Cedar Grove wastewater treatment plant
Responses to community questions - 2017

This document is a compilation of Council’s responses to questions raised by Cedar Grove residents in 2017.

WWTP SITE SELECTION

How was the treatment plant site selected?

A detailed report on the history of the project was tabled at the City Infrastructure Committee meeting of 27 November 2017. A copy of the 2009 siting study has been provided to community members (via the Cedar Grove Action Group) for review. In summary:

- The Queensland Government’s SEQ Regional Plan 2005-2026 identified major development areas including Greater Flagstone.

- In 2009, the Queensland Government released the SEQ Regional Plan 2009-2031 that included the urban footprint for the Greater Flagstone Priority Development Area (PDA). The (then) Queensland Water Commission and Department of Infrastructure and Planning requested that Council project manage a study (co-funded by these parties and prepared by consultant Parsons Brinckerhoff) to consider the synergies in locating a wastewater treatment plant and a water treatment plant in a similar area to serve the Greater Flagstone PDA.

- The October 2009 report (Sub-regional WTC and WTP Logan South siting study) considered six sites and concluded that the current site was the most suitable based on factors including buffer distances to current and future residential properties, supporting infrastructure, flood free useable site area, site topography, geotechnical conditions, cultural heritage and environmental constraints (such as remnant vegetation) and whole-of-life cost.

- In December 2009, the siting study was adopted by Council, which resolved to acquire the site.

- In July 2010, Alconnex Water was established. The (then) Urban Land Development Authority declared the Greater Flagstone PDA in October 2010, with the Cedar Grove WWTP site included within the PDA boundary.

- Alconnex Water negotiated the purchase of the Cedar Grove site and completed this in mid-2011.

Why can’t the existing WWTPs at Flagstone or Jimboomba be expanded?

The existing plant at Flagstone was designed as a temporary facility, and it is surrounded by residential properties. The plant is currently being upgraded so that it can manage increased wastewater flows from surrounding development in the short-term. However, there is not enough available land at the site to expand the plant further.

Similarly, the existing plant at Jimboomba has been upgraded but there is not enough available land at the site to expand the plant further.

Why build the WWTP in an established community that does not benefit from it?

The WWTP site is within the Greater Flagstone PDA, and its selection was based on factors including buffer distances to current and future residential properties, supporting infrastructure, flood free useable site area, site topography, geotechnical conditions, cultural heritage and environmental constraints, and whole-of-life cost. Details of the selection process is provided in the October 2009 report Sub-regional WTC and WTP Logan South siting study.

How can property owners find information about the site?

By accessing the Logan Planning Scheme Interactive Mapping page on Council’s website, users can see that the site is for a wastewater facility. Go to: http://www.loganinteractivemapping.com.au/. Search the suburb and street name (at top) and from the layers (at side) select:

- regional infrastructure (OM-09)
- regional infrastructure facilities (OM-09.01)
- wastewater facility and buffer

The Department of State Development, Manufacturing, Infrastructure and Planning website includes information about infrastructure to service the Greater Flagstone PDA. Go to: http://dilgp.qld.gov.au/resources/map/pda/greater-flagstone-icop-maps.pdf

Council is listed as the owner of the site when conducting property searches.
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WATER QUALITY AND FLOODING

What monitoring of the Logan River water quality has occurred to determine impacts of effluent discharge?

A monitoring program has been underway since December 2016 (for completion in December 2017) to better understand the existing water quality in the Logan River near Cedar Grove. Samples have been collected from four sites between the weir and the tidal limit of the Logan River. The sites were chosen to provide a spread of data along this section of the waterway. Once monitoring is complete, Council will assess the data to determine how best to improve ecosystem health.

The monitoring program supplements an existing long-term ecosystem health monitoring program undertaken by Healthy Land and Water. The program is funded by Councils in south east Queensland including Logan City Council, Seqwater and other partners.

Has an assessment of the assimilative capacity of the Logan River been undertaken?

Data on the assimilative capacity of the Logan River presented in the Cedar Grove WWTP Stage 1 Material Change of Use (MCU) application was obtained from Healthy Land and Water and the Department of Natural Resources, Mines and Energy. Modelling (prepared by BMTWBM) combined catchment impacts from increased land development and point source impacts from the WWTP.

