
 - Rural = 729 km (76%)
 - Urban = 2256 km (24%)
- Unsealed roads in the District = 762 km

- 88% of the network are local roads, 12% are collector, principal, or arterial roads;
- Average pavement age = approximately 40 years;
- Average seal age = 10 years;
- Chip seal on sealed road network = 92%;
- Bridges = 289 (154 one lane, and only 4 weight restricted).

3. Why we do it?

- Transport provides community connectivity for people, goods and services;
- Roads are public spaces;
- Delivery of Transport Services must align with:
 - Transport Vision:
 - “We will provide a Transport System that promotes Community Prosperity.”
 - Council's Visions and Community Outcomes;
 - National statutory requirements (legislation, Government Policy, and Strategies);
 - Regional and local document (District Plan, RLTS, Local strategies, etc.);
 - Safer Roads and Sustainable transport objectives;
 - Customers' expectations.

4. Big Issues for the Next 10 Years

The following points are some of the big issues that the Council is facing for the next 10 years:

- Road pavement deterioration;
- Freight transportation;
- Traffic growth;
- Bridges;
- Environmental impact – Stormwater (Natural Resource Regional Plan (NRRP));
- Funding and affordability;
- Community expectations;
- Road safety;
- Sustainable transport use.

4.1. Road Pavements

- Pavements are the biggest expenditure item.
- Unsealed and sealed pavements differ in management.
- Unsealed pavements are very dynamic.
 - Reactive maintenance only.
 - Generally low cost and risk.
- Sealed road pavement deterioration was modelled for the next 20 years using the dTIMS model. The model allows different funding scenarios to be applied and determines effect of these on roads.

Scenarios Modelled

- Triggers;
 - Ideal world,
 - Unconstrained expenditure,
 - Actions best practice long term,
 - Maintenance costs minimized.
- Optimal normal budget;
 - Current expenditure (\$3.99M per annum pavement renewals).
- Optimal variations - ±25%;
- Least cost:
 - Minimum expenditure,
 - Reactive maintenance,
 - No proactive works,
 - Renewals at failure.

Key Findings

Currently, funding has small reduction in levels of service, but future maintenance costs will increase as pavement and surface condition deteriorates. To minimise maintenance costs, increased road surfacing and pavement rehabilitation is required.

Limitations

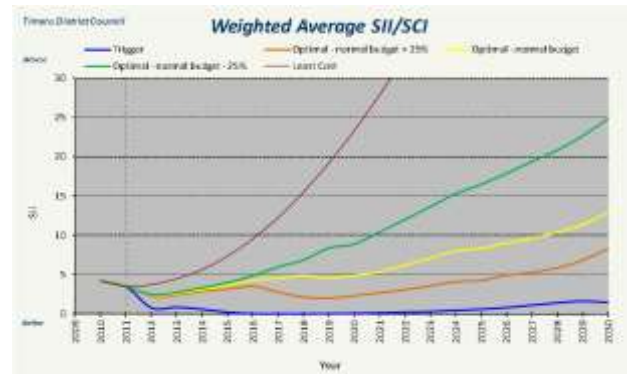
- Modelled on network average basis;
- Increase in HV (heavy vehicle) mass limits is not factored into model;
- Changes in land use will have isolated pavement issues (E.g. Levels Plain Road).

Comparison of Scenarios

Figure 1: Pavement Condition Index (PCI) - Pavement Base Layers.



Figure 2: Surface Integrity Index (SII) – Potholes, flushing, cracking.



4.2. Freight

- Canterbury Region Freight Study investigated future freight demands for next 30 years to 2041.
- Significant growth in freight demands through increased rural activity in Dairy, Arable farming, and Forestry.
- Outcome = More heavy vehicles on rural roads.
- Effects = Greater road pavement deterioration.
- Greater heavy vehicles (Increase > normal growth) on:
 - Route 72;
 - Clandeboye access roads – Ewen, Richard Pears, Factory, Farm, and Canal Roads;
 - Earl Road;
 - Temuka Waitohi and Pleasant Point Waitohi Roads.
- Increased pavement deterioration over shorter time – asset life reduced;
- Increased maintenance and renewal costs long term.

4.3. Bridges

Condition

The bridges in the District are in good condition, but ageing. With 289 bridges in the network and the current funding, only four per year are being replaced.

