

125 URBAN DESIGN

Winter 2013
Urban Design Group Journal
ISSN 1750 712X — £5.00

MIXED STREETS



URBAN
DESIGN
GROUP

LIVEABLE ARTERIALS IN AUCKLAND CITY

Ian Munro and Ross Rutherford present New Zealand's first urban design-based transport plan

The management of Auckland City's arterials has historically followed a predict-and-provide strategy of network capacity improvements and widening, until it became apparent that the spatial and financial costs of continuing this approach were unbearable. Additionally, the Council adopted numerous strategies, most of which implicitly depended on the arterial network, including an urban intensification strategy for the city's centres (all on arterials). This will require the reprioritisation of road space and amenity to support and attract living and recreating within arterial corridors.

Key network characteristics included:

- Many arterials at 20.1m wide with 14.6m carriageways, significantly limiting what could be accommodated. The costs of acquiring land for further widening were unbudgeted and would run into billions of dollars;
- Most arterials were consistently carrying over 20,000 vehicles per day (vpd), with the busiest carrying over 40,000vpd. This equates to an increased pressure from two to four (or more) vehicle travel lane outcomes per street;
- Passenger transport plans called for permanent bus lanes and associated facilities on many of the arterials, including the busiest;
- Pedestrian and cycle plans called for facilities on many of the arterials, including the busiest;
- Land use plans called for a significant amenity shift in favour of those living and transacting on arterial streets rather than those driving through them; but
- Despite the above, freight and general transport plans called for less congestion and improved travel times for all vehicular modes;
- The network was relatively well connected although there were many instances where topography and historical development choices restricted the provision of supporting road networks adjacent to main arterials, limiting opportunities to disperse or spread flows;
- Where local networks did exist, they were usually managed to deliberately restrict through movement. This forced more traffic onto arterials than was actually necessary, contributing to congestion and spatial conflict; and
- Arterial intersections were becoming increasingly 'blown out' with additional through and turning lanes. Major grade separated interchanges were being more frequently mooted by the engineering fraternity.

Dominion Road (20.1m–25m wide) provides an excellent example of this contested arterial network space, carrying more than 30,000vpd in 2006. Relied upon as an important link for general traffic, passenger transport, pedestrians and cyclists, it



is also very developed with businesses and other urban activities, often built to the road boundary. Moreover, there are plans to intensify the street along most of its length.

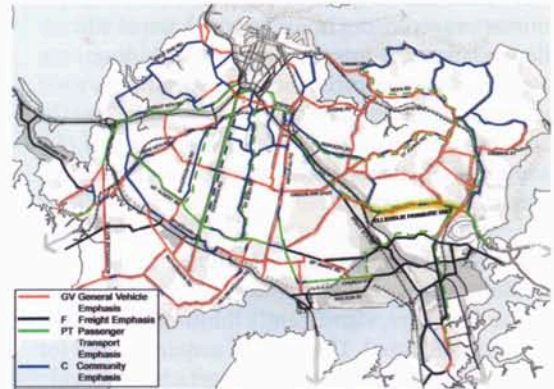
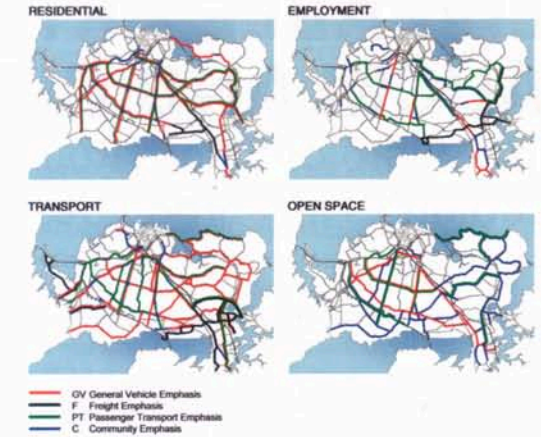
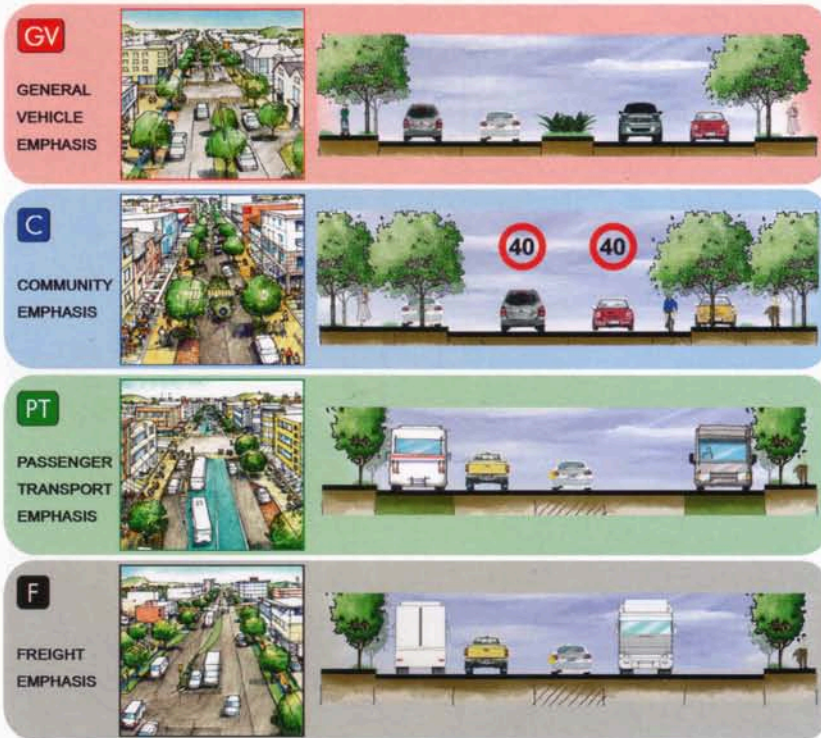
THE LIVEABLE ARTERIALS PLAN

