IPENZ TRANSPORTATION GROUP CONFERENCE 2013

KEEP CHRISTCHURCH MOVING FORWARD
CHRISTCHURCH TRANSPORT STRATEGIC PLAN

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ABSTRACT

At the heart of the Christchurch Transport Strategic Plan (the Plan) is the integration of road, freight, cycling, public transport and walking networks by applying a one network approach. This applies a similar approach to Smart Roads in Melbourne (VicRoads, 2011). The Plan integrates strategic networks for all modes. In the future streets will be prioritised for either traffic, cycling, public transport or for pedestrians. This approach helps to manage competing demands on the limited road space.

Public consultation on the Plan indicated strong support for the overall direction and resulted in more emphasis being placed on prioritising active and public transport in the short term, whilst improving network efficiency. Whilst funding remains the greatest challenge to implementation, the Council recognises that by planning now we can maximise the long-term value and benefits from the rebuild. The Plans health impact assessment provides further evidence on the wider benefits of early investment in active and public transport (CCC et al., 2010).

The one network approach is now being implemented in Christchurch through a joint Network Management Plan (CCC et al., 2012b) which aims to improve network efficiency for all modes. Further investigations to the Plan have been initiated including a new road classification, future cycle demand modelling and cycle design guidelines. The one network approach has encouraged stronger collaboration between our urban development strategy partners and between transport modes in Christchurch.

INTRODUCTION

The 2010-2011 Canterbury earthquakes had a severe impact on the effective functioning of the city's transport system and land use activity. Changing land use and travel patterns, some of which are temporary, have increased congestion and affected the availability of travel options, resulting in a greater reliance on movement by private vehicles (CCC, 2012a). The transport system needs to offer improved travel options whilst continuing to respond to increasing travel demand, accommodating planned growth and addressing environmental challenges. The city also has to make a significant investment during the next decade to repair and aid the recovery of transport infrastructure, especially in relation to roads.

The rebuild itself presents some opportunities to improve the transport system and support more intensive land use planning in line with the Greater Christchurch Urban Development Strategy (CCC et al., 2007). Effective transport networks throughout Christchurch will not only be critical for the city to recover from the recent earthquakes but also to grow and attract new business, investment and people. This is why a new city wide transport plan - the Christchurch Transport Strategic Plan (the Plan), in preparation prior to the earthquakes, was recognised by the council as an important priority.

The city has many opportunities to consider the future shape of the transport system, however the driving pressure following the earthquakes was to get the city moving again. A large response through the draft Central City Plan 'Share an Idea' (CCC, 2011) community engagement campaign showed the communities desire for increasing transport choice across the city, especially for active modes. The engagement made it clear that business as usual in transport would not deliver this increased choice. Therefore, a new transport vision was needed - to keep Christchurch moving forward by providing transport choices to connect people and places. This vision sets the context for the rebuild and future transport system of Christchurch. The aim is to achieve a fundamental shift in the way transport is provide and integrated with land use. With increased investment in safety, network management and improvements to the active and public transport networks.

