SA River Murray flood inundation modelling from Wellington to Lock 7

Updated modelling informed by the 2022–23 flood event

Department for Environment and Water
April 2025

DEW Technical report DEW-TR-2025-13

Government of South Australia
Department for Environment and Water

Department for Environment and Water

Government of South Australia

April 2025

81-95 Waymouth St, ADELAIDE SA 5000

Telephone +61 (8) 8463 6946

Facsimile +61 (8) 8463 6999

ABN 36702093234

www.environment.sa.gov.au

Report prepared by:

Dr Daniel McCullough

Water Science Unit

Water, Science and Monitoring Branch

Water and River Murray Division

Department for Environment and Water

Preferred way to cite this publication

McCullough DP (2025). *SA River Murray flood inundation modelling from Wellington to Lock 7 – Updated modelling informed by the 2022–23 flood event,* DEW Technical report DEW-TR-2025-13, Government of South Australia, Department for Environment and Water, Adelaide.

Download this document at https://www.waterconnect.sa.gov.au

Foreword

The Department for Environment and Water (DEW) is responsible for the management of the State's natural resources, ranging from policy leadership to on-ground delivery in consultation with government, industry and communities.

High-quality science and effective monitoring provides the foundation for the successful management of our environment and natural resources. This is achieved through undertaking appropriate research, investigations, assessments, monitoring and evaluation.

DEW's strong partnerships with educational and research institutions, industries, government agencies, Natural Resources Management Boards and the community ensures that there is continual capacity building across the sector, and that the best skills and expertise are used to inform decision making.

Ben Bruce
CHIEF EXECUTIVE
DEPARTMENT FOR ENVIRONMENT AND WATER

Acknowledgements

This work was conducted under the Flood Mapping Project funded by the South Australian Government.

We acknowledge DEW's Water Resource Monitoring Unit for maintaining data collection capabilities at critical monitoring stations up to and including the flood peak as it passed through the South Australian River Murray. We also acknowledge DEW's Water Infrastructure and Operations Branch and Renmark Paringa Council for collection and supply of levee bank survey data.

We acknowledge the contribution of Strategy, Science and Corporate Services Division, Information and Communication Technology Branch within DEW, in particular Matt Gregory – Systems Administrator, for maintaining the high-performance modelling servers and related software required for producing the modelling component of this work.

We acknowledge Andrew Keogh from the Murray Darling Basin Authority for supplying the Chowilla Floodplain hydrodynamic model, components of which were incorporated into the Lock 6 to 7 model, and DHI for their work in building the Lock 6 to 7 MIKE+ model. We also acknowledge review edits and comments that have improved this work from Matt Gibbs (CSIRO) and Claire Sims, Jason VanLaarhoven, Graham Green and Peter Baker (all of DEW).

Contents

List of figures

List of tables

Summary

The River Murray flood event of 2022–23 was the largest magnitude flood experienced in the South Australian (SA) Murray–Darling Basin (MDB) since 1974, peaking at a calculated Flow to SA (QSA) of approximately 186 GL/d, with an estimated annual exceedance probability of 1 in 65. At the time of the 2022–23 flood event, the best publicly-available flood-related data in SA was the 'Flood Awareness' mapping produced by the Department for Environment and Water (DEW) which was generated from hydrodynamic modelling of the river and floodplain at QSA magnitudes from 100 GL/d to 341 GL/d (1956 flood event equivalent flow). The outputs from this previous modelling proved critical to informing SA's response to managing the impacts of the flood.

A limitation of the models used for the Flood Awareness work was the small sample and age of the historical events that underpinned the model calibration with 1974 being the most recent flood of similar magnitude to the 2022–23 event. Progressive development occurring within the Basin since 1974, such as changes in land use over time, increased the likelihood that the 'water level-to-flow' relationship – or the expected height of water at any point along the river for a given flow – had altered from historical conditions. As the 2022–23 event progressed up to the flow peak, higher water levels were observed than that suggested by the modelling available and existing rating curves. The previous modelling also extended only up to Murtho, downstream of Lock 6 (River Murray distance marker 590 km), resulting in a gap in the outputs up to the state border. This data gap between Murtho and the border complicated efforts to predict water levels in this area based on flow forecasts, noting these forecasts were linked to QSA, upstream of the state border (River Murray distance marker 696 km).

Following the conclusion of the 2022–23 flood event, the observed data that had been collected during the event, including water levels and flows, were used to update and recalibrate the latest hydrodynamic models available within DEW – and in the case of the Lock 6 reach, to commission the development of a new hydrodynamic model extending from Lock 6 to Lock 7. The work produced three sequential hydrodynamic models comprising the River Murray reaches from Wellington to Lock 3, Lock 3 to Lock 6, and Lock 6 to Lock 7. These models were used to generate detailed flood inundation maps containing water levels, depths, and velocities for River Murray flows (QSA) spanning from 80 GL/d to 341 GL/d.

This report summarises the work undertaken in model development and the flood scenarios conducted in the generation of the detailed hydrodynamic outputs which include modelled flood extents and water level profiles along the length of the River Murray between Wellington and Lock 7. For the flood scenarios run, a comparison with the outputs from the earlier Flood Awareness modelling was also made to quantify the shift in the water level-to-flow relationships since the last equivalent flood event in 1974. By updating and refining these models, this effort has strengthened the state's ability to predict water levels during future floods, and enables a broader range of scenarios to be considered to inform future water management projects in South Australia.

1 Introduction

1.1 Background

The River Murray flood event of 2022–23 was the largest magnitude flood experienced in the South Australian (SA) River Murray since 1974, peaking at a calculated Flow to SA (QSA) of approximately 186 GL/d as shown by the hydrograph in Figure 1.1. Based on the analysis presented in Bloss et al. (2015a), this event had an approximately 1 in 65 annual exceedance probability (AEP).

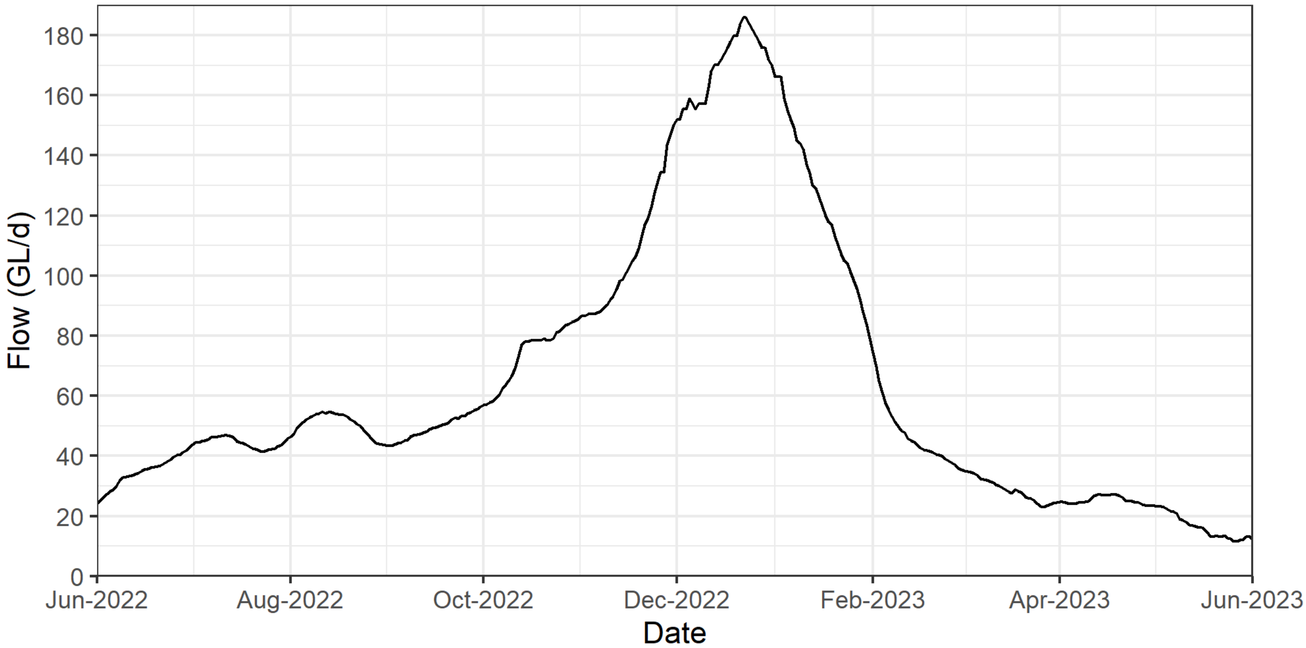

Figure 1.1. QSA hydrograph of 2022–23 flood event.

At the time of the 2022–23 flood event, the best publicly-available flood-related data in SA was the 'Flood Awareness' mapping produced by the Department for Environment and Water (DEW) and described in Bloss et al. (2015b). From this work, steady state flood extents for QSA magnitudes from 100 GL/d to 341 GL/d (1956 event equivalent flow) were generated using detailed MIKE FLOOD hydrodynamic models spanning from Murtho to Wellington. The outputs from this work proved critical to informing SA's response to managing the impacts of the flood in 2022–23.

The main limitations with the Flood Awareness modelling, for the purposes of supporting the flood response, included the model domain not extending all the way to the state border—thereby resulting in a data gap in the upper sections of floodplain in the state—and the small sample and age of the historical flood data available on which the model calibrations were based. By necessity this modelling relied on the records of historical flood events for model calibration, including the events of 1992–93 (96 to 112 GL/d), 1974 (163 to 182 GL/d) and 1956 (341 GL/d) to represent lower, middle, and upper bounds of the modelled flow range, respectively (Bloss et al. 2015b). However, the extended period between the 2022–23 event and the two largest of these historical events meant a likelihood that the water level-to-flow relationship along the River Murray in SA had shifted due to progressive development within the Basin, such as land use changes over time. Such a shift was evident in monitoring undertaken during the event at locations such as Overland Corner gauging station (site ID A4260528), where the existing 'stage–discharge' rating (i.e., conversion of level to flow based on a relationship derived from measured data) indicated higher calculated flows than those gauged at the site (Figure 1.2). For emergency response purposes, these differences necessitated corrections to be applied to the Flood Awareness modelled outputs throughout the 2022–23 flood event to improve the estimates of localised water levels against the anticipated flow peak and refine the representation of potential inundation extents from the modelled outputs at flow rates not experienced in recent years.

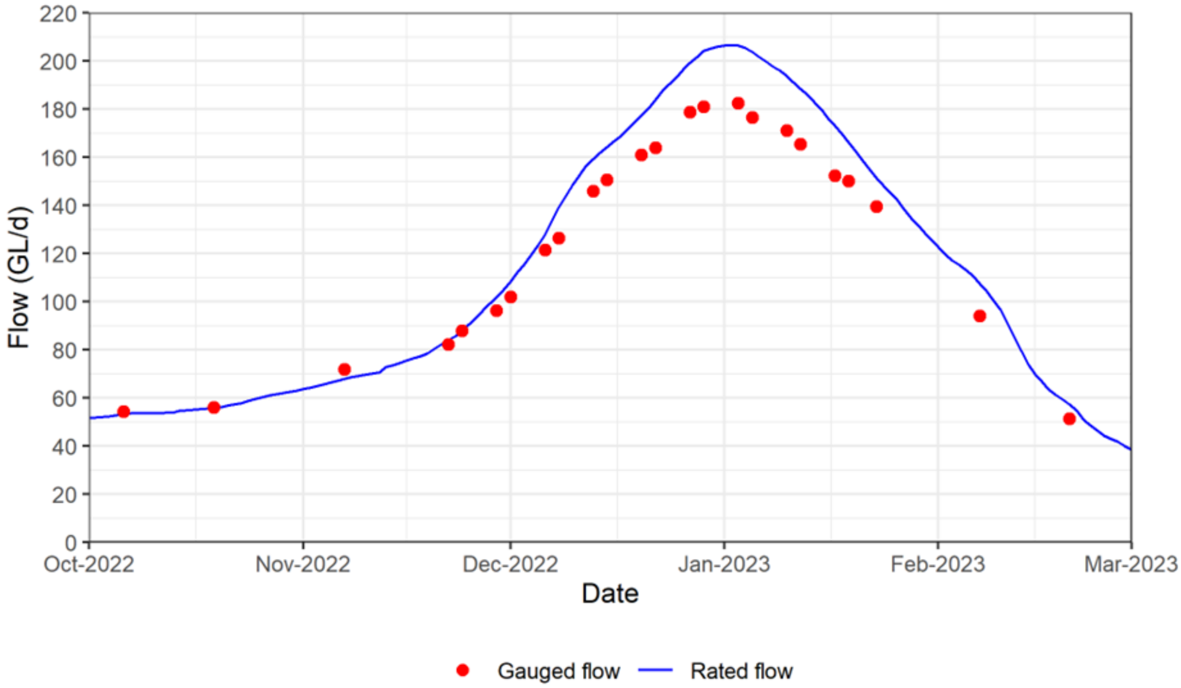

Figure 1.2. Comparison of gauged and calculated flow using the existing rating at Overland Corner gauging station (A4260528) during the 2022–23 flood event.

The outcomes of the 2022–23 event indicated work was required to update the flood knowledge held by SA, such that the state's response to future flood events, will be based on the best available information. The large amount of water-related data collected during the event, including water levels, flows, and inundation extents via satellite imagery provided an invaluable opportunity for updating the available hydrodynamic models of the River Murray in SA.

The models used to generate the Flood Awareness maps in the mid-2010s have been superseded by a new set of hydrodynamic models that provide greater flexibility in the types of scenarios that can be run and the outputs that can be generated. However, the largest flow to which these models had previously been calibrated was from the 2016–17 high flow event with QSA peak of approximately 95 GL/d. Therefore, the calibration range needed to be extended to improve model functionality under flood flow conditions and the 2022–23 flood event provided this additional data for flows up to 186 GL/d. The models also had a similar gap to the Flood Awareness models, with no model coverage upstream of Lock 6 to the border, necessitating the build of a new hydrodynamic model. The following sections summarise the work undertaken to build and update the models and generate an updated set of flood outputs for the River Murray in SA and the findings that have emerged from these outputs.

1.2 Aims and objectives

The purpose of this report is to summarise:

- the refinement and recalibration work of the existing hydrodynamic models between Wellington and Lock 6;
- the development and calibration of a new model between Lock 6 and Lock 7; and
- the modelling conducted with these models to generate updated flood extents and associated hydrodynamic data for flows into SA between 80 GL/d and 341 GL/d.

The maps generated are intended to provide an updated dataset that can be used to assist planning and emergency response for future floods in the South Australian Murray-Darling Basin (SA–MDB).

2 Methodology

2.1 Study area

The area of interest for revision of modelled flood extents is on the floodplain area spanning from Lock 7, at the confluence of the Rufus River with the River Murray, to Wellington, to the inlet of Lake Alexandrina, as shown in Figure 2.1. This area spans a distance of approximately 620 km of the River Murray channel. The width of the floodplain adjacent to the River Murray is greatest in the vicinity of Lock 7 (over 15 km width) and narrowest below Lock 1 (less than 1 km). This is represented in the peak extent of the 2022–23 flood (synthesised from data sources including satellite imagery and LiDAR), shown in Figure 2.1 extending up to the South Australian–New South Wales (SA–NSW) border.

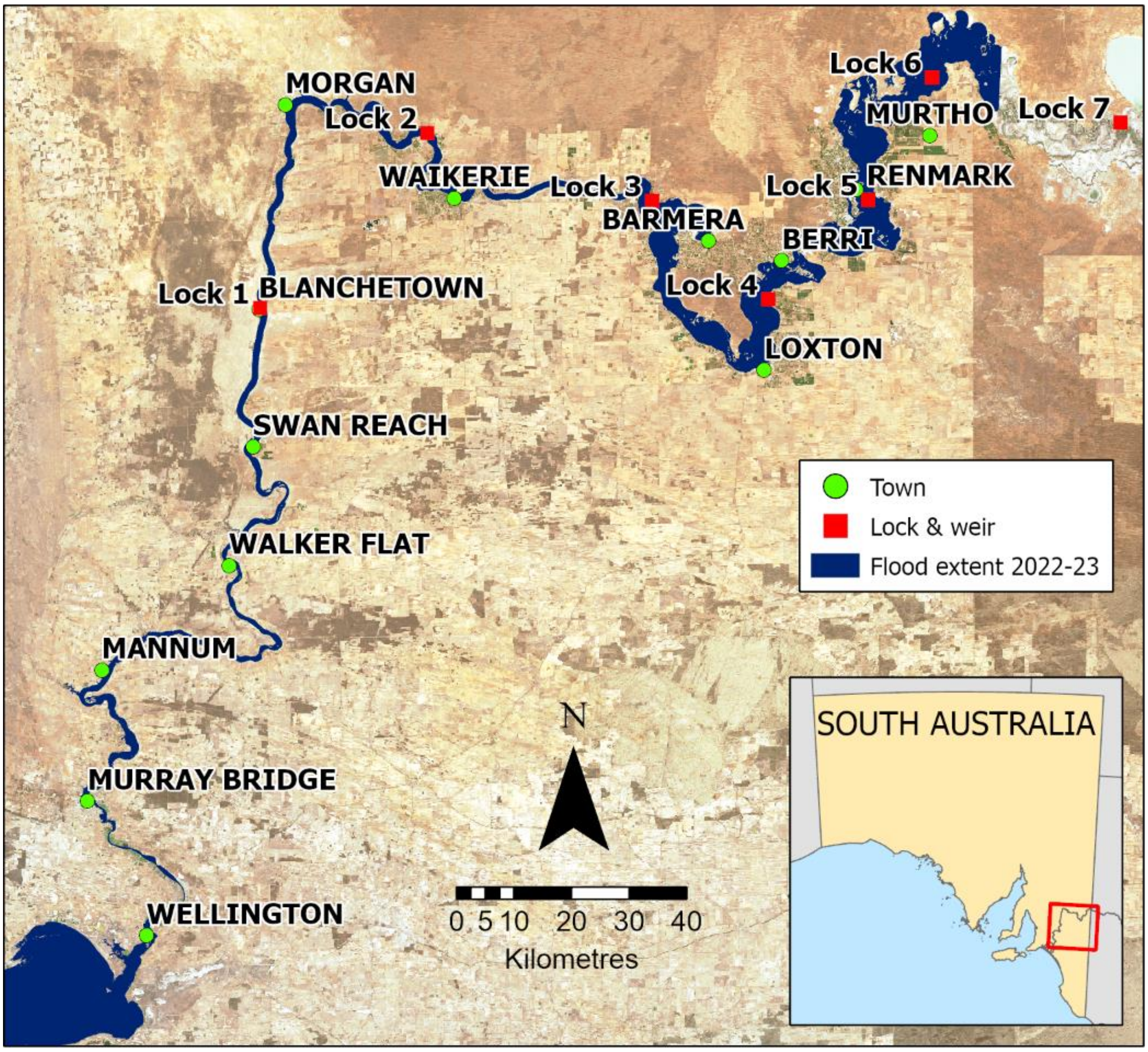

Figure 2.1. Location map of the SA River Murray study area, including 2022–23 peak flood extent to the SA border.

2.2 Hydrodynamic models

Three hydrodynamic models of the SA River Murray were used for the updated flood modelling, including Wellington to Lock 3 (W–L3), Lock 3 to Lock 6 (L3–6) and Lock 6 to Lock 7 (L6–7). The domains of these models are shown in Figure 2.2. Each of these models were configured in the latest MIKE+ software package as 'coupled' models, using a combination of 1–D and 2–D model components for channel and floodplain representation, and included representation of major infrastructure such as controllable regulators, weirs, and culverts.

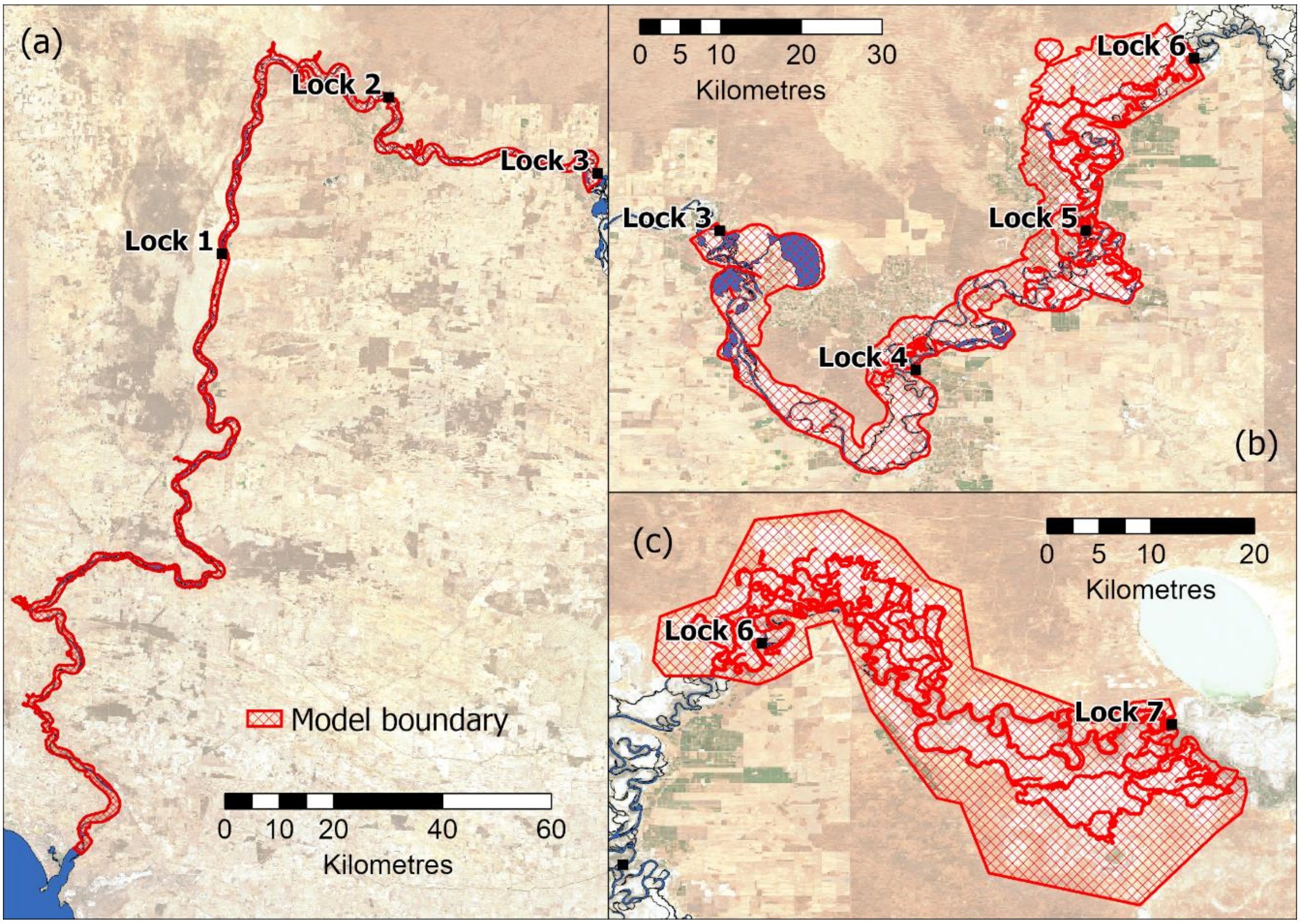

Figure 2.2. Hydrodynamic model domains (a) W–L3, (b) L3–6, and (c) L6–7.

The MIKE+ models used for this work were based on the following existing MIKE FLOOD models:

- the W–L3 model was established by combining and refining existing MIKE FLOOD models of Wellington to Lock 1 and Lock 1 to Lock 3, as described in Montazeri and Gibbs (2019);
- the L3–6 model was based on a MIKE FLOOD model that had been used extensively for river and floodplain modelling, as described in DEW (2021a, 2021b); and
- the L6–7 model was commissioned for the purposes of this modelling (Asha and Yamagata 2024), which used components of an existing MIKE FLOOD model of Chowilla Floodplain that had been previously developed (DHI 2006; Water Technology 2009), to assist with floodplain operations planning and management.

Section 6.1 in the appendices presents a summary of changes applied to each of the models.

2.3 Data

Best available data were incorporated into the models including survey data from flood levee banks (where available) and topographic elevations from Light Detection and Ranging (LiDAR) data commissioned by DEW in 2021 (i.e., latest available at the time of model calibration), stored on the Elvis Elevation and Depth system (Intergovernmental Committee on Surveying and Mapping, 2024). Estimates of levee bank crests were made in the absence of available survey data, supported by reference to LiDAR elevations.

Monitored flow and water level data collected during the 2022–23 River Murray flood event, used for setting up and calibrating the models, were obtained from the Water Data SA website (DEW 2024), the Victoria State Government Water Measurement Information System (Department of Energy, Environment and Climate Action 2024), and the SILO website (Department of Energy and Climate 2024).

Sentinel satellite imagery from the Copernicus Data Space Browser website (Copernicus Sentinel data 2024) was also accessed for inundation extents recorded during the event.

2.4 Model calibration

Each of the models were configured with an upstream flow boundary and downstream water level boundary based on monitoring data collected during the 2022–23 event, which included:

- W–L3: Water level at Wellington (site A4261159) and rated flow at Overland Corner (A4260528);
- L3–6: Water level at Lock 3 (A4260516) and rated flow at QSA (A4261001) – noting that under flood conditions this flow is based on the rating at the water level monitoring station in the River Murray directly downstream of Rufus River (A4260200); and
- L6–7: Water level taken from calibrated L3–6 model (noting that the downstream boundary of the L6–7 model in the Lock 5 weir pool downstream of Chowilla Creek does not align with a monitoring station) and rated flow at QSA.

