

BANKSTOWN CBD URBAN RENEWAL SO FAR

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Abstract

The Bankstown CBD is a major centre within the greater Sydney metropolitan area situated 18 km from the Sydney GPO.

In 2005 Council completed a Transport, Traffic and Public Domain Improvement Plan the centrepiece of which was the opening up of the Bankstown City Plaza pedestrian mall to bus traffic at the railway station after being closed for 30 years.

The objectives of the plan were to:

- Improve the economic viability of the Bankstown CBD
- Provide a north-south bus route through the CBD
- Develop space for high quality urban design enhancements and a safe pedestrian environment working in partnership.

Council's objectives meshed well with the New South Wales Government's 2005 Metropolitan Strategy providing the confidence that the proposals would be relevant over the longer term. It also enabled joint funding arrangements for various stages of the Bankstown CBD Bus Corridor and Interchange works that formed part of Council's CBD renewal program.

This paper looks at the impact of major infrastructure works on the Bankstown CBD over time and focuses on the recent Bankstown CBD Bus Corridor and Interchange projects.

Key Words: Public transport, public domain, project management, strategic planning.

Introduction

The Bankstown central business district (CBD) has changed over the years, as do most growing communities.

This paper firstly looks at the role of major infrastructure works on the Bankstown CBD's past development. Then it focuses in particular on a number of recent related infrastructure projects, which together are expected to not only transform public transport in the Bankstown CBD but also provided an impetus for the future development of the City.

The Bankstown CBD Bus Corridor and Interchange is a major component of works that form part of the City's CBD Renewal Program. It involved four coordinated projects completed over three years at a total cost of over \$10m. In May 2009 the Bankstown CBD Bus Corridor and Interchange won the IPWEA NSW Engineering Excellence Award

for Design and/or Construction of a Local Government/Public Works Project.

Bus operations commenced in the corridor on 8 December 2008 and the benefits of an improved public transport system for both local and regional bus routes in the Bankstown area are already becoming evident.

A Bit of History...

The Bankstown municipality came into existence in 1895 and the Bankstown town centre moved to the current site in 1908 in conjunction with the construction of the railway. The railway opened for business on 14th April 1909 incorporating the road bridge over the railway line at the station.

In 1928 the Bankstown Line was the second railway line in Sydney to be electrified, and this heralded in a period of significant growth that was only exceeded by the post-war boom of the 1950s.

Old Town Centre Plaza

By the 1970s an estimated 20,000 vehicles a day were using the overbridge at Bankstown railway station. A Council study in 1973 identified some deficiencies in the old part of the Bankstown commercial area, including:

- Heavy volumes of through traffic
- Noise and air pollution
- Pedestrian safety
- Lack of car parking

This resulted in proposals for the creation of the "Old Town Centre" the objectives of which, were to:

- Improve the economic viability of the shopping centre;
- Improve environmental quality of the centre;
- Provide a focus for community activity in Bankstown."

As part of the construction of the Old Town Centre Plaza project the railway bridge at Bankstown station was closed to traffic and works were completed in November 1979.

The Old Town Centre was hailed as a success, winning a merit award for its designer. The Sydney Morning Herald noted on 27 August 1980 that:

"Without doubt Bankstown City Council in the western suburbs has created one of the most imaginative pedestrian shopping plazas in the country."

A feature of the Centre was the large number of trees and shrubs that contributed to producing what was described as a "pleasant pedestrian haven".

However as the plantings matured there were increasing concerns of poor illumination in certain parts caused by tree canopies obscuring the light standards. This was considered to threaten security contributing to growing anti-social behaviour and Police were requested to increase foot patrols.

Bankstown City Plaza

Also by the early 1990s there were again concerns being raised in regard to the commercial viability of businesses in the

Plaza and there was a big move to reintroduce some traffic into the centre.

Council commissioned a new streetscape design that involved changing some of the pedestrian areas to "shared zones", either side of the railway line and adoption of CPTED (*Crime Prevention Through Environmental Design*) principles.

The project was completed in 1999 and the new arrangements were generally accepted as benefiting the business community.

Subsequently this approach and its implementation were reviewed to determine further lessons for the future. Among these were:

- The project was not part of an overall strategic plan for the CBD.
- The political imperative for a quick solution required that the project was fast-tracked allowing insufficient planning, scoping, design problem solving.
- Some materials and construction methods adopted did not take into account longer-term asset management objectives and resulted in ongoing maintenance costs.
- There was an emphasis of private vehicle access rather than public transport needs.
- The strong emphasis on CPTED principles, particularly in relation to sight lines and openness, led to a rather sterile environment.
- Organisationally, Council was not set up to effectively deliver a project of this scale

Positives from the project were:

- The implementation of CPTED principles improved safety in the centre.
- It provided a successful transition phase from the earlier village (Old Town Centre) environment to that of a future Major regional centre.
- There was acceptance of introducing traffic back into what had been solely a pedestrian precinct.
- The overbridge to the railway line was a timber structure and found to be unsafe. It was replaced as part of project with a prestressed concrete structure to T44 standard.

