

# Minutes



## Community Reference Group (CRG) for the Burwood Beach Wastewater Treatment Works (WWTW) Stage 3 Upgrade – Master Planning and Environmental Impact Assessment (EIA) Phase

**MEETING DATE AND TIME:** 4 November 2010, 4 pm

**VENUE:** Bimet Lodge

**PRESENT:**

John Flannery (JF)	Chairman
Simon Fane (SF)	Hunter Community Environment Centre
Chris Tola (CT)	Surfrider Foundation Australia
Tim Ryan (TR)	Merewether National Surfing Reserve Committee
Ross Taggart (RT)	Merewether Surf Lifesaving Club
Brad Warren (BW)	OceanWatch
Scott Wiseman (SW)	Merewether Heights Public School P&C
Peter Dennis (PD)	General Manager, System Strategy and Sustainability (Hunter Water)
Rahul Chhillar (RH)	R/Manager System Planning (Hunter Water)
Lauren Randall (LR)	Project Manager (Hunter Water)
Tara Pagnutti (TP)	Project Engineer (Hunter Water)
Sheena Martin (SM)	Consultation and Communications (Hunter Water)
Dr. Ian Wallis (IW)	Consulting Environmental Engineers (Guest Presenter)
Dr. Yogeshwar Gokhale (YG)	Process Lead - CH2M Hill (Guest Presenter)
Azaria Rahardjo (AR)	Process Engineer - CH2M Hill (Guest)
Greta Zornes (GZ)	Project Manager - CH2M Hill (Guest)
Julian Briggs (JB)	Technical Director - CH2M Hill (Guest)

### 1. APOLOGIES

Apologies were received from Bob Hawes and Michelle Peden.

### 2. MINUTES OF PREVIOUS MEETING

The minutes from the previous meeting were approved with no changes.

It was noted that Hunter Water does intend to distribute to CRG members a matrix for pair-wise comparison of the options assessment criteria once these criteria have been developed

(likely to be early in 2011).

### **3. WATER QUALITY ASSESSMENT FOR OCEAN OUTFALL (CEE)**

Dr. Ian Wallis (IW) of Consulting Environmental Engineers (CEE) gave a presentation on the marine environmental assessment program for the Burwood Beach ocean outfall. The presentation (attached) broadly included:

- background information about the outfall;
- a summary of the results of previous environmental monitoring for the outfall (1993 – 2009);
- a summary of the results of a risk assessment held with key stakeholders/agencies in August 2010;
- a summary of the recommended future studies to assist with the Stage 3 Upgrade decision-making process (2010/11 – 2012/13).

As a result of questions and discussion, it was confirmed that:

- Hunter Water is investigating the potential to use swell forecasting technology to predict when disinfection is required and allow intermittent operation of the UV disinfection system (to reduce energy usage and greenhouse gas emissions). If found to be technically feasible, agreement with regulators would be required before implementing this approach.
- Hunter Water will engage a consultant to manage the marine environmental assessment program for both Burwood Beach and Boulder Bay ocean outfalls.
- Hunter Water will engage CEE for independent peer review throughout the program.
- Hunter Water will need to make a decision on the preferred upgrade option for the Burwood Beach plant by July 2012.
- The amount of solids being discharged to the ocean from the Burwood Beach WWTW is approximately 8 tonnes per day in the sludge and 3 tonnes per day in the effluent.
- Burwood Beach is currently the only plant in Australia to discharge sludge to the ocean.
- A treatment plant at Christies Beach in South Australia previously discharged sludge to ocean, however the practice was ceased when it was determined that sea grass in the area was being indirectly affected by the outfall (the sea grass was being eaten by certain fish species which were feeding on the sludge settling out around the sea grass).
- CEE has monitored a particular effluent outfall in Devonport for over 15 years and a key observation from this monitoring is that the near-shore seabed in Bass Strait is a very dynamic environment that is constantly changing due to natural processes and fluctuations. A similarly dynamic environment is expected to exist in the vicinity of the Burwood Beach ocean outfall.
- Based on CEE's review of the previous environmental monitoring results for Burwood Beach, there are very few species present near the ocean outfall. Most of the species present are "pioneering" species. IW highlighted that this is also the case at reference sites including Stockton and Merewether (i.e. very few species exist in the area in general), probably due to storm events occurring about every six months

which cause species that have recently developed in the area to be annihilated. Also, turbidity inputs from the Hunter River may mean that light availability is another limit.

