

Author: Lisa Rossiter, National Standards Manager, Transit New Zealand

Co-author: Jacqueline Bell, Planning Policy Adviser, Transit New Zealand

Presenter: Lisa Rossiter

Title: How urban design is improving state highways in our communities

National Office, Transit New Zealand

PO Box 5084, Wellington

Telephone: +6444966660 Fax: +6444966666

Email: lisa.rossiter@transit.govt.nz

ABSTRACT

Rapid and intense development of New Zealand's urban and rural landscape places a significant responsibility on Transit New Zealand (Transit) to contribute to the wellbeing of those living in our communities, while continuing to deliver sustainable transport solutions. As the manager of the national state highway network, Transit is in a special position to contribute to vibrant, healthy communities.

Incorporating urban design into its activities is one way Transit can assist in achieving this goal. As an early signatory to the New Zealand Urban Design Protocol, Transit is strongly committed to working with others to provide context-sensitive solutions in urban and rural areas.

Effective urban design manages each activity within its context and integrates economic, engineering, environmental and social requirements to provide context-sensitive solutions. It also helps Transit meet its statutory requirements under the Land Transport Management Act 2003, which focuses on safety, integration, responsiveness and sustainability.

Urban Design Implementation Principles developed by the Transit New Zealand Board provide a framework to manage urban design issues and implement appropriate responses, on a case-by-case basis. How these principles are incorporated into planning, constructing and maintaining state highways is a key to ensuring transportation makes a positive difference to the places where we all live, work and play.

Incorporating urban design in a way that contributes to liveable communities is an exciting challenge for Transit. It offers a unique opportunity to influence the form and function of the communities we live in, and requires long-term vision to successfully achieve this. This paper will explore the options available to Transit, as a national infrastructure provider, in using urban design to help shape prosperous communities. It will also discuss the challenges to making this work successfully including collaboration, funding, historical inadequacies and the importance of getting multi-disciplinary teams involved from the outset.

1. INTRODUCTION

Urban design for Transit means a ‘context sensitive’ approach to the way the state highway network is planned, built and operated.

Good urban design integrates the concern for function, land use and visual quality with economic feasibility and public process in order to shape towns and cities that are attractive, liveable and sustainable. It is about bringing together form, function and fit at the concept planning stage of a project to enhance value in social, economic and environmental terms.

Transit recognises the role it plays in how urban and rural areas develop and function. Transit believes that by being a signatory to the New Zealand Urban Design Protocol (Protocol) and committing to urban design, it can have a positive influence on the future form and function of urban and rural areas and can make a positive difference to the places where we live, work and play.

This paper outlines Transit’s commitment to urban design. The paper includes case studies on Transit infrastructure projects and a planning project in which Transit is involved as a key stakeholder. The paper illustrates how urban design is influencing all aspects of Transit business and the challenges for Transit in making this work successfully.

2.0 TRANSIT AND THE PROTOCOL

In March 2005, Transit became one of the early signatories to the New Zealand Urban Design Protocol, in order to improve its performance with urban design. The Protocol is a key government programme of action addressing how good urban design can better contribute to the development of New Zealand towns and cities. The objective of the Protocol is to promote and encourage high quality urban design by influencing government and private sector activities as they interface with design issues.

Transit became a signatory to the Protocol as it recognises the significant role the state highway network plays in defining and influencing urban and rural areas, their function, appearance and the quality of life within them, which makes state highways powerful instruments of urban design.

Placing an urban design framework around a Transit project assists Transit to identify and integrate key issues early in the project development process. This ensures Transit meets its statutory requirements, particularly those under the Land Transport Management Act 2003, which focus on safety, integration, responsiveness and sustainability. Through recognising issues early, Transit is able to identify its funding needs more accurately in the design and construction phase of a project through to providing ongoing maintenance post construction. This is particularly important given the current environment of rapid and intense development in which Transit operates.

Transit's primary contribution to the Protocol is the delivery of a state highway network that has a high level of functionality and at the same time is sympathetic to the natural, built and social environment. The high level of functionality helps promote prosperity and economic growth.

A number of urban design components are outside of Transit's core business as an infrastructure provider. In these instances Transit has the ability to collaborate with other stakeholders and advocate for quality design initiatives, which will often require local authority and community commitment and funding.