Some adjustments of the inflow boundary conditions were necessary to better reflect the actual flow experienced during the event for each section of River Murray. For the W–L3 model, Overland Corner rated flow was corrected using flow gaugings conducted during the event (see Figure 1.2). For the L3–6 model, QSA rated flow was corrected for travel time using Lock 6 water level as a guide, with an assumption of minimal loss occurring between monitoring station A4260200 and Lock 6, given the relatively small difference in measured peak flow between QSA (186 GL/d) and Overland Corner (183 GL/d) locations.

Evaporation and precipitation were additionally applied as constant values to each model using the monitoring station at Loxton Research Centre, station ID 24024 (accessed from Department of Energy and Climate 2024).

An iterative calibration method was applied to each of the models, involving:

a) running the models configured with the observed event data;
b) comparing the outputs against the data;
c) adjusting the models to improve comparisons with the data; and
d) repeating the process until an ‘acceptable’ match of modelled to observed data was achieved – taken as <0.1 m difference in peak water level and <2 days peak timing at any given monitoring site.

Adjustments made to the models on a case-by-case basis included Manning’s n values in the underlying 2–D roughness map, mesh refinements to ensure observed connectivity in the floodplains and wetlands was being simulated and levee crest height adjustments to improve estimates made where survey data was not available.

Comparison of observed and modelled water levels show good agreement with the flood peak in both water level height and timing as in Table 2.1 for W–L3, Table 2.2 for L3–6 and Table 2.3 for L6–7. More detailed results of calibration and validation exercises are presented in Section 6.2 in the appendices. Note that model results were output at daily intervals (at 12:00 am), while the observed data included a mixture of daily manual readings (at 8:00 am) and water level sensor outputs at 5-minute intervals, which may contribute to measurement-related discrepancies in the comparisons of magnitude and/or travel time.

Table 2.1. Comparisons of modelled and observed peak levels (m AHD) and timings (days) at monitoring locations between Wellington and Lock 3.

Location	Peak date			Peak height		
	Observed	Modelled	Diff.	Observed	Modelled	Diff.
Murray Bridge	10/01/2023	10/01/2023	0	2.23	2.21	0.02
Mannum	10/01/2023	10/01/2023	0	3.28	3.20	0.08
Walker Flat	7/01/2023	8/01/2023	-1	5.24	5.23	0.01
Swan Reach	7/01/2023	7/01/2023	0	6.55	6.54	0.01
Lock 1	5/01/2023	7/01/2023	-2	7.54	7.55	-0.01
Morgan	4/01/2023	6/01/2023	-2	9.59	9.58	0.01
Lock 2	3/01/2023	5/01/2023	-2	11.18	11.25	-0.07
Overland Corner	2/01/2023	3/01/2023	-1	13.58	13.55	0.03
Lock 3 DS	1/01/2023	2/01/2023	-1	13.99	14.01	-0.02

Table 2.2. Comparisons of modelled and observed peak levels (m AHD) and timings (days) at monitoring locations between Lock 3 and Lock 6.

Location	Peak date			Peak height		
	Observed	Modelled	Diff.	Observed	Modelled	Diff.
Loxton	31/12/2022	30/12/2022	-1	15.34	15.35	0.01
Lock 4	29/12/2022	30/12/2022	1	15.97	16.01	0.04
Berri	29/12/2022	29/12/2022	0	16.49	16.48	-0.01
Lyrup	27/12/2022	28/12/2022	1	17.53	17.47	-0.06
Lock 5	26/12/2022	27/12/2022	1	18.64	18.65	0.01
Renmark	25/12/2022	26/12/2022	1	19.04	19.05	0.01
Lock 6	24/12/2022	24/12/2022	0	21.28	21.32	0.04

Table 2.3. Comparisons of modelled and observed peak levels (m AHD) and timings (days) at monitoring locations between Lock 6 and Lock 7.

Location	Peak date			Peak height		
	Observed	Modelled	Diff.	Observed	Modelled	Diff.
Lock 6	24/12/2022	25/12/2022	1	21.28	21.32	0.04
Lock 7	22/12/2022	23/12/2022	1	25.70	25.94	0.24*

* Difference due to inflow boundary distributed through River Murray, Lindsay River and Mullaroo Creek channels in the model, while flood flow spreads across the floodplain under real-world flood conditions.

L6–7 was calibrated based primarily on comparison of modelled inundation to satellite imagery due to a lack of operational monitoring sites during the flood peak (Asha and Yamagata 2024). However, performance was checked against Lock 6 and Lock 7 monitoring sites following adjustments to the model by DEW. Note that the relatively large difference between modelled and observed data at Lock 7 (0.24 m, Table 2.3) can be attributed to the difference in application of inflow boundary in the model to real-world conditions; the model has inflow divided across the River Murray, Lindsay River and Mullaroo Creek, whereas flood flows will actually spread across the floodplain and result in relatively lower levels than modelled at the upper boundary until the hydraulics stabilise as the flow moves downstream.

An additional validation event under regulated flow conditions (below 50 GL/d) was run for the W–L3 model given the more extensive updates applied to the main River Murray channel relative to the other models upstream of Lock 3.

2.5 Flood Scenarios

While flood studies often involve modelling a variable flood hydrograph with rising and falling limbs, steady state flows into SA were modelled for this work using constant inflow and water level conditions to produce a stable inundation extent in each model. This methodology was used as:

a) flood hydrographs in the SA–MDB can vary significantly between floods, and a ‘typical’ flood hydrograph was not available for representing each inflow peak for this work;
b) the system is characterised by large floodplains where rates of rise and fall of floods are relatively slow, making modelling that represents the flood peak acceptable as indicated in the Australian Disaster Resilience Guideline 7-3 Flood Hazard (AIDR 2017);
c) steady state conditions are expected to provide a maximum upper limit to the inundation extent for a given flow (noting this is not necessarily the case for velocity); and
d) steady state flows were also used for the earlier Flood Awareness modelling, providing consistency in the final outputs with those previously generated.

For these reasons, flows through the system representing QSA were modelled at steady state to generate the equivalent peak inundation extent throughout the modelled domain. Flows covering 80 to 341 GL/d were modelled, with the latter representing the highest flow on record, measured at the peak of the 1956 flood event. Increments between flows were set at 10 GL/d at flows within or just above the calibration range of the models (i.e., up to 220 GL/d), while increments of 20 GL/d or higher were used at flows substantially higher than the calibration range owing to the greater uncertainty associated with these flows.

At each flow, the models were run sequentially from W–L3 to L6–7 to use the upstream levels of the lower model as the downstream boundary of the upper model. The downstream water level boundary condition for the W–L3 model was set using a derived relationship of water level to river flow (Figure 2.3) using Lock 1 gauged flows and the corresponding water levels at Wellington from the 2022–23 event up to the peak. The historical observed level for the 1956 event peak was used to interpolate levels up to 341 GL/d. Note this historical level was considered an acceptable estimate to apply as the downstream boundary for the highest flow simulated, as the level of development below Wellington that may impact on water levels was considered low compared to cumulative impacts of development further upstream in the river.

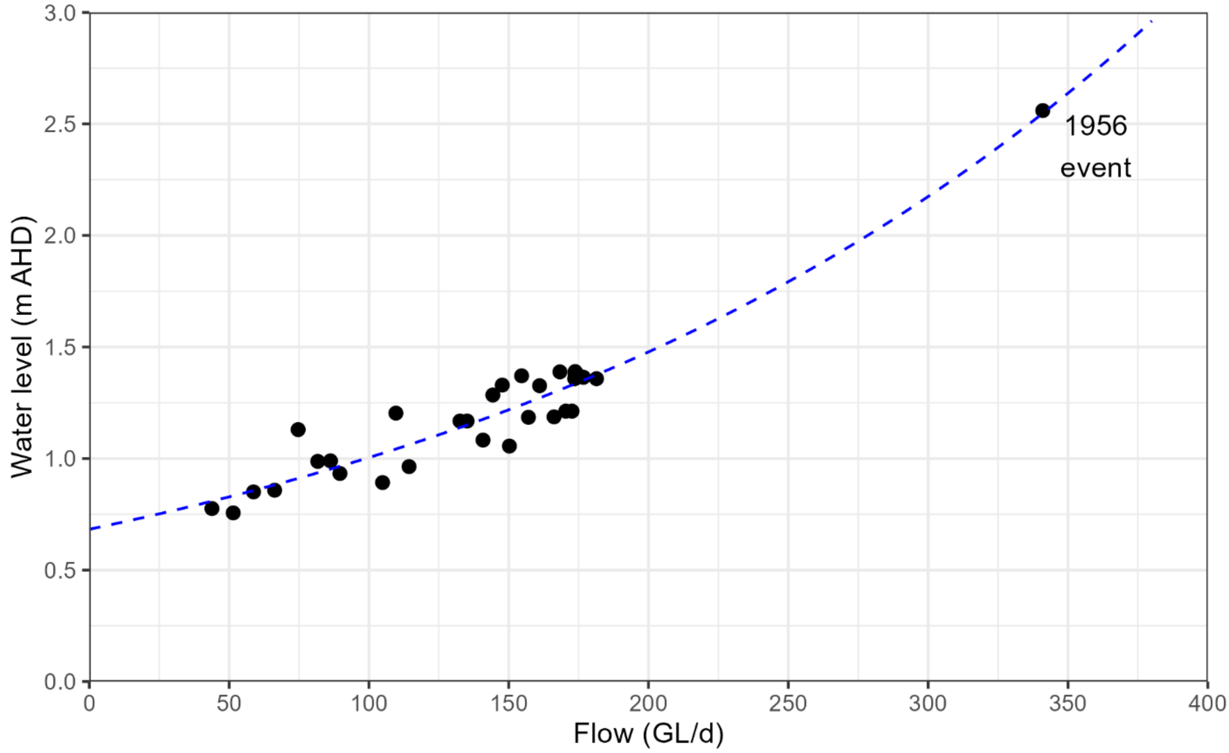

Figure 2.3. Relationship of observed water level at Wellington and River Murray gauged flow at Lock 1.

No losses in the form of evaporation, infiltration and seepage were applied to the models, while no flow adjustment in the lower reaches was made to account for potential attenuation of flow through the system (i.e., a constant flow representing QSA was applied throughout the system). These settings were justifiable based on flow gaugings taken during the 2022–23 event which indicated minimal reduction in peak flow occurring between QSA (186 GL/d) and Lock 1 (181 GL/d). Both assumptions of no loss or attenuation of peak flows result in maximum estimates of inundation extent which is desirable from a flood planning and risk management perspective. However, the influences of these assumptions are expected to be minimal.

2.6 Data processing and analysis

Each QSA flow scenario generated separate result files from the 1–D and 2–D parts of the model. In-built model functionality was enabled to project the 1–D part of the model into a 2–D representation so that it could be presented spatially with the 2–D outputs. This was set to produce a 10 m^2 grid which was chosen to allow most channels to be represented in 2–D while ensuring the file sizes were manageable from a post-processing perspective. Each result file contained hydraulic parameters including water surface elevation, depth, velocity, and area of each model element.

For each modelled QSA scenario the separate 1–D and 2–D model outputs across each of the three hydrodynamic models were combined using scripting in R to produce a continuous inundation output from Wellington to Lock 7 for each QSA flow scenario. The final files were generated in an ESRI feature class format.

The general impact of flooding through the system was indicated with total wetted area and volume of inundation (including permanent water bodies and channels), calculated using the modelled outputs for each simulated flow.

Water level profiles from Lock 7 to Wellington at each modelled flow were extracted from the outputs at 1 km intervals along the River Murray. These were compared to the earlier modelled outputs from the Flood Awareness mapping (Bloss et al. 2015b) as a surrogate for assessing changes in the water level-to-flow relationship in the system over the period between historical and most recent flood events. Average water level difference of these outputs was calculated for weir pool reach (i.e., reach extending upstream of each lock to the next lock upstream) to provide a breakdown of localised differences in water level with flow.

2.7 Assumptions and limitations

The inundation results at each flow should be taken as a theoretical maximum in both extent and water level, given the application of a steady state flow throughout the system and zero losses assumed. During events where climatic conditions result in high losses, and/or attenuation of the floodwaters becomes more pronounced as it moves downstream, it may be appropriate to refer to the inundation results at lower flows in downstream sections of the system (i.e., a composite set of results for a given flow into SA). These relatively small flow increments between scenarios (10 or 20 GL/d) provide the outputs necessary for this interpretation.

Simulation of each flow involved running the model from a starting condition at a lower QSA and filling the model domain until steady state water levels for the simulation were reached. At some simulated flows this may have resulted in certain wetlands or areas behind levee banks filling at a substantially slower rate than the rest of the domain, such as in cases where the local water levels only marginally exceeded an adjacent levee bank crest. This may mean that discrete areas in some inundation outputs may not have reached a maximum extent despite steady state conditions being achieved throughout the wider model domain (generally within 1-2 cm maximum change in level over a 24-hour period). It is therefore recommended to refer to modelled levels within the main channel in conjunction with levels in adjacent areas to ensure that maximum local levels are being accounted for in any given scenario. The resolution of underlying hydraulic data permits this assessment.

Model outputs for flows exceeding the peak of the 2022–23 event (i.e., ≥190 GL/d) exhibit a higher degree of uncertainty compared to outputs within the model calibration range. However, as future flood events of larger magnitude occur, the model calibration range may be extended using available data leading to a reduction in this uncertainty. Additionally, inundation results at model boundary locations may carry a greater degree of uncertainty than other parts of the system due to their effect on the hydraulics at these locations (e.g., upstream boundary of the L6–7 model).

The modelling inherently assumes that the river and floodplain conditions, including levee bank crest profiles and land cover types, matched those present during the 2022–23 flood event and/or as reflected by the 2021 LiDAR in the absence of survey data. The modelling therefore represents the approximate flows at which levees were overtopped during the event. Future changes on the floodplains—such as alterations to land cover, modifications to levee crest heights or alignments, or unexpected levee failures—could lead to variations in the inundation levels and extents predicted by this study.

Location-specific analysis may be impacted by visual artefacts in the results, including triangular elements introducing some ‘jaggedness’ into the inundation outputs, and minor gaps appearing between channel and floodplain at some locations due to the method for conversion of 1–D results into 2–D outputs. Note that these are visual impacts and have not adversely affected the functionality of the models. The resolution of the modelling should be taken into consideration when interpreting the results for any given application.

The inundation extent at 341 GL/d represents flooding at the equivalent flow measured for the 1956 flood event under current conditions in the river and floodplains, characterised primarily by a greater degree of development (e.g., land use change) than that present in 1956. This means that the modelled water levels, and hence inundation extent, for the 1956-equivalent flow will differ from the observed and previously estimated 1956 inundation extent and levels. However, the criticality of the 1956 flood equivalent conditions in various planning and legislative settings necessitated a scenario representing this flow to be run with the updated models.

While every effort was made to model all major landscape features that may impact flow hydraulics such as levee banks, roads and tracks, the large number and variety of such features meant that those with more minor impacts (e.g., tracks that have elevations only marginally above the surrounding landscape) may not have been explicitly defined within the models especially where they did not show a visible impact on inundation within the available observed data. Given the minimum 10 GL/d QSA increments used for this work, effects from these minor features are not anticipated to substantially impact the inundation extents produced.

3 Results and discussion

3.1 Inundation summary

Examples of flood inundation outputs are shown in Figure 3.1 for flows of 100 GL/d, 200 GL/d and 341 GL/d. The outputs indicate overtopping of levee banks has the potential to occur in the reach above Wellington by 200 GL/d (Figure 3.1a) assuming levee crest heights similar to those present during the 2022–23 event. Floodwaters are also modelled to progressively spread over the floodplains in the reaches from Lock 3 to Lock 7 (Figure 3.1c) between flows of 100 and 341 GL/d.

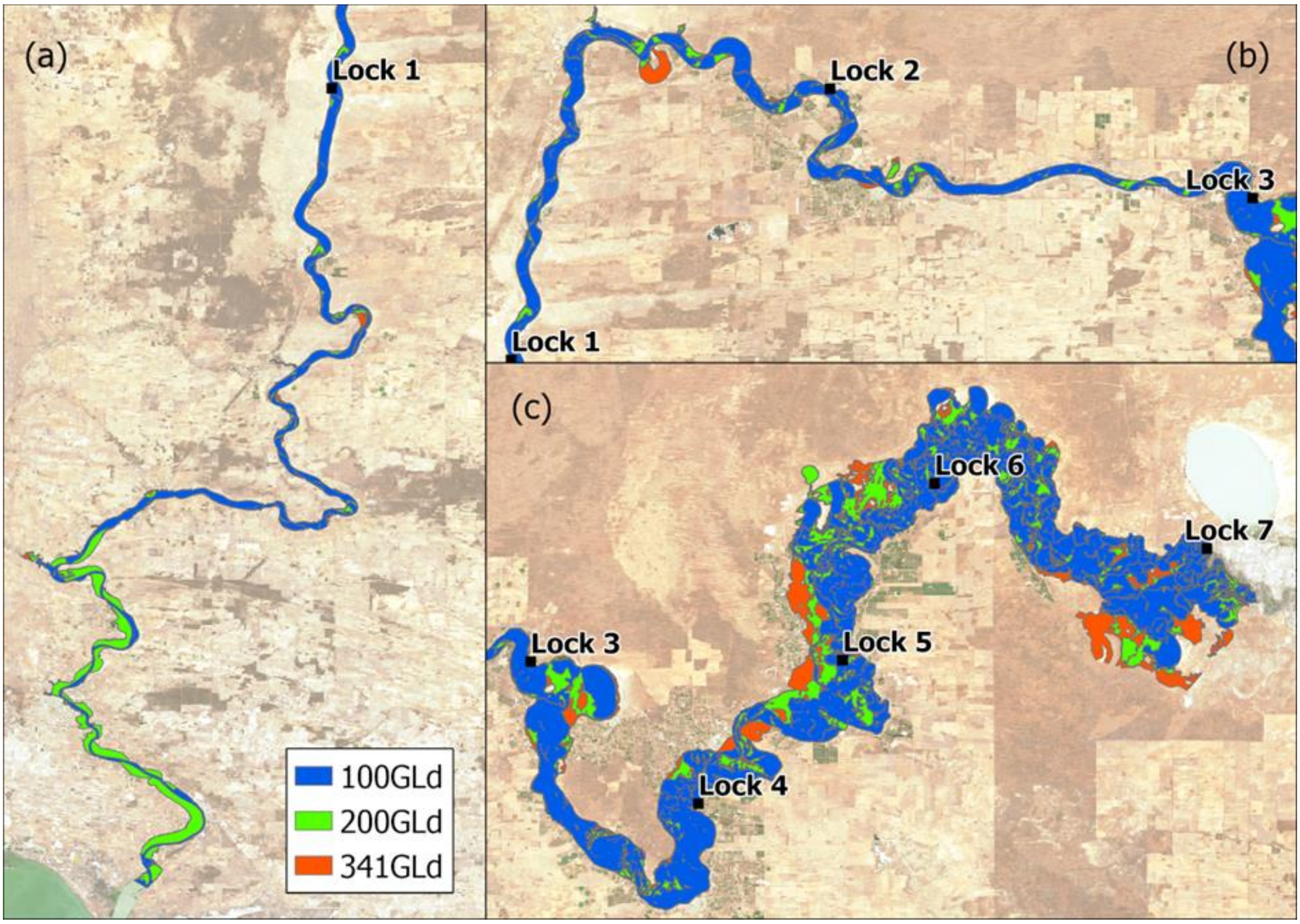

Figure 3.1. Selected modelled inundation extents in reaches (a) Wellington to Lock 1, (b) Lock 1 to Lock 3, and (c) Lock 3 to Lock 7.

Total wetted areas and volumes (including permanent channels and water bodies) between Wellington and Lock 7 for modelled flows between 100 and 341 GL/d are shown in Figure 3.2. Volume is shown to increase almost linearly with flow, while the rate of increase of inundated area with flow gradually decreases as the inundation becomes constrained by the limits of the floodplain. An inflection point can be seen with the wetted area results at a flow of around 190 GL/d with area increasing with flow at a greater rate up to approximately 240 GL/d. This behaviour can be primarily attributed to overtopping of the modelled levee banks in this flow range.

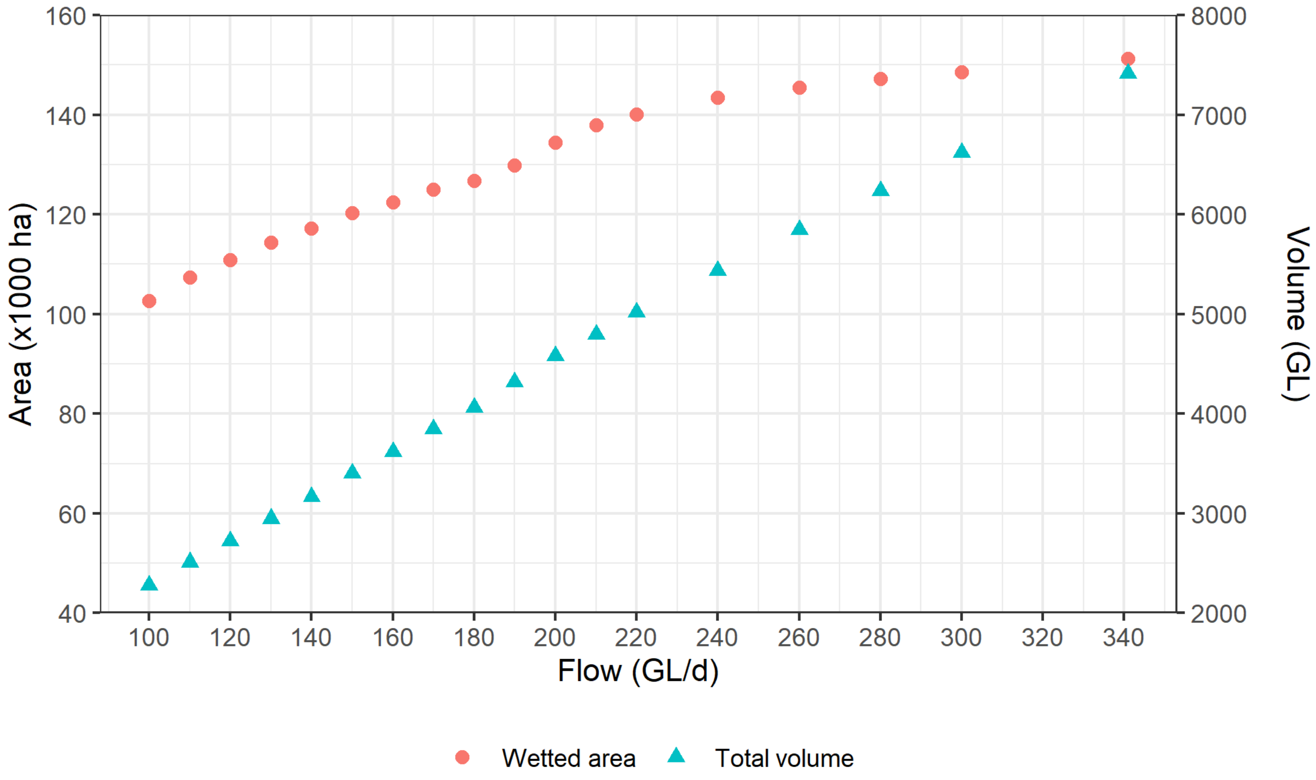

Figure 3.2. Wetted areas and volumes between Wellington and Lock 7 for modelled flows from 100 to 341 GL/d.

3.2 Water level comparison to previous modelling

Modelled river level profiles for selected flows are shown in Figure 3.3. Dashed lines representing profiles from the earlier Flood Awareness modelling (which extended only up to Murtho (refer to Figure 2.1) in the upper section of the Lock 5 weir pool) are also shown at each flow. At 100 GL/d flow, the water level profiles of the updated and previous modelling are shown in close alignment. As flows increase, levels from the updated modelling progressively increase above those of the previous modelling up until the maximum flow modelled at 341 GL/d which exhibits the greatest level differences between updated and previous modelling.

Observed water levels at Lock 1 (A4260903) and Overland Corner (A4260528) gauging stations from the 2022–23 event are shown for reference in Figure 3.3 at flows of 100, 140 and 180 GL/d (measured at each gauging station). Peak observed levels at each of the locks from historical events are also shown in the plots against the nearest comparative peak flow including 1960 (96 GL/d), 1955 (147 GL/d), 1975 (182 GL/d) and 1956 (341 GL/d) flood events. For flows within the range of the 2022–23 event (i.e., up to 180 GL/d), the water levels align well with observed levels from the event at Lock 1 and Overland Corner, while levels from the Flood Awareness modelling are typically better aligned with observed peak levels from historical events at equivalent flows.

Tables containing water levels in 1 km increments from Wellington to Lock 7 are presented in Section 6.3 in the appendices.

