MORETON BAY RAIL LINK – LOCAL GOVERNMENTS ROLE IN STATE LED INFRASTRUCTURE PROJECTS.

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Abstract

With a history that can be traced back more than a century, and with detailed corridor and infrastructure planning spanning decades, the Moreton Bay Rail Link is finally well and truly underway.

For Moreton Bay Regional Council, the outcomes achieved to date with the Moreton Bay Rail Link have re-affirmed the importance of a pro-active, strategic and energetic approach to State and Federal Government engagement, securing funding, planning and management of delivery of major, regionally significant infrastructure projects.

The involvement in the Moreton Bay Rail Link project has provided the opportunity for Council to capitalize on its investment, coordinate the infrastructure delivery with land use planning, ensure transport integration outcomes, promote effective environmental management and mobilize the necessary social and economic growth activities necessary for sustainable regional development.

The presentation will outline the Moreton Bay Regional Council’s purpose, role and partnership with the State Government in the establishment and delivery of the Moreton Bay Rail Link project and outline the benefits of “front loading” the project planning process to ensure multiple outcomes.

Take home message:

Local government involvement in State infrastructure projects can and will ensure enhanced infrastructure delivery, improved coordination with land use planning, better transport integration outcomes and effective environmental management.

Political support is essential not only to secure project funding but also facilitate community engagement and mobilize the necessary social and economic growth activities necessary for sustainable regional development.

Introduction

Many sections of the community may question the purpose and necessity of a local government involvement with the delivery of State infrastructure projects such as the Moreton Bay Rail Link.

This long awaited spur line leading off from the main North Coast Rail Line at Petrie and heading east through the suburbs of Kallangur, Murrumba Downs, Mango Hill, Rothwell and Kippa Ring on the Redcliffe Peninsula has, over history had a number of names and forms.

The first known reference to a rail link to Redcliffe dates back to the late 1800s when a local alderman proposed that a new line be built to the peninsula at an estimated cost of 200,000 pounds.

The first significant planning study to investigate the Moreton Bay Rail Link
occurred in 1978-79 when the Metropolitan Transit Authority conducted a series of planning studies into a public transport corridor between Petrie and Kippa-Ring. These investigations led to the identification of the preferred alignment for the project and the land was then acquired.

Over the last 30 years the project has been the subject of a number of further studies.

From 1999 to 2003 the Queensland Government undertook the Petrie to Kippa-Ring Public Transport Corridor Study.

This study assessed the feasibility and impact of the corridor to support the visions and objectives set out in the Queensland Government’s Regional Framework for Growth Management.

The study recommended a preferred alignment for the corridor, with the preferred transport mode being heavy rail. Heavy rail was found to be the most effective option for the following reasons:

- A single journey – extending the existing heavy rail network allows passengers to board at a station on the Moreton Bay Rail Link and continue on the same service all the way to Brisbane.
- Carrying capacity – heavy rail will better cope with increasing number of passengers in future than either light rail or a busway.
- Cost – heavy rail is similar in cost to light rail or busway, but with higher carrying capacity and faster journey times.

Based on this study, the Department of Transport and Main Roads (formerly Queensland Transport) commissioned the development of a Final Impact Assessment Study for the corridor. It concluded that the preferred corridor between Petrie and Kippa-Ring area was the original preserved corridor because:

- the land was already owned by the State of Queensland
- the alternative option would fragment existing land uses and habitat
- environmental impacts could be managed
- there was potential for 6 railway stations.

The Queensland Government’s 2003 study provided the foundation for the current project design. (Queensland Department of Transport and Main Roads (DTMR) 2014)

In July 2010 an Intergovernmental Agreement was signed between the Australian Government, Queensland Government and the Moreton Bay Regional Council to build the project, with all 3 levels of government committing funds to the $1.147B project.

**Project Facts & Figures**

Original planning for facilitation of the construction of the Petrie to Kippa Ring spur Line (Moreton Ray Rail Link) included as a separate project the State funded Lawnton to Petrie 3rd track upgrade project.