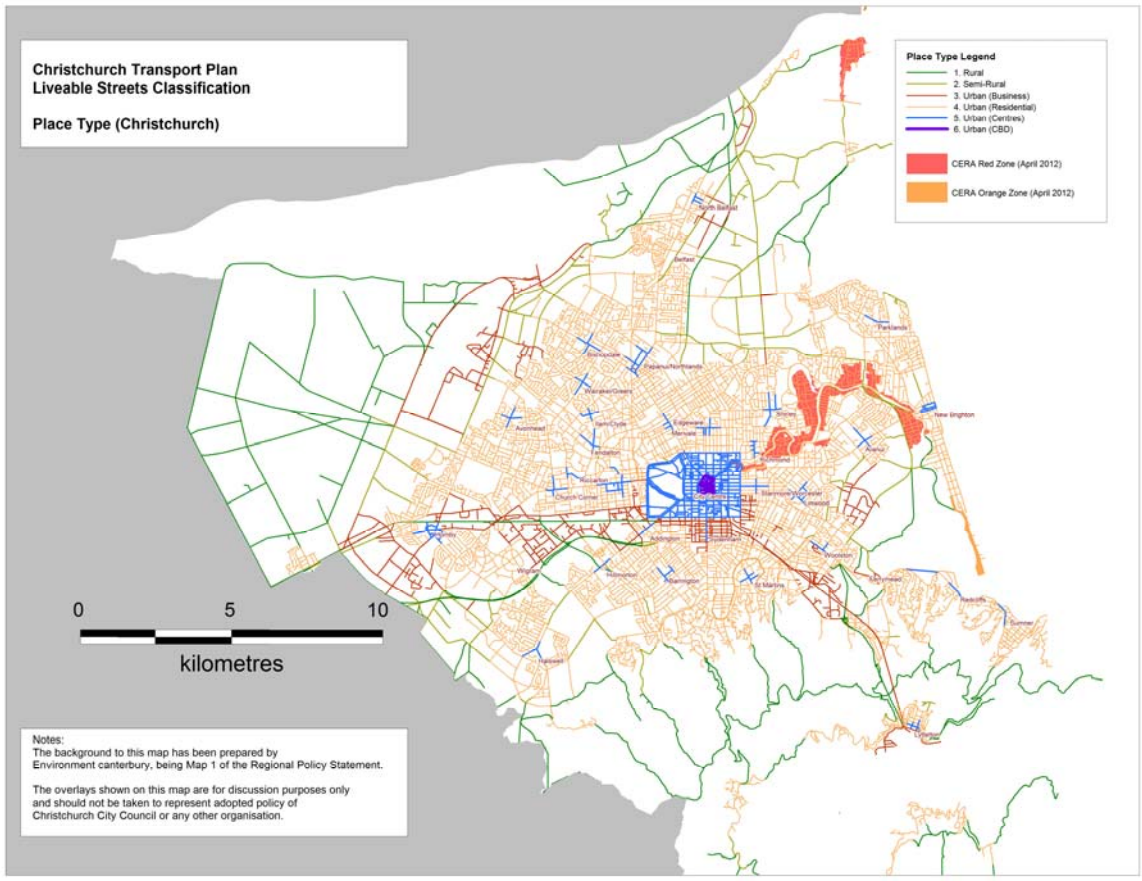
At the heart of the Plan is improved travel choice and greater integration of traffic, freight, cycling, public transport and walking networks. This approach was support through public consultation. To enable this collaboration between modes and networks, in an evolving planning environment, the council is working closely with New Zealand Transport Agency, Environment Canterbury and our neighbouring authorities to develop a new one network approach for planning, managing and operating all of the modal networks together.