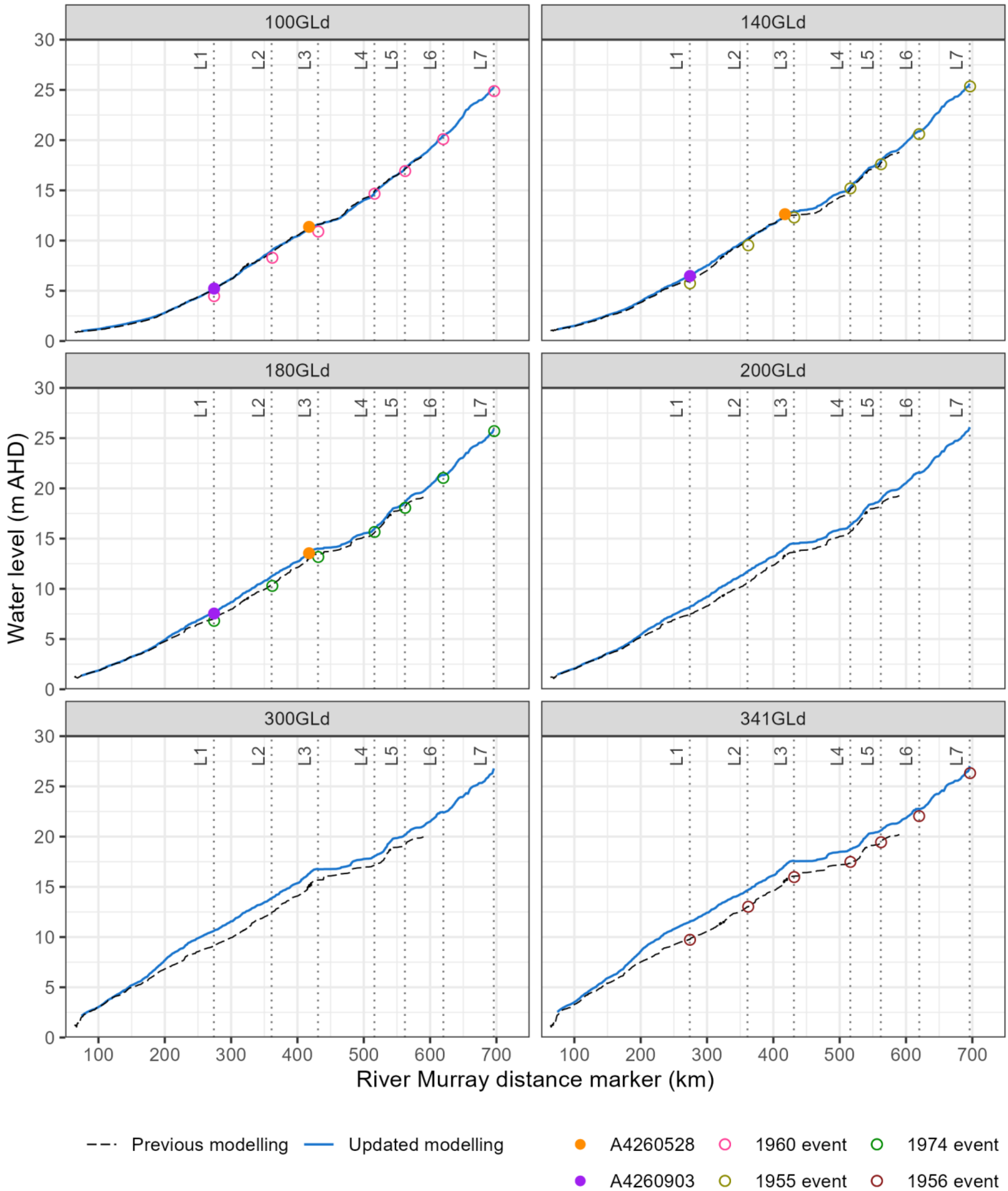

Figure 3.3. River Murray water level profiles between Wellington and Lock 7 at various flows, with lock locations indicated (dotted lines). Observed water levels shown from the 2022–23 flood event at Lock 1 (A4260903) and Overland Corner (A4260528) gauging stations at 100, 140 and 180 GL/d; and from peak levels observed at locks from flood events in 1960 (96 GL/d), 1955 (147 GL/d), 1974 (182 GL/d) and 1956 (341 GL/d).

Figure 3.4 shows the calculated average differences in modelled water levels, specifically water levels from the updated results minus the previous modelling results, with respect to flow. The magnitude of these differences is shown to vary between weir pool reaches. Linear trends for each weir pool indicate that the differences tend to increase as flow rates rise. As indicated in Figure 3.3, the modelled average differences in water level between weir pools are smallest at 100 GL/d (i.e., within approximately ±0.1 m) and largest at 341 GL/d (0.8 to 1.8 m).

The weir pool reaches with the smallest average difference in water levels between updated and previous modelling per flow are situated in the widest sections of the floodplain (predominantly upstream of Lock 3) and the most downstream reach between Wellington and Lock 1. To note, in the latter case the backwater effect from the lakes downstream of Wellington has a more significant impact on water levels than the flows in the vicinity of Wellington This results in the reduced difference between updated and previous modelled water levels relative to other weir pool reaches. In contrast, the reaches between Lock 1 and Lock 3, which are narrower relative to the upstream reaches, exhibit the most substantial differences in water levels between the two sets of modelling results.

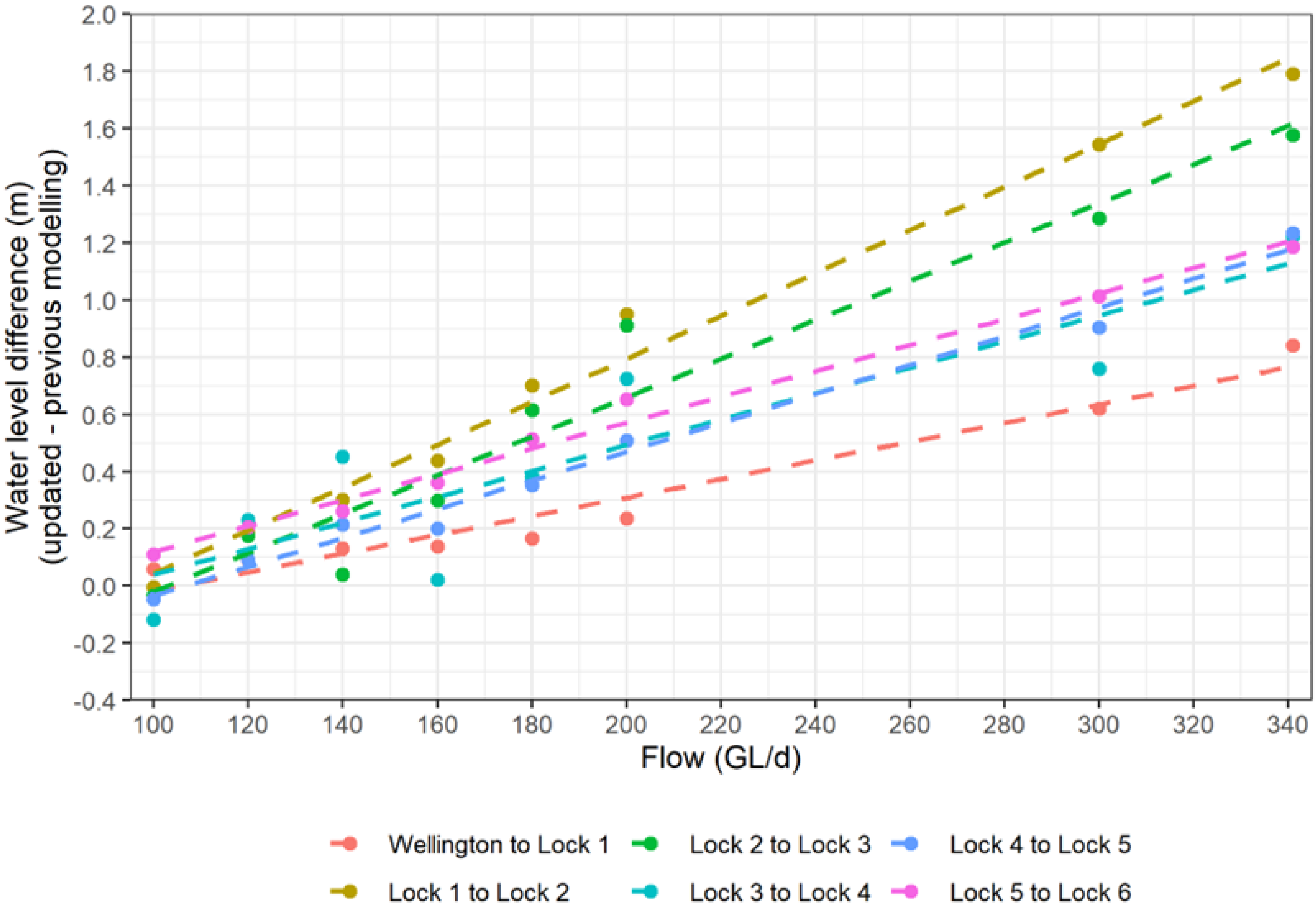

Figure 3.4. Average differences in modelled water levels between updated and previous modelling outputs by lock weir pool reach and river flow.

The results provided here form a summary of the inundation outputs and analysis of the changes occurring in the water level-to-flow relationship from historical conditions. The analysis indicates that this updated flood modelling has produced a dataset that enhances the predictive accuracy for estimating floodwater heights along the SA River Murray which is particularly important for a range of planning and emergency response requirements.

4 Conclusions

The flood modelling conducted for the SA River Murray represents a significant body of work, resulting in new-generation models and an enhanced understanding of flood-related dynamics within the SA–MDB. Notably, the work quantifies an update to the water level-to-flow relationship since the last equivalent flood event in 1974. By updating and refining the modelling, this effort has strengthened the state’s ability to predict water levels during future floods. Its applications extend from emergency flood response to floodplain planning and design. Moreover, the improvement in calibrated flow range and increase in modelled river floodplain area (via the development of the L6–7 model) have significantly improved the hydrodynamic models available in the SA–MDB. This enhancement enables a broader range of scenarios to be configurable for informing future water management projects in South Australia.

5 Recommendations

The information produced through this work should be considered best available for the River Murray between Wellington and Lock 7. It is recommended that other systems making use of the earlier Flood Awareness outputs are updated with this new information,

Due to differences between the modelled 1956–equivalent flow under current conditions and the observed peak levels from the 1956 event, care should be taken as to its use for planning purposes (i.e., for assigning a localised water level estimated from the 1956 event). While the modelled output provides greater spatial detail than the observed levels and other information collected at the time of the event, it is also based on an extrapolation of the model calibration using the 2022–23 event data which contributes to an elevated uncertainty in the outputs. Consideration should therefore be taken as to the best use of this contrasting information based on the requirements of each individual application of the data.

Future flood events, particularly those of a greater magnitude than the 2022–23 event, should be used to evaluate the model calibrations and adjust as required. This includes updating the models with new survey data, including LiDAR, bathymetric and ground-based surveys as it is collected, while also considering any major changes to landcover (e.g., new residential developments). Updates to the models may involve rerunning the models for some or all flood flows to update the inundation results.

6 Appendices

6.1 Model refinement notes

6.1.1 Wellington to Lock 3 model

Current file versions

MIKE+ files:

Wellington-L3_FloodModelling.mupp

Wellington-L3_FloodModelling.sqlite

Mesh files:

L3toWell_Update2023_V3-0.mesh

L3toWellington_WetlandSurveys_V3-0.mdf

2D Roughness map:

L3-Well_roughness_v3-0.dfs2

1D cross-section file:

L3toWellington_V1.xns11

Model development details

Summary of mesh development work undertaken.

- Extend original mesh generator file (SA_Murray_ver56_Refined.mdf) from Overland Corner to Lock 3/Banrock station at upstream end of domain, and from Upstream Wellington to Lake Alexandrina inlet at downstream end of domain, by adding arcs and nodes to the file. At the upstream end, arcs for model boundary, channels and floodplains were derived from the original Lock 1 to Lock 3 mesh (L1to3_Fullmesh_008Bathy.mesh).
- Using original mesh files for Lock 1 to Lock 3 and Downstream Lock 1 (DS_003 Final Bathymetry_DS of Lock1_V11.mesh) as guides, manually add nodes and arcs to mesh generator file.
- In new mesh generator file (L3toWellington_WetlandSurveys_V3-0.mdf), extend mesh down to the Wellington water level station location (A4261159) for lower water level boundary setting.

Other modifications.

- Recreate new 'roughness' map using vegetation mapping from EGIS to estimate Manning's n values for the various land cover types.

Levee banks and other linear features incorporated into the model impacting on hydraulics are shown in Figure 6.1 to Figure 6.4.

Figure 6.1. Features including tracks, roads and levee banks included in the model between Morgan and Lock 3 (shown in pink with IDs as named in the model).

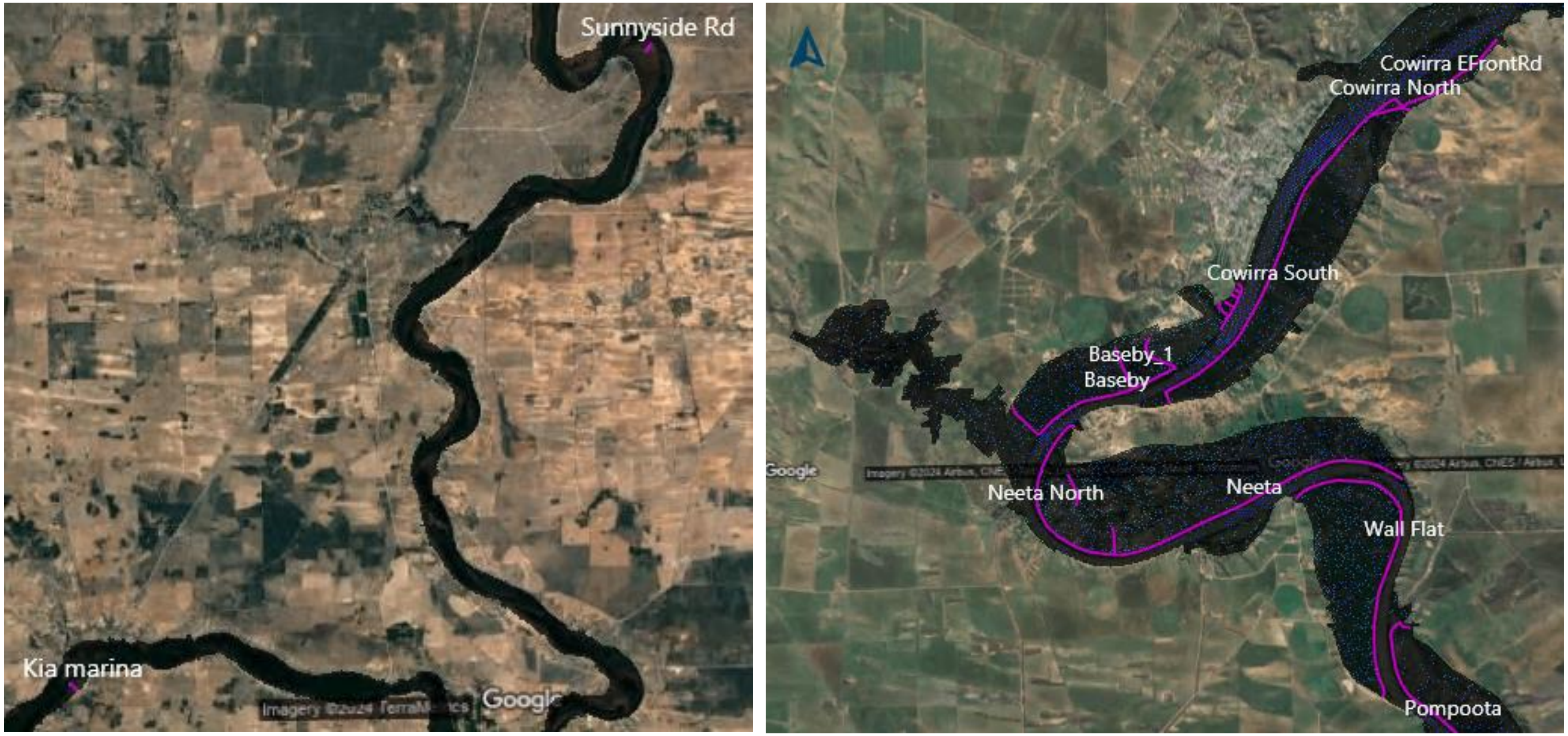

Figure 6.2. Features including tracks, roads and levee banks included in the model between Pompoota and Swan Reach (shown in pink with IDs as named in the model).

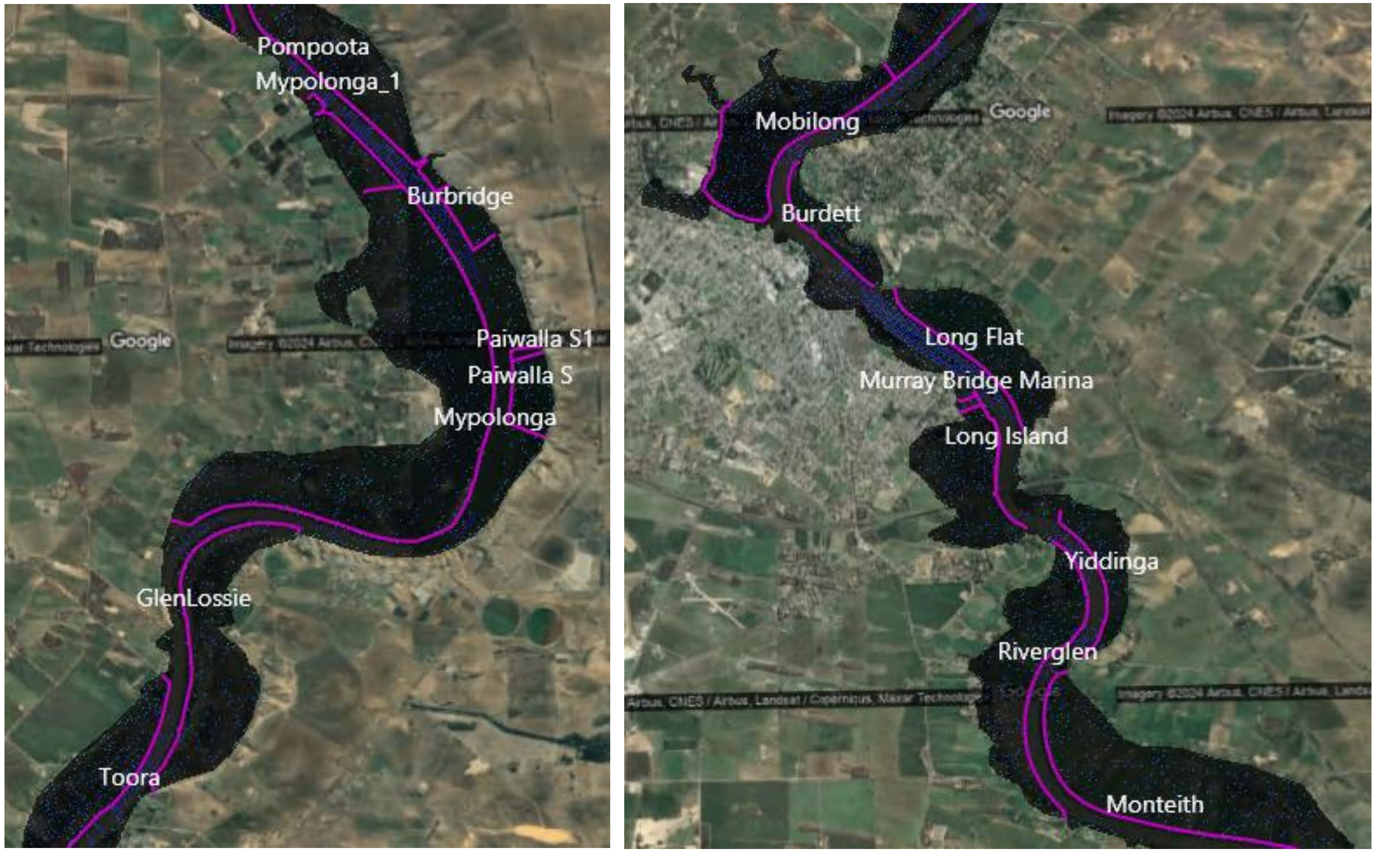

Figure 6.3. Features including tracks, roads and levee banks included in the model between Monteith and Pompoota (shown in pink with IDs as named in the model).

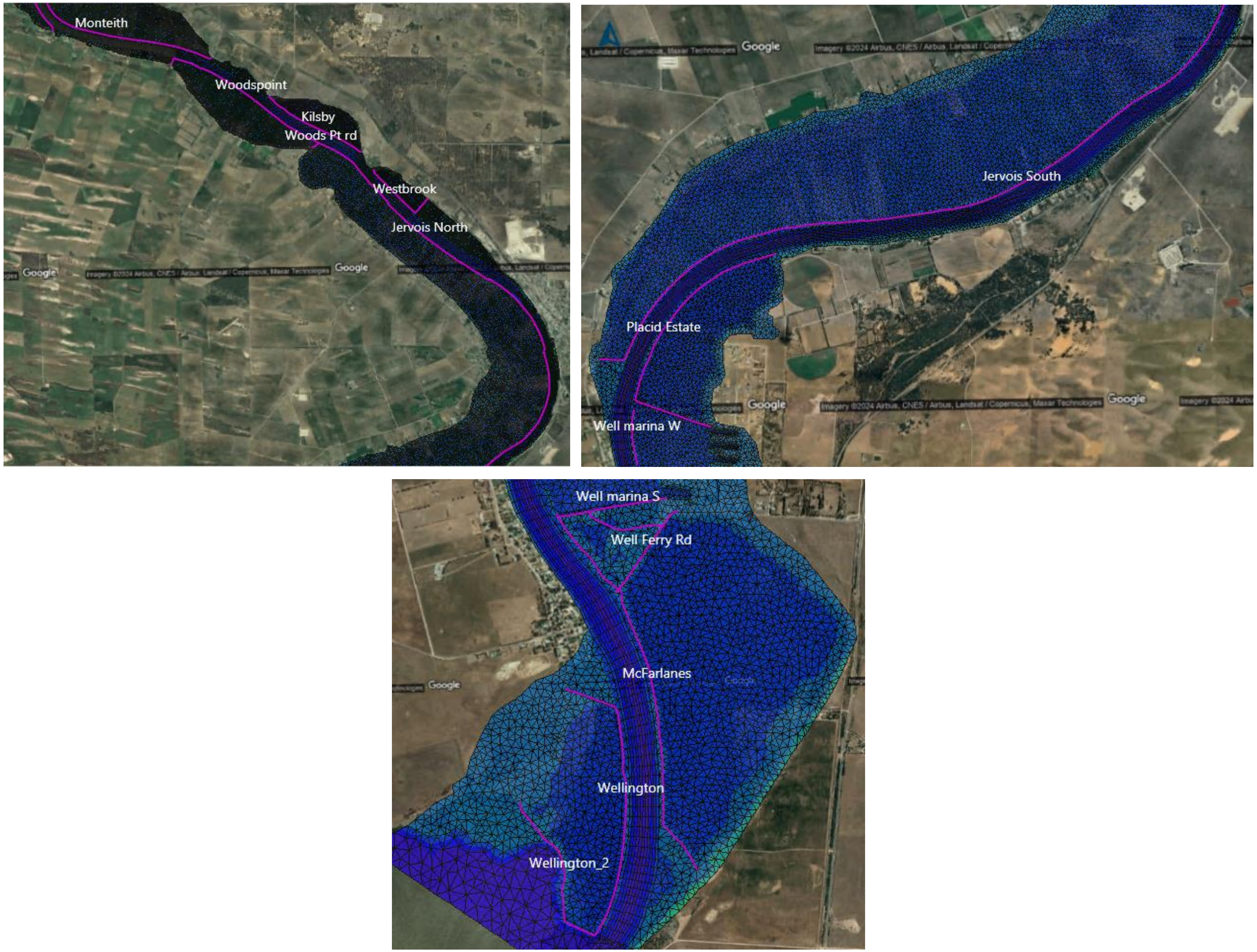

Figure 6.4. Features including tracks, roads and levee banks included in the model between Wellington and Monteith (pink with IDs as named in the model).

6.1.2 Lock 3 to Lock 6 model

Current file versions

MIKE+ files.

L3-6_FloodModelling.mupp.

L3-6_FloodModelling.sqlite.

Mesh files.

L3-6_V4-0.mesh.

L3-6_V4-0.mdf.

2D Roughness map.

L3to6_Rough10m_V2_L3_0.02_L4_0.023.dfs2.

1D cross-section file.

L3to6_PikeOps2022_V4_0.xns11.

Model development details

Summary of model development work undertaken.

<u>MIKE FLOOD to MIKE+ conversion.</u>

- Converted MIKE FLOOD configuration into new MIKE+ model using import wizard option.
- Fixed issues resulting from the conversion including:
    - updating the Control configurations to simulate regulator operation, making consistent with their usage in MIKE FLOOD;
    - combining two sets of cross sections for 'Bank_K_Ck' river to eliminate error in coupling links;
    - adjusting the downstream standard link at river '4_1' from 'start chainage' to 'end chainage'; and
    - manually added constant crest levels to each point in 2D dike structures where MIKE FLOOD could add a single value and apply to the entire dike.

<u>2–D updates.</u>

- Expanded mesh in floodplain areas not originally captured in 2008 DEM, as indicated in Figure 6.5.
- Updated topographic elevations, using the 2021 LiDAR, focusing on new (expanded) areas added to the mesh and the area encompassing Chowilla downstream of Lock 6, which showed the most substantial difference in elevation from the 2008 DEM (i.e., approximately 30-40 cm).
- Minor adjustments to localised elevations in mesh following mesh structure updates to ensure connectivity of flow paths is maintained and coupling link locations are consistent between 1–D and 2–D model components.
- Added levee banks, both permanent and temporary, where inundation was affected during the 2022–23 flood event. Levee banks and other linear features incorporated into the model impacting on hydraulics are shown in Figure 6.6 to Figure 6.10.

<u>1–D updates.</u>

- Adjusted cross-sections in 'Hunchee1' river between chainages 8168 m and 14101 m to better reflect available bathymetric survey results.
- Replaced existing inlet structure at Bookmark Creek and the Nelwart Street bridge with proposed upgraded structure designs (note the existing structure designs were used in calibration testing).