During the tendering process, the two previous projects were combined with the now combined Moreton Bay Rail Project spanning some 13.6km with a combined total funding of over $1.3B. This combined project includes:

- 13.6 km of double track rail from Lawnton to Kippa Ring;
- Grade separated rail connection to the North Coast (Caboolture) Line just north of the Petrie Station;
- 22 bridge structures to provide river and waterway crossings, grade separation of shared path, road and rail including rail over the Bruce Highway;
- Six new rail stations incl. bus interchanges and bike storage;
- 2850 off-street carparks with associated bus and cycle facilities at stations;
- 800,000m³ excavation; and
- 1,100,000m³ fill

Associated works will involve:

- Stabling for ten (six car) trains near Kippa-Ring station;
- 3 km of 4 lane road;
- 4.7 km of 2 lane road;
- 7 signalized intersections;
• 12.6km x 3m wide concrete Shared Path and 6km connecting path links along length of corridor;
• Establishment of over 100,000 Koala Habitat trees; and
• Significant regional ecosystem and marine plant offset areas.

Council’s Role in “Making it Happen”

Soon after the amalgamation of the previous Redcliffe City Council, Caboolture Shire Council and Pine Rivers Shire Councils into the Moreton Bay Regional Council in 2008, the Mayor elect Alan Sutherland commenced the process of lobbying the State and Federal Government for funding of the long awaited infrastructure project.

Critical in securing the necessary commitment and funding was the development of the Moreton Bay Rail Link Business Case. This $4M business case was jointly funded (50/50) by the State Government and Moreton Bay Regional Council. The planned outcome of the business case development was submission to Infrastructure Australia for funding.

Funding for the project was finally confirmed through the Federal Government Nation Building Program with the total joint funding of $1.147B being provided by:

Federal Government $742M
Queensland Government $300M + land
Moreton Bay Regional Council $105M

Strategic Context

Background

Moreton Bay Regional Councils is currently the third largest local government area in Australia with a population now exceeding 400,000 people and expected to grow to over 530,000 by 2031.

More than half of the people leave the region for employment and education daily and 83% use private vehicles for their journey. (MBRL Business Case 2011)

Current and planned growth is seeing significant congestion on major roads becoming a looming problem for the future with congestion on the Bruce Highway, south of Anzac Avenue regularly featuring in morning traffic reports.

Significant development areas of North Lakes, Mango Hill, Deception Bay and Redcliffe lie along the Moreton Bay Rail Link corridor are planned to accommodate more than 240,000 people and provide over 70,000 jobs by 2031.

Improved network integration as a result of the Moreton Bay Rail Link benefits communities along the corridor and on the Redcliffe peninsula. The potential for a proportion of existing bus services within the corridor to be redistributed to enhance existing services and be integrated with the station precincts will provide a superior level of service. The inclusion of an integrated active transport spine along the corridor also ensures communities are best serviced by a range of transport to options to meet both employment and recreational needs. (MBRL Business Case 2011)

The overall goal for new development areas along the Moreton Bay Rail corridor is to create walkable, transit based communities with:

• Community infrastructure in convenient and accessible locations adjacent to and within mixed use centres;
• Regional level facilities in the major centres to reinforce the strengths and character of the urban areas;
• Effective and efficient connection of centres to their catchments by public transport and active transport links; and
• Access to local employment opportunities.

Strategic Planning

With over 40% of total regional growth occurring along the Moreton Bay Rail Link corridor, there has been a deliberate focus on the necessary land use and infrastructure planning to leverage off the planned rail infrastructure. Key strategy elements include:
• Increase connections between key activity centres within the region;
• Provide better access to employment centres of North Lakes and CBD;
• Reduce traffic congestion;
• Support sustainable development and population growth in the region;
• Support the continuing development of new employment areas.

**Project Impacts Overview**

**Community**

A significant length of the project corridor threads its way through existing developed areas with sections through Lawnton, Kallangur, Murrumba Downs, Mango Hill, Rothwell and Kippa Ring being literally on the back fences of properties.

