



Minutes

Meeting:	Hunter River Salinity Trading Scheme Operations Committee Meeting	Date:	Monday 10 May 2021
Location:	Singleton Civic Centre	Time:	10.15am-12.30pm
Last Meeting Date:	Monday 19 October 2020	Next Meeting Date:	Monday 11 October 2021
Present:	Dr WEJ Paradise – Chair Andrew Speechly – Discharge Licence Holder – Hunter Valley Operations Brenton Hubert – Hunter Valley Operations Bill Baxter – Discharge Licence Holder – YanCoal Australia Christopher Rooney – Discharge Licence Holder – AGL Macquarie Peter Jaeger – Discharge Licence Holder – Wambo Coal Ken Bray – Irrigators Representative – Hunter Valley Water Users Association Forugh Dorani – NSW Department of Industry, Land and Water Division Sri Sritharan – WaterNSW Mahmood Khan – WaterNSW Mitchell Bennett – NSW Environment Protection Authority (EPA) Genevieve Lorang – EPA Gina Bradley – EPA		
Apologies:	Michael Clarke – Environmental Representative (unable to attend due to COVID-19 advice) Robyn Parker – River Management Committee – Local Land Services (unable to attend due to COVID-19 advice) Gary Mulhearn – Discharge Licence Holder – YanCoal Australia		

Agenda items:

1. Introduction

1.1. Acknowledgment of Country and COVID-19 Procedures

The Chair acknowledged the Wanaruah people as the traditional owners of the land and paid respects to their Elders past, present and emerging. Ms Bradley ran through housekeeping and COVID-19 procedures.

1.2. Present, apologies and declarations of interest

The Chair welcomed the committee and noted the apologies. Mr Speechly introduced Mr Hubert as an additional representative from Hunter Valley Operations. Mr Baxter attended as Mr Mulhearn's delegate. There were no declarations of interest.

2. Previous Minutes and Outstanding Actions

2.1. Review previous minutes

The previous minutes were adopted with no changes.

2.2. Outstanding actions

Action Item No	Action	Person Responsible	Status
1	In consultation with WaterNSW, draft amendments to the SOP to be circulated before the next meeting	Mitchell Bennett	Ongoing – see agenda item 5 below
2	Statement of Work to be finalised and progressed before the next meeting	Mitchell Bennett	Complete
3	Ms Bradley to coordinate volunteers to complete the User Acceptance Testing within the timeframe finalised in the Statement of Work	Bianca Morton and Gina Bradley	Ongoing – this has not been completed as scheduled due to ongoing issues with security firewalls preventing external access to the test environment. Internal UAT members have tested and provided feedback on the changes. If the external issues cannot be resolved in the coming weeks, it was agreed the changes should be sent live to prevent further delays.
4	WaterNSW to advise the EPA of the final costs of model development so that a request to vary the 2020-2021 budget can be circulated to the committee before the next meeting	Sri Sritharan	Complete – see agenda item 3
5	Demonstration on managing a discharge event to be carried over to the next meeting and Ms Bradley to secure a meeting venue with sufficient internet connection for the presentation	Sri Sritharan/Mahmood Khan	Complete – see agenda item 4 below

3. HRSTS Draft Budget for 2021-2022

3.1. Presentation on the Draft Budget for 2021-2022

Mr Bennett presented the 2021-2022 budget. Overall costs are projected to be \$914,777. This includes WaterNSW costs of \$741,025 and EPA costs of \$167,752.

The following points were raised in relation to the presentation:

Expenses:

- It was noted that meeting costs may go down if future meetings are scheduled online.
- The \$914,777 total expenses compared to \$886,752 from the 2020-2021 expenses.

WaterNSW's estimated cost breakdown

- Model auditing and calibration costs of \$84,480 have been built into the 2021-22 budget.
- There has been a transition from the excel platform to a new system and the model auditing and calibration costs include costs associated with maintaining this system. (The system outputs remain the same, but the platform has now changed.)

Income:

- Auction income has previously been built into the budget during the auction year, whereas this time it will be incorporated into the 2022-2023 budget. Next steps
- The 2020 auction proceeds will cover July-Dec 2020 invoices. The \$85,000 for Jan-Jul 2021 invoices may change based on the actual invoiced costs. These should be available early next financial year.

Resolved: The draft budget was endorsed by the committee.

3.1.1. Proposed Model Upgrades

The committee then discussed the upgrades to the current model proposed by WaterNSW in further detail.