Levels of Service

The bridge network is being challenged with larger (wider and heavier) farming vehicles. 154 bridges are one lane and are not wide enough. The increase mass of heavy vehicles challenging current bridge capacities. Due to the ageing of the bridges, “bow-wave” of bridge replacements in 10 to 20 years time will need to be considered. Many of these bridges are large bridges and will therefore cost a large amount of money (millions) to replace.

4.4. Sustainability

- Challenges to increase active and public transport use and to leave cars at home;
- Acceptance of the road as a public space, not just the domain of vehicles – Better urban design, slower speeds;
- Environmental impacts of roads and transport – increasing stormwater requirements, reduce vehicle emissions.

4.5. Road Safety

Road safety is about behaviour and attitude changes. There are no quick fix solution and generation changes affect road safety too.

Issues in Timaru District

- Speed;
- Intersections;
- Alcohol;
- Poor observation;
- Young drivers.

Crash statistics

- Fatal crashes trending downwards but vary year by year;
- Injuries increasing.

Gains are being made

- Average speeds is down;
- Safety belt wearing compliance very high;
- Reduction in alcohol driving offences.

4.6. Affordability

Expenditure

- Costs, asset needs, and levels of service are increasing particularly in rural networks;
- Costs increases are being generated in rural areas form rural activities;
- Rural road costs (60% of total expenditure) exceeds rural rates funding (19% of total) now. This gap will increase in the future.

Funding

- Government Policy Statement on Land Transport Funding (GPS) indicates less financial assistance for maintenance and renewals;
- Financial assistance rates (FAR) is being reviewed. Timaru District Council FAR is up 1% to 53% for next three years, but for 2015/16 onwards, this is unknown;
- Potentially, more rates funding required.

4.7. Community

- Customer expectations increasing;
- Less tolerance of poor condition or performance;
- Greater reliability;
- People are more mobile than ever before;
- Ageing population changing transport modes.

5. What levels of service (LoS) do we provide?

Transport vision;

Figure 3: Timaru District Council Transport Vision.



Figure 3 displays the environment, society, and economy are the corner stones of the community. This is linked into the Council's community outcomes and are summarised by the vision statement at the top of Figure 3.

- Current LoS is not an option;
- Changes required due to:
 - Changing land use – increasing demands;
 - Increasing mass and dimensions of farm machinery;
 - Increasing High Productivity Motor Vehicle (HPMV) use;
 - New environmental standards – road runoff treatments;
 - Legislation changes;
 - Government funding priorities change;
 - Community expectations increasing – less tolerance.
- LoS must increase to meet economic, social, and environmental needs of the district – the “goal posts are always moving”.
- LoS requires striking the balance;

Figure 4: Transport Vision - Striking a Balance.



Figure 4 demonstrates the provision, cost, performance and image of the transport system are all fundamental to ensuring a

level of service which facilitates the implementation of the District Transport Vision.

- Strategic Priorities are necessary;
- Government priorities for funding are:
 - Economic growth;
 - Value for money;
 - Road safety.
- Regional Priorities – RLTS;
- Local priorities are:
 - Investing in community;
 - Promote integrated, highly liveable communities;
 - Support areas of economic and district strength;
 - Ensure critical infrastructure meets future needs.

6. Business Processes

There are multiple business processes in place to assist the Council in delivering asset management and services. These include but are not limited to the following:

- Systems (Information systems, Asset register, Crash analysis system, etc);
- National, regional, and local legislations, strategies, plans, policies and compliance;
- Review, monitoring, and audits;
- Civil Defence emergency management arrangements.

6.1. Performance Monitoring

Performance measures and indicators are found at all levels of planning and decision making. At the strategic management level, these are defined in the Long Term Plan and Annual Plan. Operational performance measures cover issues such as availability of the network, level of congestion, safety and response times. Financial information is also resented for program progress and delivery accountability.

The Council collects information on user satisfaction, and reports on numerous performance measures and indicators such as road roughness and network condition, which provides input into key technical performance measures.

6.2. Project selection

Projects originate for a variety of reasons. Generally to

- Improve the levels of service;
- Facilitate growth; or
- Lifecycle renewal.

A project is identified from:

- Inspections;
- Asset database analysis;
- Faults and issues; or
- A study that leads to a strategy.

On of the key drivers for Council is to spend ratepayer funding and Government financial assistance wisely. Community affordability is also a key driver therefore there are limitations on projects implemented. It is therefore essential that projects are assed in a uniform manner that will allow prioritisation.

The assessment criteria are based on Council strategic priorities and Government funding priorities as outlined in the Government Policy Statement on Land Transport Funding. The project assessment criteria are therefore generally based on the NZTA assessment system of assessing a project on the basis of contribution to specific outcomes on a high, medium, or low scale.