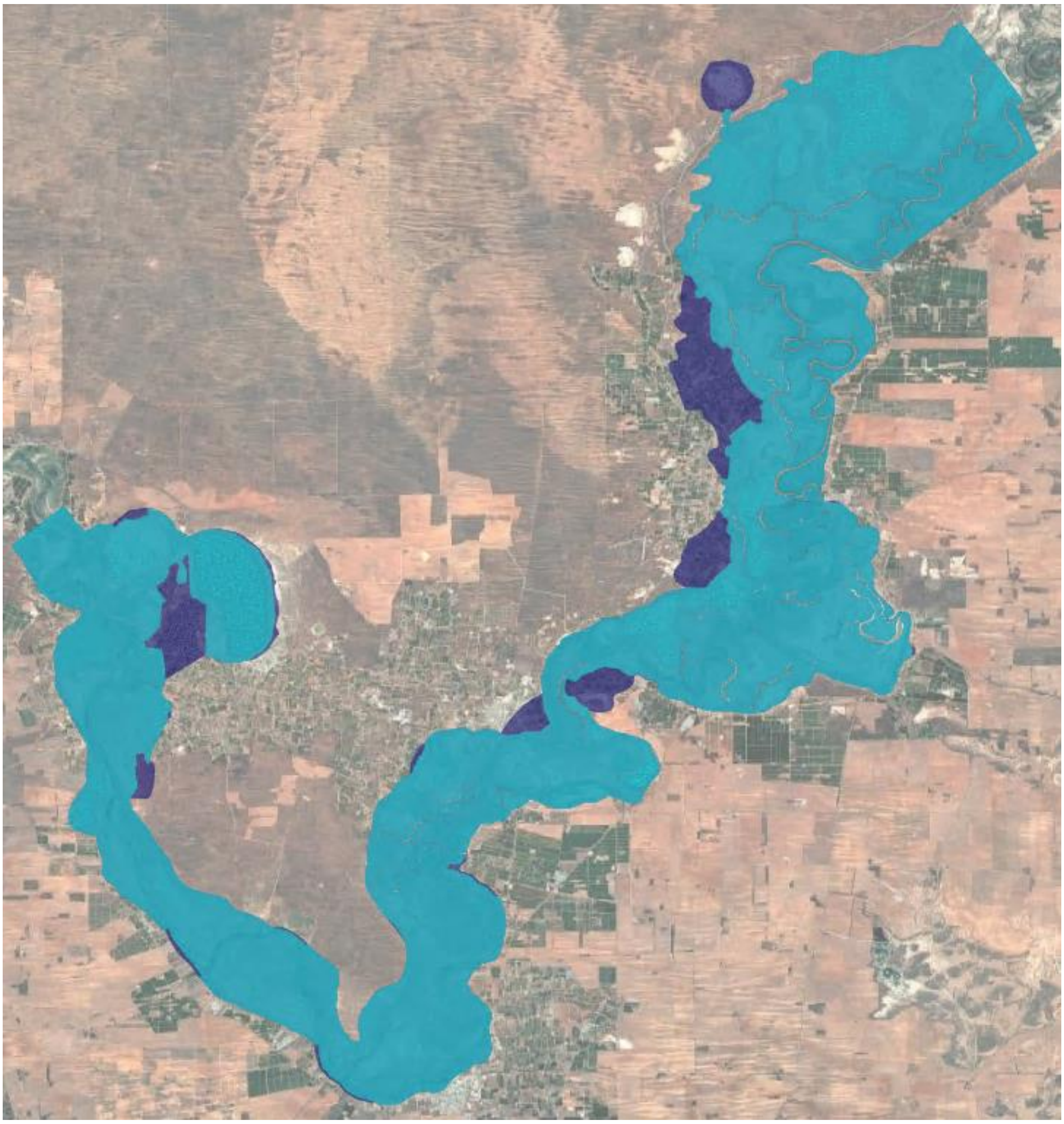

Figure 6.5. Initial mesh extent (light blue) and expanded areas (dark blue).

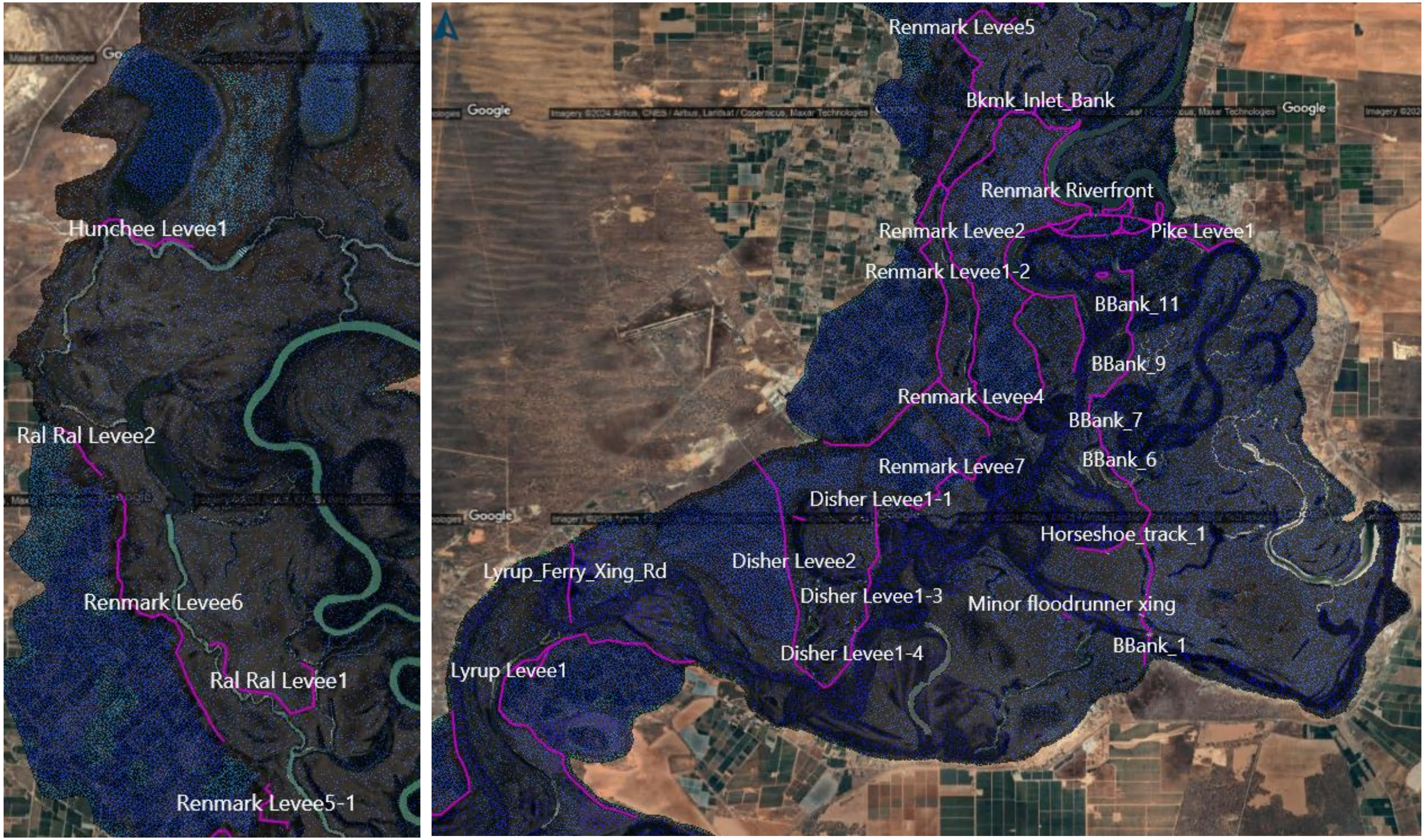

Figure 6.6. Features including tracks, roads and levee banks included in the model from Renmark to Lyrup and Pike Floodplain (shown in pink with IDs as named in the model).

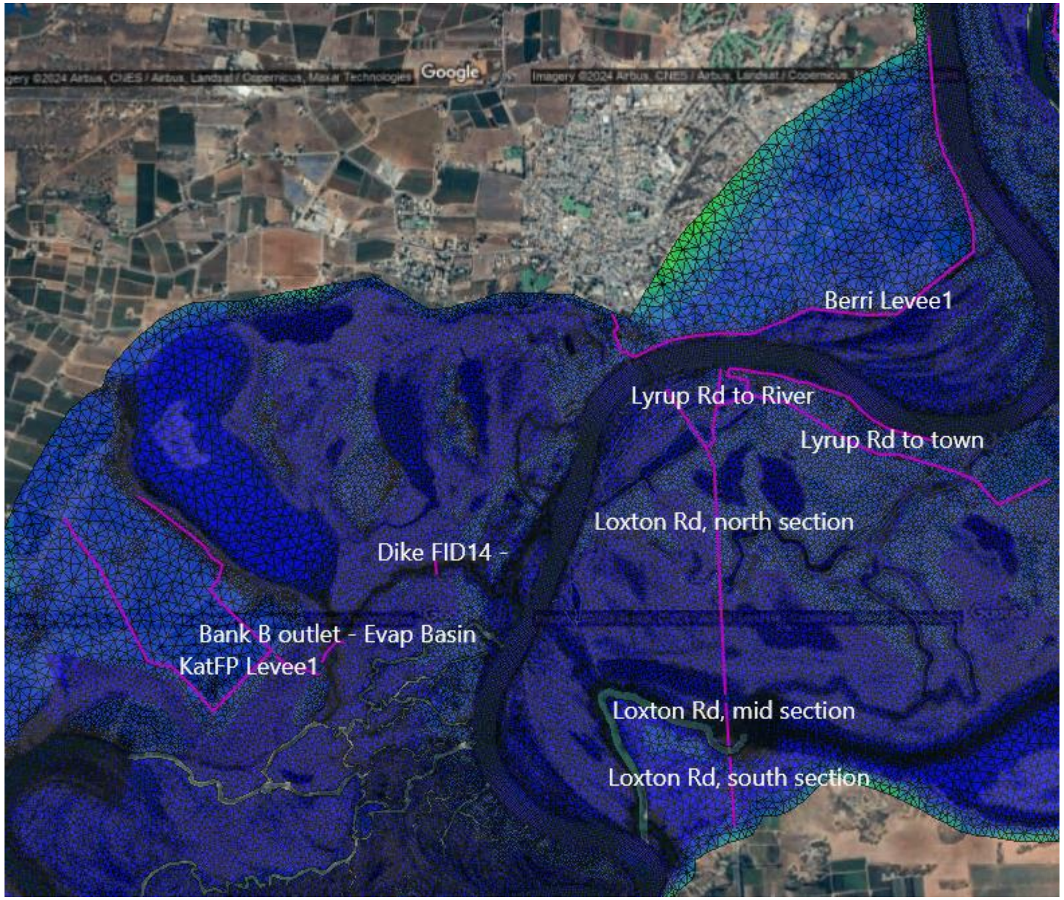

Figure 6.7. Features including tracks, roads and levee banks included in the model at Katarapko, Gurra Gurra and Berri (shown in pink with IDs as named in the model).

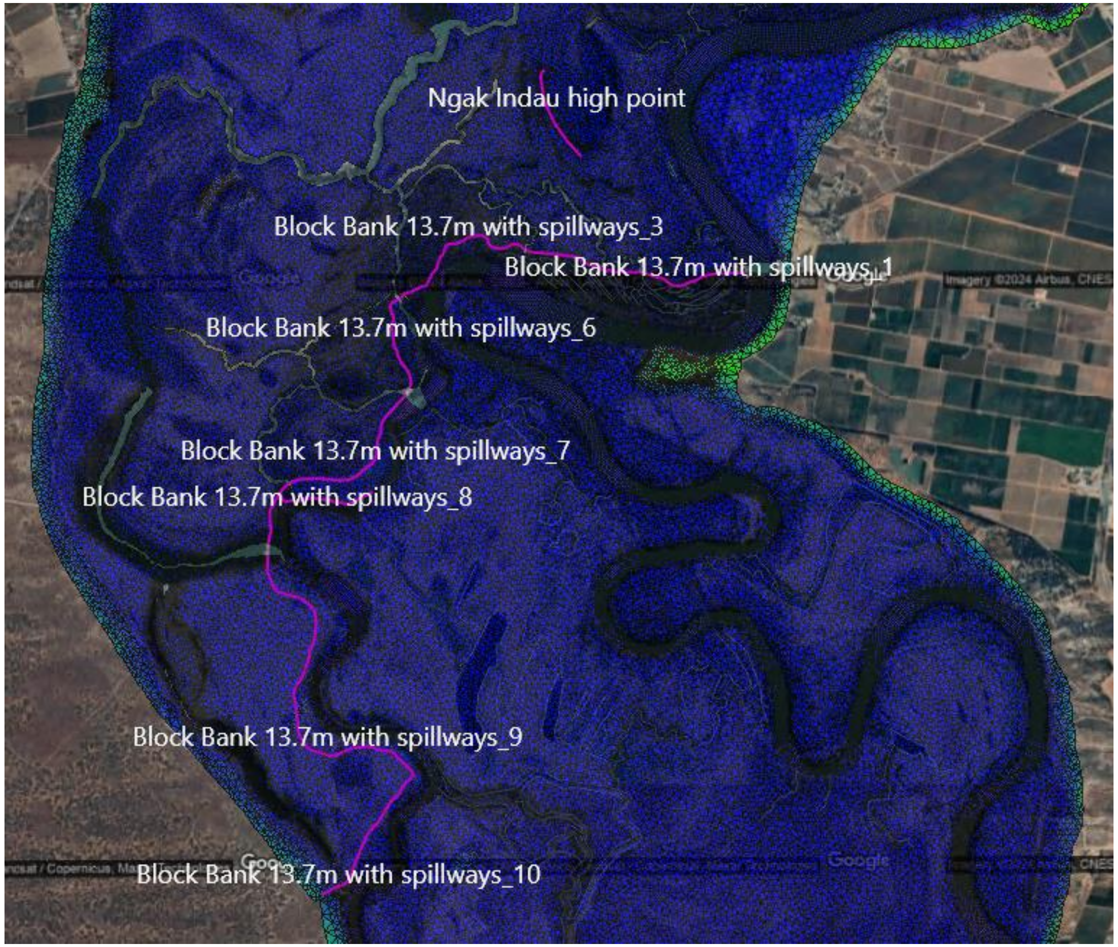

Figure 6.8. Features including tracks, roads and levee banks included in the model at Katarapko (shown in pink with IDs as named in the model).

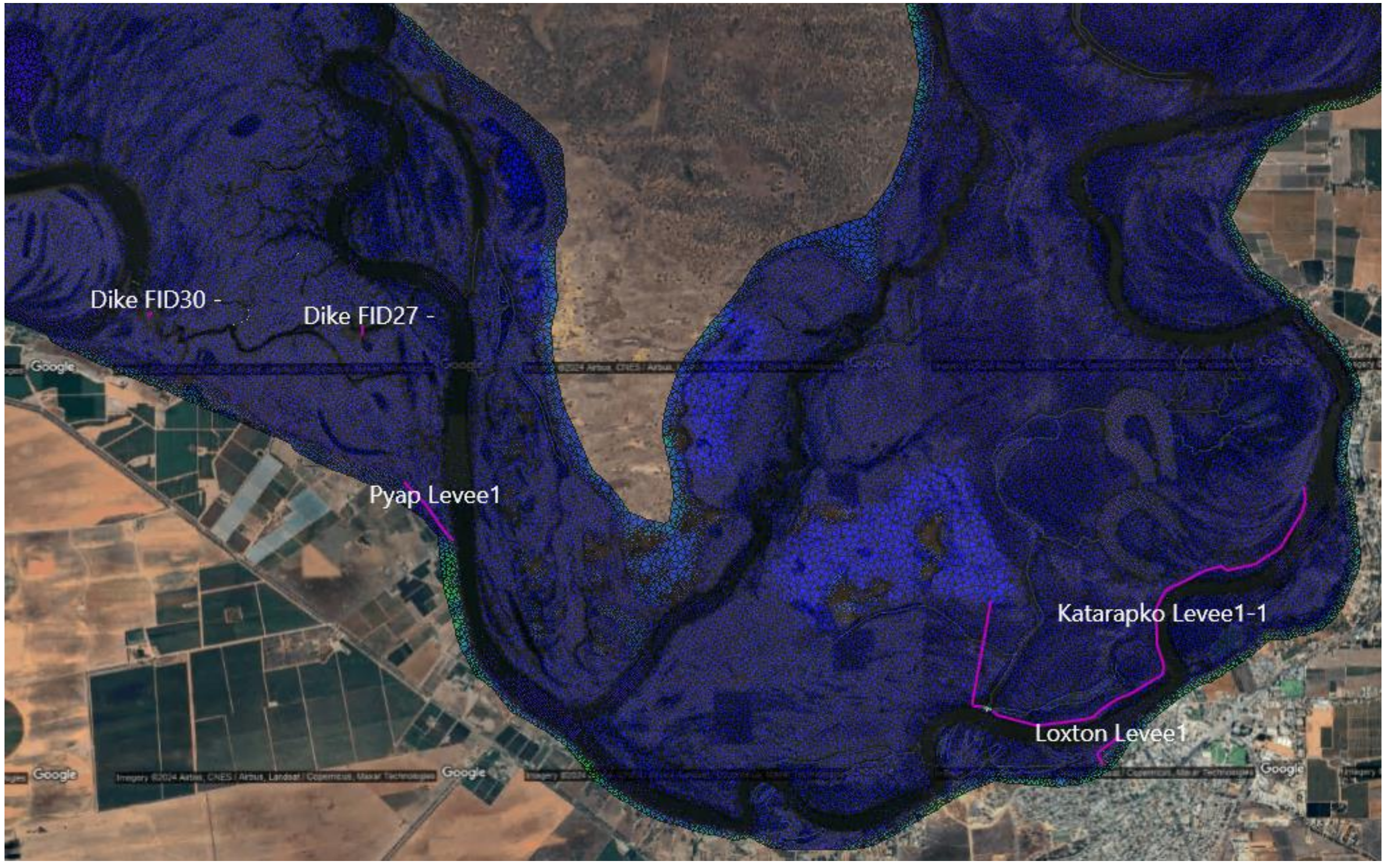

Figure 6.9. Features including tracks, roads and levee banks included in the model between Pyap and Loxton (shown in pink with IDs as named in the model).

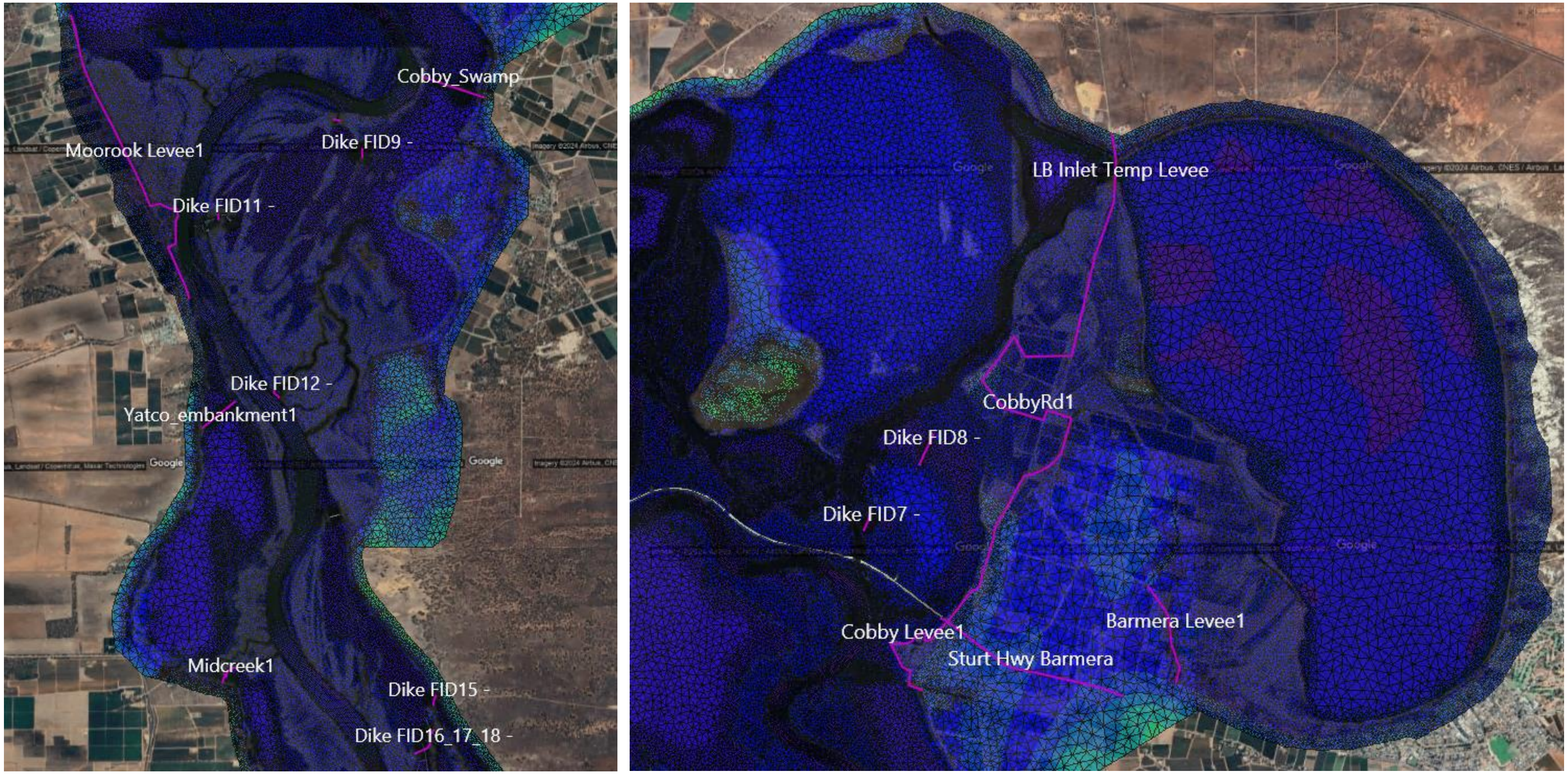

Figure 6.10. Features including tracks, roads and levee banks included in the model between Yatco Lagoon and Lake Bonney (shown in pink with IDs as named in the model).

6.1.3 Lock 6 to Lock 7 model

Current file versions

MIKE+ files.

L6-7_FloodModelling.mupp.

L6-7_FloodModelling.sqlite.

Mesh files.

Lock6_Lock7_couple_v3-1.mesh.

Lock6_Lock7_couple_v3.mdf.

2D Roughness map.

Landuse_50mclip_mga54_ActualRoughness_Simplified2.dfs2.

1D cross-section file.

Lock6_7_Calibration2022Dec_20240514.xns11.

Model development details

Model built and calibrated by DHI (Asha and Yamagata 2024). Additional model update work undertaken by DEW to refine performance include:

- changing numerical settings for 'time integration' solution from high order to low order and adjusted time step length of 1–D model from 5 seconds to 2 seconds;
- changing 'wetting depth' from 100 mm to 30 mm (consistent with Lock 3 to Lock 6 model);
- minor adjustment in mesh elevations at Hancock Creek to improve connectivity of Lake Limbra. Updated mesh naming to V3-1 (from V3-0);
- correcting an issue with cross section at MULLAROO_CK, chainage 16987 m to bring 'river alignment' marker '2' to be in between bank markers '1' and '3' – required to enable 1–D to 2–D mapping to occur;
- adjusting 1–D bed roughness values, with Manning's n values increased at LINDSAY_RV from 0.025 to 0.05 and at MULLAROO_CK from 0.03 to 0.05;
- reconfiguring Lock 6 as a control structure to allow weir pool level setting under normal River Murray operations to replace its configuration as a 1–D boundary location to set Lock 6 level to observed data; and
- generating a simplified floodplain roughness map to improve calibration results using Manning's n values of 0.05 for vegetated floodplain areas adjacent to channels and 0.033 for the remainder of floodplain values.

Levee banks and other linear features incorporated into the model impacting on hydraulics are shown in Figure 6.11. These consist predominantly of the blocking banks at Chowilla for facilitating managed inundation operations.

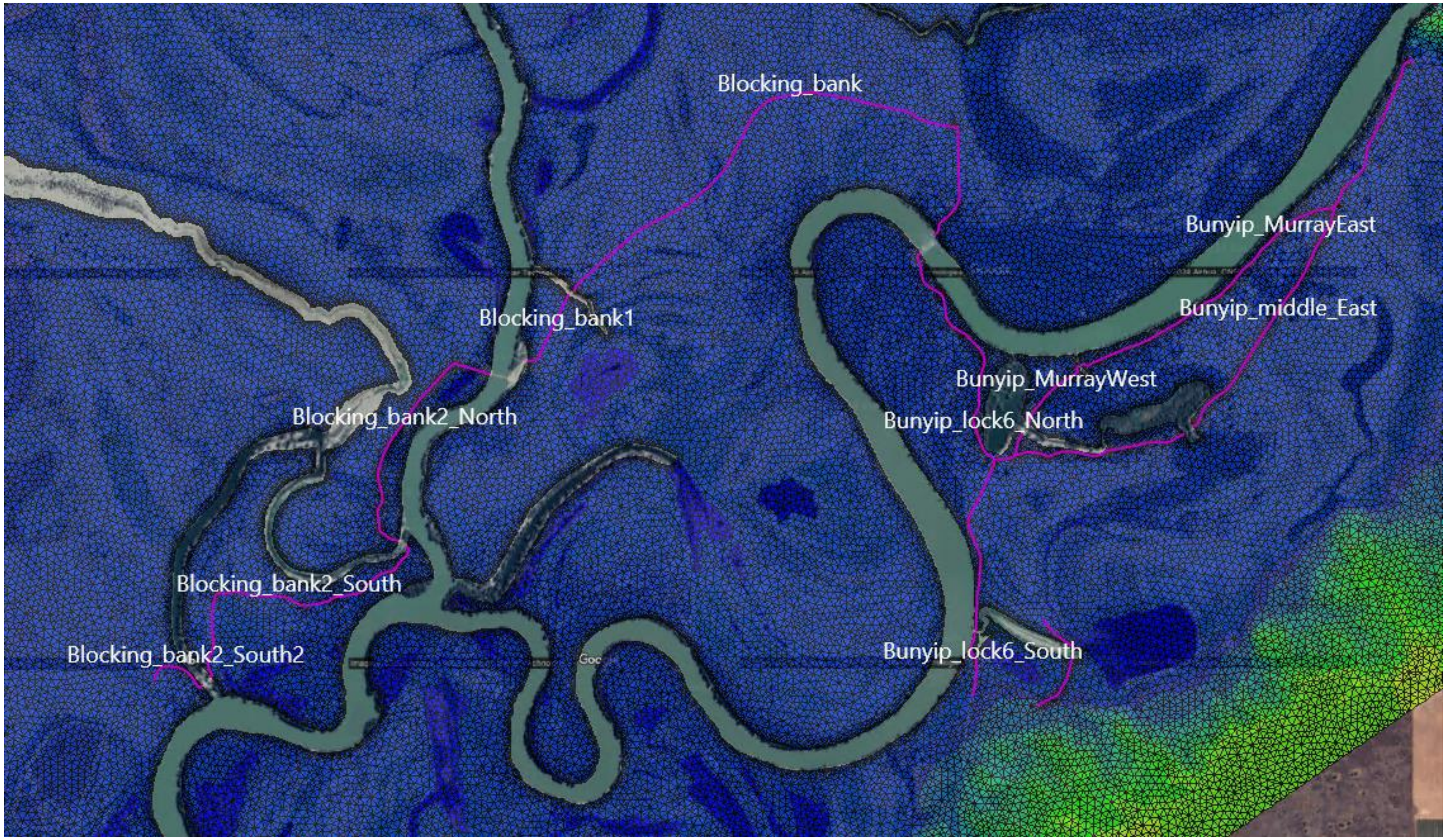

Figure 6.11. Features including tracks, roads and levee banks included in the model at Chowilla (shown in pink with IDs as named in the model).