3.0 THE INTEGRATION OF URBAN DESIGN INTO TRANSIT BUSINESS

3.1 IMPLEMENTATION

The Transit Board has endorsed a set of *Urban Design Implementation Principles* to help guide Transit in implementing urban design. These principles are consistent with Transit's commitment to the Protocol and the broader concept of sustainable transportation. Furthermore, the principles are part of the response from Transit to balance increased community expectations with the need to ensure projects deliver value for money.

An Urban Design Team at National Office has been established to support the implementation of urban design. The team's goal is to ensure that urban design is integrated into all areas of Transit's business, from planning and construction to everyday maintenance of the state highway network.

To avoid reinventing the wheel, Transit has looked to the Roads and Traffic Authority in New South Wales for guidance on urban design and its relationship with the transport system.

In May 2006, Transit's first series of urban design workshops were conducted in Transit's four main regional offices. The purpose was to help close the gaps between policy and practice. The workshops were very successful and Transit will continue to provide training for staff in the future, with a particular emphasis on profiling useful case studies.

3.2 WHERE IS TRANSIT HEADING WITH URBAN DESIGN?

Urban design is a learning and evolutionary process for Transit. The importance of considering opportunities early and avoiding (to the extent reasonable) effects 'beyond the pavement' is continuing to be embedded alongside the key drivers of safety, efficiency and affordability.

The Protocol provides Transit with a tool to work with other signatories, such as Land Transport New Zealand and local authorities to produce good urban

design outcomes in partnership. This is particularly important when opportunities arise from a Transit project but are the funding and implementation responsibilities of others.

By incorporating urban design at the outset of a project and having multi-disciplinary teams involved, Transit is able to ensure that the proposed transportation solution effectively incorporates environmental, social, engineering and economic elements into a project. The project scope can then be valued by using quantitative and qualitative values to ensure it will deliver value for money and meet the statutory requirements of Transit and Land Transport New Zealand.

The planning and funding requirements in which Transit operates provide Transit with the opportunity to ensure that state highways are planned, built and operated with a context sensitive approach. To ensure this happens, Transit is currently undertaking the following work:

- Continuing to develop Transit's position that urban design is a context sensitive approach to highway planning, construction and maintenance;
- Working with local authorities, community groups and other stakeholders to ensure common goals are reached in the management of the state highway network and co-funding is achieved where appropriate;
- Amending Transit professional services manuals in order for the urban design expectations to be explicit in the tendering of contracts for the different phases of project development;
- Developing a professional services guide on urban design to provide direction to Transit project managers and their teams on how and where to implement urban design in the planning, design and maintenance of any state highway work;
- Reviewing and working with regional Transit staff on transportation studies and capital projects to ensure urban design is appropriately considered; and
- Working with Land Transport New Zealand to ensure that urban design is further integrated into the funding application process, for example by including urban liveability in the assessment criteria.

The challenge for Transit is to incorporate urban design into all of its business practices early on to ensure a context sensitive approach can be provided in cost effective ways. It is important that an urban design framework is placed not only around larger projects but also smaller capital and maintenance projects. This is necessary in order to capture the small opportunities that arise when Transit makes gradual improvements to the network.

4.0 A 'CONTEXT SENSITIVE' APPROACH

A key urban design element, which has been pursued by Transit in incorporating urban design into its business, is that of a context sensitive approach, or context sensitive design.

Transit's long term vision for the state highway network and a goal that it is actively working towards is to ensure that a context sensitive approach is taken to any new state highway work in order to achieve integration and alignment of the state highway network with the surrounding area and landuses, while maintaining traffic performance.

The concept of context sensitive design is that state highways need to fit in sensitively with the environment through which they pass and also have a positive influence in physically shaping and transforming such environments where it is appropriate.

To achieve this, Transit must ensure that all environmental treatments (such as storm water facilities and ecosystem protection), economic development drivers (such as access for businesses and services), engineering factors (such as road design being safe and functional) and social requirements (such as avoiding social severance, providing good access for pedestrians, cyclists, public transport uses and local traffic) are incorporated into the design of the state highway from the outset. By providing a context sensitive approach early in the planning process, Transit can deliver on its commitments to the Protocol in a cost efficient manner.

5.0 CASE STUDIES

The following case studies focus on how Transit is contributing to delivering good urban design. The case studies focus on two of Transit's major infrastructure projects, the Newmarket Viaduct and the Northern Busway. A case study has also been included on the Christchurch Urban Development Strategy, a planning project in which Transit is one of the key stakeholders.

The case studies highlight the challenges of incorporating urban design successfully into Transit business, including collaboration, funding, addressing historical inadequacies and the importance of having multidisciplinary teams involved from the outset.