INTEGRATED NETWORKS

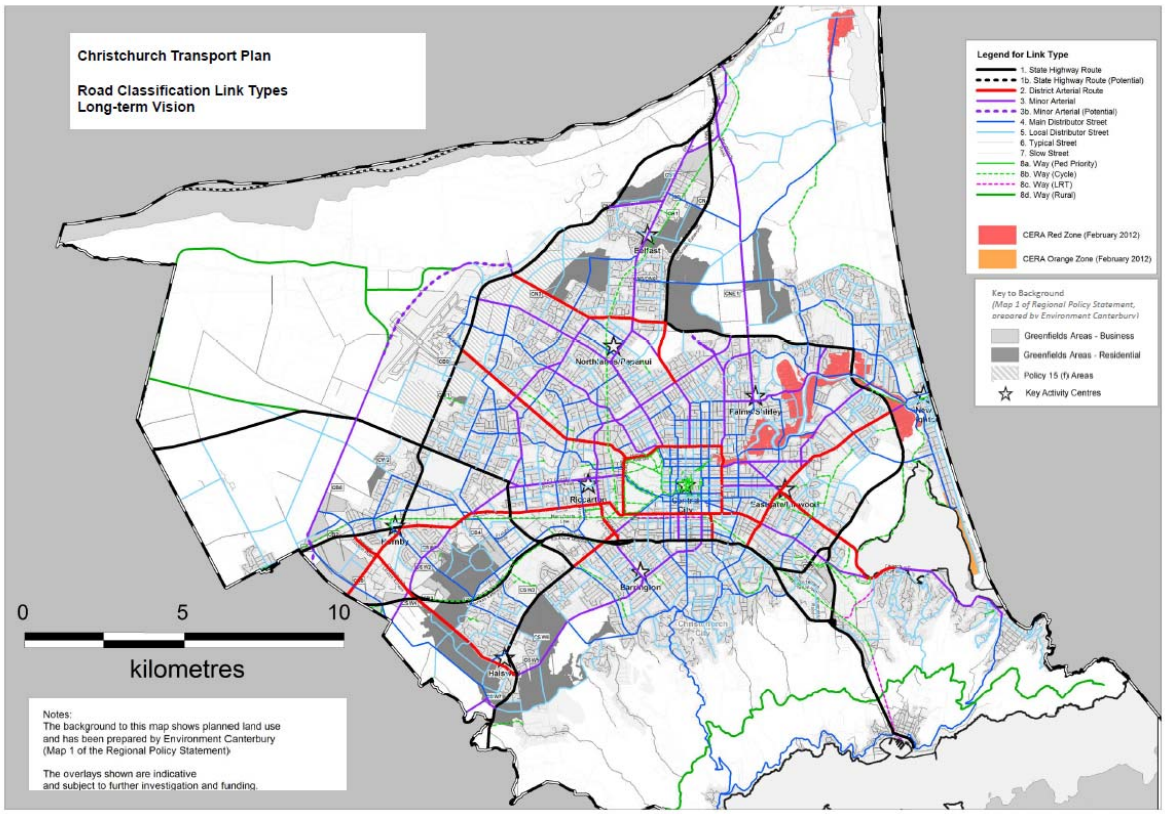
The Plan places a strong emphasis on integrating land use and transport to improve travel choices. The first step towards an integrated network was to understand the different components of the road network and how these relate to land use. This lead to the development of both a new road classification and future transport networks for each mode.

The new road classification is based on recognising both the movement and place function of streets across the city. This concept builds on the Link and Place approach in the United Kingdom (Boujenko, 2007), the Smart Roads approach in Melbourne (VicRoads, 2011), and the New Zealand Standards for Land development and subdivision infrastructure (NZS, 2010). The new classification considers both the adjacent land use or 'place' function alongside the movement or 'link' function of each street, as illustrated in Figure 1. Place (rural or urban, and industrial or residential) and link types (highway, arterial, local, slow street) have been combined to create a matrix to help define for each section of road not only type of movement intended to use it, but also the type of neighbourhood it is passing through. This will ensure that future road designs are both sympathetic to the surrounding area and fit for purpose in terms of network movement and efficiency. The new road classification will eventually replace the City Plan's existing road hierarchy

in Policy 7.2.1 which primarily focuses on the movement function of streets rather than place.



Place types



Link Types

Figure 1: Proposed road classification (CCC, 2012a)

The link and place concept in the new road classification, has also been applied to develop future transport networks for all modes. The transport networks describe how people will move from one place to another by different modes. The five networks are illustrated in Appendix A.

The transport networks identify the core routes for each mode to connect key places or destinations across the city. They have taken into account trip purposes and social-economic characteristics to link destinations. The networks have been integrated so that certain roads can be prioritised and managed to work better for specific modes, such as freight, while others can be managed for public transport, cycling and pedestrians. Where a greater priority has been given to one mode, good alternative routes are given for other modes.

In some locations competing demands for road space remain, often creating capacity tensions and potential safety conflicts. These corridors are typically on the busiest arterial routes, especially where they approach and pass through commercial centres or residential areas. Through the development of the Plan, workshop sessions with the Urban Development Strategy partners and key stakeholder were held to identify and integrated the five networks. In the workshops, areas of conflict and competing demands were identified and where possible alternative routes were assigned for competing modes on parallel routes.
This approach of defining modal priorities is similar to the road user hierarchy applied in Smart Roads (VicRoads, 2011). Smart Roads gives particular modes of transport priority on certain roads at particular times of the day. The workshops were supported by additional evidence from population projections, transport modelling of future volumes and destinations, land use growth plans, transport plans, cycle demand modelling and a health impact assessment. Where modes could not be separated and a mix of priorities remain specific corridor studies were recommended as actions in the Plan.