6.2 Calibration results

6.2.1 Wellington to Lock 3 model

Comparisons of modelled results to observed data are shown in Figure 6.12 for the 2022–23 flood event simulation and Figure 6.13 for the validation results below 50 GL/d. Comparisons of modelled inundation extent with satellite imagery at 1 January 2023 (Copernicus Sentinel data 2024) are shown in Figure 6.14 to Figure 6.17. Note that discrepancies between modelled and observed data at some of the sites seen on the increasing limb of the hydrograph may be attributed to differences in modelled and observed travel times which may also be impacted by estimates made related to the inflow hydrograph. Assumed initial conditions may have also influenced the progression of the rising limb up to the flood peak.

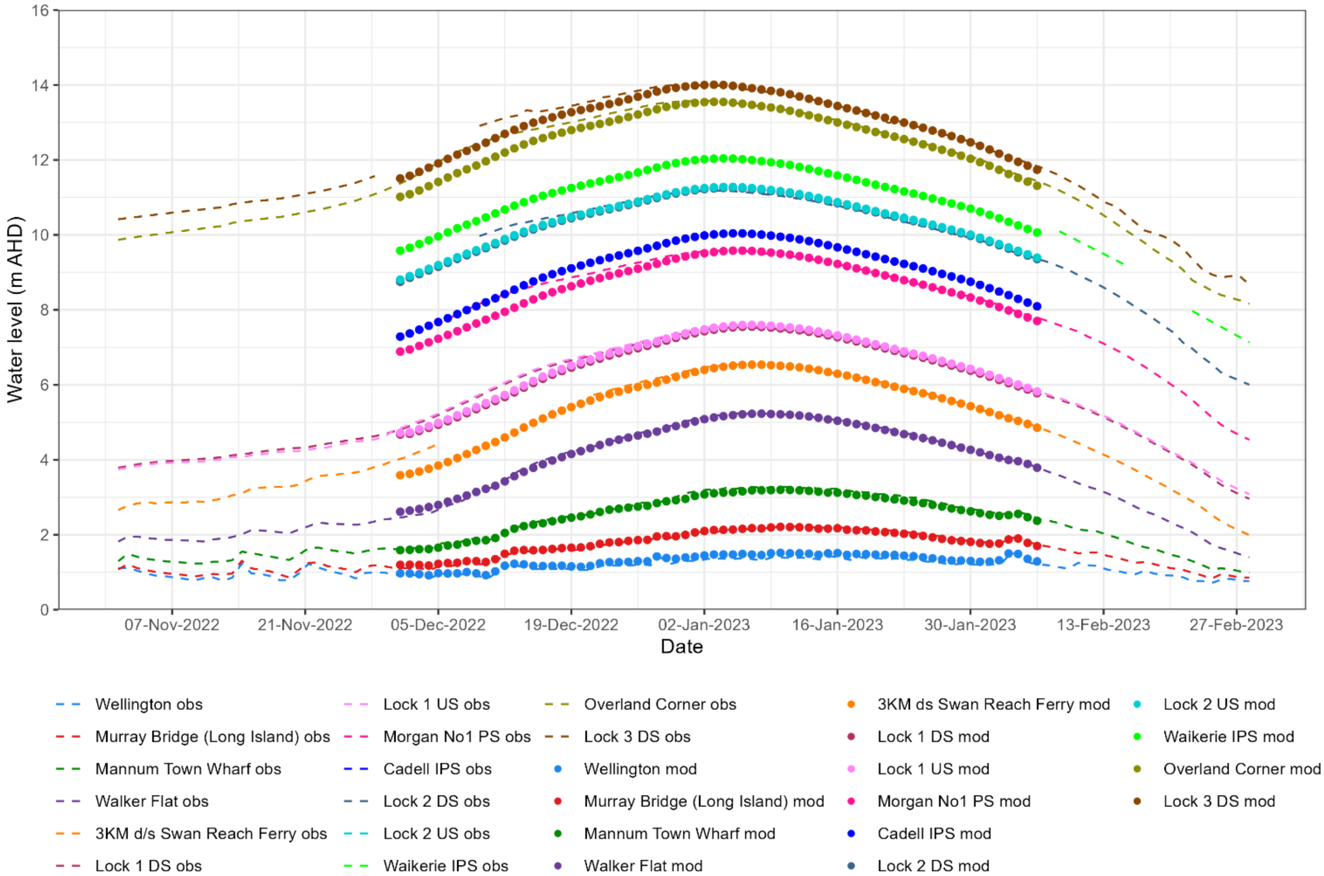

Figure 6.12. Water level comparisons modelled ('mod') to observed ('obs') for 2022–23 flood event peak at active monitoring stations between Wellington and Lock 3.

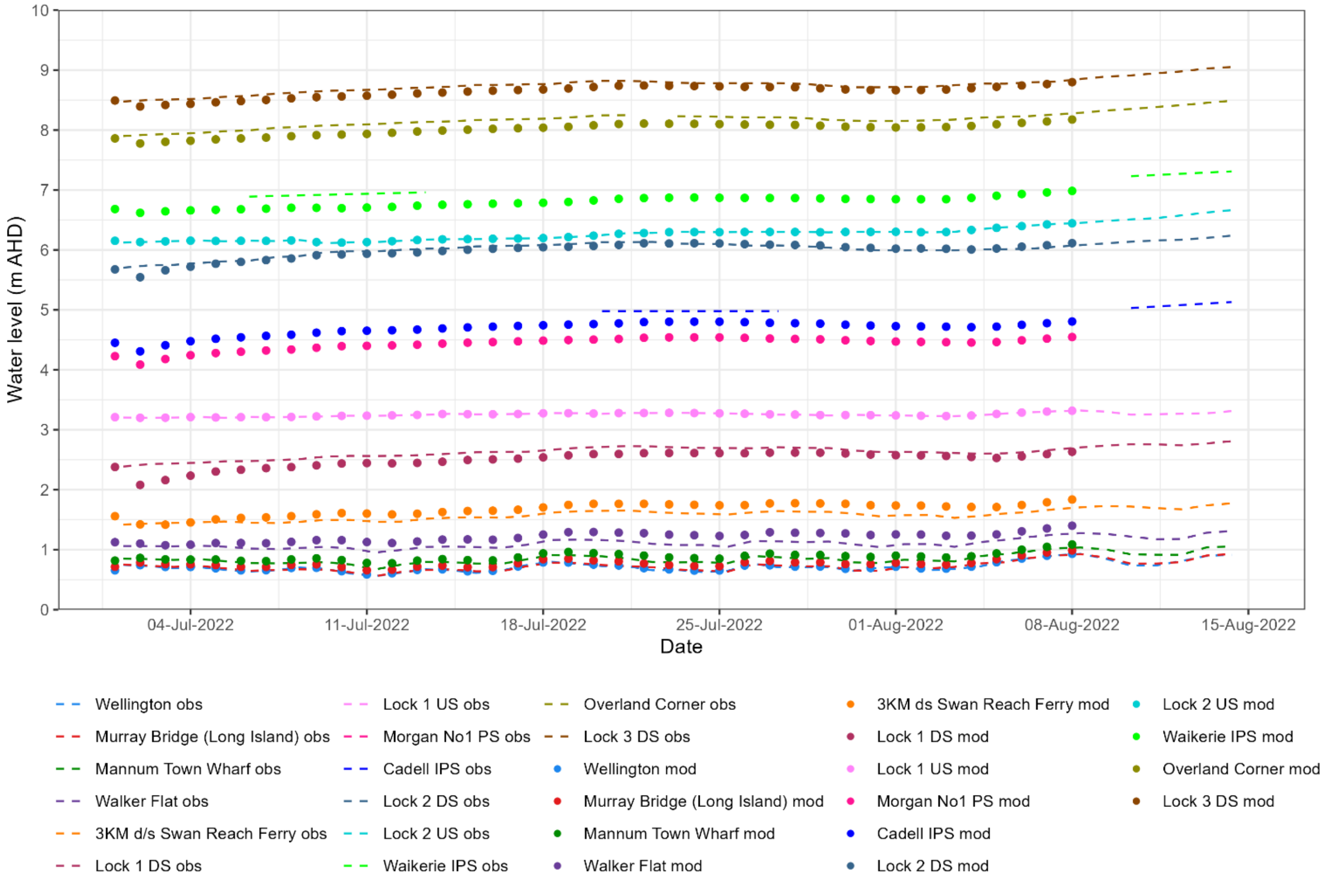

Figure 6.13. Water level comparisons modelled ('mod') to observed ('obs') for July to August 2022 at active monitoring stations between Wellington and Lock 3.

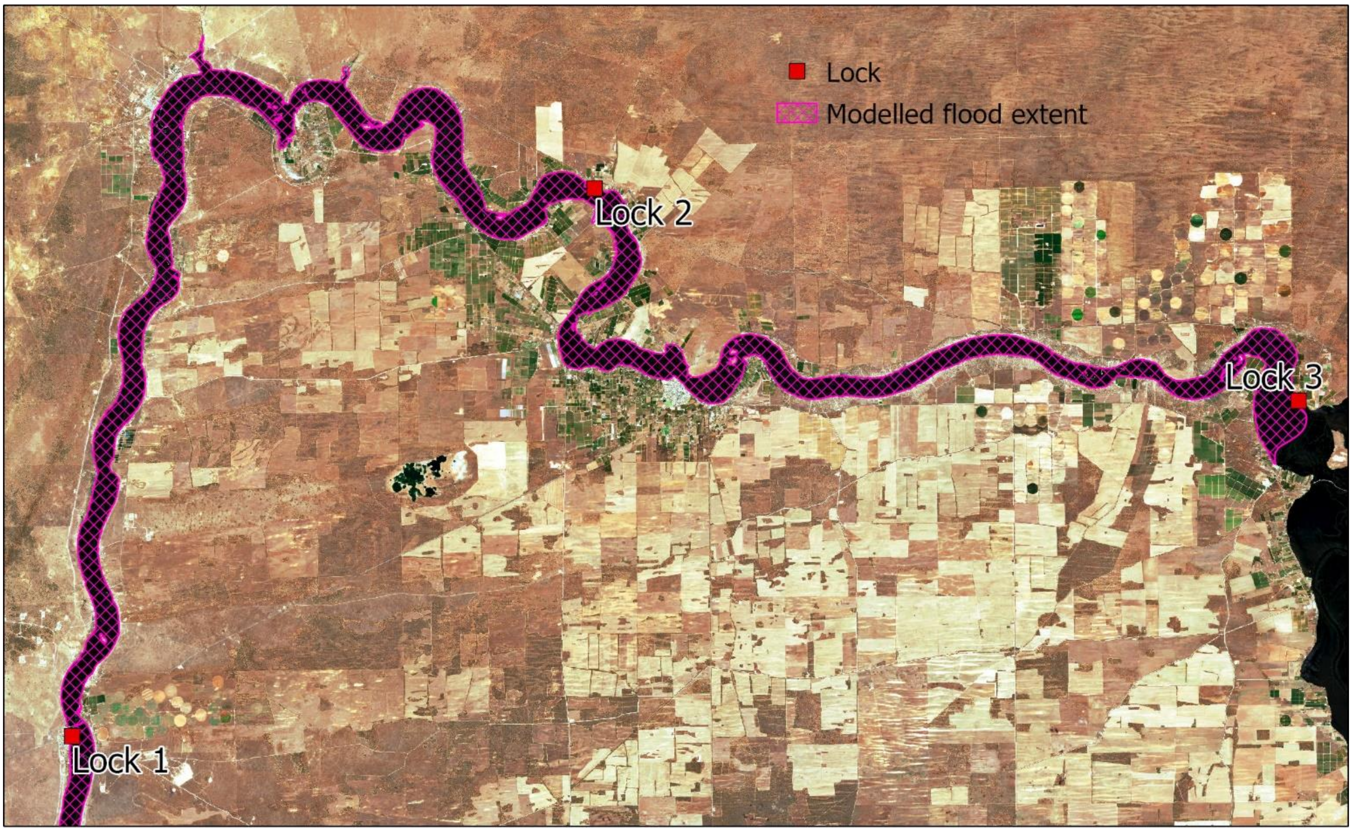

Figure 6.14. Modelled inundation extent between Lock 1 and Lock 3 superimposed on satellite imagery of flood inundation at 1 January 2023 (Copernicus Sentinel data 2024).

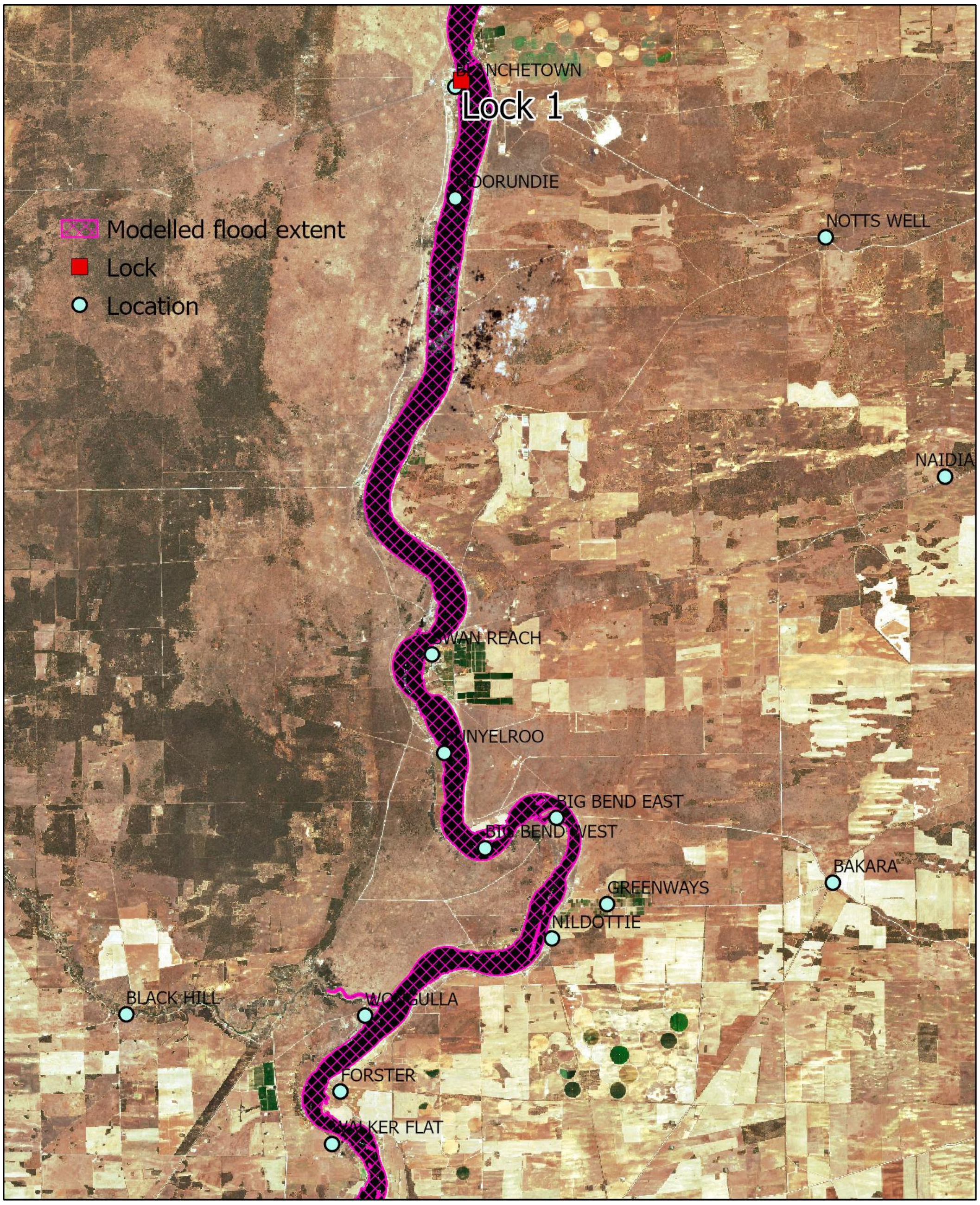

Figure 6.15. Modelled inundation extent between Lock 1 and Walker Flat superimposed on satellite imagery of flood inundation at 1 January 2023 (Copernicus Sentinel data 2024).

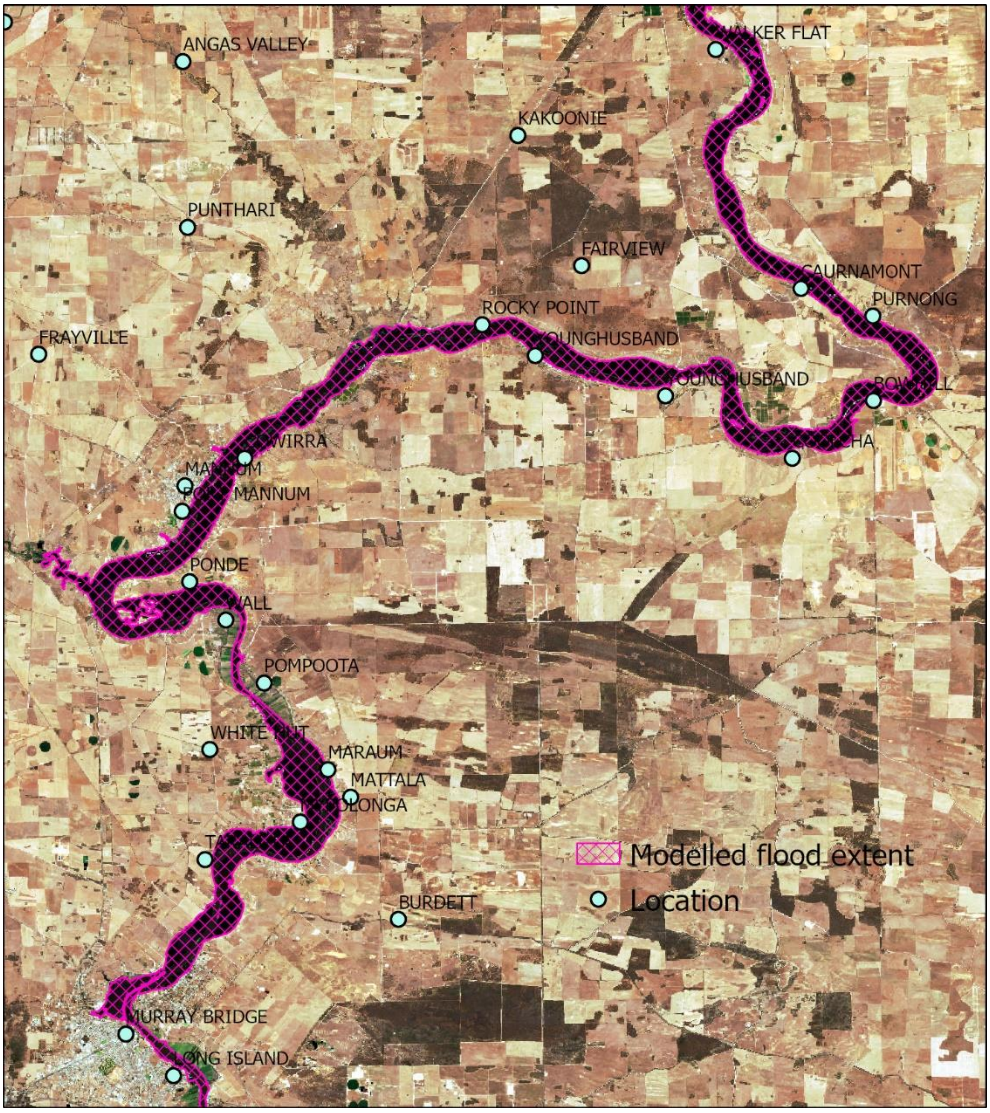

Figure 6.16. Modelled inundation extent between Walker Flat and Murray Bridge superimposed on satellite imagery of flood inundation at 1 January 2023 (Copernicus Sentinel data 2024).

Figure 6.17. Modelled inundation extent between Murray Bridge and Wellington superimposed on satellite imagery of flood inundation at 1 January 2023 (Copernicus Sentinel data 2024).

6.2.2 Lock 3 to Lock 6 model

Comparisons of modelled results to observed data are shown in Figure 6.18 for the 2022–23 flood event simulation. Comparison of modelled inundation extent to satellite imagery (Copernicus Sentinel data 2024) from this simulation is shown in Figure 6.19 for Lock 5 to Lock 6 and Figure 6.20 for Lock 3 to Lock 5. Note that discrepancies between modelled and observed data over various periods of the hydrograph may be attributed to differences in modelled and observed travel times and may also be impacted by estimates made relating to the inflow hydrograph.

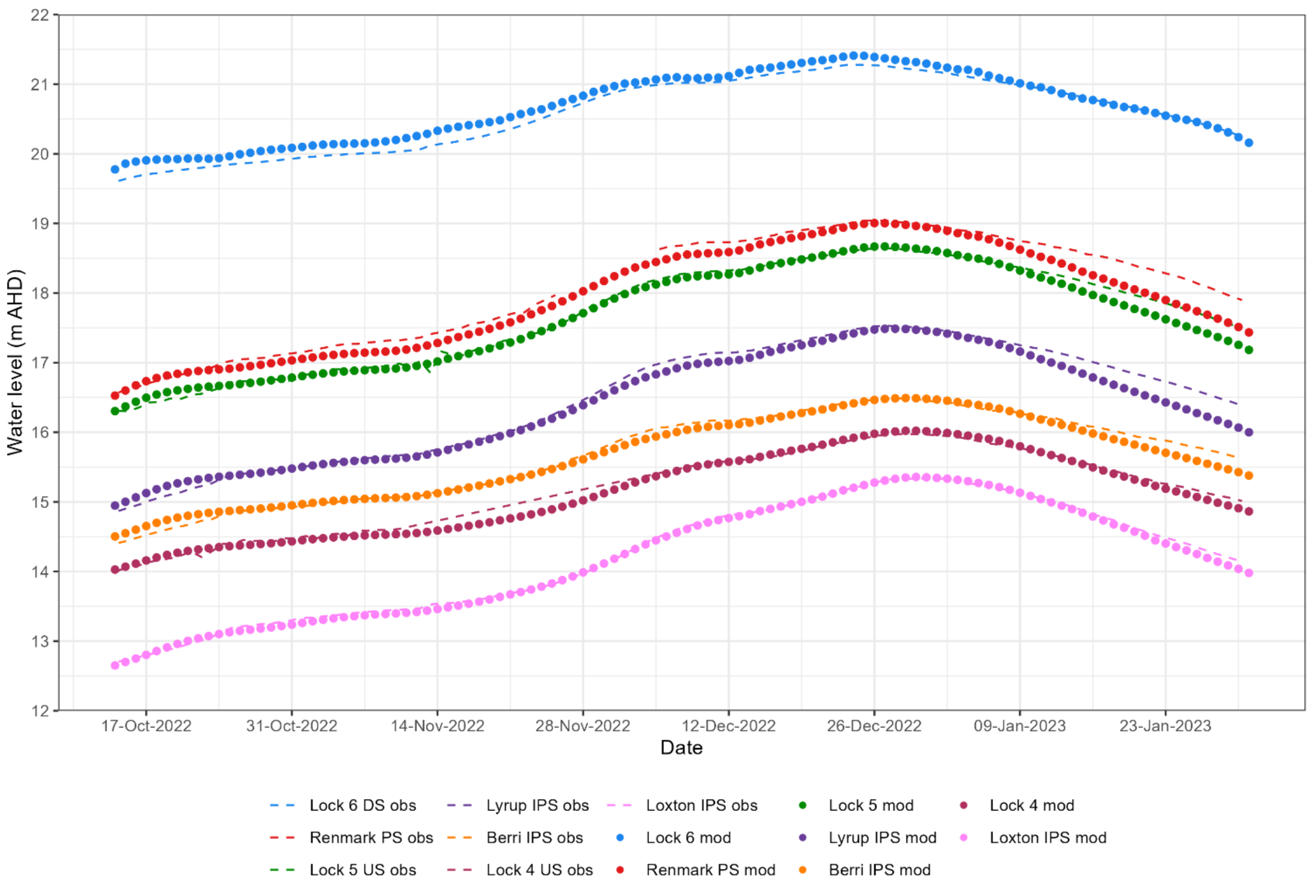

Figure 6.18. Water level comparisons modelled ('mod') to observed ('obs') for 2022–23 flood event peak at active monitoring stations between Lock 3 and Lock 6.

