MERRYLANDS CENTRE URBAN REVITALISATION PROJECT – DEVELOPING SOLUTIONS TO ADDRESS FLOODING IN THE TOWN CENTRE

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Abstract

The Merrylands centre comprises two distinct precincts, namely the Neil Street Precinct and the Merrylands Town Centre Precinct. The Neil Street Precinct is characterised by older commercial/light industrial uses and large areas of vacant land, and the Merrylands Town Centre Precinct is characterised by a “Main Street” with narrow retail shop frontages and a parallel shopping strip on which is located a shopping mall.

The Merrylands centre evolved along the course of A’Becketts Creek during the late 1800s, with the shops along Merrylands Road built during the 1920’s and 1930’s. As a consequence the town centre is subject to high hazard flooding which requires to be considered in any redevelopment of the centre.

The Merrylands Centre Urban Revitalisation Project commenced in 2000 (with funding received through the Urban Improvement Program) and sought to manage urban change in the town centre to ensure the long-term viability and vitality of the Merrylands CBD and adjoining areas.

One element of this project included creating site specific planning controls for both the Merrylands Town Centre Precinct and the Neil Street Precinct. Flooding was one of the major issues to be addressed in the development of these planning controls, with the solution required to address the flooding differing between the two precincts.

Key Words: Merrylands, Town Centre, Redevelopment, Development Controls, Flood Study

Introduction

The Merrylands Centre comprises a Main Street, and a parallel shopping strip on which is located a shopping mall. The town centre evolved along the course of A’Becketts Creek during the late 1800s, with the shops along Merrylands Road built during the 1920’s and 1930’s. The creek through Merrylands was converted to an open concrete lined channel in 1933 and as further development occurred, the majority of the channel was enclosed and the watercourses piped.

Merrylands is Holroyd Council’s largest commercial centre and is also the most accessible to the Merrylands Transport Interchange, located at the eastern side of the CBD. Merrylands is a well established shopping centre, with the main focus of the CBD being the traditional shopping strip along Merrylands Road and a large shopping mall defining the northern edge of the commercial area. The commercial area of Merrylands is in need of significant revitalisation and renewal in order to ensure the centre’s viability and economic growth over the long term.
The Merrylands Centre Urban Revitalisation Project (MCURP), funded in part by both Council and the then Department of Infrastructure, Planning and Natural Resources under the Urban Improvement Program, was designed to provide long and short-term outcomes for the community and businesses of the Merrylands Centre to bring about overall revitalisation of the town centre. The aim of the project was to establish mechanisms that would ensure that future redevelopment in Merrylands would occur in accordance with well-planned urban design outcomes. One element of this project included creating site specific planning controls for both the Merrylands Town Centre Precinct and the Neil Street Precinct.

**The Neil Street Precinct**

The Neil Street Precinct is located immediately north of the central Merrylands Town Centre and Transport Interchange and is south of Holroyd Gardens residential estate and Holroyd Gardens Regional Park. The Precinct comprises a range of older commercial uses and light industrial uses as well as a substantial amount of vacant disused land.

Due to its highly accessible location, the Precinct is considered ideal for urban renewal. Redevelopment will support the revitalisation of the Town Centre through increased residential density and provide an excellent opportunity to satisfy State Government's policy of integrating land use and transport.
The Merrylands Town Centre Precinct

The Merrylands Town Centre Precinct is the commercial heart of the City of Holroyd and is located to the west of the Merrylands Transport Interchange. The Merrylands Town Centre Precinct is comprised of a "Main Street" along Merrylands Road which is characterised by a fine grained subdivision pattern creating narrow retail frontages and McFarlane Street, a wide tree lined road on which is located a large shopping mall, but with a fine grained subdivision pattern occurring at the eastern end closest to the Transport Interchange.

There is a need to enhance the Main Street by focusing on facilitating mixed use development with retail development at grade that engages with the street and public domain to counterbalance the planned expansion of the shopping mall on the northern edge of the commercial centre on McFarlane Street and its expansion onto land at the western end of McFarlane Street and Merrylands Road. This is required to ensure the long-term viability of the Town Centre as a whole.

Preparation of Planning Instruments

As a means of implementing the proposed planning changes draft Local Environmental Plans (LEP) and draft Development Control Plans (DCP) were prepared by Council. The LEP and DCP for the Neil Street Precinct were finalised in 2004, whilst the LEP and DCP for the Merrylands Town Centre Precinct are nearing completion. Numerous studies were undertaken in the development of the planning instruments to respond to the identified opportunities and constraints, with one of the major constraints identified being flooding.

Flooding In Merrylands

The creek through Merrylands was converted to an open concrete lined channel in 1933. As further development occurred, the majority of the channel was enclosed and the watercourses piped. The Sydney Metropolitan area was subject to significant storm events during the late 1980s. The Sydney Water Board, under the Special Environmental Program, conducted various flood studies to assist local councils for flood mitigation options and future grant funding. Fifteen years later and after the construction of four upstream detention basins, the flood study, through the town centre, needed to be revised. A flood study was undertaken as part of the MCURP project.