PUBLIC CONSULTATION

The development of the Plans vision and future transport networks were shaped by early stakeholder engagement and supported through public consultation. Early engagement with a number of stakeholders helped to identify the key transport issues and priorities for the future. The feedback received was also supported by the draft Central City Plan ‘share an Idea’ campaign (CCC, 2011) which sought the communities input to inform what form a new city centre should take. The engagement clearly showed the communities desire for increasing transport choice across the city, especially towards active transport. A health and sustainability assessment provided further evidence around the benefits of investing early in active and public transport (CCC, et al. 2010).

Overall there was a good response to public consultation on the draft Plan, with 240 submissions. The majority of these indicated strong support for the vision and networks. The feedback received through submissions and the hearings encouraged Council to place more emphasis on active and public transport improvements in the short term, whilst improving network efficiency. In particular two additional actions were made to develop a business case for cycling and walking and to provide further clarity on cycleway design through the development of Christchurch specific ‘cycle design guidelines’ as the first implementation actions for the Plan. The new road classification and a network management plan were also emphasised as key actions to improving network efficiency.

ONE NETWORK APPROACH

Through the Plans implementation and in partnership with our partners, a new collaborative approach to the way the Council uses, operates and manages its road network is being developed – the one network approach. The experiences from the Austroads operation group, Melbourne (VicRoads, 2011) and Auckland Transport have been invaluable in helping to inform the development of this approach.

Central to the one network approach is the ongoing development of a joint Network Management Plan (the management plan) with NZTA. The process for developing the management plan is outlined in Figure 3. There are five main stages: establishing the strategic setting; identifying the

modal networks and road use hierarchy; identifying operating gaps; and planning improvements in network operating, management and improvement plans.

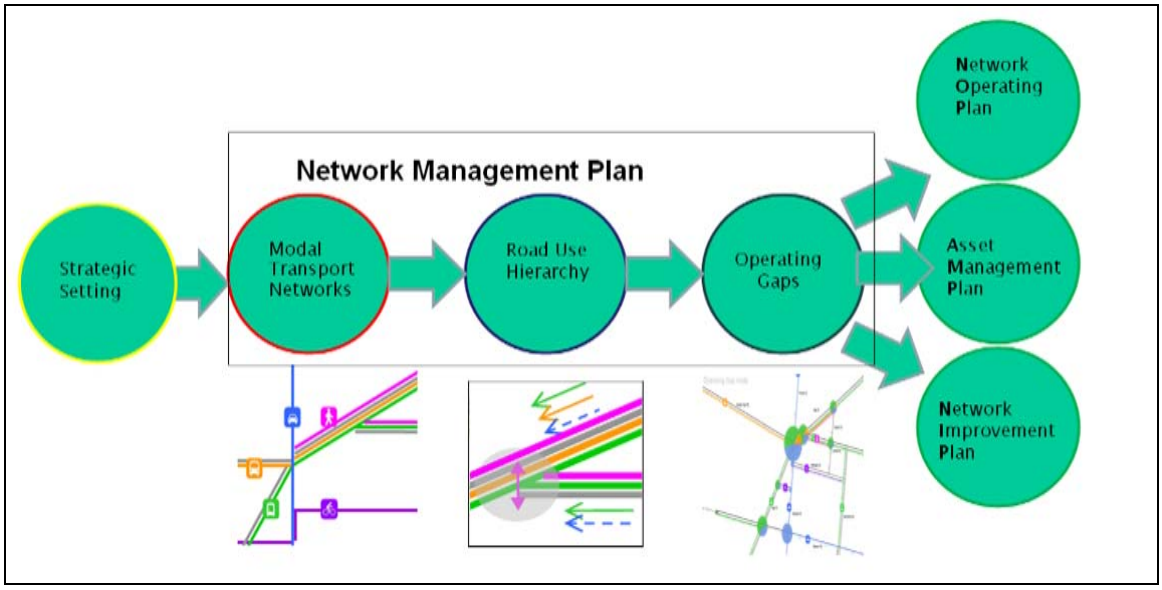


Figure 3: Network management plan process (CCC, 2012b)

The Christchurch Transport Strategic Plan has provided the strategic setting for the management plan. This aims to improve network efficiency and sustainability for all modes by changing the way we monitor, manage and operate our transport system. Sound network management can help to make the best use of the existing roads and transport infrastructure, to ensure Christchurch's transport networks continue to operate effectively and sustainably now and into the future. Road space is a scarce and expensive public resource and one of the most valuable assets owned by the Council which needs to be managed effectively (CCC, 2012a). The management plan applies the principle to use existing infrastructure to it's maximum potential before building new infrastructure. To manage competing interests for road space more effectively than before, the management plan is starting to apply the road classification and modal transport networks from the transport Plan (Figures 1 and 2) to develop a road use hierarchy. This assigns a clear priority to one mode and identifies where the most important place functions of streets are likely to be, such as commercial centres.