Planning for the Future

Like communities everywhere Bankstown has endeavoured to articulate its own identity and vision for the future. A more strategic look at the CBD, plus lessons from the past, provided a framework for better articulating that vision.

Transport deficiencies had long been recognised and this issue was identified as a major driver of future development involving the follows issues:

- Bankstown has a relatively high reliance on private transport.
- Good rail access exists with in both the north and south of the LGA by virtue of the Bankstown and East Hills rail lines.
- Bus transport was characterised by a number of private bus operators (plus one State Transit Authority service) utilising two terminuses adjacent to the north and south sides of the Bankstown railway station.
- The lack of ready vehicle access through the CBD was seen as a real impediment to the centre's future - the only central cross-CBD vehicular route was the narrow 2.4m high railway Underpass

As a result Council undertook a series of transport related studies for the Bankstown CBD.

The Bankstown Transport Issues Report (November 2002) – This analysed and assessed the following:

- Impacts of future growth
- Vehicle access into and through Bankstown
- Public transport servicing
- Traffic management
- Pedestrian access parking provision
- Potential transport solutions

The Bankstown CBD Transport Study (October 2003) – This second phase developed options to support the master planning process.

It was recognised that the development of transport, traffic and parking solutions was an important part of the master planning process and must integrate effectively with the urban design and future planning of the centre.

Among the recommendations of the report were:

- A bus through-routing system in Bankstown
- Construction of a new underpass to the rail line
- Implementation of bus lanes to support through-routing
- Progressive upgrading of the existing five multi-storey car parks within the CBD
- Urban design and safety treatments near the entrance to the railway station.

The next stage of this process looked specifically at improving bus access through the centre by considering railway crossing options, including:

1. Overpass and underpass options immediately east of the station
2. An expanded underpass east of the existing Underpass
3. An overpass adjacent to the existing bridge at Stacey Street
4. Opening up of the Plaza by construction of a bus roadway over the existing railway bridge.

Over a number of years extensive in-house investigations had looked at options for north-south bus access under or over the railway line between Stacey Street and Marion Street.

These investigations finally resulted in the elimination of all but the Option 4 recognising that in both practical and financial terms it was the most viable solution.

This was based on:

- The constraints imposed by the existing road network.
- The high cost of long underpass or overpass structures near the station required to achieve acceptable gradients.
- The flooding risk associated with the Sydney Water channel (upper reaches of Salt Pan Creek) through the existing Underpass
- The remoteness of the Stacey Street bridge from the centre (approx. 500m).

There was strong opposition to opening up the existing railway bridge from its being a

pedestrian precinct until all other crossing options had been eliminated.

Perhaps the most decisive factor was that the existence of the prestressed concrete bridge at the station meant that the major cost associated with the construction of a new structure, either under or over the railway line, would be averted.

These issues were reviewed and resulted in the May 2005 *Bankstown CBD Strategy, Central CBD Transport and Access Plan*, which together with the public domain improvement plan was subsequently adopted by Council.