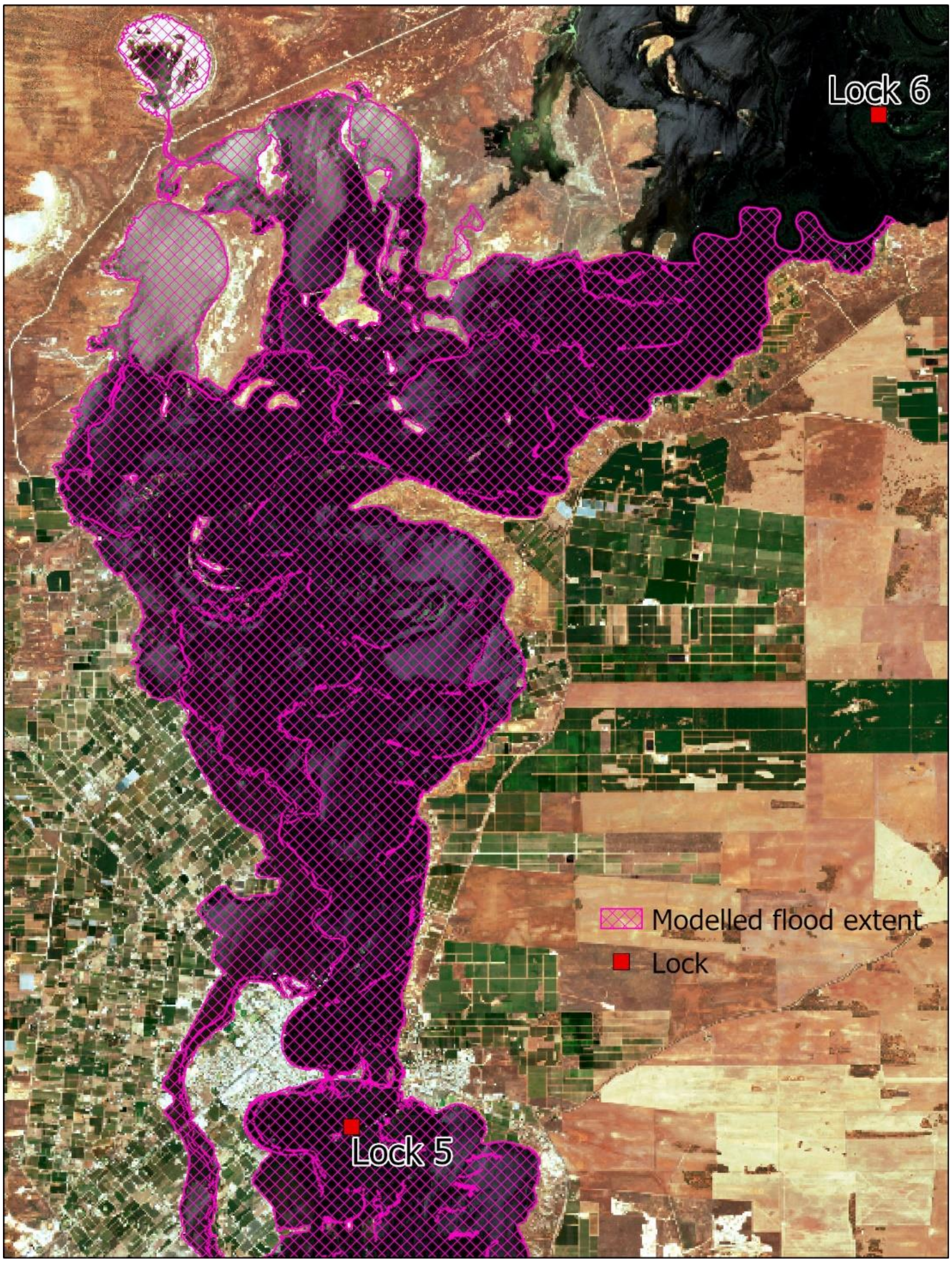

Figure 6.19. Modelled inundation extent between Lock 5 and Lock 6 superimposed on satellite imagery of flood inundation at 27 December 2022 (Copernicus Sentinel data 2024).

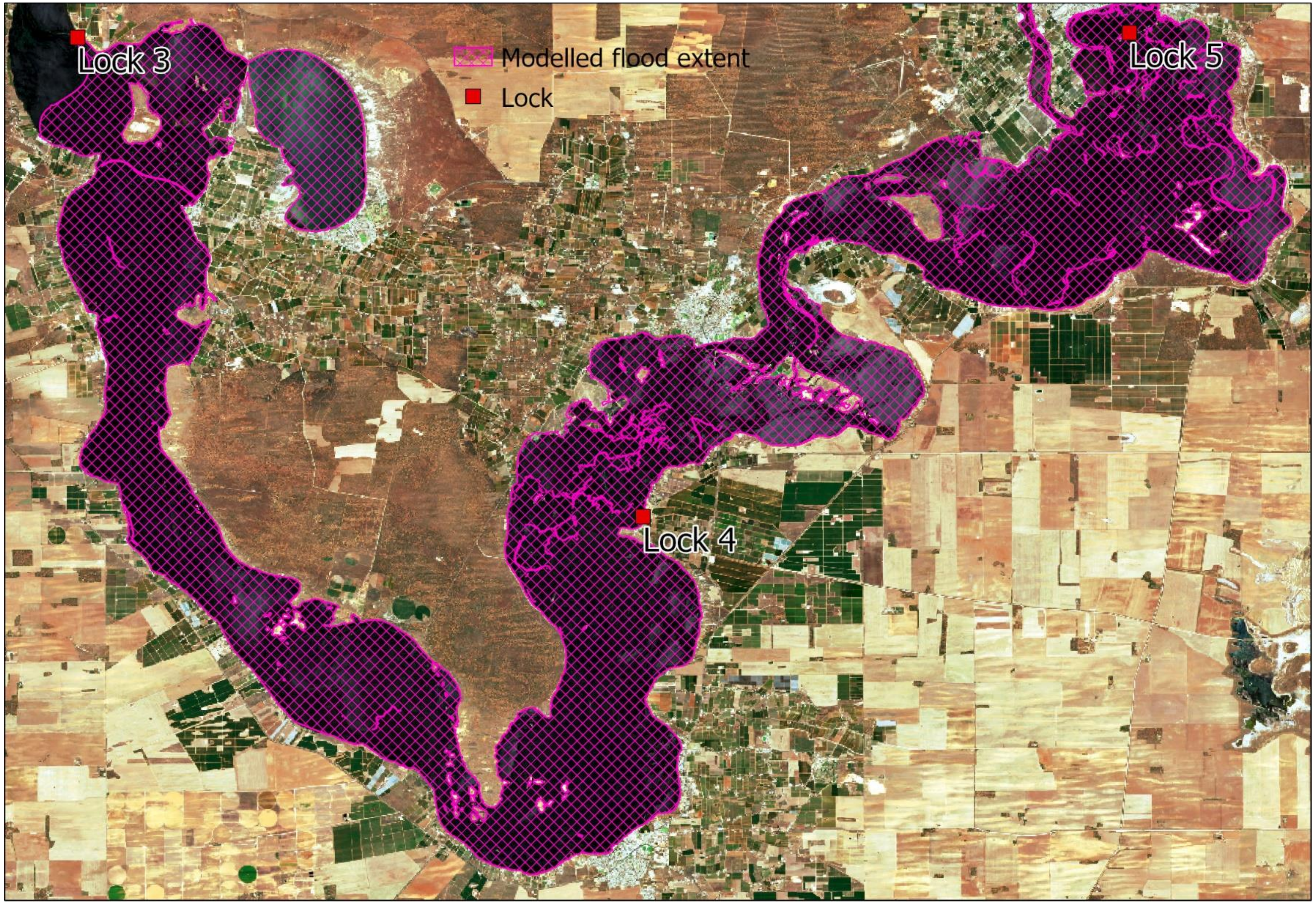

Figure 6.20. Modelled inundation extent between Lock 3 and Lock 5 superimposed on satellite imagery of flood inundation at 27 December 2022 (Copernicus Sentinel data 2024).

6.2.3 Lock 6 to lock 7 model

Comparisons of modelled results to observed data at Lock 6 and Lock 7 are shown in Figure 6.21 for the 2022–23 flood event simulation. Comparison of modelled inundation extent from the final 2022–23 flood event calibration simulation to satellite imagery (Copernicus Sentinel data 2024) is shown in Figure 6.22.

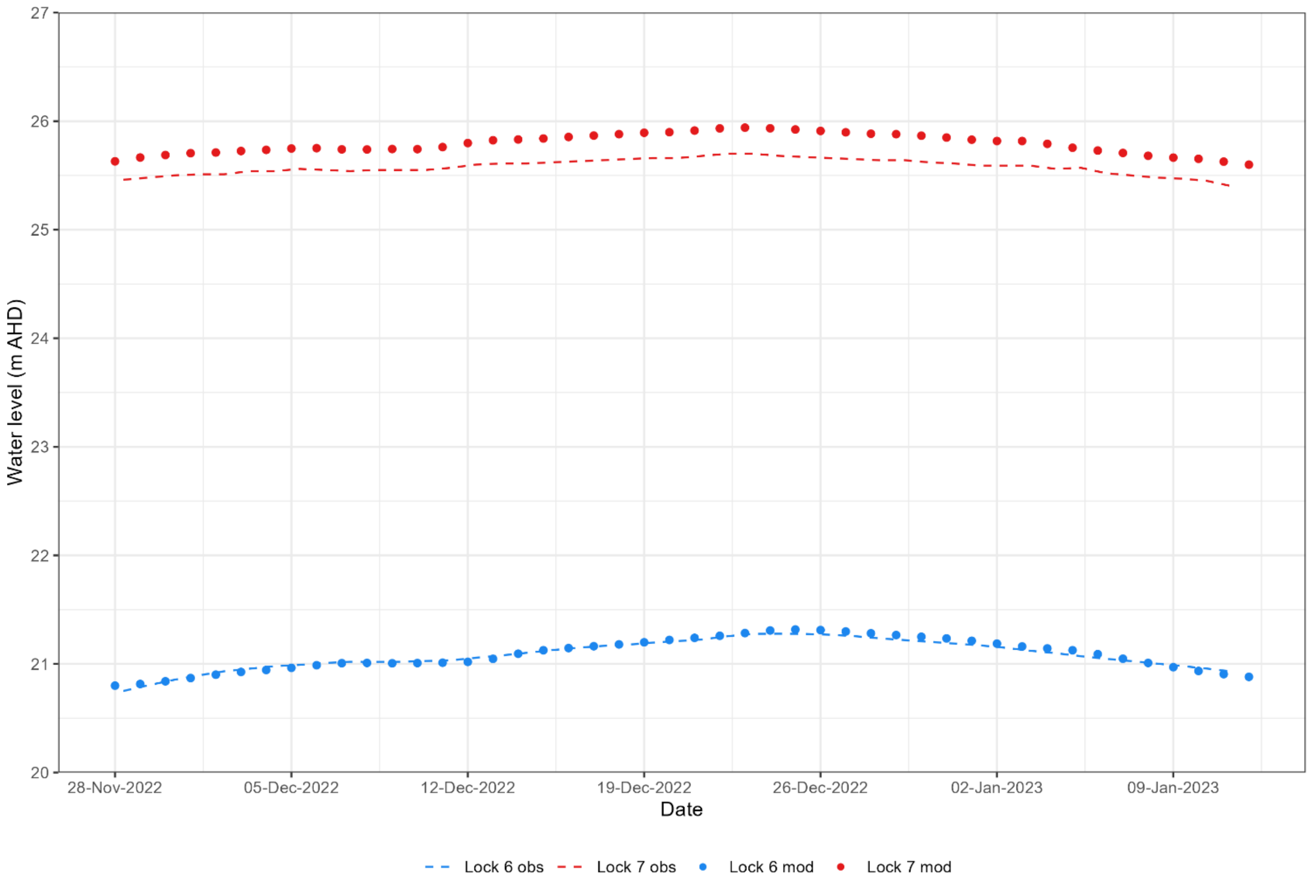

Figure 6.21. Water level comparisons modelled ('mod') to observed ('obs') for 2022–23 flood event peak at active monitoring stations at Lock 6 and Lock 7. Lock 7 water level comparison impacted by model inflows distributed through River Murray, Lindsay River and Mullaroo Creek channels rather than spread across the floodplain under real-world conditions.

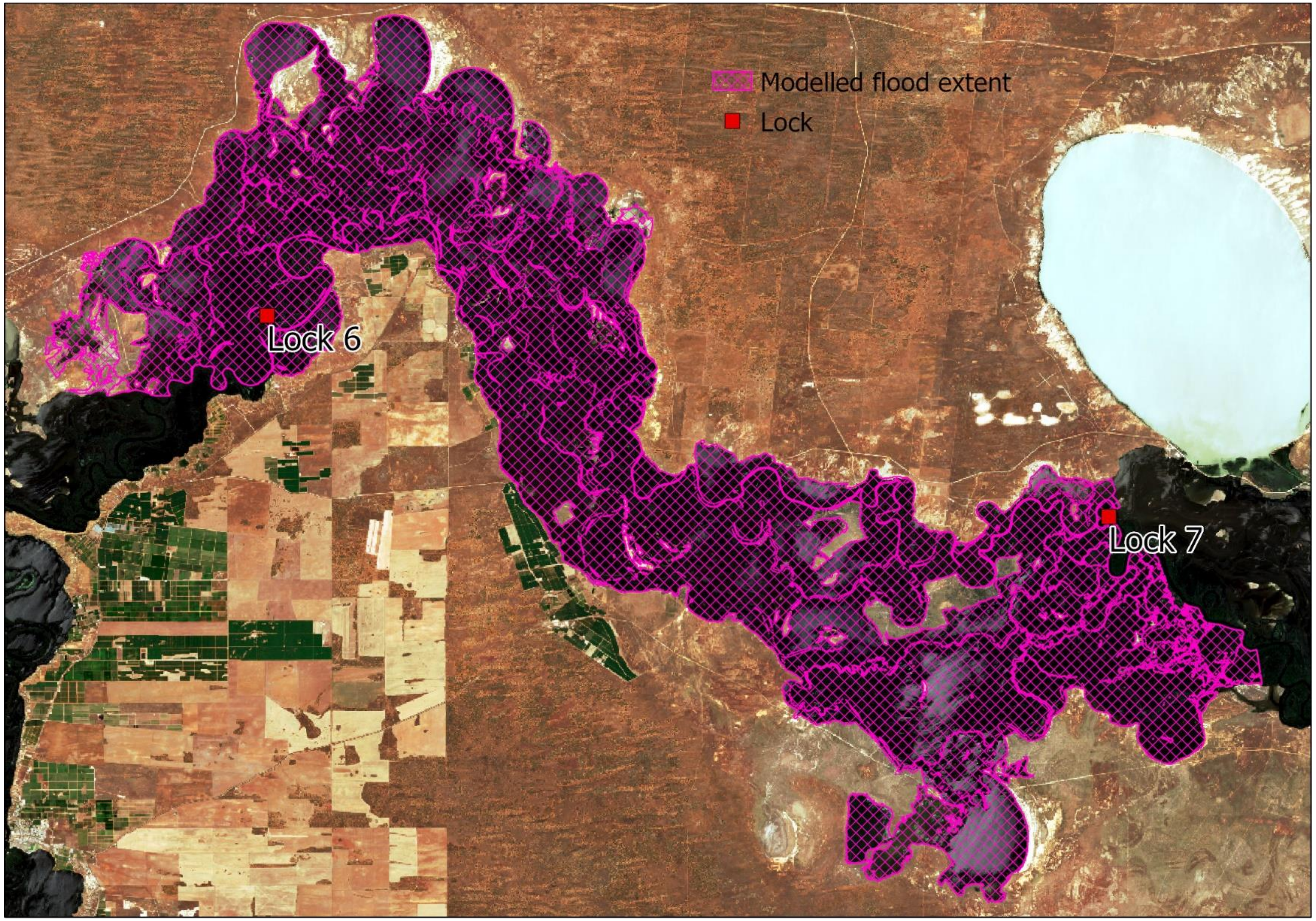

Figure 6.22. Modelled inundation extent for Lock 6 to Lock 7 model superimposed on satellite imagery of flood inundation at 27 December 2022 (Copernicus Sentinel data 2024).

6.3 Water level profiles by QSA

The following tables present the modelled water levels for each of the modelled QSA flows (steady state) at River Murray distance markers in each lock weir pool. Approximate locations of various distance markers are provided for reference purposes and may not include all notable locations along the river, noting that some locations may span multiple distance markers. Modelled water levels should be used as a guide only; levels modelled at each location may vary with the characteristics of each given flood event which may include factors such as antecedent conditions (i.e., preceding the event) of the River Murray floodplain and the shape of the event hydrograph. Water levels for flows exceeding the peak of the 2022–23 event (i.e., ≥190 GL/d) exhibit a higher degree of uncertainty compared to outputs within the model calibration range. Water levels at model boundary locations, including Wellington, Lock 3, Lock 6 and Lock 7, may carry a greater degree of uncertainty than other parts of the system due to boundary impacts on the hydraulics at these locations (e.g., levels in the vicinity of Lock 7 in Table 6.7).

Table 6.1. Modelled River Murray water level profiles at each modelled QSA between Wellington and Lock 1.

Approximate	River dist.	Water levels in metres AHD at QSA flows																			
location	km	80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	74	1.00	1.00	1.00	1.04	1.09	1.13	1.17	1.22	1.27	1.32	1.37	1.42	1.48	1.54	1.60	1.72	1.86	2.02	2.18	2.57
	75	1.00	1.00	1.00	1.04	1.09	1.13	1.17	1.22	1.27	1.32	1.37	1.42	1.49	1.55	1.61	1.73	1.87	2.03	2.20	2.59
Wellington	76	1.00	1.01	1.01	1.05	1.10	1.14	1.18	1.24	1.29	1.34	1.39	1.44	1.51	1.57	1.63	1.76	1.90	2.06	2.22	2.61
	77	1.01	1.01	1.02	1.06	1.11	1.16	1.20	1.25	1.31	1.36	1.41	1.47	1.53	1.60	1.66	1.80	1.95	2.12	2.29	2.70
	78	1.02	1.02	1.02	1.07	1.12	1.17	1.21	1.27	1.32	1.38	1.43	1.49	1.56	1.63	1.69	1.83	1.98	2.15	2.33	2.74
	79	1.02	1.03	1.03	1.08	1.13	1.18	1.22	1.28	1.34	1.39	1.45	1.51	1.58	1.65	1.72	1.86	2.02	2.19	2.38	2.80
	80	1.03	1.04	1.04	1.09	1.15	1.20	1.25	1.30	1.36	1.42	1.48	1.54	1.61	1.68	1.75	1.89	2.05	2.23	2.41	2.84
Placid Estates	81	1.03	1.04	1.05	1.10	1.16	1.21	1.26	1.32	1.38	1.44	1.50	1.56	1.63	1.70	1.77	1.91	2.08	2.26	2.45	2.88
	82	1.04	1.05	1.06	1.11	1.16	1.22	1.27	1.33	1.39	1.45	1.51	1.57	1.64	1.72	1.79	1.93	2.11	2.29	2.49	2.92
	83	1.05	1.06	1.07	1.12	1.18	1.24	1.29	1.35	1.42	1.48	1.55	1.61	1.69	1.76	1.84	1.99	2.17	2.35	2.54	2.97
	84	1.05	1.07	1.08	1.13	1.20	1.25	1.31	1.37	1.44	1.50	1.57	1.64	1.71	1.79	1.87	2.02	2.20	2.38	2.56	3.00
	85	1.05	1.07	1.08	1.14	1.20	1.26	1.32	1.38	1.45	1.52	1.59	1.66	1.74	1.81	1.89	2.05	2.23	2.41	2.59	3.03
	86	1.06	1.08	1.09	1.15	1.22	1.27	1.33	1.40	1.47	1.54	1.61	1.68	1.76	1.84	1.92	2.08	2.26	2.44	2.62	3.07
	87	1.07	1.09	1.10	1.16	1.23	1.29	1.35	1.42	1.49	1.56	1.63	1.70	1.79	1.87	1.95	2.11	2.29	2.47	2.66	3.10
Jervois	88	1.07	1.09	1.11	1.17	1.24	1.30	1.36	1.43	1.51	1.58	1.65	1.73	1.81	1.89	1.98	2.14	2.32	2.50	2.69	3.14
Tailem Bend	89	1.08	1.10	1.12	1.18	1.25	1.31	1.38	1.45	1.52	1.60	1.67	1.75	1.84	1.92	2.01	2.17	2.35	2.53	2.72	3.17
	90	1.08	1.11	1.12	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.69	1.77	1.86	1.95	2.03	2.19	2.37	2.55	2.74	3.20
	91	1.09	1.11	1.13	1.19	1.27	1.33	1.40	1.48	1.55	1.63	1.71	1.79	1.88	1.97	2.06	2.21	2.39	2.57	2.77	3.22
	92	1.09	1.12	1.14	1.20	1.28	1.34	1.41	1.49	1.57	1.65	1.73	1.81	1.90	1.99	2.08	2.24	2.41	2.59	2.79	3.25
	93	1.10	1.12	1.14	1.21	1.29	1.35	1.42	1.50	1.58	1.66	1.74	1.83	1.92	2.01	2.10	2.26	2.43	2.61	2.81	3.27
Westbrook	94	1.10	1.13	1.15	1.22	1.29	1.36	1.43	1.51	1.59	1.68	1.76	1.84	1.93	2.02	2.12	2.28	2.44	2.62	2.82	3.28
	95	1.11	1.14	1.16	1.23	1.31	1.38	1.45	1.53	1.62	1.70	1.78	1.87	1.97	2.06	2.15	2.31	2.48	2.66	2.86	3.33
	96	1.11	1.14	1.17	1.24	1.32	1.39	1.46	1.55	1.63	1.72	1.80	1.89	1.98	2.08	2.18	2.34	2.51	2.70	2.90	3.36
	97	1.12	1.15	1.17	1.25	1.33	1.40	1.47	1.56	1.65	1.73	1.82	1.91	2.00	2.10	2.20	2.37	2.54	2.73	2.93	3.40
	98	1.12	1.15	1.18	1.25	1.33	1.41	1.49	1.57	1.66	1.75	1.83	1.92	2.02	2.12	2.22	2.39	2.57	2.76	2.96	3.44
Mason	99	1.12	1.16	1.18	1.26	1.34	1.42	1.50	1.58	1.67	1.76	1.85	1.94	2.04	2.14	2.24	2.41	2.59	2.78	2.98	3.46
	100	1.13	1.17	1.19	1.27	1.36	1.43	1.51	1.60	1.69	1.78	1.87	1.97	2.07	2.17	2.27	2.45	2.64	2.83	3.04	3.53
	101	1.14	1.17	1.20	1.28	1.36	1.44	1.52	1.61	1.71	1.80	1.89	1.98	2.09	2.19	2.29	2.48	2.67	2.86	3.08	3.56
	102	1.14	1.18	1.21	1.29	1.38	1.46	1.54	1.63	1.73	1.82	1.91	2.01	2.12	2.22	2.33	2.51	2.70	2.90	3.11	3.60
	103	1.15	1.19	1.22	1.30	1.39	1.47	1.56	1.65	1.74	1.84	1.93	2.03	2.14	2.24	2.35	2.53	2.73	2.93	3.15	3.64
	104	1.15	1.20	1.23	1.31	1.40	1.49	1.58	1.67	1.77	1.87	1.96	2.06	2.17	2.28	2.38	2.57	2.76	2.97	3.19	3.69
Monteith	105	1.17	1.22	1.26	1.34	1.44	1.53	1.62	1.71	1.82	1.92	2.02	2.12	2.23	2.34	2.44	2.63	2.82	3.03	3.25	3.75
	106	1.18	1.22	1.26	1.35	1.44	1.54	1.63	1.73	1.83	1.93	2.03	2.14	2.25	2.36	2.46	2.66	2.86	3.07	3.30	3.82
	107	1.19	1.23	1.27	1.37	1.46	1.55	1.65	1.75	1.85	1.96	2.06	2.17	2.28	2.38	2.49	2.68	2.88	3.09	3.32	3.83
	108	1.20	1.25	1.29	1.39	1.49	1.58	1.68	1.78	1.89	2.00	2.10	2.21	2.32	2.43	2.54	2.73	2.94	3.16	3.39	3.91
	109	1.20	1.26	1.30	1.40	1.50	1.59	1.69	1.80	1.90	2.01	2.12	2.23	2.35	2.45	2.56	2.76	2.98	3.20	3.43	3.96
Long Island	110	1.21	1.26	1.31	1.41	1.51	1.61	1.71	1.81	1.93	2.04	2.14	2.26	2.38	2.49	2.60	2.81	3.03	3.26	3.50	4.04
	111	1.22	1.28	1.33	1.43	1.54	1.64	1.74	1.86	1.97	2.09	2.20	2.32	2.44	2.55	2.66	2.87	3.10	3.33	3.57	4.12
	112	1.25	1.31	1.37	1.47	1.58	1.68	1.79	1.90	2.02	2.14	2.25	2.37	2.49	2.60	2.71	2.92	3.14	3.37	3.61	4.15
Murray Bridge	113	1.25	1.31	1.36	1.47	1.58	1.68	1.79	1.91	2.03	2.14	2.26	2.38	2.50	2.61	2.72	2.93	3.15	3.39	3.63	4.17
	114	1.26	1.32	1.38	1.48	1.60	1.70	1.81	1.93	2.05	2.17	2.29	2.41	2.53	2.65	2.77	2.99	3.22	3.45	3.70	4.25