Design flows through the CBD were calculated and included the impact of the Merrylands Regional Park detention basins. Computer-based hydraulic models were then developed to model the trunk stormwater system, which runs through the CBD, and to assess flow regimes through this area.

The model results indicate that the trunk stormwater system capacity is approximately 24m³/s at the Addlestone Road culvert, 16 m³/s at Treves Street and 48 m³/s from Pitt to downstream of Neil Street. These capacities are significantly smaller than the 100-year flow magnitudes. 100-year overland flows along McFarlane Street would be approximately 35 m³/s, with 41 m³/s through the area downstream of Neil Street.

The hydraulic modelling of the overland flow paths shows that much of these flow paths would exhibit high hazard risks during the 100-year storm events.

To reduce these flows, it is proposed to upgrade the road culverts at Treves Street and Addlestone Road, construct a new culvert from Pitt Street to Neil Street and provide a central swale and culvert along a proposed "New Street" within the Neil Street Precinct.
Despite the proposed trunk drainage improvements, the modelling showed that overland flows in the 100-year event remain significant and hazard is often high.

To avoid increasing upstream flooding, an existing overland flow path between Merrylands Street (near Addlestone Road) and McFarlane Street needs to be preserved. Modelling showed that a width of not less than 15m wide is necessary.

To put the flooding through the CBD in perspective, the critical storm duration for this study is the two-hour storm pattern. It is expected that actual property inundation would be short and sharp, approximately 15 to 20 minutes during this event. There would be no time to warn property owners of a flood; thus alternative flood prevention measures would be required.

The Neil Street Precinct Solution

Whilst flooding was not the only constraint, it was a significant constraint. Affection by the current 100-year ARI flood inundation means that within the Neil Street Precinct development on certain sites could not occur unless finished floor levels were up to 2 metres above natural ground level. Another constraint revolved around the subdivision pattern, such that some sites were very constrained, meaning that if they were to be developed in isolation, poor circulation and poor design would result.

The Neil Street Precinct was therefore designed so that a roadway and swale (40m wide) will carry the majority of the floodwaters. Additional under-ground trunk drainage systems will re-direct flows to the open watercourse. The proposed new road north-south will also provide for a better subdivision pattern for redevelopment and traffic circulation. These works will lower existing flood levels, in this precinct, by approximately 500-600mm.
New buildings and driveway entry/exit points to underground parking areas will have finished floor levels equal to or above flood planning levels.

**Merrylands Town Centre Precinct Solution**

Flooding of properties occurs to some extent within all streets within the town centre precinct. The flood study indicated that there is approximately 35m$^3$/s, flowing down McFarlane Street, with a maximum depth of 1.3m.

Initially a review was undertaken into the possibility of flood mitigation works for the centre. This study identified two options, one requiring significant land acquisition (much of which is comprised of residential flat buildings) for the purpose of constructing upstream detention basins. The other option requiring a large culvert to be constructed along McFarlane Street to the watercourse. This option would require easement acquisitions, redesign of a local park, require infrastructure adjustments to sewer, gas electricity, telephone in the town centre and adjustments to existing stormwater culverts. Both options were costed as being in excess of $25 million.

With no further flood mitigation works being viable, development control solutions were required to address the flooding issue.

Two of the main options considered as part of formulating the development controls were:

- designing new buildings to be above a designated flood planning level; (in some locations as high as 1.5m above existing ground levels) or
- maintain shops at grade in order to ensure the ongoing viability of the main street.

![Figure 10 – Merrylands Town Centre Precinct-Activities](image-url)
It was apparent from the beginning that the fine-grained subdivision pattern of Merrylands Road and the eastern end of McFarlane Street would be a major determining factor in the development of appropriate planning controls. The background studies undertaken for the MCURP identified the need to maintain and enhance the activated street front and retail edge, by facilitating retail development at grade. Clearly, this recommendation would not be consistent with a requirement to design all new buildings above a designated flood planning level, as a multiple series of steps and ramps would hinder an accessible retail strip.

Taking into account the social and economic factors associated with redevelopment of the town centre, instead of requiring all new buildings to be constructed above the flood planning level, the development controls incorporated into the draft LEP and draft DCP acknowledge the potential for inundation and requires flood proofing of buildings through the use of flood compatible materials.

![Figure 11 – Artist impression of the Merrylands town Centre (in vicinity of proposed town square)](image)

**Conclusion**

The Merrylands Centre Urban Revitalisation Project has resulted in the preparation of two place-based Development Control Plans for two distinct precincts in the Merrylands Centre. Each precinct is affected by flooding and the development controls prepared differ for each precinct. Within the Neil street precinct, redevelopment requires a new road north south through the precinct to facilitate not only a better subdivision pattern and traffic circulation, but to incorporate additional trunk drainage and overland flow path through the precinct. The proposed new road includes a drainage swale, with a total width of 40m. Within the Merrylands Town Centre Precinct, studies have identified the importance of the need to maintain and enhance the activated street front and retail edge. This is especially important with the proposed expansion of the shopping mall that will provide further competition to the traditional retail shopping strip. As a consequence, the planning controls permit redevelopment at grade with the use of flood compatible materials.

**References**


Merrylands CBD Flood study, Bewsher Consulting Pty Ltd (2002)