Transporting large volumes (in excess of 800,000m$^3$) of bulk earthworks over local roads and along the corridor has taken a significant effort in haulage management and community consultation.

The project team includes communications managers from the Department of Transport and Main Roads, Queensland Rail, Moreton Bay Regional Council and the Contractor (Thiess).

Emerging issues of community concern include:

• Noise management;
• Dust control;
• Traffic impacts;
• Parking management around station precincts; and
• Property access.

**Waterways and Flooding**

One of the significant constraints on the MBRL project design is the corridor location which crosses and traverses a number of regional and environmentally significant waterways including:

• North Pine River;
• Yebri Creek;
• Freshwater Creek South;
• Black Duck Creek;
• Freshwater Creek North;
• Freshwater Creek;
• Saltwater Creek; and
• Hays Inlet

In addition to the normal hydraulic and water quality considerations, the flood plains are subject to:

• flood releases from the North Pine Dam;
• tidal inundation; and
• storm tide inundation.

These areas also contain significant areas of remnant vegetation, acid sulphate soils, fish habitat reserves, Marine Park and Ramsar wetland areas.

Council provided the necessary flood models, developed from the MBRC Regional Flood Plain Database project. These latest generation TuFlow models have provided the basis of waterway analysis, bridge and drainage structure selection, rail and infrastructure flood immunity assessment.

**Koala Habitat**

Another very significant element of project planning was the care and management of the local Koala population during and after construction.

Initial estimates provided by koala researchers and local wildlife groups indicated a resident population of Koalas along the corridor at between 60 and 100 individuals.

With this in mind, the project team developed a comprehensive Koala Action Plan *(SMEC 2012)*. The specific objectives of the Koala Action Plan for the project area are to:

• Define the affected koala population and its habitats;
• Identify threatening processes which already affect the koala population (e.g. vehicle strike, dog attack, habitat loss and fragmentation);
• Identify impacts of the project, and recommend strategies for management;
• Define roles, responsibilities and timing for implementation of mitigation measures;
• Establish performance criteria to evaluate management success;
• Devise a monitoring program; and
• Identify corrective actions.

It is interesting to note that the tagging and monitoring program has recorded more than 300 Koalas along the corridor to date against the original estimates of between 60 and 100 individuals.

Clearing for the entire corridor has been completed without a single Koala injury.

Mosquito Management

An additional issue for consideration in the project planning and delivery has been the management of saltmarsh mosquitos.

Moreton Bay Regional Council undertakes one of the largest mosquito management programs in the state. A significant portion of the program activities are over the areas surrounding the Hays Inlet conservation park and impact on the Moreton Bay Rail Link corridor.

Helicopter applied aerial treatment methods have been the traditional cost effective program alternative. This approach has triggered the need for significant coordination between Council’s mosquito control crews and the project construction planning and management staff.

Treatment strategies have had to be modified to avoid conflict between airborne operations and construction plant and personnel with increased utilization of ground based treatment programs for areas within the rail corridor or separated from the safe treatment areas by the rail construction works.

Traffic and Transport Planning

In order to assess the impacts of changes to the local road network and alternative travel patterns likely to be a result of the completed project Moreton Bay Regional Council developed a series of integrated transport models derived from Department of Transport and Main Roads “Brisbane Strategic Transport Model Multi-Modal (BSTM-MM) version 1.2.

The BSTM-MM model is a mature, well-developed and documented model that has wide acceptance in the planning industry. (MBRL Business Case 2011)

PTV Asia-Pacific was commissioned by Moreton Bay Regional Council to develop integrated traffic models for the areas surrounding the proposed stations of the Moreton Bay Rail Link. (PTV 2012).

The developed model has enabled Council and the project team to understand the impact of changes proposed on the surrounding road network and plan mitigation measures. Activities and outcomes from this modelling project included:

• Development of a VISUM traffic assignment model for the area surrounding the proposed stations of the Moreton Bay Rail Link;
• Conducting traffic surveys and collection of latest demographic and land use data;
• Update the model with latest demographic, network and intersection data;
• Development of a microscopic VISSIM model of the identified core areas around the stations;
• Developing future year models according to network changes planned; and
• Providing the necessary inputs for the Moreton Bay Rail Link Integrated Transport Strategy.