The current model is based on observed flows being routed, not predicted flows. The upgrade would allow for different modules to be attached, for example, rainfall runoff model can be developed by WaterNSW and plugged into the CARMLite model. This would provide participants with more reliable advice on the likelihood of an event. WaterNSW confirmed a couple of the flood models are being tested next week.

The costs of this needs further scoping by the committee, with a clear timeframe to be provided. There has been previous conversation on ways to speed up the system, but no progress has occurred so far. The committee needs to consider the importance of advance notice.

Mr Jaegar has used the trading system once with Mount Thorley and it worked well, aside from the issues with accessibility to trade credits on the credit register.

The current notifications appear to be an issue for industry discharging in the upper sector. The higher up the catchment the less notice participants get and arguably the less certain the predictions are. It was noted that there are no members on the committee from the upper sector and that it would be good for them to be represented. The Chair indicated he would raise this issue in the Mt Arthur Coal and Mt Pleasant Community Consultative Committees. Dartbrook mine is the furthest operator up the catchment and, whilst the system is set up so that they can only discharge under the rules in the scheme, it is unclear how Dartbrook would be able to access the scheme in practice. Given the status of Dartbrook mine is still under review it may be worthwhile for the EPA to obtain more understanding about the status of Dartbrook mine regarding their water issues and potential need to use the HRSTS.

Mr Rooney added that advance notice is beneficial for AGL Macquarie, because they contact industries downstream to give them 24 hours advance notice of any discharge. In a situation where there is only a couple of days to discharge, it would be beneficial to have a couple of days advance notice.

There should be a balance between advance notice and certainty. Although, it is arguably more beneficial to have advance notice.

The committee agreed it would also be good to understand how long the discharge period might last for. It would allow credit trades to be made with more certainty.

Action Item No	Action	Person Responsible
1	Provide an example and estimated benefits of the proposed model upgrades. The committee will then consider the value of the proposal in more detail.	WaterNSW

4. Managing discharge events

4.1. Demonstration on how to manage a discharge event

Mr Khan provided an overview of the HRSTS as a refresher to the committee. A handout was distributed containing all the gauging stations used in the model. The following points were raised:

- The flood flow register still shows the individual Total Allowable Discharge (TAD) levels. Mr Hubert was unsure if this meant the TAD needed to be considered for flood flows. This was added when the MERF (Manage Envelope of Residual Flows) scheme was in operation to help participants ensure that salinity targets were not exceeded during flood flows. As MERF has now been discontinued, the individual TAD levels are no longer relevant and should not be included on the flood flow registers. In high flow, everyone must use the same TAD.
- The Middle Sector (Denman to Glennies Creek) has been in high flow for some time. Mr Bray wanted to know if this threshold limit could be decreased. The system was designed cautiously so that everyone could be discharging at maximum capacity during a flood flow. At a lower rate,

WaterNSW calculates the amount of discharge on a 24-hourly basis. Mr Bennett confirmed that decreasing the upper flow threshold limit would risk discharging too much salt into the river.

- WaterNSW confirmed that checking rainfall forecasts in the lead up to the event is part of the initial process in managing a discharge event, consistent with the Standard Operating Procedures (SOP).
- It is the members' responsibility to keep the early warning network notification mailing list updated. A new member can be added to the list by either phoning WaterNSW or emailing Mr Khan or Mr Sritharan directly.
- WaterNSW confirmed there is no defined flow threshold criteria to trigger the commencement of the model run for an event. It is based on experience in assessing the catchment condition and tracking the flows.
- Trial model runs are commenced on the forecast of rain by the Bureau of Meteorology in order to check all attributes of the model and get ready for a potential event. Formal model runs are commenced based on the observed flows in the tributaries.

Mr Khan then ran through the steps involved with managing a discharge event. The step numbers correspond with the step numbers in the SOP. The following points were raised in relation to individual steps:

Step 1: Create the event

- The operator extracts the average hourly data from the last 7 days. The time lag from the monitoring point to the computer is around 15-30 minutes.
- Initiate the Salt Model and load real data from the current event.

Step 28: Forecast the recession for the next few days

- The recession curve is manually adjusted based on the flow hydrograph at the gauge in upstream, operator knowledge and understanding of the weather forecast.
- The recession curve coefficient must be adjusted for every model run.
- If the rainfall runoff model was in place it would be possible to predict this more accurately. The current model presumes that the flow hydrograph from the tributaries has already peaked, so the operator is adjusting the rate at which it drops. This means it must be checked every few hours to adjust the rate based on any additional rainfall.
- Saddlers Creek is not taken into consideration specifically in the model, but it is considered by the operator. Looking at it outside of the river gives more flexibility than it would in the model.

