

# Fact Sheet

March, 2014

## East Levee and Floodgate

### What is a levee?

A levee is a ridge or wall which controls water levels. Location and costs generally dictate the type of levee chosen for a particular situation. The most commonly used levee is an engineered earthen bank constructed with a clay core.

Levees can be designed to blend into their surrounding environments and can be planted with vegetation. It is also possible to integrate walkways along the top of them.

### What is a floodgate?

A floodgate is a set of movable watertight steel doors which are sometimes built into the design of a levee to allow for flow of local creek waters in non-flood conditions. During a flood event they are closed when river levels start to rise and reopened when river levels return to normal.

### Fast Facts

- Cost \$71 million in capital works
- Reduction in tangible flood damage
- 741 properties would no longer experience above floor flooding in a 1% AEP event (in an event similar to January 2013)
- Protects East, South and Central Bundaberg from Burnett River flooding up to the levee design event
- Concrete wall, road raising and earth embankment levee
- Flood gates at two creek crossings



Figure 1 (above): Example of a similar floodgate in Tasmania that would be built near the mouth of Bundaberg Creek



Figure 2 (above): Example of a similar earthen bank levee and floodgate in New Zealand



**What would the East Levee and Floodgate involve if funding was approved?**

The East Levee would be a combination of concrete wall, road raising and earth embankments and with floodgates at two creek crossings in East Bundaberg.

Starting from Quay Street, the levee crosses over Bundaberg Creek along Quay Street East to Scotland Street and into Cran Street. From here the levee would traverse private property, another waterway, and along the river edge of Millaquin Mill and the Bundaberg Distillery, before passing along the back of the Sewage Treatment plant, across Alexandra Street and terminating at a high point (See figure 6, page 4 to view the indicative location of the levee).

The floodgate will be a significant structure, located near the mouth of Bundaberg Creek downstream of the heritage listed former railway bridge. The gate can be left open to allow local creek flood waters to flow freely into the river, and then be closed during large Burnett River flood events.

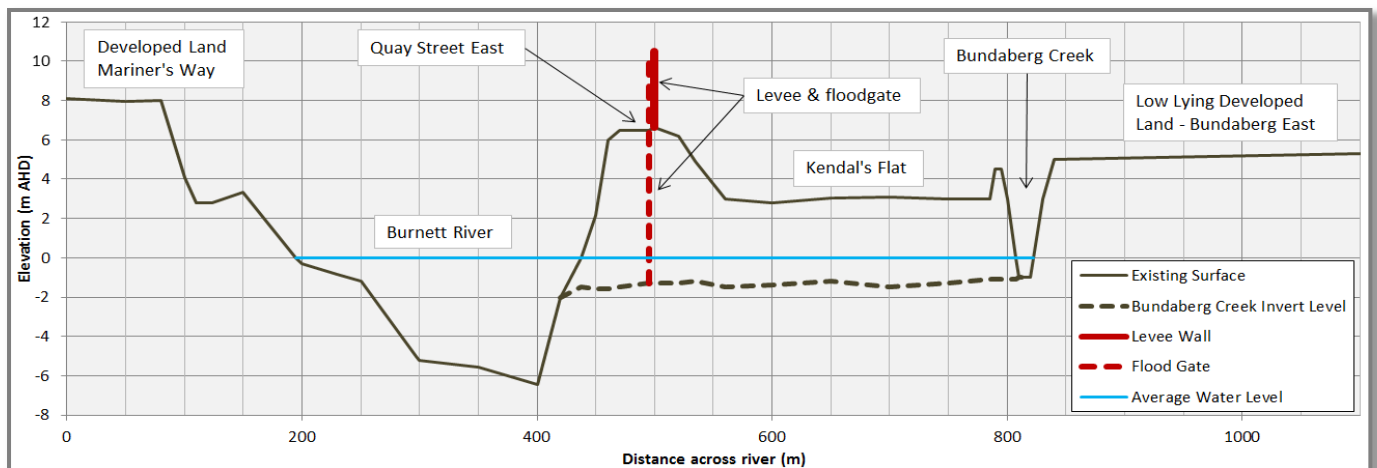


Figure 3 (above): Cross-section of the proposed East Levee and Floodgate

**Why build a levee in Bundaberg East and not Bundaberg North?**

A range of potential levees in Bundaberg North and East were considered as part of an engineering assessment, which found that a levee in Bundaberg East was most viable.

Given the exceptionally high volume and speed of floodwater passing through Bundaberg North, there is little that can be done to block, divert or otherwise displace these flows without causing severe impacts elsewhere. This is in contrast to Bundaberg East, where the flooding is caused by backwaters entering the area via Bundaberg Creek. Modelling shows that a levee and floodgate here will not displace fast-flowing flood waters and hence will not have significant adverse impacts elsewhere.





***Won't a levee still overtop or push the water elsewhere?***

Careful planning of the location of a levee is needed to ensure that the levee will not make flooding worse elsewhere. The hydraulic model of the Burnett River was used to address this very issue for a range of levee options. The potential levees were modelled, and the change in flood level outside of the levee was measured. A levee that is properly planned, designed, constructed and managed can substantially reduce a communities' exposure to minor and major floods, which provides an overall benefit even if the levee may still be overtopped in a rare but extreme flood. It is nonetheless important that the community understands this "residual risk", and that there is a management plan in place to deal with this rare overtopping scenario.