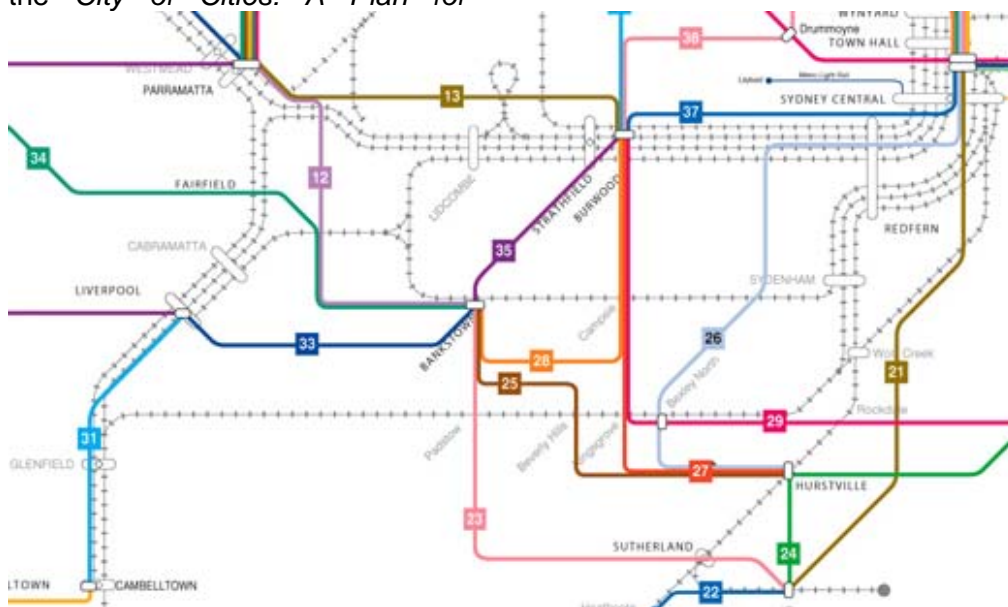
New South Wales Government Involvement

In December 2005 the NSW Government released the *City of Cities: A Plan for*

Sydney's Future. Its objective was to support continuing economic growth, based on anticipated population, economic and demographic trends.

The Subregional Strategies were designed to translate objectives of the NSW Government's Metropolitan Strategy and State Plan to the local level. In the West Central Subregional Strategy, one of the key directions was the "promoting Bankstown as a Major Centre".

An input to this strategy and a main impetus for the State Government's involvement in the Bankstown CBD project was the Final Report of the Hon Barrie Unsworth's Review of Bus Services in NSW released by the Minister for Transport Services on 17 March 2004.



Seven regional corridors through the Bankstown CBD and the relationship with the rail network

This was a wide-ranging report covering the whole state and among the recommendations for the Sydney Metropolitan Network were:

- The Government should progressively implement ... a network of viable strategic corridors to provide fast, frequent, direct and convenient links to regional centres. The identification of suitable corridors should be finalised on the basis of patronage modelling results and stakeholder inputs.
- The network of Strategic corridors should be underpinned by 10 contract regions in the Sydney metropolitan area...
- There should be one contract per contract region...
- Within each region, provision of bus services along the strategic corridors should be integrated with local bus services
- Identify ... opportunities to integrate bus services with rail and ferry services where appropriate

In terms of the impact on the Bankstown CBD, it meant:

- A rationalisation of bus services within a new consolidated contract area
- The need for a through route for buses in CBD
- An opportunity to better integrate bus and rail services

Council's 2005 Bankstown CBD Transport, Traffic and Public Domain Improvement Plan was a consolidation of the findings of previous studies and the State Government Unsworth review. It provided a clearer vision for the future of the Bankstown CBD, identifying the following objectives:

- A centre that was attractive and safe for the general community that would also be commercially viable into the future.
- Ensure high quality public domain as an investment in the future
- High quality public transport facilities that would encourage community use.
- Create an identity for the public domain that is unique to Bankstown.

It also facilitated entering into a joint enterprise with the New South Wales Government. The advanced nature of Council's planning and concept feasibility led to an early implementation of the Bus Corridor.



Bankstown Bus Corridor

The Bus Corridor and Interchange

The program of works making up the overall project, and funding, included:

- Bus Corridor Stage 1 - RTA
- Bus Corridor Stage 2 – RTA
- Bankstown Plaza Upgrade – Council
- Bankstown Bus Interchange – MoT
- Centro Bankstown Bus Facilities – MoT

To delivery this program it was obvious that a more disciplined project management approach would be necessary. Since the 1997 project, more rigorous systems and procedures were in place at Council, plus

staff with the additional requisite skills and experience enabling a better project management approach.

Project Design

There were some significant design challenges involved in this project. The concept relied on constructing the bus corridor, and the interchange, within the available space of the existing road reserves. Some railway land was available adjacent to the station but was only available for landscaping purposes.

The design for the complete project was managed by Council staff with specialist consultants engaged as required.

The principal design elements of the overall project were:

- Civil and traffic engineering design of the bus corridor roadway and adjoining streetscape upgrading.
- Bus interchange layout and operation design, also including Centro Bankstown

bus facilities upgrading and associated on-street works for bus layovers and pedestrian facilities.

- Structural design, including RailCorp approval, for bus corridor works on the railway bridge.
- Architectural design of the interchange structure based on in-house developed concept.



Bankstown CBD Bus Corridor and Interchange

The bus interchange design was driven by its operational needs where there were specific requirements for:

- The drive through nature of the interchange – pick up and set down with no layover space within the interchange
- The number, length and location of stands for a “head of rank” operation
- The provision of separate remote layover areas to cater for driver meal breaks, time between finish and start of runs, rail bus operations, etc.