Step 30

- The operator must be satisfied with the forecast. This will involve consulting the WaterNSW team and also looking at the hyplots, for example, looking upstream to see what is happening.

Step 33

- The model will produce results which include the recorded/observed flow, the model forecast flow, the observed Electrical Conductivity (EC) and the forecast EC. The goal is to accurately assess the recession of flows in the main tributaries and then accurately route that flow to the three reference sites. When routing of flows and EC to the reference sites the operator, where appropriate, may line up the trace for the observed data with the trace for the model's prediction.
- In order to get the peak and the timing of the routed flow as accurate as possible, there is a separate database containing 20 years of previous discharge events. The operator will look at similar flows in the database and use this information to update the model, by manually adjusting the time lag and/or the magnitude of the flow forecast and the salinity forecast.
- It was acknowledged that this requires a strong level of knowledge. It is time consuming to review historical data and compare previous events.
- The model will demonstrate when there is a deviation in the observed and the forecasted, but it doesn't explain why a deviation might occur.
- The model makes its predictions based on historic events, but every event will ultimately be different.

Step 39: Import the completed forecasts

- The model calculates flood flow, high flow and low flow events. The operator then checks that the flow thresholds are correct and consistent with the regulation (these should never change).

Step 45: Check credit holdings

- This involves extracting the river sector report on the EPA HRSTS credit register website.
- The total figures are inputted into the allocation calculations. The total number will not always add up to 1000 as some credits may be held by users that cannot discharge.

Step 49: PDF and publish the register on the website

- A register will not be published if the flow duration at Singleton is less than 24 hours. This means there is a missed opportunity to discharge in the blocks at either end of the event. The operator will look at the hydrographs and run the model again, taking a less conservative approach, as a way of testing this sensitivity.

The process of one operator running the model takes approximately 1.5 to 2 hours. This is then checked by another operator. Extended events take less time to run than the initial event.

The process is recorded in the SOP.

At least three WaterNSW operators are trained to run the model and the planning team is capable of assisting to cover when trained operators are unavailable. The 'central' team are based in Dubbo and cover the Hunter region, working 7 days a week.

Mr Bray acknowledged that when an anomaly happened on Sunday evening it was well managed.

Mr Speechly suggested adding a step to include fully automated flow routing to the reference sites based on past events to better categorise events both in lag-times and flow peaks. Some automated flow routing is already included in the current model. Flow routing in CARMLite is modelled (automated) similar to the current model and may require some operator intervention to get the peaks and lag-times correct.

The Chair concluded the discussion, adding that advance forecasting may need to be discussed in the budget. WaterNSW were thanked for a clear and informative demonstration.

Action Item No	Action	Person Responsible
2	Remove the TAD numbers recorded against the flood flow registers	WaterNSW
3	Confirm if 24-hour service is contracted within the service agreement between the EPA and WaterNSW, over and above the 7 days requirement	Mitchell Bennett

5. WaterNSW Standard Operating Procedures (SOP)

5.1. Draft amendments to the SOP

Mr Bennett and Ms Lorang reviewed the SOP whilst WaterNSW ran through the demonstration at item 4 above. Feedback is to be shared with the committee. Areas which require operator knowledge and experience should be acknowledged and recorded in the SOP.

Action Item No	Action	Person Responsible
4	In follow up to previous action item, any proposed amendments to the SOP are to be drafted and circulated with the committee	Mitchell Bennett / Genevieve Lorang

6. General Business

6.1. Other

The Chair asked Mr Rooney for any updates on the Liddell fish passage. AGL met with Fisheries but it is unclear how far this will progress. Modifications to the weir to provide fish passage could cost around \$2-3 million.

Mr Bray raised an issue with the communication of the scheme. At the last meeting there was a table shared that showed how the scheme has been implemented and demonstrated how salinity has been

improving. There are still people that do not understand. The Minerals Council puts out useful information. There is more that could be done in this space. This information could be taken to Hunter Coastal Customer Advisory Group, but this is only a small group.

Ms Bradley reminded the committee that the current membership will expire in September 2021. A call for new member nominations will be advertised in due course and current members will be eligible to reapply.

The committee agreed it would be beneficial to have some broader communication to the community on the successes of the HRSTS.

6.2. Next meeting date

The next meeting is scheduled to take place on Monday 11 October 2021. The first meeting of the new committee will likely be held in person. Thereafter, all meetings will be held online unless there is a specific reason not to, for example, if a site visit is scheduled.

Action Item No	Action	Person Responsible
5	Develop content on the long-term successes of the scheme	Mitchell Bennett / Gina Bradley