The scope of projects is extremely varied. Projects can range from being minor works, such as routine maintenance activities or low cost minor improvements, through to large high costing projects, high risk improvement, or renewal projects.

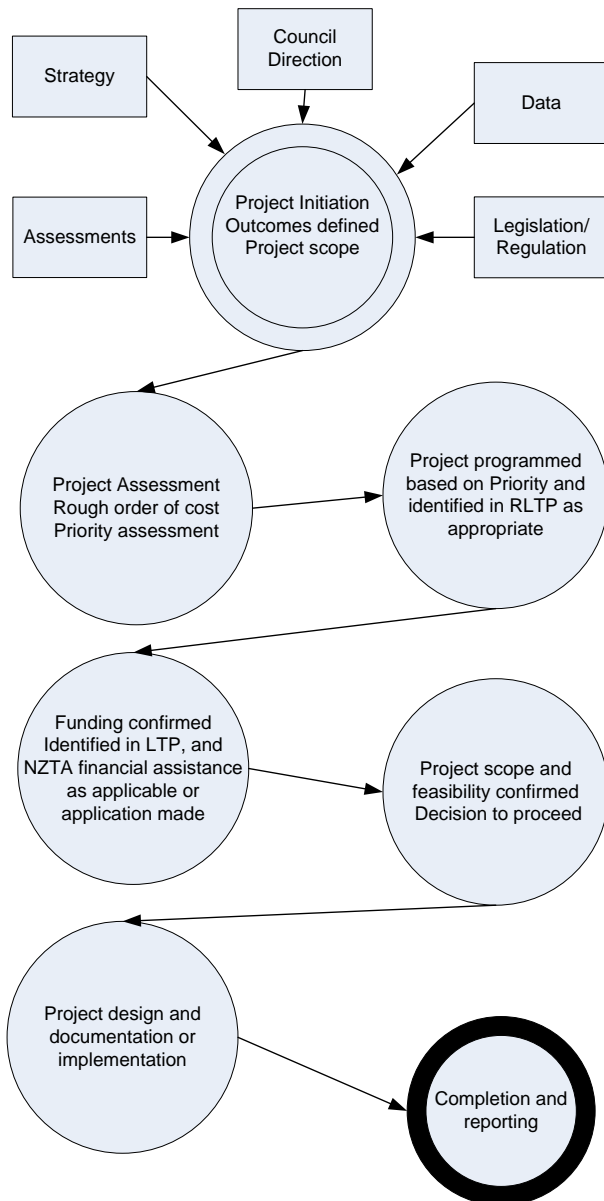
Table 2: Low / High Guidelines.

	Low	High
Importance / Risk	<ul style="list-style-type: none"> ➤ Routine maintenance; ➤ Projects <\$500,000; ➤ Resource Consent not required; ➤ Minor improvement. 	<ul style="list-style-type: none"> ➤ Change in Level of Service; ➤ Projects >\$500,000; ➤ Resource Consent required; ➤ Significant improvement.

There are two key aspects to determining where the decision making on a project should be. These are:

1. **Project Importance** – community interest, change in service levels, change in Council policy, potential media interest.
2. **Project Risk** – cost, community disruption, consenting requirements, community acceptance.

Figure 5: Project Selection Process.



- Current farming practices continue;
- International commodity prices hold up;
- No major legislative changes;
- No local authority amalgamation.

8. Risks

The major identified transport risks are (includes but is not limited to):

- **Asset** – Failures, major events, age, condition;
- **Business** – Funding, affordability, image;
- **Levels of Service** – Inability to meet future demands, “Bow-wave”;
- **Legislative** – New standards (E.g. NRRP), GPS, Crown fibre;
- **Community / Social** – Loss of public transport, mobility, connectivity, increase in customer expectations;
- **International effects** – Economy, peak oil, significant oil price rises.

The purpose of identifying the risks associated with the transport activity and the associated assets is to minimise, avoid, or to even mitigate the possible likelihood of the risk occurring. This requires the risks to be approached from multiple perspectives, such as:

- Corporate image;
- Environment;
- Health and safety;
- 3rd party losses;
- Loss of services;
- Business costs.