To deliver the networks the management plan describes how the network should be operated and sets clear service levels for the system, for each mode and for individual corridors. Where the network does not perform to these service levels, operational gaps are identified using a modelling tool similar to Smart Roads(Vic Roads, 2011). The management plan can also take into account other elements such as time of day (peak, off-peak times), and trip purpose. Operational improvements are then recommended through network operating, management and improvement plans. Future improvements might include maximising the operation of traffic signals to increase reliability of journey times, improved driver information systems, reallocating road space to provide facilities for other modes, such as introducing bus priority or safer cycling facilities. The approach is improving co-ordination across transport organisations through shared planning, design, operation and maintenance of existing and future networks.

CONCLUSION

The biggest challenge currently facing Christchurch is funding the rebuild. This places pressure on the next Christchurch City Council Long Term Plan and the transport funding available to implement the Plan. To achieve the Plans vision will take time, but the Council recognises that by planning now we can maximise the long-term value and benefits through the rebuild. The publication of the Plan has prompted fresh dialogue with the Stronger Christchurch Infrastructure Rebuild Team over exploring opportunities for doing things differently as infrastructure is repaired

or replaced.

The Plan sets out a clear vision for how the networks will be integrated, managed and enhanced to keep Christchurch moving forward. The vision also supports a more sustainable and resilient transport system, by reshaping travel demand and investing in green infrastructure to reduce emissions and oil dependence. The one network approach has encouraged stronger collaboration in planning between our urban development strategy partners and between transport modes and networks in Christchurch. The development of the new road classification and network management plan are key to achieving this. The early development of guidelines for cycle design and integrated transport assessments also aim to influence the rebuild and future design of the City. A collaborative approach to transport planning has been taken to achieve the vision: to keep Christchurch moving forward by providing transport choices to connect people and places.

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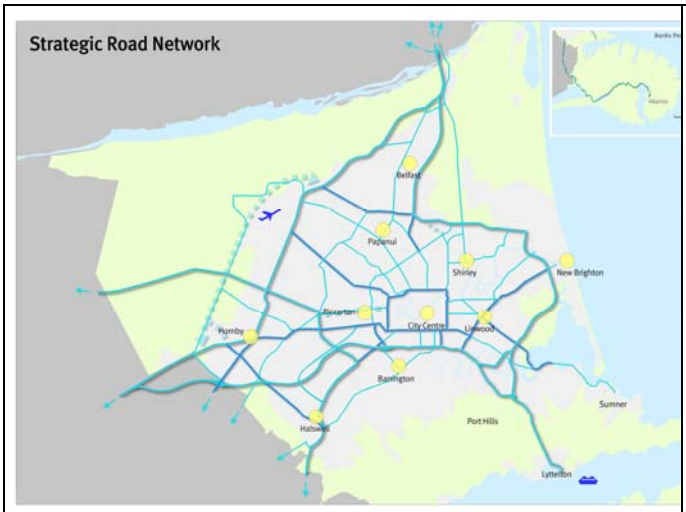
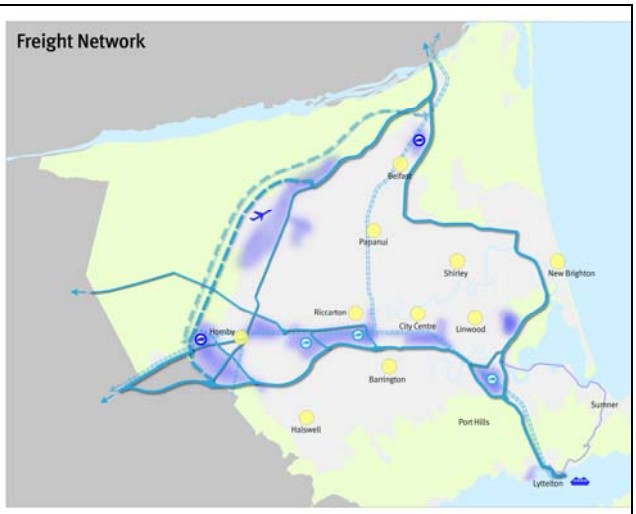
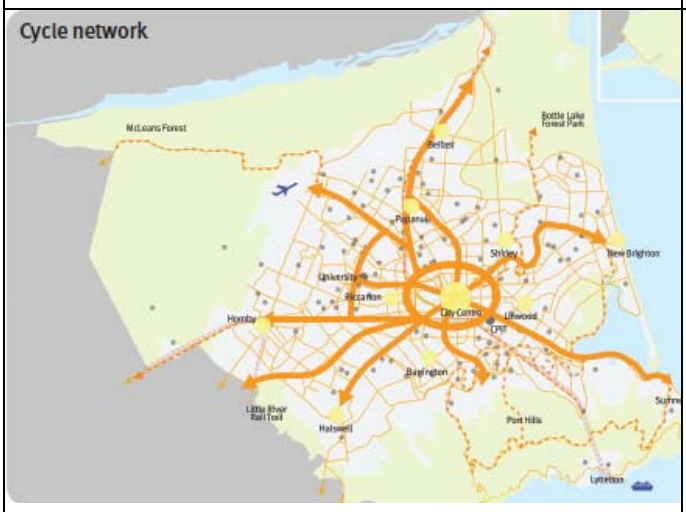
Appendix A: Transport Networks