The approach by Transit for the Newmarket Viaduct has seen a focus on the urban fabric beneath the Viaduct. For the Northern Busway it has been about Transit responding to a community's needs by providing travel choice. The Christchurch Urban Development Strategy highlights a higher level strategic approach by Transit to collaborate with its partners in order to achieve good urban design outcomes at a sub-regional level.

5.1 NEWMARKET VIADUCT

Urban design has become one of the key elements of the Newmarket Viaduct project. The Viaduct sits within a complex urban area, steeped in history with a variety of land uses from historic residential villas to modern car yards, boutique retail outlets and thriving commercial activities.



Newmarket Viaduct

The Newmarket Viaduct project is part of wider works being undertaken to reduce congestion on Auckland's Central Motorway Network. The project involves replacing the existing Viaduct structure and adding a fourth southbound lane between Gillies Avenue and the Green Lane Interchange.

Transit is taking a context sensitive approach to the project. This is achieved by not only being concerned about the structure and aesthetics of the new Viaduct, but also the existing urban form and use of land under the Viaduct, which is less than ideal.



Existing landuse under Viaduct

Transit proposes to address the landuses beneath the Viaduct as part of the project in order to allow and encourage greater community connectivity and flow between north and south Newmarket.

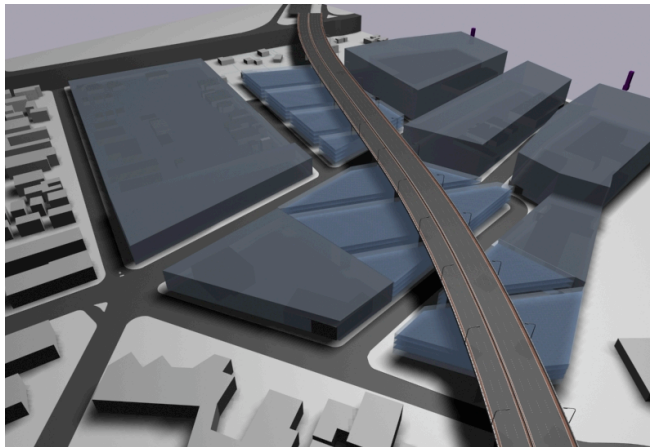
5.1.1 Urban Design Assessment

Transit commissioned an Urban Design Assessment of the project, consistent with its Urban Design Implementation Principles. The Urban Design

Assessment included a workshop with the multi disciplinary project team and an external peer review.

The workshop looked at both the aesthetics of the Viaduct and the landuse beneath. In terms of aesthetics, it was agreed that the new Viaduct be a slim and elegant structure similar in form to the existing structure. For the landuse beneath the Viaduct, it was agreed that four different scenarios be explored as potential urban design solutions, including:

1. Urban infill;
2. Urban infill with open space beneath the Viaduct for maintenance access;
3. Open space; and
4. Do minimum, for example improve the existing carparking area.



*A landuse option for
under the Viaduct*

5.1.2 Notice of Requirement

The Urban Design Assessment was documented and used to support the project's Notice of Requirement for designation. The hearing to consider the Notice of Requirement was held in July 2006. An outcome of that hearing was that a number of urban design conditions have been attached to the designation. These include the development of an urban design framework by an urban design working party, comprising Transit, Auckland City Council and iwi. This condition formalises the urban design initiatives Transit had undertaken prior to the hearing.

Transit is committed to developing this framework in collaboration with its partners. However, Transit's funding is limited by its statutory mandate. Given this, it will be important that the desire for improved urban form under the Newmarket Viaduct is balanced with safety and operational requirements as well as funding challenges, including development costs and commercial opportunities.

5.2 NORTHERN BUSWAY

The Northern Busway project is a partnership between Transit New Zealand, North Shore City Council, Auckland Regional Council and Auckland City Council. The project exhibits good urban design practices through collaboration of the stakeholders regarding funding, transport choice and improvements to the northern motorway to provide for a Bus Rapid Transit (BRT) system, thus improving modal choice in the North Shore. The busway project, while also addressing a number of environmental challenges and historical inadequacies regarding transport choice on the North Shore, has exhibited a context sensitive approach by responding to the needs of the community for different travel options in a manner that maximises the use of existing corridors rather than creating new ones.

5.2.1 Bus Rapid Transit System

BRT is a city bus system that works in a similar way to a train system, where local services feed into a central network. The Northern Busway (busway) will form the 'central spine' of North Shore City's planned BRT system. The project when completed will consist of interconnecting services within North Shore City linking to the high frequency busway and its stations.