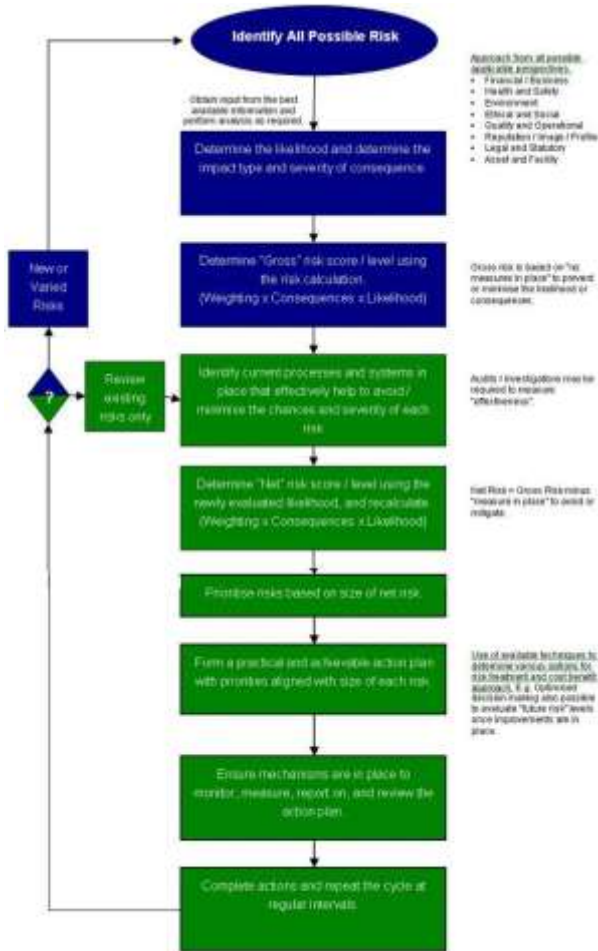
Figure 6 displays the key elements of the risk management process used at the Council.

7. Assumptions

The transport's assumptions are (include but is not limited to):

- Oil available – bitumen;
- Mobility will increase;
- Funding assistance from government to continue;
- Asset lives do not change;
- Asset condition / deterioration is consistent;
- Data is available and reliability improves;
- Continual district growth;
- Proportional of freight transport modes does not change (Sea, Rail, Road);

Figure 6: Risk Management Process.



9. What are we planning on doing?

The following are some of the points that the Council is planning to work towards:

- Maintain existing assets well;
 - Increase renewals to minimise maintenance costs – resurfacing, pavement renewals, kerb and channel, footpath renewals;
 - Improve urban renewals;
 - Refreshing the Timaru CBD;
 - Innovation to achieve more for less.
- Seal widening and bridge upgrades to meet increasing freight activity;
- Support growth:
 - Improve key rural roads for greater freight demands – seal widening, pavement strengthening;
 - Upgrade roads in Washdyke – Elginshire extension link, Seadown and Meadows Road;
 - Two lane Factory Road bridge;
 - Upgrade roads in Temuka and Temuka – Waitohi bridge;

- New kerb and channel, footpaths;
- Seal extensions;
- Planning for the future – long term modeling / studies.

➤ Improve road safety:

- Continue actively promoting road safety – vision zero;
- Road safety education and continued collaboration with Police;
- Intersection improvements – islands, round-a-bouts, traffic signals;
- Safer roads and roadsides – Safety enhancements in conjunction with road renewals or upgrades. Design to encourage appropriate road user behaviour and safe speeds.

➤ Sustainable transport:

- Implement Active Transport Strategy projects as funding permits;
- Collaboration with ECan on bus services.

➤ Maximise government financial assistance and user charges;

➤ Continue to develop long term strategies and plans to reduce risks;

➤ Continued collaboration with ECan and NZTA;

➤ Manage the road corridor more actively;

➤ Monitoring asset performance;

- Network condition;
- Maintenance costs;
- Data collection;
- Customer surveys.

10. Projects and Financial Forecasts

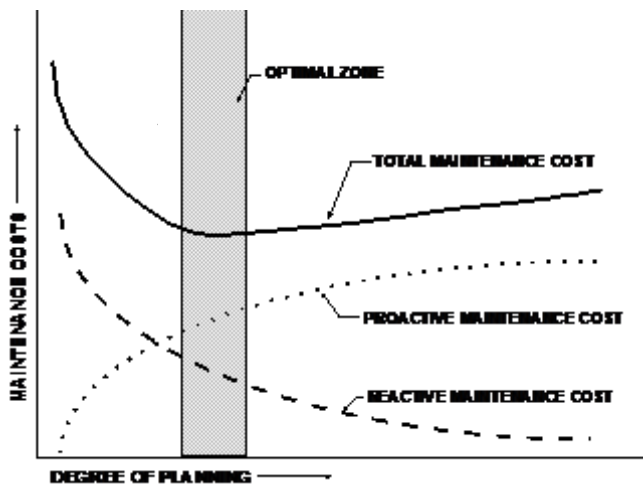
Expenditure on infrastructure assets can be categorised into four main areas:

- Operations and Maintenance;
- Renewal (Replacement);
- Capital (New);
- Disposal.