Council aims to improve the long-term water quality in the river through measures such as riverbank rehabilitation. A condition of the Cedar Grove WWTP environmental license requires Council to undertake a nutrient offsets program that offers a net environmental benefit to the catchment.

Why is the WWTP located near a river and the Cedar Grove weir?

WWTPs are often located near waterways so that effluent can be released at a licensed discharge point. The discharge point for effluent from the Cedar Grove WWTP is downstream of the existing weir, away from any future intake point for water supply.

Is Council using offsets to address nutrient releases into the Logan River?

Yes. Council intends to use offsets in the form of riverbank rehabilitation projects to prevent sediment and nutrients from entering the Logan River. These works will be in line with the Department of Environment and Science’s Offset Policy. This policy requires nutrient reductions to be 1.5 times greater than any nutrients discharged; resulting in a net environmental benefit for the Logan River catchment.

What systems are in place to prevent further damage to the Logan River?

Council will put systems in place to achieve a net improvement in the health of the Logan River catchment. Effluent from the WWTP will be treated to achieve ultra-low nutrient levels (Class A quality) using a state-of-the-art system and polished through constructed wetlands. An upstream nutrient offsets program will improve nutrient levels in the river and prevent tonnes of sediment from entering the waterway each year. The revegetated riverbank will also provide habitat and movement opportunities for native wildlife.

How would the WWTP site be managed in flood and storm events?

All proposed WWTP structures and wetlands (for Stages 1 and 2 of the WWTP) are above the Q100 flood line. The design of wetlands for further stages of the WWTP (required in about 2039) has not yet been determined.

A site based Stormwater Management Plan has been prepared which addresses the potential impacts from runoff in rainfall events during construction and operation of the WWTP. During construction, this includes erosion and sediment control measures such as silt fences, check dams, bunding and sediment ponds.

During operation, runoff from areas of the site which could contain wastewaster will be captured and directed through the WWTP for treatment. Stormwater in other areas of the site will be directed through a bio-retention basin to remove any contaminants.
What risk analysis has been completed regarding the accidental release of chemicals into waterways?

While Council is not aware of such an incident in the city in recent decades, the risk of chemical spill on site will be managed through strict controls on the storage and handling of chemicals. For example, all chemicals will be stored and handled in bunded areas.

How will wastewater overflows and spills be managed?

Emergency wastewater overflows would only occur if flows through the plant exceed five times its normal capacity (eg during an extreme weather event). In this case, flows would be screened and de-gritted, and directed into the on-site wetlands before discharge. Stormwater management controls in the operational area of the plant will provide an additional level of control in the unlikely event of a wastewater spill on the site.

ROADS AND TRANSPORT

What truck movements will occur?

The number and content of trucks to and from the WWTP during operation (based on the design capacity of Stage 1) are:

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Vehicle type</th>
<th>Return trips per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical deliveries</td>
<td>20,000L tanker</td>
<td>1</td>
</tr>
<tr>
<td>Biosolids removal</td>
<td>Body truck</td>
<td>5</td>
</tr>
<tr>
<td>Grit and screenings removal</td>
<td>8 tonne truck</td>
<td>1</td>
</tr>
<tr>
<td>Operator light vehicle access</td>
<td>Ute</td>
<td>8</td>
</tr>
</tbody>
</table>

What was the basis of the traffic assessment?

The Material Change of Use application addresses the impact of the WWTP development on the local traffic network, rather than reviewing baseline conditions in the area. Vehicle movements for the WWTP (above) do not constitute a significant additional traffic load on local roads. As such, traffic counts were not conducted.

Will the WWTP receive septic tank contents for treatment?

While a septage receival facility is listed as a potential inclusion in the concept design of Stage 1 of the Cedar Grove WWTP (in the odour assessment report for the Material Change of Use application to Economic Development Queensland), Council confirms that receival and treatment of material from septic tanks (septage) is not part of the Cedar Grove WWTP Stage 1 design.

Will the WWTP receive imported sludge for treatment?

While an imported sludge receival facility is listed as a potential inclusion in the concept design of Stage 1 of the Cedar Grove WWTP (in the odour assessment report for the Material Change of Use application to Economic Development Queensland), Council confirms that receival and treatment of imported sludge is not part of the Cedar Grove WWTP Stage 1 design.

What volume of tankered waste is processed at Loganholme WWTP each year?