Procurement

Procurement associated with the delivery of the Moreton Bay Rail Link infrastructure has included a traditional Department of Transport and Main Roads Road Construction Contract (RCC) for the early works package for the Kinsellas Road East overbridge and approaches and a Modified Early Contractor Involvement (ECI) tender and Collaborative Partnership Agreement (CPA) for the main construction project contract.
The modified ECI contract has three (3) distinct stages as follows:

- **Stage 1A**
  - 4 x Teams competing for shortlisting;
  - Assessment by organisation capacity;
  - Design concept functionality.

- **Stage 1B**
  - 2 x Teams competing for contract award;
  - Assessment:
    - 80% Risk Adjusted Tender Price;
    - 20% functionality improvements

- **Stage 2**
  - Collaborative Partnership Agreement
  - Modified D & C Contract

Council resources and technical experts have been involved with all stages of tender assessment, contract award and design reviews.

**What happens next**

**Design**

With the contract award on 1 August 2013, work to develop the designs commenced with the establishment and co-location of the Client, Designer and Contractor’s project management teams.

To date, a staggering 850 design packages have been produced, reviewed and accepted. This accounts for some 8,000 drawings.

What has been an unanticipated consequence of Council’s involvement in the project has been the significant resource demand associated with the technical review of the designs of relevant infrastructure and monitoring and managing project impacts. To date more than 35 Council staff have been involved in the contract assessment, design review, project coordination, compliance and environmental management processes.

**Construction**

The integration process has continued into the construction phase with co-location of the Client and Contractor’s construction teams established on site.

At the time of writing this paper, early works are nearing completion with almost 800,000m³ of the planned 1,100,000m³ bulk earthworks completed. Ten (10) of the twenty-two (22) bridge structures are underway, three of which are up to construction of the superstructures.

Cross corridor drainage structures are substantially complete with some 25 major culverts installed or under construction.

**Asset Handover**

Finalisation and asset handover processes are underway with one of the first elements being the development of an Asset Handover Agreement between the State and Council.

The agreement documents the process of ensuring access for Council staff throughout the construction of infrastructure (primarily local road upgrades, station accesses and shared path facilities) which is to be returned against Council’s financial contribution to the project.

The more substantial elements of the Handover Agreement include:

- Obligations and responsibilities of the parties;
- Access to site;
- Witness and Hold Points;
- Quality Records;
- Land tenure arrangements;
- As constructed plans; and
- Asset valuation data.

**Conclusion**

The involvement in the Moreton Bay Rail Link project has provided the opportunity for Moreton Bay Regional Council to capitalize on its investment, coordinate the infrastructure delivery with land use planning, ensure transport integration outcomes, promote effective environmental management and mobilize the necessary social and economic growth activities necessary for sustainable regional development.

In addition to the significant financial contribution to the project, Council has
provided significant technical support and involvement through the process to date.

Political support for the project has been unwavering across all three (3) levels of government. At a local level this continues to be essential in managing the community response to project impacts.

References


*SMEC (2012)* – SMEC Australia Pty Ltd. - Moreton Bay Rail Link Project - Koala Action Plan Study for the Department of Transport and Main Roads (including Queensland Rail) - 16 March, 2012
Author Biography

Lindsay McLeod is the Manager Major Projects at Moreton Bay Regional Council and has over 40 years of experience leading and working in a local government civil engineering profession performing infrastructure design, planning, strategic and management functions across the spectrum of local government responsibilities.

Lindsay graduated from the then Queensland Institute of Technology with a Certificate in Civil Engineering, he has subsequently completed tertiary studies in Traffic Management and Human Resource Management and holds diplomas in Management and Business.

As the Manager Major Projects, Lindsay’s key role is managing the planning and infrastructure delivery associated with Moreton Bay Regional Council’s $105M investment in the $1.147B Moreton Bay Rail Link Project.

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