The initial design allowed for a total of more than 1,100 bus movement per day through the interchange with maximum of 86 buses per hour in the peak. This also defined the

extent of the bus / pedestrian conflict to be experienced at the pedestrian crossing point on the railway bridge.

External consultants in conjunction with the two private bus companies, State Transit Authority (STA) and Council's designers addressed issues including:

- Providing a layout that provided effective bus - rail interchange.
- Identification of bus stand requirements in a rationalised service environment.
- Catering for future increases in bus services.
- Effective signage at the interchange plus catering for desired future provision for electronic signage.
- Provision of level of adequate shelter for bus passengers.

- Providing a facility that fitted with existing commercial environment.
- Providing for effective bus operations while minimising the disruption to general traffic.

RTA and MoT grant funding was provided on the basis of detailed designs, specifications and cost estimates. A requirement for the funding was a commitment by Council to the fixed estimated amounts to which any over expenditure would be the responsibility of Council.

Railway Bridge

The whole project relied on the use of the existing railway bridge by buses.

RailCorp's requirements for bus usage of the bridge were very stringent. The concern was that errant buses could leave the roadway and end up on the rail tracks. This risk had to be virtually eliminated and thereby influenced the whole design for that area.

A crash-proof barrier was required on top of the T44 bridge deck either side of the bus roadway. This was complicated by a necessary break in the wall for a pedestrian crossing of the roadway on the top of the bridge at the station entrance.

The resulting crash barrier over the bridge was in the form of a reinforced concrete wall capable of containing a bus collision at 40 kph. The wall was extended along the approached to the bridge to other pedestrian signalised crossing points to ensure efficient bus operations while providing optimum access for pedestrians throughout the Plaza. The pedestrian crossing on the bridge at the break in the wall required two significant bollards either side of the roadway to provide the required collision resistance.

The design was approved by RailCorp but subsequently modified at the request of the contractor to avoid risks associated with drilling into the prestressed bridge planks during the construction and that might impact on train services.

A Deed of Agreement was formalised with RailCorp in relation to both the construction and on-going maintenance of the bus

roadway on railway bridge and for the associated streetscaping. It set out the limit of responsibilities for both parties in relation to the ownership of the bridge and the Council "facilities" constructed on the bridge.

This Deed, based as it is on RailCorp's risk assessment, is expected to fulfil the requirements of an *Interface Agreement* under the Rail Safety Act 2008, for which all rail crossings are required within the next few years.

Streetscape

The fundamental landscaping change from the project was to convert the open pedestrian plaza and shared zones back to a traditional roadway and footway configuration.

The public domain design incorporated high quality granite paving on a concrete base as being a cost effective treatment over the life of the pavement. The granite provided:

- High strength and durability
- Material longevity
- Hard surface able to resist point loads from outdoor furniture

The bus corridor barrier walls had the advantage of disguising changes on levels between the road and footways and providing effective barriers to reduce the potential for bus – pedestrian conflict. The latter is important because of the change from a completely open pedestrian environment to one involving high volume bus activity.

Bankstown Interchange

The interchange structure was designed as a steel and glass structure to provide a balance between adequate shelter and openness with maximum, although filtered, light. It also had to blend in with the existing shopfronts.

Challenges for both design and construction centred on the ability of a slim-line design catering for necessary services including lighting, CCTV, stormwater disposal, etc., which also provided for maximum visual penetration to existing retail businesses.

Centro Bus Facilities

An integral part of the CBD bus operations were the bus facilities at Centro Bankstown

that were constructed as part of the Bankstown Square shopping centre in the 1960s. These had operated very successfully since that time but also needed upgrading to cater for the increased bus traffic.

Working collaboratively with Centro Bankstown management, the existing terminus within Centro property was redesigned to cater for an almost doubling of bus traffic.

Construction

The final layout design emphasised the operational efficiency of the interchange in relation to bus movements and the travel paths through the bus corridor and over the bridge. There was little room for changes to the layout and this necessitated preconstruction activities involved the relocation of major Telstra services including the reconstruction of a large jointing chamber costing \$700,000. Significant watermain relocations and adjustments also had to be made.

The project construction was carried out through a number of open tenders.

- Bus Corridor Stage 1 - The upgrading of streetscape and intersection redesign in Restwell Street incorporating a contra-flow bus lane in the one-way street
- Bus Corridor Stage 2 - The construction of a bus-only roadway over the railway line and including Council's streetscape upgrading of the Plaza incorporating safe pedestrian crossing points
- Bankstown Bus Interchange - The construction of two modern 80m long shelter structures either side of the bus roadway
- Centro Bankstown - Modifications to improve traffic circulation for bus operations and pedestrian access as well as additional shelters for passengers.