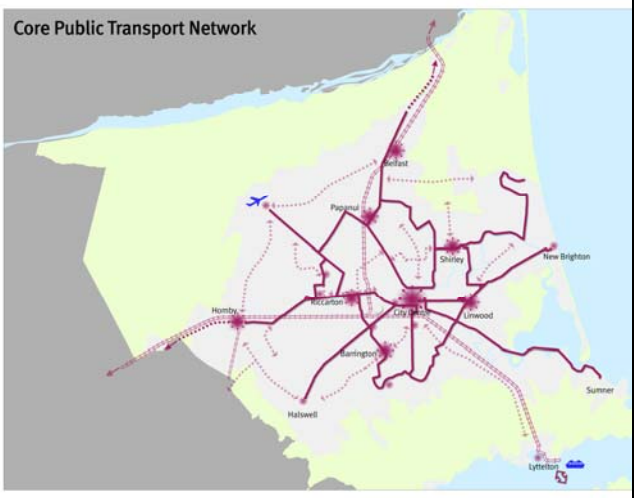
Strategic road: a vehicle network for medium and long-distance trips into and around the city.



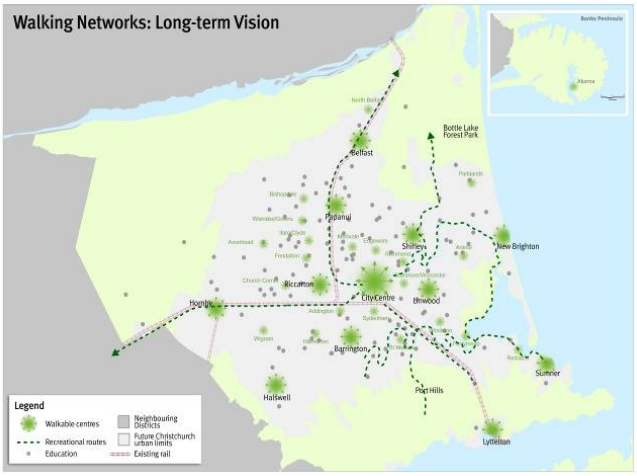
Freight: a dedicated freight network to access Lyttelton Port, Christchurch airport and key hubs.



Cycle: a network of major, local and recreational cycleways.



Public transport: infrastructure to support the core routes in the regional public transport plan.



Walking: centres that are attractive and safe to walk around and recreational routes with an emphasis on providing an accessible environment for mobility and visually impaired users.

(CCC, 2012a)