The answer to this conundrum, the *Liveable Arterials Plan*, was New Zealand's first network-wide transport plan based on an urban design-led process. It set out a 25-year framework for the management of arterial roads in the city and incorporated a number of innovations, including that integrated design, rather than transport models and fixed engineering standards, should be the primary shaper of road space.

The project was anchored around a series of inquiry-by-design workshops informed by issue-specific research. These involved a core team of 20 to 25 senior-level practitioners from consultancies and the council. First, a number of parallel technical themes were identified as the key issues around which an equitable and informed design negotiation could commence: regional dynamics, transport, open space networks, community infrastructure, activity centres, residential growth and economic development.

Second, a selfish depiction of arterial network objectives, issues, opportunities, and constraints from the point of view of each theme, was explored.

↑ Dominion Road, Auckland



Those responsible for each theme had to justify and sell their priorities to the wider group, and the limits that this would set on the space and opportunities available to others. The process identified the place-specific competition between key priorities that for the first time could be understood across the whole network.

This solution would not have arisen in the absence of an urban design process that forced the issues onto the same table and a design innovation to resolve the conflict.

Third, based on this, a toolbox of four arterial segment typologies was identified and agreed by consensus. Each typology represented a particular set of emphases, reflecting this within a model of the scarce road space available. The typologies were Community, Passenger Transport, General Vehicle and Freight. Rather than inflexible standards, each was designed as a framework of spatial and functional priorities to be worked through in succession until available road space had been consumed. Whilst accommodating as much as possible for as many as possible, the process accepted that hard choices would on occasion need to be made.

Finally the arterial segments were allocated across the network in a way that would best implement the preferences of each theme. The composite of these created a form of common language that identified the actual spatial problems at hand. The issue then became a spatial and technical challenge of identifying design

solutions rather than a moral question of which amongst competing policy interests was the most right. Extraordinarily, this led to such buy-in and acceptance of how integrated the issues were across the network, that participants actively started breaking down their silos and looked to help solve problems associated with other themes, as well as their own.

For much of the network there was a ready consensus on the way forward. Those corridors that presented particular challenges were subjected to place-based analysis exploring different opportunities within those corridors. These design tests varied from 1:500 to 1:1000 scales, on corridor roll plots of up to 10m or longer. In one case, for example, the tension between community advocates seeking a high-amenity and low-intensity road edge interface with land uses, and passenger transport advocates seeking provision for high-speed high-frequency buses, was resolved through a design solution previously unheard of in Auckland, that provides permanent bus lanes in the centre of an arterial. This solution would not have arisen in the absence of an urban design process that forced the issues onto the same table and a design innovation to resolve the conflict.