10.1. Operations and Maintenance

Operations and maintenance strategies cover the policies that will determine how the transport network will operate and be maintained on a day-to-day basis to consistently achieve the optimum use of the asset.

Figure 7: Balancing Proactive and Reactive Maintenance.



Effective programming is considered the cornerstone of the effective management of the Road Maintenance Contract and the network.

10.2. Renewal

Renewal expenditure is work that restores an existing asset to its original levels of service and at current standards. It involves either rehabilitation or replacement.

Rehabilitation involves the repair of an existing asset, or asset component. Replacement involves the replacement of an existing asset or asset component, normally at the end of its useful life. Renewal does not provide for a planned increase to the operating capacity or design loading.

Many of the smaller renewal works are undertaken within maintenance, all major works are programmed and managed in a similar way to capital works.

10.3. Capital (New)

Capital works are the creation of new assets or works, which upgrades or improves an existing asset beyond its existing capacity or performance. These are normally done due to changes in usage or customers' expectations.

Capital works fall into a number of separate categories:

- Growth;
- Levels of Service;
- Legislative;
- Vested;
- Selection criteria.

Table 3: Summary of Capital Projects. (2012/13 to 2015/16-2021/22)

Project	Expenditure (\$000)			
	2012/13	2013/14	2014/15	2015/16 – 2021/22
Structural Bridge Renewals	400	400	400	2,880
Pavement Rehabilitations	1,300	1,000	1,000	7,800
Intersection Upgrades / Safety Improvements	250	0	250	1,000
Sign Renewals	130	130	130	910
Minor Improvement Works	805	805	805	5,635
Kerb and Channel Renewals	800	800	800	6,00
Maintenance Chip Seal Renewals	2,520	2,520	2,520	18,040
Asphaltic Surfacing Renewal	500	500	500	3,500
Unsealed Road Metalling Renewals	200	220	230	1,890
Culvert Renewals	40	40	40	280
Seal Extensions	330	330	330	1,980
Seal Widening	400	300	300	3,060
Street Lighting and Lantern Renewals	44	44	44	308
Footpath Renewals	668	640	649	4,512
District Central Business District (CBD) Renewals	0	50	550	550
Parking Infrastructure Renewals	0	16	104	68
New Kerb and Channel / Culverts	350	240	210	2,050
New Street Lighting	150	130	130	910
New Signs	60	80	80	620
New Footpaths	128	55	122	575
Factory Road Upgrade	300	0	0	0

Project	Expenditure (\$000)			
	2012/13	2013/14	2014/15	2015/16 – 2021/22
Factory Road Bridge Widening	100	1,430	1,480	0
Temuka Roothing Upgrade	0	200	0	500
Timaru – Southern Road Port Access	0	0	80	4,540
Washdyke Network Improvements	2,120	200	500	2,500
Timaru CBD Parking	0	0	0	800
Identity Signage Replacements	0	20	125	10
Miscellaneous Roothing and Footpaths Projects	63	51	3	221

11. How do we know we are there?

Performance measurements are used to identify how the Council is doing. The following are some ways these performances are measured:

- Customer satisfaction surveys – Levels of Service;
- Maintenance response time;
- Condition rating – Road roughness, etc.
- Asset performance – Journey times, bridge capacity;
- Historical trends;
- NZTA audits;
- Crash statistics (CAS)
- Project completion;
- Strategy implementation.

12. Other issues

The Timaru District Council's Land Transport Unit has a few challenges (issues) that have to be considered and worked through. These include but are not limited to the following:

- Natural Resource Regional Plan (NRRP) compliance – 2011;
- National code of practices compliance (e.g. Temporary Traffic Management – 2004, Utility Operators' Access to Transport Corridors – 2011);
- Government maintenance task force;
- Audit NZ raising the bar;
- NZTA requirements – greater reporting requirements;
- Utilities in the road:
 - Trenches reduce life of road by approximately 30%;
 - Failure repairs cost \$80K to \$100K per annum.