

## Community Committee for Recycled Water Storage (Northern Adelaide Irrigation Scheme)

<b>Project Name</b>	Northern Adelaide Irrigation Scheme					
<b>Purpose</b>	Community Committee for Recycled Water Storage					
<b>Date</b>	13/04/2016	<b>Time</b>	5pm – 7pm			
<b>Meeting No.</b>	9	<b>Frequency</b>	Fortnightly			
<b>Facilitator</b>	Matthew Bonnett, SA Water		<b>Minute Taker</b>	Chloe Ringwood, SA Water		
<b>Venue</b>	Virginia Horticultural Centre, Old Port Wakefield Road, Virginia					
<b>Attendance</b>	Michael Picard	P	Eddie Stubing	P	Matthew Sheedy	P
Ab = Absent	Frank Maiolo (proxy for Dino Musolino)	P	Kieren Chappell	P	Peter Rentoulis	P
Ap = Apologies	Ross Trimboli	P	Evie Arharidis	P	Louis Marafioti	P
P = Present	Mark Wilson	P	Danny De Ieso	P	Paul Cleghorn	P
	Joe Lazzaro (proxy for Mark Wilson)	P	Dino Musolino	Ap	Mark Wilson	Ap
	Nick Pezzaniti	Ap	Rocco Musolino	Ab	Nghien Nguyen	Ab
	Susie Green	Ab	Greg Pattinson	Ap	Felicia Nguyen	Ap

### 1 Welcome and Apologies

Matt welcomed all members and introduced proxy's; Frank Maiolo and Joe Lazzaro.

The agenda for the meeting was outlined as follows:

1. Welcome and apologies
2. Minutes of previous meeting and review of actions
3. Presentation: Water Security Update, Guest Presenter: Chris Burgess, Manager Operations, City of Playford.
4. Workshop 3: Draft Plan Structure - Key principles/Issues for Discussion
5. Other business
6. Next meeting

The apologies were noted (as above).

### 2 Minutes of previous meeting and review of action items

The minutes of the previous meeting 30/03/16 were tabled to the Committee with a view to confirming them at the following meeting.

### 3 Presentation: Water Security Update – City of Playford

Matt introduced guest speaker Chris Burgess, Manager - Operations

*The presentation slides are attached.*

*The questions received and responses provided after the presentations are summarised as follows:*

A Committee member sought clarification on the contour lines labelled 10 and 20 on the picture of Stebonheath Curtis Wetland in the presentation. In response, it was noted that the modelling represents the groundwater pressure of the aquifer. A further question was asked about what impact the contours pictured on the slide have on the existing contours of the Northern Adelaide Plains. In response, it was noted that the broader contours of the Northern Adelaide Plains would have a certain pressure i.e. pressure X. The map resembles modelling of site specific contours and should be interpreted as pressure X + 10 and pressure X + 20 etc.

A Committee member sought clarification about a statement in the City of Playford's fact sheet stating the City of Playford already successfully manages 5 sites and asked if they were injecting treated wastewater at all of these sites. In response, it was noted that the City of Playford is currently only injecting stormwater at each of these sites however the proposal to inject WRSV (Bolivar water) is only for the Stebonheath Curtis Wetland.

A Committee member asked if the City of Playford do any additional treatment other than using the wetland before injecting the water. In response it was noted that the water is collected into a basin which is then gravity fed into a section of the wetland that contains reed beds and spends a number of days in this section (detention time). Live instrumentation at this site monitors the turbidity, pH and EC (salinity). If any of these breach the parameters set by the EPA, the injection bore shuts off after 30 minutes. Additionally, a range of water samples, at different volumes of injection, are collected and sent to the Australia Water Quality Centre (AWQC) for testing, including for approximately 80 metals.

A Committee member asked whether a heavy rain event would cause overflow of the holding pond. In response, it was noted that approximately 2GL will travel into Smith Creek and that the City of Playford will only collect a small amount of stormwater at this site.

A Committee member sought clarification about the quantity of Bolivar water the City of Playford is planning to inject into the aquifer. In response, it was noted that if there was no rain at all, the modelling indicates up to 300ML could be injected. However, on an average year the City of Playford are suggesting approximately 150ML, which will be 100% extracted.

A Committee member asked if the City of Playford expect the Bolivar water to meet the same standards as the stormwater currently being injected. In response, it was noted that the Bolivar water would be more consistent than stormwater, however the Bolivar water would have separate licence conditions that must also meet the MAR guidelines.

A Committee member asked if the wetland can be closed off during a first rain event to prevent heavily polluted water entering the pond. In response it was noted that the City of Playford would give the water a longer detention time if it were from the first rains after a long period. The Stebonheath Wetland can be closed off if required during heavy rain events or utilise the low flow bypass to allow the initial dirty water to bypass the pond.

A Committee member sought clarification around the process of allowing the initial water to bypass the pond, as it was understood that wetlands are responsible for filtering the "dirty water" (from roads etc.) before it's discharged to sea. In response, it was noted that if there was a 50mm rain event which ends up generating 400ML of water the City of Playford might only catch 100ML. Therefore, to achieve the correct treatment, the water must remain in the reed section of the wetland for 4-10 days.

A Committee member asked if anyone was held responsible to ensure after a heavy rain event the water is "cleaned" before it enters the sea. In response it was noted that wetlands are used for this purpose however this particular wetland (Stebonheath Curtis Wetland) is being used for a MAR scheme.