In the 2016/17 year, Logan City’s largest wastewater treatment facility, Loganholme WWTP, accepted and processed 7.2 ML of tankered waste (approximately 1,500 deliveries).

Could WWTP trucks use Undullah Road instead of Cedar Grove Road during construction and operation?

During construction of the WWTP, Council will consider the use of Undullah Road for construction vehicles.

During operation of the plant, the seven return truck trips each week (as above) are not expected to significantly contribute to current truck movements on Cedar Grove Road.

Can Council move the access point to the wastewater treatment plant (WWTP) on Cedar Grove Road to a more appropriate location?
The access point shown on the current Cedar Grove WWTP master plan (map) is conceptual, and can be modified as required during the detailed design of the project.

Council notes the community suggestion of using the existing Seqwater access point on Cedar Grove Road. This access point / track is below the Q100 flood line. As such, any future access road at this point would require significant engineering to offer access to the WWTP during major weather events.

The WWTP access point, and other aspects of the site layout and design, will be discussed by the proposed Cedar Grove WWTP Community Reference Group during the detailed design phase.

PROPERTY VALUES

How will the plant affect property values and will Council fund an independent report into this?

Modern wastewater treatment facilities are relatively unobtrusive. Stage 1 of the WWTP includes low rise structures surrounded by a planted buffer zone (at least 800m of open space between structures and residential properties, with areas of vegetation). This will soften the appearance of structures and provide screening for residents. The wetlands will be visible to some residents, and will be designed to be visually pleasing. A modern odour control system will also be provided.

In other suburbs where Council operates WWTPs, property values continue to increase (eg the Loganholme median house price has increased from $318,500 in 2007 to $396,000 in 2017, and in Jimboomba the median house price has increased from $392,500 in 2007 to $480,000 in 2017 – source Price Finder). At this time, Council has not committed to funding an independent report into property values.

WWTP DESIGN AND PROCESS

How will the WWTP work?

Stage 1 of the WWTP will have the capacity to process wastewater for 20,000 people.

The plant will feature inlet works, a membrane bioreactor, membrane filtration system, biosolids dewatering and storage system, an odour control system, plant control systems, a solar array, administration building and constructed wetlands for nutrient removal. More information about the WWTP design will be available as the detailed design progresses.

What chemicals will be stored on site?

Chemicals for treating wastewater will be stored on site for approximately 30 days (based on the average dosing rate for Stage 1 design capacity). These are:

- Alum: 10,000L
- Liquid Sugar: 20,000L
- Sodium Hypochlorite: 10,000L
- Citric Acid: 3,000L
- Caustic Soda: 10,000L
- Liquid Polymer: 1,000L

Would a chemical spill upstream affect organisms in the bioreactor?

Should a chemical spill occur in the wastewater network and be transferred via pipelines to the WWTP, there is the potential for short-term impacts on the plant (eg on nutrient reduction). However, disinfection of the wastewater would still be achieved via membrane filtration.

In Council’s experience, chemical spills in the wastewater network are rare and typically come from industrial waste entering the network. Inside the WWTP, there are no chemicals upstream of the bioreactor which are likely to affect organisms in the bioreactor.

What are the risks of contamination occurring in the feed area?

Council assumes this question relates to potential contamination of wastewater or effluent from products used at / waste from feed lots. Council considers this risk to be low, as there will not be any feed lots connected to the wastewater network.

What are the environmental licence conditions for odour?

The licence states: Condition A1: Odours or airborne contaminants must not cause environmental nuisance at a sensitive place or commercial place.

Environmental nuisance is defined under the Environmental Protection Act 1994 as “unreasonable interference or likely interference with an environmental value”.

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What type of odour management system is proposed?

The proposal is for a bio-trickling filter and activated carbon unit odour control system. Odourous gases will be captured from the inlet works, bioreactor flow splitter and bioselector chambers for treatment.

Will there be odour impacts in the event of an emergency bypass?

In the event of an emergency bypass (eg during an extreme weather event), wastewater flows would be screened and de-gritted at the WWTP inlet works. Odour management is provided at this point before flows are directed into the on-site wetlands, before discharge. In such an instance, it is unlikely that residents would experience odour impacts.

Can you clarify references to Rubyanna WWTP with regards to odour studies?