The contract documentation was prepared in-house utilising AS 2124 - 1992 as the General Conditions of Contract and AUS-SPEC#2 format for contract specifications.

The documentation also included a comprehensive set of construction drawings for:

- Road design
- Landscaping details
- Retaining walls
- Drainage
- Lighting and CCTV
- Traffic management and intersection traffic signals
- RailCorp's WAE for the railway Chapel Road Overbridge Deck
- SKM structural design of bridge pedestrian crossing barriers and bollards on Overbridge
- Service drawings

The construction phase experienced some delays because of bad weather and the resolution of design issues associated with the railway bridge and the interchange structure.

Project Completion and Opening

As part of the completion phase, an Implementation Working Party of all major stakeholders was established to ensure that all the objectives were met and an effective operations start-up was achieved. This also involved additional elements of:

- Post-construction road safety audit
- Preparation of a Bus Operations Plan
- Communications planning
- Additional staff on hand for the initial operations period to assist the public's familiarisation with the new arrangements.

The working party ensured a coordinated approach to the completion of construction and the commencement of bus operations. There was particular emphasis on effective signage, both permanent and temporary, and media communications to the public.

The road safety audit identified some changes to pedestrian facilities and further possible improvements that may be required with future increases to bus traffic volumes.

Despite some delays, all projects were completed within budgets and funding allocations, as follows:

- | | |
|-----------------------------|--------|
| • Bus Corridor Stage 1 | \$1.7m |
| • Bus Corridor Stage 2 | \$2.6m |
| • Bankstown Plaza Upgrade | \$2.9m |
| • Bankstown Bus Interchange | \$2.6m |

- Centro Bankstown Bus Facilities \$0.4m

The fundamental objectives of the project were achieved and the general view of the business community has been positive.

Bus Operations Plan

A Bus Operations Plan was commissioned to document procedures and requirements for the new corridor and interchange. The objectives are to:

- Detail the bus operations
- Inform and educate all those who operate buses in the interchange
- Clearly define responsibilities of stakeholders in relation to bus operations
- Ensure bus operations within the Bankstown CBD are implemented in agreed arrangements.

This process provided an effective review that ensured the physical project deliverables met the practical operational needs of the bus companies.

It was prepared in conjunction with public transport consultants and provides a reference document that also acts as an instructional guide for bus operators and their employees.

Conclusions

The Bankstown CBD Bus Corridor and Interchange was, by any measure, a successful engineering project both from a design and construction viewpoint. However more than that, it demonstrated the importance of thorough project planning to ensure that the objectives were clearly articulated and understood.

The real success of the whole program of works will only be demonstrated in the future if, as expected, Bankstown further develops as a vibrant business and community centre. It will then have illustrated the importance of the broader strategic context for such infrastructure and that significant benefits can be derived from a coordinated inter-governmental implementation to achieve the strategic objectives.

Like most communities, it is inevitable that the Bankstown CBD will continue to change to meet the needs of the day, and

infrastructure will continue to play a central role in that ongoing development.

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Acknowledgements

These projects illustrated the broad range of skills within Local Government, and in particular at Bankstown City Council, that can be applied to deliver major infrastructure projects. The “ownership” of the outcomes of the projects at the local level proved to be a key motivator in that successful delivery by a professional team.

Major Stakeholders

- Roads and Traffic Authority
- Ministry of Transport
- RailCorp
- Centro Bankstown

Specialist Consultants

- Clouston Associates - Streetscape design
- Parsons Brinckerhoff - Traffic and bus operations
- Tomkins MDA - Interchange architectural design
- Sinclair Knight Merz - Structural design for railway bridge
- Teal Management Services - Project management of rail interface

Principal Contractors

- KJ Civil Bus Corridor Stage 1
- Sydney Civil Bus Corridor Stage 2
- GMW Urban Bankstown Interchange
- Civil Constructions Centro Interchange

Author Biography

Rowan Morrison B.Sc. (Eng.) MBA

Rowan Morrison is a Civil Engineer graduating in 1973 and with over 27 years experience in Local Government in a number of councils as well as in the private sector in contracting and consulting roles.

At Bankstown City Council he was the Manager Roads and Infrastructure for over 13 years with responsibility for the planning and commissioning of roads and infrastructure works and services. This covered areas of asset management, traffic management and road safety, infrastructure maintenance and capital works, and emergency management.

Rowan has recently taken advantage of Bankstown's flexible workforce arrangements and currently holds the position of Coordinator Planning and Assets focussing of infrastructure planning and project management.

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