

A flood project with park benefits

Reducing the incidence of flooding in the Sun Valley area and improving the amenity of Kathleen Shanahan Park

Gladstone Regional Council's (formerly Gladstone City Council) 2006 Auckland Creek Flood Study Report identified a need to reduce the incidence of flooding (and erosion) along the embankments of Tigalee Creek at Sun Valley during heavy rain events.

This is a busy residential area and contains major access routes to the southern suburbs.

The hazard originates from overland flow and the piped storm water system outlets that take storm water from roadways, kerb and channel, as well as residential storm water from within the Tigalee Creek catchment area.

Council designers developed a proposal to construct a water retardation basin at Kathleen Shanahan Park, which is bordered by Philip Street (north) and Glenlyon Road (west). This area currently serves as a catchment area that cannot effectively divert flow along Tigalee Creek in heavy rain events.

While other mitigation options were considered (Auckland Creek Flood Study Report – August 2006 section 9.4.2 & 9.5), independent consultants suggested the retarding basin provided the best outcome for the community in alleviating the affects of flooding (especially between the culverts of Witney and Mercury Streets), visual aesthetics and environmental impact.

Furthermore, the ongoing maintenance of the dry retarding basin was determined to be more cost effective than the other options investigated.

The retarding basin has the additional benefit of decreasing the velocity along the creek and through structures, alleviating many of the predicted pedestrian safety, vehicle safety, erosion and sediment problems indicated by the report.

Project Description

This project is to construct a Dry Bed Stormwater Retarding Basin. (Recommended in the Auckland Creek Flood Study Report – August 2006 as RB 33).

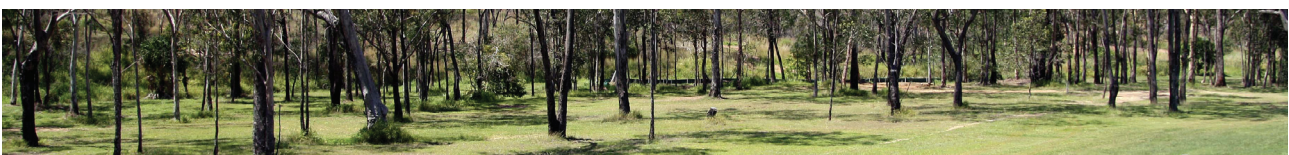
The original retarding basin design was approximately 3.70 hectares in area and capable of holding 16,700 m³ of water to meet the proposed mitigation outcomes modelled in the study.

When this mitigation option was modelled in the flood study, it showed that the area downstream of the proposed Retarding Basin would benefit significantly, reducing flooding heights at key points Witney Street Crossing (-0.68m); Mercury Street Crossing (-0.65m); and Links Court Bridge (-0.59m).

Tigalee Creek is 2.9km long from the confluence with Auckland Creek to Glenlyon Road.

Objectives & Milestones of the Basin

- Eliminate or limit to acceptable levels, the effect of flooding on the community, improving the well being, health and safety of currently flood prone parts of the community.
- Eliminate or limit to acceptable levels, damage caused by flooding to private and public property an infrastructure.
- Increase in the safety of pedestrians and vehicles using the creek crossings when the structure is overtopped by the reduction in the creeks flow velocity.
- Maintain or facilitate the natural function of the flood plain, by conveying and storing floodwaters during an event and enhancing the floodplain function and ecosystem.



Hazard and risk reduction goal

- Overtopping of the creek banks and structures downstream of the project site, along the length of Tigalee Creek during rainfall events.

Benefits to the community

- There are approximately 900 properties expected to benefit from immediately improving the flood immunity of the downstream area, plus up to a potential 6000 properties from preventing infiltration of flood waters into the sewerage system. Of the 900 properties, most are residential but some 70 are light or local industry; 25 are commercial; and three are educational facilities.

Infrastructure and services

- There are two electrical pad-mount transformers located on the edges of the flood footprint that are expected to fall well outside the affected area after the basin is constructed.
- Reduction in the risk to the Moura Short Railway from effects of flooding.
- Increase in protection of the Residential Electrical and Telecommunication services from inundation.
- Reduction in erosion and sedimentation along and in Tigalee Creek.

Reduction in future losses

- Reduction in future losses by reducing the need to rehabilitate creek banks where excessive flow velocities have eroded the bank.
- Reduce the need to backfill around structures that have had material washed away by flood waters.
- Minimising repairs required to road crossing infrastructure and pavements from becoming overtopped and washed out.

Social

- Minimising the requirement for emergency services to attend to the various sites for traffic direction and incident response.
- Access to the suburb of Telina being maintained with an alternative access for other unforeseen emergencies.
- Improves the visual amenity of the area.

- The creation of a new recreational area.
- Provides improved and safer walkway access from Sun Valley to Philip Street.

Environmental

- Reduce velocities and water heights in the water flow, minimise severe erosion along the creek bank.
- Enhance the natural environment around Kathleen Shanahan Memorial Park and make it an attractive location to visit.
- Reduce sedimentation in the lower reaches of Tigalee and Auckland Creeks.
- Prevent the destruction of habitat during flooding.
- Removal of exotic weed species from the park during the construction phase.

Amenity of the area

- The area will be visually appealing.
- It will provide a usable, attractive open space for gatherings and recreation.
- The car park provides off-road safety for park users.
- Being located on the main arterial road network of Glenlyon Road, the parkland presents the opportunity to strategically provide a continuum of easily accessible recreation areas connecting Tondoon Botanic Gardens in the south to Reg Tanna and Memorial Parks to the north.
- This reduces Council's playground maintenance impost by providing a central feature parkland with a usable recreation area.
- It will provide better connections to the pathway network.

Benefits or re-designed basin

- A much more manageable park;
- Providing better and safer pedestrian access across the drainage swail to adjacent streets.
- Saving approximately 25 metres off original design to create a better noise and visual buffer to neighbouring residences.
- Saving approximately five hectares of bushland;
- Providing a car park and playground to make the area a central recreational area.
- The bench landscaped component of the basin walls will provide a visually pleasing backdrop for park users and passersby.

Funding

The \$1.66 million project has received Federal National Disaster Resilience Program funding with the costs to be shared equally between Federal, State and Local Government. The total costs include the hard mitigation works; volunteer capacity building and community awareness and education.

Funding has been approved by Emergency Management Queensland who manage the funding arrangements on behalf of the Natural Disaster Mitigation Program.

Council commitment

- To ensure all stakeholders are informed and given an opportunity to discuss the plans for the area.
- To ensure risks are assessed and considered in the final design of the venue.
- To ensure the project meets all goals and objectives in the given time frame.
- To ensure existing stakeholders' needs are considered and factored into the final design and construction.
- To ensure Council's investment is supported by rate-payers.

Schedule of Work

- Unseasonal rain in August and September forced Council to defer the commencement of work until after the summer wet season. It is now anticipated that work will commence in April 2011.
- It is anticipated that work will take approximately 8-10 weeks to complete from commencement, depending on whether the work is conducted on a six or seven-day-a-week roster.

FURTHER INFORMATION
 For further information, phone Gladstone Regional Council's Community Relations section on 4976 6946 or download updates from Council's website at www.gladstonerc.qld.gov.au
 Email updates can also be arranged by forwarding a request to tigaleecreekproject@gladstonerc.qld.gov.au