Odour studies for new WWTPs are based on specific odour emission rates for the various process units within the treatment facility. Odour emission rates for process units at the Cedar Grove WWTP were based on monitoring data sampled at four treatment facilities - Goodna WWTP, Bundamba WWTP, Southern WWTP and Wetalla WWTP. Data from these facilities was also used as inputs for odour studies conducted for the Rubyanna WWTP which is currently being constructed in Bundaberg.

What are the environmental licence conditions for effluent and bypass events?

During normal WWTP operations, the plant will produce treated wastewater (effluent) in accordance with one of the strictest environmental permits in Queensland. Council will be required to meet tightly controlled levels of at least 11 water quality characteristics before effluent is discharged to the Logan River.

The environmental licence from the Department of Environment and Heritage Protection (DEHP) says that for Stage 1 of the WWTP, full treatment is needed for 5 x design Average Dry Weather Flows. The proposed trunk pipelines connecting to the WWTP are not designed to deliver more than this level of flows. Should they exceed this (eg in an emergency) the licence states that flows must discharge through the wetlands after being screened and de-gritted. Such an event would need to be reported to DEHP within 24 hours.

What level of redundancy is provided in WWTP equipment to manage breakdowns or power outages?

A risk-based approach to equipment redundancy has been taken in the preliminary design of the plant. Critical plant elements typically include standby units. Where this is impractical, critical spare parts will be stored on site. Emergency power generation (sufficient to operate the WWTP) will be provided by generators at the site.

Will the WWTP wetlands contribute to breeding of midges and mosquitoes?

In designing the wetlands, mosquito and midge control has been included as a key design parameter. There are a range of design / control measures that can be incorporated such as creating ‘moving water’ through the wetlands, altering water detention times in the wetlands, changing the steepness of banks, raising and lowering the water level as required, and promoting natural predators. The low nutrient level of water leaving the treatment plant itself also limits the likelihood of mosquito and midge breeding due to the lack of food sources for larvae in the water.

Council will regularly monitor the operation of the wetlands to ensure they are not contributing to local mosquito and midge concerns.

As wetlands will attract birds, have impacts on adjacent residents been considered (noise, odour and waste)?

While the wetlands are not being specifically designed to attract birds, it is likely that they will attract native wildlife including birds. This is considered a positive environmental benefit. However, the scale and design of the wetlands means that they are unlikely to attract large flocks of water birds.

Council will regularly monitor the populations of wildlife, including birds, on the site.
CONSULTATION AND COMMUNITY BENEFITS

How do we lodge a submission?

During the public notification period, community members can make a submission about Council’s MCU for Stage 1 of the WWTP to Economic Development Queensland (EDQ). The MCU is available on the EDQ website at www.dilgp.qld.gov.au (search for ‘Priority Development Area development applications’). The application reference number is DEV2017/826.

The public notification period is expected to commence during February 2018 (timing to be confirmed).

On what grounds would EDQ stop or relocate the plant?

Council cannot comment on EDQ’s assessment process. We recommend that community members address this question directly to EDQ.

What obligation does Council / EDQ have to acknowledge community concerns?

Council is currently acknowledging and addressing community concerns via meetings, written responses (like this one) and communications with individuals. Council proposes to coordinate a Community Reference Group in 2018 to enable community members to provide feedback on issues such as potential community features on the site.

Council cannot comment on EDQ’s community engagement process. We recommend that community members address this question directly to EDQ.

Will Council provide community facilities (eg walking tracks) and who would pay?

Council plans to seek feedback from a Community Reference Group to plan and deliver community facilities on the WWTP site. Initial feedback from community members (at meetings) has indicated an interest in access to the Logan River, walking tracks, a community garden and a community education centre. Funding opportunities are yet to be determined.

Which Councillors voted to approve the WWTP in the first place?

The decision to support the purchase of land for the purpose of constructing a WWTP was made at a full meeting of Council in 2009 and this is on the public record.

ALTERNATIVE LAND USES

If the WWTP does not proceed, will the site become high density housing?

As part of the PDA, the site has potential for small lot subdivision and is estimated to yield at least 400 residential lots. Since EDQ is the assessment manager for land within the PDA, Council has no control over the future development potential of the site.

For more information or to register your interest in participating in a Cedar Grove WWTP working group:
Phone 3412 9600 (ask for Tania Keelan)
Visit www.logan.qld.gov.au
Email community@loganwia.com.au