A Committee member sought clarification around the proposed costs of the NAIS scheme and why that amount of money isn't being spent at Bolivar to improve the water quality discharged to sea. In response, it was noted that requirements to the marine environment are centred around environmental values of the water and the Department of Health. The marine environmental requirements are for low nutrient and turbidity levels to be discharged, i.e. low Nitrogen and Phosphorus. The water supplied to the VPS is tertiary treated water for irrigation. It is understood growers prefer higher Nitrogen and Phosphorus nutrient levels for use on food crops. It is important to note that different targets are required depending on the end use. The MAR Guidelines require the recycled water to be a high standard. A Committee member added that the issue when discharging nutrient rich water to the marine environment is that as soon as it is exposed to sunlight, algae begins to bloom, whereas if it were injected into a dark environment (i.e. underground) this eliminates that risk. An SA Water representative also spoke of the original VPS infrastructure being underpinned by government funding that allowed the recycled water to be priced without the need to recover the initial cost of the assets. Therefore, SA Water and the Government of South Australia currently subsidise the cost of recycled water that is provided through the VPS.

A Committee member sought clarification about the purpose for the recent government grant applications and whether that money was to be used for upgrading Bolivar. In response, it was noted that the grant would assist to upgrade the tertiary treatment process of the water supplied via the current VPS. An SA Water representative added that as part of the EOI process, the shortlisted proponents have been asked for improved water quality.

A Committee member asked SA Water for written evidence that the treated recycled water meets the water quality guidelines. In response, it was noted that this would be included in the Draft Master Plan for Recycled Water Storage.

## 4 Workshop 3 – Draft Plan Structure - Key principles/Issues for Discussion

*Matt explained to the Committee that the following slides contain all the information the Committee Members have raised or discussed throughout the 8 Committee Meetings to date, and what will be emphasised in the Draft Plan for Recycled Water Storage.*

*The questions received and responses provided are summarised as follows:*

A Committee member asked if it was possible to inject the water into the aquifer with a salinity that is of 5000TDS. In response, it was noted that it is possible however the efficiency of recovery of acceptable quality water becomes reduced as the mixing zone creates lower quality water due to the high salinity.

A Committee member sought clarification on why the T1 was not being considered for a MAR scheme. In response, it was noted that this had been discussed in earlier meetings however it was noted that the T1 in the NAP is of a lower TDS and more people use the T1 for domestic purposes.

A Committee member spoke of a possible survey that could be included in the site selection process to determine the purpose of each bore in the area of a potential storage. In response, it was noted that this was a good suggestion and will be included in the plan.

A Committee member asked whether it's better to measure salinity than the actual bore use. In response it was noted that it would help identify appropriate areas in relation to salinity however there will be a number of additional characteristics that will contribute to site selection.

A Committee member asked if a MAR is only being considered north of the Gawler River, in line with the results from the Market Proving Study. In response, it was noted that the plan would help to

identify where possible locations for a MAR or above-ground structure could be. Earlier discussions with the Committee indicated that Bolivar could be a potential site for storage and that is south of the Gawler River. The criteria that the Committee identify as essential will ultimately determine the location of the storage solution.

A Committee member sought clarification on the parameters associated with above-ground storage. In response, it was noted that there are a number of parameters including;

- Amenity of above-ground storage (high walls)
- Cover for lagoon (to mitigate algae growth)
- Land suitability and availability
- Planning consent (applications sent to Development Assessment Commission)
- Storage construction
- Site selection (soil structure, land size, distance of above-ground storage to residential/commercial property)
- Environmental hazards (pests, odour, leakage)

A Committee member sought clarification around the monitoring bores in the attenuation zone (diagram on pg 9 of presentation) of the water once injected into the aquifer and whether it would make matters worse for extraction. In response, it was noted that the diagram is to be interpreted as a guide only and characterisation of the aquifer is really needed at a given site.

A Committee member asked where the extracted water would go if this diagram was being used as an example of a contingency measure. In response, it was noted that these details would need to be determined during the site selection process and site-specific investigations. If the extracted water is of a high TDS then it would need to be treated for re-use.

A Committee member questioned whether computer modelling was capable of predicting the aquifer characteristics and how the water will behave once injected. In response, it was noted that computer modelling is just one aspect of modelling and there are a number of others such as live data collection in the hydraulic impact zone and FeFlow, which is a solute transport model which helps identify the salinity contours. Salinity is a good tracer for water movement. The Modflow program is also used to look at the changes in pressure.

A Committee member asked if the water will be cleaned up and injected into the nearest reservoir as a form of drinking water security. In response, it was noted that there are no plans for this to occur as there is no current requirement for additional drinking water (i.e. the desalination plant is back-up source). The Market Proving Study has also identified that there is further demand for the additional water to be used for irrigation or other 'fit for purpose' uses.

A link to the Goyder document that has information on this is provided below.

<http://www.goyderinstitute.org/uploads/Public%20Health%20Risk%20Assessment%20Final%20Report%20June%202014%20%282%29.pdf>

A Committee member sought clarification on the barriers (Critical Control Points) that are in place during the treatment process at Bolivar. In response, it was noted that while the lagoons discharge to sea after 2 treatment processes, the water that is distributed through the VPS needs to pass through a further 3 barriers in order to protect public health.

## 5 Other business

Matt asked the committee if there were any further questions or other business they wish to discuss.

No further questions were noted.

## 6 Next meeting

The next meeting is scheduled for 11/05/2016 from 5-7pm at the Virginia Horticultural Centre.

SA Water will provide a copy of the Draft Master Plan for Recycled Water Storage in the Northern Adelaide Plains Region prior to next meeting for Committee review.

### Open Action Items Register

No.	Action	By Whom	Date Raised	Status
1.	Consider how an independent hydrogeological assessment of the technical modelling of any future managed aquifer storage schemes established as part of NAIS (in line with established Plan) could be undertaken and made publicly available.	SA Water	13/01/16	To be included in storage plan
2.	To revise the Storage Plan (Guidelines) to be more prescriptive in certain areas of the document e.g. site selection process.	SA Water	11/05/2016	To be included in storage plan