- Future marine environmental monitoring will aim to define the extent (footprint) of the impacts from the Burwood Beach ocean outfall on the marine environment.

**ACTION** - Hunter Water will consider the implications of storm loads from the Hunter River on the local beaches and marine environment in conjunction with another project that is being undertaken (Hunter River Catchment Effluent Management Master Plan).

#### **4. UPGRADE OPTIONS FOR STAGE 3 UPGRADE (CH2M HILL)**

Dr. Yogeshwar Gokhale (YG) of CH2M Hill gave a presentation (attached) on six potential upgrade options for the Burwood Beach plant. The high level development of options was undertaken in a short timeframe to provide the CRG with a preliminary appreciation of:

- indicative treatment options for six broad upgrade scenarios;
- potential social implications for nearby residents (eg. odour impacts, truck movements, etc.);
- potential energy usage and greenhouse gas (GHG) implications;
- potential cost implications and affordability; and
- potential future discharge loads.

As a result of discussion, it was confirmed that:

- The GHG emissions presented were quantified relative to the current treatment process (base case scenario).
- The GHG emissions presented include scope 1 and 2 emissions due to emissions from process tanks and energy usage at the plant respectively, and potential scope 3 emissions due to truck movements. For the options that included biosolids reuse (scenarios 4, 5 and 6) it was assumed that the trucks would have to travel 100 kilometres to reach the reuse site.
- The GHG emissions presented do not include nitrous oxide (N<sub>2</sub>O) in the effluent and sludge streams discharged to ocean, as the scientific community has not yet agreed on how these emissions should be addressed.
- Hunter Water is reviewing its Corporate Biosolids Management Strategy in parallel with the Burwood Beach Stage 3 Upgrade project. Hunter Water will continue to investigate a range of biosolids management opportunities for the Burwood Beach plant, including:
  - continuing to discharge sludge to the ocean through the existing outfall;
  - treating sludge on-site at Burwood Beach and discharging the digested sludge to the ocean through the existing outfall;
  - extending the length of the ocean outfall and discharging the sludge further off-shore;
  - treating sludge on-site at Burwood Beach and trucking dewatered biosolids away for beneficial reuse;
  - pumping sludge to an off-site biosolids treatment facility before trucking the dewatered biosolids product away for beneficial reuse; and

- treating sludge on-site at Burwood Beach and discharging the digested sludge into the abandoned underground mine workings below the Burwood Beach site.
- Hunter Water will specifically investigate opportunities for energy and nutrient recovery as part of sludge treatment options for Burwood Beach.
- As the level of nitrogen removal at the plant increases, the operating and maintenance cost of the plant will increase, because nitrogen removal requires aeration (and hence power).
- Introducing sludge treatment will also increase plant operating and maintenance costs significantly.
- For this high level investigation it was difficult to model odour generation due to uncertainty regarding the exact location and sizing of the process units. However, as a general rule of thumb, the more process units on-site, the greater the possibility for the increase in associated odours. As the options with sludge treatment (Scenarios 4, 5 and 6) have significantly more process tanks, there is a possibility that these options may produce more odours than the existing plant. Whilst the estimated cost of each option incorporates odour control facilities to minimise odour emissions, there is still a risk that some additional odours may be experienced if sludge treatment is implemented. In addition, there may be some odours associated with the biosolids trucks transporting dewatered biosolids offsite for reuse. These moving odour sources cannot be easily modelled.
- One truck movement represents a round trip (i.e. one truck entering and exiting the site).
- Hunter Water will continue to investigate opportunities for reusing treated effluent from the Burwood Beach plant. Some potential opportunities include:
  - diverting some of the wastewater from the Burwood Beach catchment to other plants inland where there is greater opportunity for reuse;
  - diverting all wastewater from the Burwood Beach catchment to a new (greenfield) treatment plant site with sufficient space to provide high quality recycled water for industrial reuse.