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	115	1.27	1.33	1.39	1.50	1.61	1.72	1.84	1.96	2.08	2.20	2.32	2.44	2.57	2.68	2.80	3.02	3.26	3.50	3.75	4.31
	116	1.27	1.34	1.40	1.51	1.62	1.74	1.85	1.97	2.10	2.22	2.34	2.46	2.59	2.71	2.83	3.05	3.29	3.53	3.79	4.35
	117	1.28	1.35	1.41	1.52	1.64	1.75	1.86	1.99	2.11	2.24	2.36	2.49	2.62	2.74	2.86	3.08	3.33	3.57	3.83	4.39
	118	1.28	1.36	1.42	1.53	1.65	1.76	1.88	2.00	2.13	2.26	2.38	2.51	2.64	2.76	2.88	3.11	3.36	3.60	3.86	4.43
	119	1.29	1.37	1.43	1.54	1.66	1.78	1.90	2.02	2.16	2.29	2.41	2.54	2.66	2.79	2.91	3.14	3.39	3.63	3.89	4.47
	120	1.29	1.37	1.43	1.54	1.66	1.78	1.90	2.02	2.16	2.29	2.41	2.54	2.66	2.78	2.91	3.13	3.38	3.63	3.89	4.46
	121	1.31	1.38	1.45	1.57	1.69	1.81	1.93	2.06	2.19	2.32	2.45	2.58	2.71	2.84	2.97	3.21	3.46	3.72	3.99	4.59
	122	1.32	1.39	1.46	1.58	1.71	1.83	1.95	2.08	2.22	2.35	2.48	2.61	2.75	2.87	3.00	3.24	3.50	3.76	4.03	4.63
	123	1.32	1.40	1.47	1.59	1.72	1.84	1.97	2.10	2.23	2.36	2.49	2.63	2.76	2.88	3.01	3.26	3.52	3.78	4.05	4.65
	124	1.33	1.41	1.48	1.60	1.73	1.86	1.98	2.11	2.25	2.39	2.52	2.65	2.79	2.92	3.05	3.30	3.56	3.83	4.11	4.72
	125	1.34	1.42	1.49	1.62	1.75	1.88	2.00	2.14	2.27	2.41	2.54	2.68	2.82	2.95	3.08	3.33	3.60	3.87	4.16	4.77
	126	1.35	1.43	1.51	1.63	1.77	1.90	2.03	2.16	2.30	2.44	2.57	2.71	2.85	2.98	3.12	3.37	3.64	3.91	4.19	4.81
Mypolonga	127	1.35	1.44	1.52	1.65	1.78	1.91	2.04	2.18	2.32	2.46	2.59	2.73	2.87	3.00	3.14	3.39	3.66	3.94	4.22	4.84
	128	1.37	1.46	1.53	1.67	1.80	1.94	2.07	2.21	2.36	2.50	2.63	2.77	2.91	3.05	3.18	3.44	3.72	3.99	4.28	4.90
	129	1.38	1.47	1.55	1.69	1.82	1.96	2.10	2.24	2.39	2.52	2.65	2.80	2.94	3.07	3.21	3.47	3.75	4.02	4.31	4.92
	130	1.39	1.48	1.56	1.70	1.84	1.98	2.12	2.27	2.41	2.55	2.68	2.82	2.96	3.09	3.23	3.48	3.76	4.04	4.33	4.94
	131	1.39	1.49	1.57	1.71	1.85	1.99	2.13	2.28	2.42	2.55	2.69	2.83	2.98	3.11	3.25	3.52	3.80	4.08	4.37	5.00
	132	1.40	1.50	1.59	1.73	1.87	2.02	2.16	2.30	2.44	2.58	2.71	2.86	3.00	3.14	3.28	3.55	3.83	4.11	4.40	5.03
Pompoota	133	1.41	1.51	1.60	1.74	1.88	2.03	2.17	2.31	2.45	2.59	2.72	2.87	3.01	3.15	3.29	3.55	3.83	4.11	4.40	5.03
	134	1.42	1.52	1.61	1.76	1.91	2.05	2.20	2.35	2.49	2.63	2.77	2.91	3.06	3.21	3.35	3.62	3.91	4.20	4.50	5.15
	135	1.43	1.53	1.62	1.77	1.92	2.07	2.21	2.36	2.51	2.65	2.79	2.94	3.08	3.23	3.37	3.65	3.94	4.24	4.54	5.19
	136	1.43	1.54	1.63	1.78	1.93	2.08	2.23	2.38	2.53	2.67	2.81	2.96	3.11	3.26	3.41	3.69	3.99	4.29	4.59	5.26
Wall	137	1.45	1.56	1.65	1.81	1.96	2.11	2.27	2.42	2.57	2.71	2.85	3.00	3.16	3.30	3.45	3.73	4.04	4.34	4.65	5.31
	138	1.46	1.57	1.67	1.82	1.98	2.13	2.29	2.45	2.60	2.75	2.88	3.03	3.19	3.33	3.48	3.76	4.07	4.37	4.68	5.35
	139	1.46	1.58	1.67	1.83	1.99	2.14	2.30	2.46	2.61	2.76	2.89	3.05	3.20	3.35	3.50	3.78	4.09	4.39	4.70	5.37
	140	1.48	1.59	1.69	1.85	2.01	2.17	2.33	2.49	2.64	2.79	2.92	3.07	3.22	3.37	3.52	3.81	4.12	4.42	4.73	5.41
	141	1.48	1.60	1.70	1.86	2.02	2.18	2.33	2.49	2.65	2.80	2.93	3.08	3.23	3.38	3.53	3.81	4.12	4.43	4.74	5.42
	142	1.49	1.61	1.71	1.88	2.04	2.20	2.36	2.52	2.68	2.83	2.97	3.12	3.27	3.43	3.58	3.87	4.18	4.49	4.80	5.48
	143	1.51	1.63	1.73	1.90	2.06	2.22	2.39	2.55	2.71	2.86	3.00	3.16	3.31	3.47	3.62	3.91	4.23	4.53	4.85	5.53
Reedy Creek	144	1.52	1.65	1.76	1.93	2.10	2.27	2.44	2.61	2.77	2.93	3.06	3.22	3.38	3.53	3.69	3.98	4.31	4.61	4.93	5.62
	145	1.53	1.66	1.77	1.94	2.11	2.27	2.44	2.61	2.78	2.93	3.07	3.23	3.39	3.55	3.70	4.00	4.32	4.63	4.95	5.64
	146	1.54	1.67	1.78	1.95	2.12	2.29	2.46	2.63	2.80	2.96	3.10	3.27	3.43	3.59	3.74	4.05	4.37	4.69	5.02	5.72
	147	1.55	1.69	1.80	1.98	2.15	2.32	2.50	2.68	2.85	3.01	3.15	3.31	3.48	3.64	3.80	4.10	4.44	4.76	5.09	5.79
	148	1.56	1.71	1.82	2.00	2.18	2.35	2.53	2.71	2.88	3.04	3.19	3.35	3.52	3.68	3.84	4.15	4.48	4.81	5.14	5.85
	149	1.58	1.72	1.84	2.02	2.20	2.38	2.56	2.74	2.91	3.07	3.22	3.38	3.55	3.71	3.87	4.18	4.52	4.84	5.18	5.89
Mannum	150	1.59	1.73	1.85	2.04	2.22	2.40	2.58	2.76	2.93	3.09	3.24	3.40	3.57	3.73	3.90	4.21	4.54	4.87	5.20	5.92
	151	1.60	1.75	1.87	2.05	2.24	2.42	2.60	2.78	2.95	3.11	3.26	3.43	3.59	3.75	3.92	4.23	4.57	4.90	5.23	5.94
	152	1.61	1.76	1.88	2.07	2.25	2.44	2.62	2.80	2.97	3.13	3.28	3.44	3.61	3.77	3.94	4.25	4.59	4.92	5.26	5.97
Cowirra	153	1.61	1.77	1.89	2.08	2.27	2.45	2.64	2.82	2.99	3.15	3.30	3.47	3.63	3.80	3.96	4.28	4.62	4.95	5.28	6.00
	154	1.63	1.78	1.91	2.10	2.29	2.47	2.66	2.85	3.02	3.18	3.33	3.50	3.67	3.83	4.00	4.31	4.66	4.98	5.32	6.04
	155	1.64	1.79	1.92	2.11	2.30	2.49	2.68	2.86	3.03	3.20	3.35	3.52	3.69	3.85	4.02	4.34	4.68	5.01	5.34	6.06
	156	1.65	1.81	1.93	2.13	2.32	2.51	2.70	2.89	3.06	3.23	3.38	3.55	3.72	3.89	4.06	4.38	4.73	5.05	5.39	6.11
	157	1.66	1.82	1.95	2.15	2.34	2.53	2.72	2.91	3.08	3.25	3.40	3.57	3.74	3.91	4.08	4.40	4.74	5.07	5.41	6.13
	158	1.67	1.83	1.96	2.16	2.36	2.55	2.74	2.93	3.10	3.27	3.42	3.60	3.77	3.94	4.11	4.43	4.78	5.11	5.45	6.17
	159	1.68	1.84	1.98	2.18	2.38	2.57	2.76	2.95	3.13	3.30	3.45	3.63	3.80	3.97	4.14	4.46	4.82	5.15	5.49	6.22
	160	1.69	1.86	1.99	2.20	2.40	2.59	2.78	2.98	3.15	3.33	3.48	3.66	3.83	4.00	4.17	4.50	4.85	5.18	5.52	6.25
	161	1.70	1.87	2.01	2.21	2.41	2.60	2.80	2.99	3.17	3.34	3.50	3.68	3.85	4.02	4.19	4.52	4.87	5.20	5.54	6.27
	162	1.71	1.88	2.01	2.22	2.42	2.61	2.81	3.00	3.18	3.35	3.51	3.69	3.86	4.03	4.21	4.53	4.88	5.22	5.56	6.28
	163	1.72	1.89	2.03	2.24	2.44	2.63	2.83	3.03	3.21	3.38	3.54	3.72	3.89	4.06	4.24	4.56	4.92	5.25	5.59	6.32
	164	1.73	1.90	2.04	2.25	2.45	2.65	2.85	3.04	3.22	3.40	3.55	3.73	3.91	4.08	4.26	4.58	4.94	5.27	5.62	6.34
	165	1.74	1.92	2.06	2.27	2.47	2.67	2.87	3.07	3.25	3.43	3.59	3.77	3.95	4.13	4.30	4.63	4.99	5.34	5.68	6.42
	166	1.75	1.93	2.07	2.29	2.49	2.70	2.90	3.10	3.29	3.46	3.63	3.81	3.99	4.17	4.35	4.68	5.05	5.39	5.74	6.48
	167	1.77	1.95	2.10	2.32	2.53	2.73	2.94	3.14	3.33	3.51	3.68	3.87	4.05	4.23	4.41	4.75	5.12	5.47	5.82	6.56

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	168	1.78	1.96	2.11	2.33	2.54	2.75	2.96	3.16	3.35	3.53	3.70	3.89	4.07	4.25	4.44	4.78	5.15	5.50	5.85	6.60
	169	1.79	1.98	2.13	2.35	2.56	2.77	2.98	3.18	3.38	3.56	3.73	3.92	4.11	4.29	4.47	4.81	5.19	5.54	5.89	6.64
	170	1.80	1.99	2.15	2.37	2.59	2.80	3.01	3.22	3.41	3.60	3.77	3.96	4.15	4.33	4.52	4.86	5.24	5.59	5.95	6.70
	171	1.81	2.00	2.16	2.38	2.60	2.81	3.03	3.24	3.43	3.62	3.79	3.99	4.18	4.36	4.55	4.89	5.27	5.62	5.98	6.73
Younghusband	172	1.83	2.03	2.19	2.42	2.64	2.85	3.06	3.28	3.47	3.66	3.84	4.03	4.22	4.40	4.59	4.94	5.31	5.67	6.02	6.77
	173	1.84	2.04	2.20	2.43	2.65	2.86	3.08	3.28	3.48	3.67	3.84	4.04	4.22	4.41	4.59	4.94	5.32	5.67	6.03	6.78
	174	1.85	2.05	2.21	2.44	2.67	2.88	3.10	3.31	3.51	3.70	3.88	4.07	4.26	4.45	4.63	4.98	5.36	5.72	6.08	6.84
	175	1.86	2.07	2.23	2.46	2.69	2.91	3.13	3.34	3.55	3.74	3.92	4.12	4.32	4.51	4.70	5.06	5.45	5.82	6.19	6.96
	176	1.87	2.08	2.24	2.48	2.70	2.93	3.15	3.36	3.57	3.76	3.95	4.15	4.35	4.54	4.73	5.10	5.50	5.87	6.25	7.04
	177	1.90	2.11	2.27	2.51	2.73	2.96	3.19	3.41	3.62	3.82	4.00	4.21	4.41	4.61	4.80	5.17	5.58	5.96	6.34	7.14
	178	1.91	2.12	2.29	2.53	2.76	2.99	3.22	3.44	3.65	3.85	4.04	4.24	4.45	4.65	4.84	5.22	5.62	6.01	6.39	7.20
	179	1.91	2.13	2.29	2.54	2.76	3.00	3.23	3.45	3.66	3.86	4.04	4.25	4.46	4.65	4.86	5.24	5.65	6.03	6.42	7.23
	180	1.93	2.16	2.33	2.57	2.80	3.04	3.27	3.49	3.71	3.91	4.10	4.31	4.51	4.71	4.92	5.30	5.71	6.10	6.49	7.30
	181	1.94	2.17	2.34	2.59	2.82	3.06	3.29	3.52	3.73	3.94	4.13	4.34	4.55	4.75	4.95	5.34	5.76	6.15	6.54	7.36
	182	1.98	2.21	2.38	2.63	2.86	3.11	3.34	3.57	3.79	3.99	4.18	4.40	4.61	4.81	5.02	5.41	5.83	6.22	6.62	7.45
	183	2.00	2.23	2.40	2.66	2.89	3.14	3.37	3.60	3.82	4.02	4.21	4.43	4.64	4.84	5.05	5.44	5.86	6.26	6.65	7.48
	184	2.01	2.25	2.42	2.68	2.92	3.16	3.40	3.63	3.85	4.06	4.25	4.47	4.69	4.89	5.10	5.49	5.92	6.32	6.72	7.55
Bowhill	185	2.03	2.27	2.44	2.71	2.94	3.19	3.43	3.66	3.88	4.09	4.28	4.50	4.71	4.92	5.13	5.52	5.95	6.35	6.75	7.58
	186	2.04	2.28	2.46	2.72	2.96	3.20	3.44	3.68	3.90	4.11	4.31	4.53	4.74	4.95	5.17	5.57	6.00	6.41	6.82	7.67
	187	2.06	2.30	2.48	2.75	2.98	3.23	3.48	3.71	3.94	4.15	4.35	4.58	4.80	5.01	5.23	5.64	6.08	6.49	6.90	7.75
	188	2.08	2.33	2.51	2.78	3.02	3.28	3.53	3.77	4.00	4.22	4.42	4.65	4.87	5.08	5.30	5.71	6.15	6.56	6.97	7.82
	189	2.10	2.36	2.55	2.82	3.07	3.33	3.57	3.82	4.05	4.26	4.47	4.70	4.92	5.13	5.34	5.75	6.18	6.59	7.00	7.85
	190	2.12	2.38	2.57	2.85	3.10	3.37	3.62	3.86	4.10	4.32	4.52	4.75	4.98	5.19	5.41	5.82	6.26	6.67	7.08	7.93
	191	2.14	2.40	2.60	2.88	3.13	3.40	3.66	3.90	4.14	4.36	4.57	4.80	5.03	5.25	5.47	5.88	6.33	6.74	7.16	8.01
Purnong	192	2.15	2.42	2.61	2.89	3.15	3.42	3.67	3.92	4.16	4.38	4.59	4.83	5.05	5.27	5.49	5.90	6.35	6.77	7.19	8.05
	193	2.16	2.41	2.61	2.89	3.15	3.42	3.67	3.93	4.17	4.39	4.60	4.84	5.07	5.29	5.51	5.93	6.38	6.80	7.22	8.10
	194	2.19	2.46	2.65	2.94	3.20	3.48	3.74	3.99	4.23	4.46	4.67	4.91	5.14	5.36	5.59	6.01	6.46	6.89	7.31	8.18
Caurnamont	195	2.21	2.48	2.68	2.97	3.23	3.50	3.77	4.02	4.26	4.50	4.71	4.95	5.18	5.40	5.63	6.05	6.51	6.93	7.36	8.23
	196	2.23	2.50	2.71	3.00	3.26	3.54	3.80	4.06	4.31	4.54	4.76	5.00	5.24	5.46	5.69	6.12	6.58	7.01	7.43	8.31
	197	2.25	2.53	2.73	3.03	3.30	3.57	3.84	4.10	4.34	4.58	4.79	5.03	5.27	5.49	5.72	6.15	6.61	7.04	7.47	8.35
	198	2.27	2.55	2.76	3.05	3.32	3.60	3.87	4.13	4.37	4.61	4.82	5.07	5.30	5.53	5.76	6.19	6.66	7.09	7.52	8.41
	199	2.28	2.57	2.78	3.08	3.35	3.64	3.91	4.17	4.42	4.66	4.89	5.13	5.38	5.61	5.84	6.28	6.75	7.19	7.63	8.52
	200	2.32	2.61	2.82	3.13	3.40	3.69	3.96	4.22	4.47	4.71	4.93	5.18	5.42	5.65	5.89	6.33	6.80	7.24	7.68	8.57
	201	2.34	2.63	2.85	3.16	3.43	3.72	3.99	4.26	4.51	4.76	4.98	5.23	5.48	5.71	5.95	6.39	6.86	7.31	7.75	8.66
	202	2.35	2.65	2.87	3.17	3.45	3.74	4.02	4.29	4.55	4.79	5.02	5.28	5.52	5.76	6.00	6.45	6.93	7.38	7.83	8.74
	203	2.39	2.69	2.91	3.22	3.51	3.80	4.08	4.35	4.60	4.85	5.08	5.33	5.58	5.82	6.06	6.50	6.99	7.44	7.89	8.80
	204	2.42	2.72	2.95	3.27	3.55	3.84	4.12	4.40	4.66	4.91	5.14	5.40	5.65	5.88	6.12	6.57	7.06	7.51	7.96	8.88
	205	2.43	2.74	2.97	3.29	3.57	3.86	4.15	4.42	4.68	4.94	5.17	5.43	5.68	5.91	6.16	6.61	7.11	7.57	8.02	8.93
	206	2.48	2.80	3.03	3.35	3.64	3.94	4.22	4.49	4.76	5.01	5.25	5.50	5.75	5.98	6.22	6.68	7.15	7.61	8.06	8.97
	207	2.51	2.83	3.05	3.36	3.65	3.95	4.23	4.50	4.76	5.02	5.25	5.51	5.76	5.99	6.24	6.69	7.18	7.63	8.08	9.00
	208	2.53	2.85	3.09	3.41	3.70	4.00	4.29	4.56	4.83	5.09	5.32	5.58	5.84	6.07	6.31	6.77	7.25	7.71	8.16	9.08
Walker Flat	209	2.54	2.86	3.10	3.42	3.71	4.01	4.30	4.57	4.84	5.10	5.33	5.60	5.85	6.08	6.33	6.79	7.27	7.73	8.18	9.10
	210	2.56	2.89	3.12	3.45	3.74	4.04	4.33	4.61	4.89	5.15	5.39	5.65	5.91	6.14	6.39	6.85	7.34	7.80	8.26	9.18
	211	2.60	2.94	3.18	3.50	3.80	4.11	4.40	4.68	4.95	5.21	5.46	5.72	5.98	6.21	6.46	6.92	7.42	7.88	8.33	9.25
	212	2.62	2.96	3.20	3.53	3.83	4.14	4.43	4.71	4.98	5.25	5.49	5.76	6.01	6.25	6.50	6.96	7.45	7.91	8.37	9.28
	213	2.64	2.98	3.23	3.56	3.86	4.17	4.46	4.74	5.02	5.28	5.52	5.79	6.05	6.29	6.53	7.00	7.49	7.95	8.41	9.32
	214	2.66	3.00	3.25	3.58	3.88	4.19	4.48	4.76	5.03	5.30	5.54	5.81	6.07	6.31	6.56	7.02	7.51	7.97	8.43	9.34
	215	2.70	3.04	3.29	3.62	3.92	4.23	4.52	4.80	5.08	5.34	5.59	5.86	6.12	6.36	6.61	7.07	7.56	8.03	8.48	9.40
Wongulla	216	2.72	3.06	3.32	3.65	3.95	4.26	4.56	4.84	5.11	5.38	5.63	5.90	6.16	6.39	6.65	7.11	7.60	8.07	8.52	9.44
Marne River	217	2.74	3.09	3.34	3.67	3.98	4.29	4.58	4.87	5.14	5.40	5.65	5.92	6.18	6.42	6.67	7.13	7.63	8.09	8.55	9.46
	218	2.75	3.10	3.36	3.69	3.99	4.30	4.60	4.89	5.16	5.42	5.67	5.94	6.20	6.44	6.69	7.16	7.65	8.12	8.57	9.49
	219	2.78	3.13	3.38	3.72	4.02	4.33	4.63	4.92	5.19	5.46	5.70	5.98	6.24	6.48	6.73	7.19	7.69	8.15	8.61	9.52
	220	2.81	3.16	3.42	3.75	4.05	4.36	4.66	4.94	5.22	5.48	5.73	6.00	6.26	6.50	6.76	7.22	7.72	8.19	8.64	9.57