*Figure 4: Example of floodgates in operation in Tasmania*



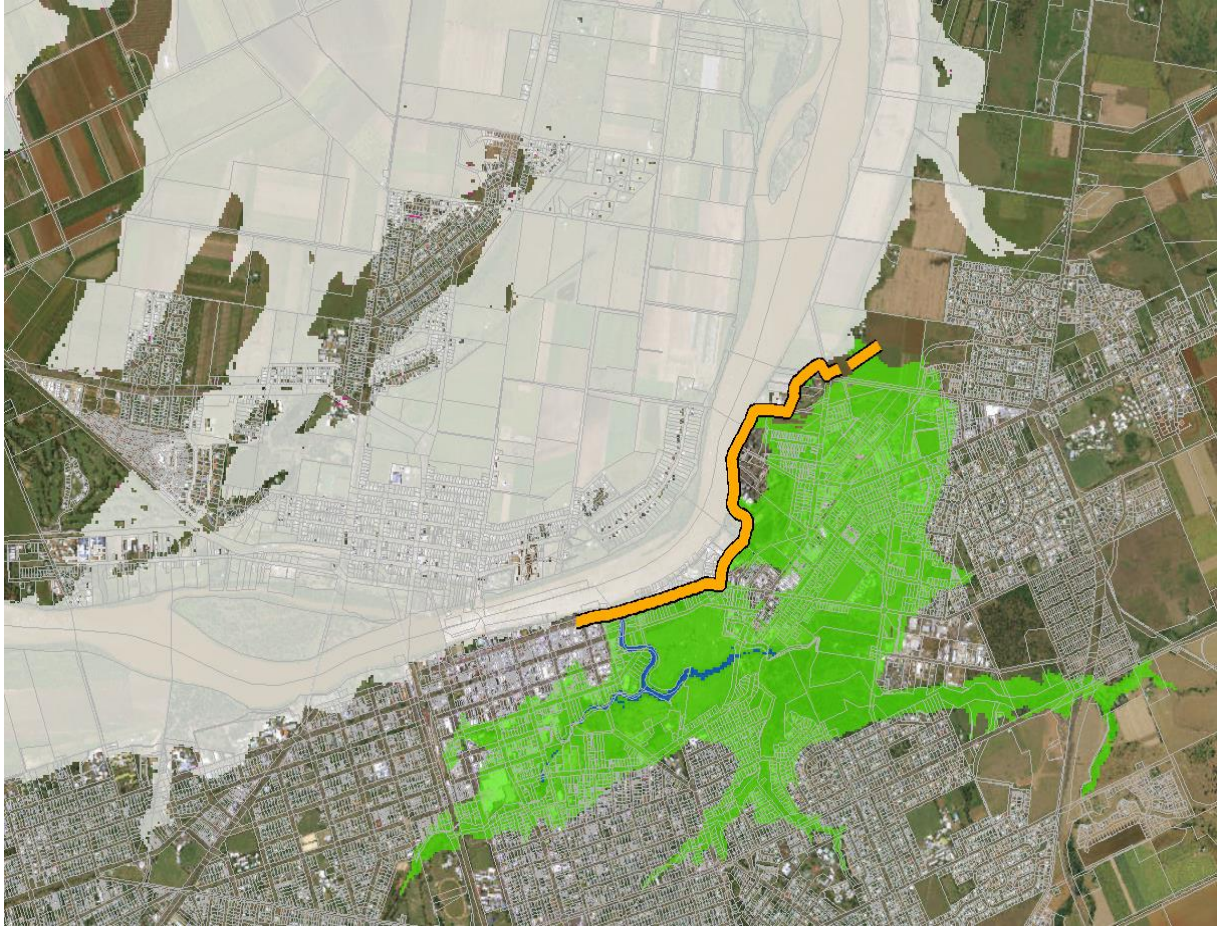
*Figure 5: Grassed levee at Edgecombe, New Zealand*

***What benefits would the project offer?***

Construction of the East Levee and Floodgate would result in a reduction in tangible flood damage in East, South and Central Bundaberg and could effectively exclude river flood waters from the entire East Bundaberg area. An estimated 741 properties would no longer experience above floor flooding in a 1% AEP event. The project is designed to mitigate the risk of Burnett River flooding, while minimising any potential exacerbation of local creek flooding.







*Figure 6 (above): Location of the proposed East Levee and Floodgate - levee indicated in orange*

### **What's next?**

Council has put forward seven infrastructure projects and several flood management initiatives to the Queensland Government for full funding consideration. **These projects will form part of the overall Burnett River Floodplain Action Plan, which will also include other crucial floodplain management measures. Only the projects that receive funding support will be able to proceed.**

While we await funding decisions, our focus is on completing the Floodplain Action Plan. This involves rolling out initiatives such as flood gauge mapping, evacuation capability assessments and route planning, improved flood search certificates, and managing future flood risk through land use planning.