## **5. GENERAL BUSINESS**

No general business discussed (due to shortage of time).

## **6. NEXT MEETING**

The next meeting will be held onsite at Burwood Beach WWTW on Thursday 3 March 2011. A site tour will commence at 2.30 pm and the meeting will follow at 4 pm.

**MEETING CLOSED:** The meeting was closed by JF at 6:30 pm

# Minutes



## ACTIONS ARISING FROM PREVIOUS MEETINGS:

	Action	Responsibility	Status/Comment
1	A schematic diagram illustrating the outfall tunnel and diffusers to be provided with more information on why the effluent and biosolids are discharged separately.	LR	Complete
2	Further feedback on the approval pathway will be provided to the CRG after the Government Stakeholder Briefing.	LR	Complete. Assessment under Part 5 of EP&A Act to be adopted (NB Department of Planning did not attend Government Stakeholder Workshop).
3	The Member Contact Details sheet will be updated to include email addresses and distributed to members.	LR & JF	Complete
4	An electronic copy of the questionnaire will be distributed to members.	LR & JF	Complete
5	A link to the project webpage will be distributed to members.	LR & JF	Complete (refer to Member Contact Details sheet)
6	An overview of Hunter Water's capital works portfolio and information on other major projects relevant to the Burwood Beach project to be provided at future meetings.	LR & JF	Overview of Capital Program complete. Further details of specific projects to be provided at future meetings.
7	Future CRG meetings will be held on the first Thursday of the month (every month until September and every two or three months thereafter).	LR & JF	Next meeting scheduled for Thursday 3 March 2011.

<b>Action</b>		<b>Responsibility</b>	<b>Status/Comment</b>
8	At future CRG meetings, minutes from the previous meeting will be printed for circulation.	LR	Complete
9	A presentation on the current and planned upgrades to the Newcastle transportation system will be provided at a future CRG meeting (but not the next meeting).	GB	Timing of presentation to be determined.
10	Copies of the "virtual tour" DVD will be forwarded to the CRG members.	LR	Complete
11	Dr. Ian Wallis will be engaged to present an overview of the Environmental Monitoring Program and recommended future studies/monitoring at the next CRG meeting.	LR	Complete
12	Dr. Ian Wallis will be consulted as to the potential cause of the reported intermittent clay coloured plume near the ocean outfall.	LR	Complete. No definitive cause identified by IW.
13	Hunter Water will discuss vehicle access with the National Parks and Wildlife Service (NPWS) at a Briefing on 12 August 2010.	LR	Complete. Access through Hunter Water owned land will not be provided. Use of land within Glenrock State Conservation Area is governed by the Glenrock Plan of Management developed by NPWS (copies can be obtained from LR on request).

<b>Action</b>		<b>Responsibility</b>	<b>Status/Comment</b>
14	Hunter Water will clarify whether the truck numbers quoted based on preliminary calculations at the Process Options Workshop referred to truckloads of biosolids or actual truck movements (in and out of the plant).	LR	Complete
15	Hunter Water will distribute a matrix for pair-wise comparison of assessment criteria by CRG members.	LR	Matrix will be distributed in 2011 once the assessment criteria have been developed (options need to be screened first to ensure selected criteria are meaningful and useful in differentiating the options).
16	Hunter Water will translate estimated capital and operating costs into the estimated change to each customer bill (i.e. \$ per customer per bill).	LR	Impact of six options presented on 4 November 2011 on customer bills is still being assessed and the information will be provided to the CRG when it is available.

**ACTIONS ARISING FROM CURRENT MEETING:**

<b>Action</b>		<b>Responsibility</b>	<b>Due Date</b>
17	Hunter Water will consider the implications of storm loads from the Hunter River on the local beaches and marine environment in conjunction with another project (Hunter River Catchment Effluent Management Master Plan).	LR	To be determined in conjunction with the consultant.