With such design intelligence, each theme re-visited its segment allocation preferences to resolve areas of the network where disagreement remained. These revised preferences were again overlaid, and remaining competition was subjected to a further and enhanced round of design testing, investigation and debate. This was repeated until a consensus for the network was reached. The process resulted in a cross-disciplinary agreement for the arterial network, as well as an unprecedented understanding of how the network as a key part of the urban system could support

↑ Arterial segment typologies
 ↗ Allocating the arterial segments
 ↗↗ Final Liveable Arterials Plan

or repress the different objectives of the different disciplines over time.

IMPLEMENTING THE PLAN

The *Liveable Arterials Plan* is implemented through Corridor Management Plans (CMPs), each taking a 20-30 year corridor-specific transport and development vision for an arterial, including the street and related land use catchment. A number of CMPs have been undertaken in accordance with the *Liveable Arterials Plan*, each following the same multi-disciplinary, urban design-led format. This, in conjunction with the comprehensive process underpinning the *Liveable Arterials Plan* itself, allows CMPs to break new ground in land use/ transport integration.

Whereas previous CMPs had been criticised for taking an almost singular view on accommodating predicted transport flows, the new CMPs included clear land use consequences, concepts and possibilities. For the first time, plans emerged that explored the way in which – depending on anticipated timeframes – changes in the road could not only support but help induce identified land use changes, and vice versa. This involved, in some instances, recommendations to accept carefully managed peak period congestion, based on securing the optimum overall outcome for the city.

By way of example, Ellerslie has been identified as an important urban growth centre over the next 30 years and is defined by its 20m wide main street. The street space was hotly contested, with priorities expressed for permanent bus lanes and cycle lanes, a pedestrian-focussed street and retail environment that appealed to residents and shoppers, landscaping and amenity space, and on-street car parking. Conventional approaches would have simply identified travel lane and bus lane requirements as the most important in the space available, and installed them to the detriment of the other identified priorities. But through a comprehensive urban design process an alternative outcome was identified that diverted buses and enabled the re-prioritisation of space within the main street to a more pedestrian and amenity-based outcome.

LESSONS LEARNED

The *Liveable Arterials Plan* and subsequent CMPs succeeded in introducing a new way of thinking about arterials and how they are managed. It has demonstrated that professionals from different disciplines can overcome their conflicts and prejudices, to produce outcomes that otherwise would not have arisen. Urban design acted as an effective unifying influence in this regard, from which some key lessons were learned:

- **Don't integrate too soon**

The process highlighted the need for successful integration to be based on a level playing field and mutual respect between participants and inputs. Perhaps counter-intuitively, this meant that the process of synthesising and integrating could only be undertaken after an initial period of deliberate non-integration to ensure a full understanding of the different professional perspectives.



- **Good process alone can't cut it**

The whole council was committed to the Plan and this was reflected in the seniority of participants that were made available for the project's duration. Later CMPs had a lower profile and inconsistencies in participant experience became at times problematic. Junior practitioners are often unable to commit organisations to the risky design innovations proposed.

↑ Ellerslie Town Centre concept

- **Urban design is not yet a universal language**

The Plan was so integrated and iterative that practitioners not involved in the process or unfamiliar with urban design have not always accepted its outcomes at face-value. The Plan could have been disaggregated at its conclusion into discrete discipline-specific versions. This would have allowed each technical discipline involved in implementation to have its own Liveable Arterials sub-Plan based on terms, contexts, justifications and logic familiar to each.

- **Application to Urban Planning**

To urban planners and designers, it is no longer acceptable to describe arterials in terms of conventional engineering-based hierarchies and codes. These have been shown to leave too many important spatial outcomes and design innovations to chance, or as nice-to-have add-ons. ●

● Ian Munro, Senior Associate, Urbanismplus Ltd, Auckland
 Ross Rutherford, Director, Transport Planning Solutions Ltd, Auckland