5.2.2 Busway Design

The busway comprises a 6 km dedicated two-way roadway for buses in both directions and high occupancy vehicles (HOVs), having southbound access only in the morning peak. Bus stations will be located at Albany, Constellation, Sunnynook, Westlake and Akoranga and will act as transfer stations between the busway roadway and the local street network. The busway has the potential to be converted to light rail in the future, should this be required.

Busway route map



Stations will be the exit and entry point for buses and HOVs, and will cater for passengers arriving by foot, bike, car and bus. Albany and Constellation stations will have park and ride facilities. Passengers will also be able to transfer between bus routes at the stations.

The busway infrastructure of bus lanes and busway stations will provide good integration and connection between a local and regional bus network, which are key elements of good urban design. This will provide an improved passenger transport service both within North Shore City and over the Harbour Bridge to central Auckland via Fanshawe Street. In peak times, buses are expected to run every five minutes along the busway itself and every 15 minutes from most residential areas along main suburban routes.



Example of the Brisbane busway



Albany Park and Ride Station

5.2.3 Funding

The collaboration of stakeholders on this project has been particularly important given that it has required funding from a number of different stakeholders.

Whilst the busway itself has been developed by Transit and funded by Land Transport New Zealand, the BRT related elements including local roading priorities, suburban bus stations, real time passenger information, on-street bus priorities and road widening have been funded by North Shore City Council and Auckland City Council.

North Shore City Council has funded the busway stations with the assistance of a \$40M grant from Infrastructure Auckland that is now administered by the Auckland Regional Transport Authority (ARTA). The costs associated with new bus services are met by the ARTA.

The busway, related interchange upgrades, and improvements to the public transport services throughout the North Shore will provide a real alternative to private car use and is particularly important for those without access to a car. A choice of transport helps the environment, provides more equitable access and improves the liveability of urban areas.

5.3 CHRISTCHURCH URBAN DEVELOPMENT STRATEGY

Although there are few formal mechanisms for collaboration or inter-modal and inter-sectoral planning related to transport and population growth, Transit now takes a more strategic approach to state highway planning that seeks to integrate transport planning with wider planning for land use and economic

growth. An integrated approach is recognised by Transit as being fundamental to achieving good urban design outcomes. One such example is the Christchurch Urban Development Strategy that is currently being developed.

Christchurch is the largest city in the South Island, and serves as the gateway to international markets for trade via the Christchurch International Airport and the Port of Lyttelton. Christchurch is frequently the starting point for many tourists traveling around New Zealand's South Island. Waimakariri (a neighbouring district) is one of the fastest growing districts in New Zealand. This combined with other factors such as significant greenfield development has led to increased pressure on the transport networks in and around Christchurch City.



Project Area

Transit's response to the current and projected growth in and around Christchurch has been to collaborate with local authorities (the Selwyn and Waimakariri district councils, Christchurch City Council and Environment Canterbury) in the Greater Christchurch Area to establish an Urban Development Strategy (UDS). The purpose of the UDS is to investigate where growth and change might happen in the region and how this is to be managed and planned for. A number of areas of growth have been identified that have the potential to be built up and made more accessible by public transport and roads, while conserving environmental areas and unique character.

Transit is particularly supportive of such comprehensive planning in order to manage growth in Christchurch and in order to plan and prepare for projects that require Transit funding. As a result of working on these planning issues from the outset, Transit and its planning partners are well positioned to achieve integrated landuse and transport outcomes for Christchurch in which quality urban design solutions can be realised.

6.0 CONCLUSION

The state highway network can have great impact on built and natural environments. However, if designed and managed sensitively it can positively contribute to how our communities form and function.

Incorporating urban design into Transit's business will assist Transit to scope its projects more effectively and deliver its statutory objectives. It is an evolving long term process that will deliver long term benefits to New Zealand.

Urban design provides Transit with value for money solutions. Adopting an urban design approach has cost benefit advantages in the long term, particularly through savings in long term maintenance and the reduced need for lengthy statutory approvals. However, it needs to be integrated into the planning and design process from the outset, hence Transit's on-going focus on up-skilling staff to recognise opportunities early and act on them.

Ensuring that urban design is integrated from the outset will take time to achieve. However Transit is dedicated to improving its performance with urban design, particularly through the delivery of context sensitive solutions that meet Transit's *Urban Design Implementation Principles*, thus making a positive contribution to vibrant and healthy communities.