Approximate location	River dist. km	Water levels in metres AHD at QSA flows 80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	221	2.82	3.17	3.43	3.76	4.07	4.39	4.69	4.98	5.25	5.52	5.78	6.05	6.31	6.56	6.81	7.28	7.78	8.25	8.71	9.63
	222	2.84	3.20	3.46	3.81	4.12	4.44	4.75	5.04	5.32	5.59	5.84	6.12	6.38	6.62	6.88	7.34	7.84	8.31	8.77	9.69
	223	2.88	3.24	3.50	3.84	4.15	4.47	4.78	5.07	5.35	5.62	5.87	6.15	6.41	6.65	6.91	7.38	7.88	8.34	8.80	9.72
	224	2.93	3.30	3.56	3.90	4.22	4.54	4.84	5.13	5.41	5.68	5.94	6.21	6.47	6.71	6.97	7.43	7.92	8.38	8.84	9.75
Nildottie	225	2.97	3.34	3.61	3.95	4.27	4.58	4.89	5.17	5.45	5.72	5.97	6.25	6.51	6.75	7.00	7.45	7.94	8.40	8.86	9.77
	226	3.00	3.37	3.64	3.98	4.29	4.61	4.91	5.20	5.47	5.74	5.99	6.26	6.52	6.76	7.01	7.46	7.95	8.42	8.87	9.79
	227	3.02	3.39	3.66	4.01	4.32	4.63	4.93	5.21	5.48	5.74	5.99	6.26	6.52	6.76	7.01	7.47	7.96	8.43	8.88	9.80
	228	3.04	3.41	3.68	4.02	4.34	4.65	4.95	5.23	5.51	5.76	6.01	6.28	6.54	6.79	7.04	7.50	8.00	8.47	8.93	9.86
	229	3.07	3.45	3.72	4.07	4.38	4.70	5.00	5.28	5.55	5.81	6.06	6.33	6.59	6.84	7.09	7.55	8.05	8.52	8.98	9.91
	230	3.09	3.47	3.75	4.10	4.41	4.73	5.03	5.32	5.59	5.86	6.11	6.38	6.64	6.89	7.14	7.62	8.12	8.60	9.06	9.99
	231	3.11	3.50	3.78	4.13	4.45	4.78	5.09	5.38	5.66	5.93	6.19	6.47	6.74	7.00	7.26	7.73	8.23	8.70	9.16	10.08
	232	3.17	3.56	3.85	4.21	4.53	4.86	5.17	5.46	5.74	6.02	6.28	6.55	6.82	7.07	7.33	7.80	8.30	8.77	9.22	10.13
	233	3.18	3.57	3.85	4.21	4.53	4.86	5.17	5.46	5.74	6.02	6.28	6.55	6.82	7.07	7.33	7.80	8.30	8.77	9.23	10.14
	234	3.20	3.59	3.88	4.24	4.56	4.89	5.20	5.50	5.79	6.06	6.32	6.60	6.88	7.13	7.39	7.87	8.37	8.85	9.30	10.22
	235	3.23	3.63	3.92	4.28	4.61	4.94	5.26	5.56	5.85	6.13	6.39	6.68	6.95	7.21	7.47	7.96	8.46	8.94	9.40	10.31
	236	3.27	3.67	3.96	4.33	4.66	4.99	5.31	5.61	5.90	6.17	6.44	6.73	7.00	7.26	7.52	8.00	8.50	8.97	9.43	10.34
Big Bend	237	3.30	3.70	4.00	4.36	4.69	5.03	5.34	5.64	5.93	6.21	6.47	6.75	7.03	7.28	7.55	8.02	8.53	9.00	9.46	10.37
	238	3.31	3.72	4.01	4.38	4.71	5.04	5.36	5.66	5.94	6.22	6.49	6.77	7.05	7.30	7.57	8.05	8.55	9.02	9.48	10.40
	239	3.33	3.73	4.03	4.39	4.72	5.06	5.37	5.67	5.96	6.24	6.51	6.79	7.07	7.33	7.59	8.07	8.58	9.05	9.51	10.43
Punyelroo	240	3.37	3.78	4.08	4.45	4.78	5.11	5.43	5.74	6.03	6.31	6.58	6.86	7.14	7.39	7.66	8.14	8.64	9.12	9.58	10.49
	241	3.39	3.80	4.10	4.48	4.81	5.15	5.47	5.77	6.06	6.34	6.61	6.89	7.17	7.42	7.69	8.17	8.67	9.14	9.60	10.51
	242	3.42	3.82	4.12	4.49	4.82	5.16	5.48	5.78	6.07	6.35	6.62	6.90	7.18	7.44	7.70	8.18	8.69	9.16	9.62	10.53
	243	3.42	3.83	4.12	4.49	4.83	5.17	5.49	5.80	6.09	6.37	6.64	6.92	7.20	7.46	7.72	8.20	8.71	9.19	9.65	10.56
	244	3.45	3.86	4.16	4.53	4.86	5.20	5.52	5.83	6.12	6.40	6.66	6.95	7.23	7.49	7.75	8.23	8.74	9.22	9.68	10.59
	245	3.49	3.90	4.20	4.56	4.89	5.23	5.54	5.84	6.13	6.41	6.68	6.96	7.24	7.50	7.76	8.25	8.76	9.23	9.69	10.61
Swan Reach	246	3.50	3.91	4.21	4.57	4.90	5.23	5.55	5.85	6.14	6.42	6.68	6.97	7.24	7.50	7.77	8.25	8.76	9.24	9.70	10.62
	247	3.52	3.94	4.23	4.60	4.93	5.26	5.58	5.88	6.18	6.46	6.73	7.02	7.30	7.57	7.83	8.32	8.84	9.32	9.78	10.67
	248	3.56	3.98	4.29	4.66	5.00	5.33	5.66	5.96	6.26	6.54	6.82	7.11	7.39	7.65	7.91	8.39	8.90	9.38	9.84	10.74
	249	3.59	4.01	4.32	4.69	5.03	5.37	5.70	6.00	6.30	6.58	6.85	7.14	7.42	7.68	7.95	8.42	8.93	9.40	9.86	10.76
	250	3.62	4.04	4.35	4.72	5.06	5.39	5.72	6.02	6.32	6.60	6.88	7.17	7.45	7.71	7.97	8.45	8.96	9.43	9.89	10.79
	251	3.64	4.06	4.37	4.74	5.08	5.42	5.74	6.05	6.34	6.63	6.90	7.19	7.47	7.73	8.00	8.48	8.99	9.46	9.92	10.83
	252	3.66	4.08	4.39	4.76	5.09	5.44	5.76	6.07	6.37	6.66	6.93	7.22	7.49	7.76	8.02	8.50	9.01	9.49	9.94	10.85
	253	3.71	4.13	4.44	4.81	5.15	5.49	5.81	6.11	6.41	6.70	6.97	7.26	7.54	7.80	8.06	8.54	9.05	9.53	9.99	10.89
	254	3.73	4.14	4.45	4.82	5.16	5.50	5.82	6.13	6.43	6.71	6.99	7.28	7.55	7.82	8.08	8.56	9.07	9.55	10.00	10.91
	255	3.75	4.17	4.48	4.85	5.19	5.53	5.85	6.16	6.46	6.75	7.02	7.31	7.59	7.86	8.12	8.60	9.11	9.58	10.04	10.95
	256	3.80	4.21	4.53	4.90	5.24	5.58	5.89	6.20	6.50	6.79	7.06	7.35	7.63	7.89	8.16	8.63	9.15	9.62	10.07	10.98
	257	3.84	4.25	4.56	4.94	5.27	5.61	5.93	6.24	6.54	6.83	7.10	7.39	7.67	7.93	8.19	8.67	9.18	9.65	10.11	11.01
	258	3.86	4.27	4.58	4.95	5.29	5.63	5.95	6.26	6.55	6.84	7.12	7.41	7.68	7.95	8.21	8.69	9.20	9.67	10.13	11.03
	259	3.90	4.32	4.64	5.01	5.35	5.69	6.01	6.32	6.62	6.91	7.18	7.47	7.75	8.01	8.27	8.75	9.26	9.73	10.19	11.09
	260	3.94	4.36	4.68	5.05	5.39	5.73	6.05	6.35	6.65	6.94	7.21	7.50	7.78	8.04	8.30	8.78	9.29	9.76	10.22	11.12
	261	3.97	4.39	4.71	5.08	5.42	5.77	6.09	6.39	6.69	6.98	7.25	7.54	7.82	8.08	8.34	8.82	9.33	9.80	10.26	11.16
	262	4.01	4.42	4.74	5.11	5.45	5.78	6.10	6.41	6.70	6.99	7.26	7.55	7.83	8.09	8.35	8.83	9.34	9.81	10.26	11.16
	263	4.04	4.46	4.78	5.15	5.49	5.83	6.15	6.45	6.75	7.03	7.31	7.60	7.87	8.13	8.39	8.87	9.38	9.85	10.31	11.21
	264	4.08	4.50	4.82	5.19	5.53	5.86	6.18	6.49	6.78	7.07	7.34	7.63	7.91	8.17	8.43	8.91	9.42	9.89	10.34	11.25
	265	4.11	4.52	4.84	5.21	5.55	5.89	6.21	6.52	6.81	7.10	7.38	7.66	7.94	8.20	8.46	8.94	9.45	9.92	10.38	11.28
	266	4.14	4.56	4.88	5.25	5.59	5.93	6.25	6.55	6.85	7.13	7.41	7.69	7.97	8.23	8.49	8.97	9.48	9.95	10.41	11.31
	267	4.18	4.59	4.91	5.28	5.61	5.95	6.27	6.57	6.86	7.15	7.42	7.71	7.99	8.25	8.51	8.99	9.49	9.96	10.42	11.32
Moorundie	268	4.20	4.61	4.93	5.29	5.63	5.97	6.28	6.59	6.88	7.17	7.44	7.73	8.01	8.27	8.53	9.01	9.52	9.99	10.44	11.35
	269	4.24	4.64	4.96	5.33	5.67	6.00	6.32	6.62	6.92	7.21	7.48	7.77	8.04	8.31	8.57	9.04	9.56	10.02	10.48	11.38
	270	4.27	4.67	4.98	5.35	5.69	6.02	6.34	6.64	6.94	7.22	7.50	7.79	8.06	8.32	8.58	9.06	9.57	10.04	10.50	11.40
	271	4.31	4.70	5.02	5.38	5.71	6.05	6.36	6.66	6.96	7.25	7.52	7.81	8.08	8.35	8.61	9.09	9.60	10.07	10.52	11.43
	272	4.34	4.74	5.05	5.41	5.74	6.07	6.39	6.69	6.99	7.28	7.55	7.84	8.12	8.38	8.64	9.12	9.63	10.10	10.55	11.46
	273	4.37	4.77	5.08	5.45	5.77	6.10	6.42	6.72	7.02	7.31	7.58	7.87	8.15	8.41	8.67	9.15	9.66	10.13	10.58	11.48

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Blanchetown/Lock 1	274	4.42	4.82	5.13	5.49	5.82	6.15	6.46	6.76	7.06	7.35	7.62	7.91	8.18	8.44	8.70	9.18	9.69	10.16	10.61	11.51

Table 6.2. Modelled River Murray water level profiles at each modelled QSA between Lock 1 and Lock 2.

Approximate	River dist.	Water levels in metres AHD at QSA flows																			
location	km	80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Paisley/Lock 1	275	4.47	4.87	5.19	5.56	5.89	6.22	6.54	6.84	7.14	7.42	7.70	7.98	8.25	8.52	8.77	9.25	9.76	10.22	10.67	11.57
	276	4.50	4.90	5.23	5.59	5.92	6.26	6.57	6.88	7.17	7.46	7.73	8.02	8.29	8.55	8.81	9.28	9.79	10.25	10.70	11.59
	277	4.53	4.93	5.25	5.61	5.94	6.28	6.59	6.89	7.19	7.48	7.75	8.03	8.31	8.57	8.83	9.30	9.81	10.27	10.72	11.62
	278	4.55	4.95	5.27	5.63	5.96	6.29	6.61	6.91	7.20	7.49	7.77	8.05	8.32	8.58	8.84	9.32	9.82	10.29	10.73	11.63
	279	4.58	4.97	5.29	5.64	5.97	6.30	6.61	6.92	7.21	7.50	7.77	8.06	8.33	8.59	8.85	9.33	9.83	10.30	10.75	11.64
	280	4.61	5.01	5.32	5.68	6.00	6.33	6.65	6.95	7.25	7.53	7.81	8.09	8.36	8.62	8.88	9.36	9.86	10.32	10.77	11.66
	281	4.67	5.07	5.39	5.76	6.09	6.42	6.74	7.04	7.33	7.62	7.89	8.17	8.44	8.70	8.95	9.42	9.92	10.38	10.82	11.71
	282	4.74	5.14	5.46	5.82	6.15	6.48	6.80	7.10	7.39	7.67	7.94	8.22	8.49	8.74	9.00	9.46	9.96	10.42	10.86	11.75
	283	4.80	5.21	5.53	5.89	6.22	6.56	6.87	7.17	7.46	7.74	8.01	8.29	8.56	8.81	9.06	9.53	10.02	10.48	10.92	11.80
	284	4.85	5.25	5.57	5.93	6.26	6.60	6.91	7.21	7.50	7.78	8.05	8.33	8.59	8.85	9.10	9.56	10.06	10.51	10.95	11.83
	285	4.89	5.29	5.62	5.98	6.31	6.64	6.95	7.25	7.54	7.83	8.09	8.37	8.64	8.89	9.14	9.60	10.09	10.55	10.98	11.86
	286	4.93	5.33	5.65	6.01	6.34	6.67	6.98	7.29	7.58	7.86	8.13	8.41	8.68	8.93	9.18	9.65	10.14	10.60	11.04	11.92
	287	4.99	5.39	5.72	6.08	6.41	6.75	7.07	7.37	7.66	7.94	8.22	8.49	8.76	9.01	9.27	9.73	10.22	10.68	11.11	11.99
	288	5.02	5.42	5.75	6.11	6.44	6.78	7.09	7.40	7.69	7.97	8.24	8.52	8.78	9.04	9.29	9.75	10.24	10.69	11.13	12.01
	289	5.06	5.45	5.77	6.13	6.46	6.79	7.10	7.40	7.70	7.98	8.25	8.53	8.79	9.05	9.30	9.76	10.25	10.71	11.14	12.02
	290	5.09	5.48	5.80	6.15	6.47	6.81	7.12	7.43	7.72	8.00	8.28	8.55	8.82	9.08	9.33	9.79	10.28	10.74	11.17	12.05
	291	5.13	5.53	5.86	6.21	6.54	6.87	7.18	7.48	7.77	8.05	8.32	8.59	8.86	9.11	9.36	9.82	10.32	10.77	11.20	12.08
	292	5.16	5.56	5.89	6.24	6.56	6.89	7.20	7.49	7.78	8.07	8.33	8.61	8.88	9.13	9.38	9.84	10.33	10.79	11.22	12.10
	293	5.19	5.59	5.92	6.27	6.60	6.93	7.24	7.54	7.83	8.12	8.39	8.67	8.94	9.19	9.44	9.91	10.40	10.86	11.29	12.16
	294	5.25	5.65	5.97	6.33	6.65	6.98	7.29	7.59	7.89	8.17	8.44	8.72	8.99	9.25	9.50	9.96	10.46	10.91	11.35	12.22
	295	5.28	5.68	6.00	6.36	6.69	7.02	7.33	7.62	7.92	8.20	8.48	8.76	9.02	9.28	9.53	9.99	10.49	10.94	11.37	12.24
	296	5.31	5.72	6.04	6.40	6.73	7.06	7.37	7.67	7.96	8.24	8.52	8.79	9.06	9.32	9.57	10.03	10.52	10.97	11.41	12.28
	297	5.35	5.75	6.07	6.42	6.75	7.08	7.39	7.69	7.98	8.26	8.53	8.81	9.08	9.33	9.59	10.05	10.54	10.99	11.43	12.30
	298	5.38	5.78	6.11	6.45	6.78	7.11	7.42	7.72	8.01	8.30	8.57	8.85	9.12	9.38	9.63	10.10	10.59	11.04	11.48	12.35
	299	5.43	5.84	6.17	6.52	6.85	7.18	7.49	7.79	8.09	8.37	8.64	8.92	9.19	9.44	9.70	10.16	10.65	11.10	11.54	12.40
	300	5.48	5.89	6.21	6.57	6.89	7.22	7.53	7.83	8.12	8.41	8.68	8.95	9.22	9.48	9.73	10.19	10.68	11.13	11.56	12.43
	301	5.51	5.91	6.24	6.59	6.91	7.23	7.54	7.84	8.13	8.42	8.69	8.96	9.23	9.49	9.74	10.20	10.69	11.14	11.57	12.44
	302	5.52	5.92	6.24	6.59	6.91	7.23	7.54	7.84	8.13	8.42	8.69	8.96	9.23	9.49	9.74	10.20	10.69	11.14	11.57	12.44
	303	5.56	5.96	6.28	6.63	6.95	7.27	7.58	7.88	8.17	8.46	8.73	9.01	9.27	9.53	9.78	10.25	10.74	11.19	11.62	12.49
	304	5.60	6.00	6.32	6.67	7.00	7.33	7.64	7.94	8.24	8.52	8.80	9.08	9.35	9.60	9.85	10.32	10.81	11.27	11.70	12.56
	305	5.66	6.07	6.40	6.75	7.07	7.40	7.71	8.01	8.31	8.59	8.86	9.14	9.41	9.66	9.91	10.37	10.86	11.30	11.74	12.59
	306	5.69	6.09	6.43	6.78	7.10	7.43	7.75	8.05	8.35	8.64	8.92	9.20	9.47	9.73	9.98	10.45	10.94	11.39	11.82	12.68
	307	5.78	6.19	6.53	6.89	7.22	7.55	7.87	8.17	8.46	8.75	9.02	9.30	9.57	9.82	10.07	10.53	11.02	11.46	11.89	12.74
	308	5.85	6.27	6.60	6.95	7.27	7.60	7.91	8.20	8.49	8.78	9.05	9.33	9.59	9.84	10.09	10.55	11.03	11.48	11.91	12.76
	309	5.87	6.28	6.60	6.95	7.27	7.60	7.91	8.21	8.49	8.78	9.05	9.33	9.60	9.85	10.10	10.56	11.05	11.49	11.92	12.78
	310	5.90	6.31	6.64	6.98	7.31	7.63	7.94	8.24	8.53	8.81	9.08	9.36	9.63	9.88	10.13	10.59	11.08	11.52	11.95	12.80
	311	5.92	6.34	6.67	7.02	7.34	7.66	7.97	8.27	8.56	8.85	9.12	9.40	9.66	9.92	10.16	10.63	11.11	11.56	11.99	12.84
	312	6.02	6.43	6.75	7.09	7.41	7.73	8.04	8.34	8.62	8.90	9.18	9.45	9.72	9.97	10.22	10.68	11.16	11.61	12.03	12.88
	313	6.05	6.46	6.77	7.11	7.43	7.74	8.05	8.35	8.63	8.92	9.19	9.47	9.73	9.98	10.23	10.69	11.18	11.62	12.05	12.90
	314	6.14	6.54	6.86	7.19	7.51	7.83	8.14	8.44	8.72	9.01	9.28	9.55	9.82	10.07	10.32	10.78	11.26	11.70	12.13	12.98
	315	6.17	6.58	6.91	7.24	7.56	7.88	8.19	8.49	8.78	9.07	9.34	9.62	9.88	10.13	10.38	10.84	11.33	11.77	12.20	13.05
	316	6.23	6.64	6.96	7.29	7.61	7.93	8.24	8.54	8.83	9.11	9.39	9.67	9.93	10.18	10.43	10.90	11.38	11.83	12.26	13.11
	317	6.32	6.74	7.07	7.40	7.71	8.02	8.33	8.63	8.91	9.20	9.47	9.75	10.01	10.27	10.51	10.98	11.46	11.90	12.33	13.18
	318	6.38	6.80	7.14	7.48	7.79	8.10	8.41	8.70	8.99	9.27	9.54	9.82	10.08	10.33	10.58	11.04	11.52	11.96	12.39	13.23
	319	6.43	6.85	7.18	7.51	7.83	8.14	8.44	8.73	9.02	9.30	9.57	9.84	10.11	10.36	10.60	11.06	11.54	11.98	12.41	13.26
Morgan	320	6.46	6.88	7.20	7.53	7.84	8.15	8.45	8.75	9.03	9.31	9.58	9.86	10.12	10.37	10.62	11.08	11.56	12.00	12.42	13.27
	321	6.50	6.92	7.25	7.58	7.88	8.19	8.49	8.78	9.06	9.34	9.61	9.89	10.15	10.40	10.65	11.11	11.59	12.03	12.46	13.30
	322	6.52	6.94	7.26	7.59	7.89	8.20	8.50	8.79	9.08	9.36	9.63	9.91	10.18	10.43	10.68	11.15	11.63	12.08	12.51	13.36
	323	6.58	7.01	7.34	7.68	7.99	8.30	8.60	8.89	9.17	9.45	9.72	10.00	10.26	10.51	10.76	11.22	11.70	12.14	12.57	13.41
	324	6.63	7.05	7.38	7.71	8.01	8.32	8.62	8.91	9.19	9.47	9.74	10.02	10.28	10.53	10.78	11.24	11.72	12.16	12.59	13.43
	325	6.65	7.08	7.40	7.73	8.04	8.34	8.64	8.92	9.21	9.49	9.76	10.04	10.30	10.55	10.80	11.26	11.74	12.18	12.61	13.46

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	326	6.68	7.11	7.44	7.77	8.07	8.37	8.67	8.95	9.24	9.51	9.78	10.06	10.32	10.57	10.81	11.27	11.75	12.20	12.62	13.47
	327	6.71	7.14	7.46	7.79	8.10	8.40	8.69	8.97	9.25	9.53	9.80	10.07	10.33	10.58	10.83	11.29	11.78	12.22	12.65	13.50
	328	6.74	7.17	7.51	7.84	8.15	8.45	8.75	9.04	9.32	9.61	9.88	10.15	10.41	10.66	10.91	11.37	11.85	12.29	12.72	13.56
	329	6.78	7.21	7.55	7.88	8.19	8.49	8.79	9.08	9.36	9.64	9.90	10.17	10.43	10.68	10.93	11.39	11.87	12.31	12.73	13.57
	330	6.80	7.23	7.56	7.90	8.21	8.51	8.81	9.10	9.38	9.66	9.93	10.21	10.47	10.72	10.96	11.42	11.91	12.35	12.77	13.61
	331	6.85	7.30	7.64	7.96	8.28	8.59	8.90	9.19	9.48	9.76	10.03	10.30	10.56	10.81	11.05	11.51	11.99	12.42	12.85	13.68
Cadell	332	6.88	7.32	7.67	8.00	8.32	8.63	8.94	9.23	9.52	9.80	10.07	10.33	10.59	10.84	11.09	11.55	12.02	12.46	12.88	13.72
	333	6.92	7.36	7.70	8.03	8.35	8.66	8.96	9.26	9.54	9.83	10.09	10.36	10.62	10.87	11.11	11.57	12.04	12.48	12.90	13.74
	334	6.94	7.39	7.73	8.06	8.37	8.68	8.98	9.28	9.56	9.84	10.11	10.38	10.64	10.89	11.13	11.59	12.06	12.50	12.92	13.76
	335	6.98	7.42	7.76	8.09	8.41	8.72	9.02	9.31	9.60	9.88	10.15	10.41	10.67	10.92	11.16	11.62	12.10	12.54	12.96	13.79
	336	7.00	7.44	7.78	8.11	8.43	8.74	9.04	9.33	9.62	9.90	10.17	10.44	10.70	10.95	11.19	11.65	12.12	12.56	12.98	13.82
	337	7.07	7.52	7.87	8.21	8.53	8.84	9.15	9.44	9.73	10.01	10.27	10.54	10.80	11.04	11.29	11.74	12.21	12.64	13.06	13.88
	338	7.11	7.56	7.90	8.24	8.56	8.87	9.17	9.46	9.74	10.02	10.29	10.56	10.82	11.06	11.31	11.76	12.23	12.66	13.08	13.90
	339	7.18	7.64	7.99	8.33	8.66	8.97	9.27	9.56	9.85	10.13	10.39	10.65	10.91	11.15	11.40	11.85	12.31	12.74	13.15	13.97
	340	7.25	7.70	8.05	8.39	8.71	9.02	9.32	9.61	9.89	10.17	10.43	10.69	10.94	11.19	11.43	11.88	12.34	12.76	13.18	13.99
	341	7.27	7.72	8.07	8.41	8.73	9.04	9.34	9.63	9.91	10.19	10.45	10.71	10.96	11.20	11.44	11.89	12.35	12.78	13.19	14.00
Weston Flat	342	7.33	7.76	8.10	8.44	8.75	9.06	9.36	9.65	9.93	10.20	10.46	10.72	10.97	11.22	11.46	11.90	12.36	12.79	13.20	14.01
	343	7.38	7.80	8.13	8.46	8.78	9.08	9.38	9.66	9.94	10.22	10.48	10.74	10.99	11.23	11.47	11.91	12.37	12.80	13.21	14.02
	344	7.41	7.82	8.15	8.47	8.78	9.09	9.38	9.67	9.95	10.23	10.49	10.75	11.00	11.24	11.48	11.93	12.39	12.81	13.22	14.04
	345	7.51	7.91	8.24	8.57	8.87	9.18	9.47	9.75	10.03	10.30	10.56	10.82	11.07	11.31	11.54	11.99	12.44	12.87	13.28	14.09
	346	7.56	7.96	8.28	8.60	8.90	9.20	9.49	9.78	10.05	10.32	10.58	10.83	11.08	11.32	11.56	12.00	12.45	12.88	13.28	14.09
	347	7.62	8.01	8.32	8.64	8.94	9.24	9.53	9.81	10.08	10.35	10.61	10.87	11.12	11.36	11.59	12.04	12.49	12.92	13.32	14.13
	348	7.69	8.08	8.40	8.72	9.03	9.32	9.61	9.89	10.16	10.43	10.69	10.94	11.19	11.43	11.66	12.10	12.56	12.98	13.38	14.18
Hogwash Bend	349	7.73	8.13	8.45	8.77	9.06	9.35	9.64	9.92	10.20	10.47	10.72	10.98	11.22	11.46	11.69	12.13	12.58	13.00	13.40	14.21
	350	7.80	8.20	8.52	8.83	9.13	9.42	9.70	9.98	10.25	10.52	10.78	11.03	11.28	11.52	11.75	12.19	12.64	13.06	13.46	14.26
	351	7.85	8.24	8.56	8.87	9.17	9.46	9.74	10.02	10.29	10.56	10.81	11.07	11.31	11.55	11.78	12.22	12.67	13.09	13.49	14.29
	352	7.88	8.27	8.59	8.89	9.19	9.48	9.77	10.04	10.32	10.58	10.84	11.09	11.33	11.57	11.80	12.24	12.69	13.11	13.51	14.31
	353	7.91	8.30	8.62	8.92	9.21	9.50	9.78	10.06	10.33	10.59	10.85	11.10	11.34	11.58	11.81	12.25	12.70	13.12	13.52	14.32
	354	7.94	8.33	8.65	8.95	9.24	9.52	9.80	10.08	10.34	10.61	10.87	11.12	11.36	11.60	11.83	12.27	12.73	13.14	13.55	14.35
	355	7.98	8.37	8.69	9.00	9.29	9.57	9.84	10.12	10.38	10.65	10.90	11.16	11.40	11.64	11.87	12.31	12.76	13.18	13.59	14.39
	356	8.02	8.42	8.75	9.07	9.36	9.65	9.93	10.20	10.47	10.73	10.99	11.24	11.49	11.73	11.96	12.40	12.84	13.26	13.66	14.46
	357	8.06	8.46	8.79	9.11	9.41	9.69	9.97	10.25	10.51	10.78	11.03	11.28	11.53	11.76	11.99	12.43	12.88	13.30	13.70	14.49
	358	8.09	8.49	8.82	9.13	9.43	9.71	9.98	10.26	10.52	10.79	11.05	11.30	11.54	11.78	12.02	12.46	12.91	13.32	13.73	14.53
	359	8.14	8.55	8.89	9.21	9.52	9.81	10.09	10.37	10.64	10.91	11.16	11.41	11.66	11.89	12.12	12.55	13.00	13.41	13.81	14.60
Qualco	360	8.22	8.62	8.95	9.27	9.56	9.85	10.13	10.40	10.67	10.94	11.19	11.44	11.68	11.92	12.15	12.58	13.03	13.44	13.83	14.62
Taylorville/Lock 2	361	8.27	8.67	9.00	9.32	9.62	9.90	10.18	10.45	10.72	10.98	11.24	11.49	11.73	11.96	12.19	12.62	13.06	13.47	13.86	14.65

Table 6.3. Modelled River Murray water level profiles at each modelled QSA between Lock 2 and Lock 3.

Approximate location	River dist. km	Water levels in metres AHD at QSA flows 80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Lock 2	363	8.41	8.81	9.14	9.46	9.74	10.02	10.29	10.56	10.82	11.09	11.34	11.59	11.83	12.06	12.29	12.72	13.16	13.56	13.96	14.74
	364	8.45	8.85	9.18	9.49	9.77	10.05	10.32	10.58	10.84	11.11	11.36	11.60	11.84	12.08	12.30	12.74	13.18	13.58	13.98	14.76
	365	8.50	8.90	9.23	9.54	9.83	10.10	10.37	10.63	10.89	11.15	11.40	11.64	11.88	12.12	12.34	12.77	13.21	13.62	14.01	14.79
	366	8.53	8.93	9.26	9.57	9.85	10.12	10.39	10.65	10.91	11.17	11.42	11.67	11.91	12.14	12.37	12.80	13.24	13.64	14.04	14.82
	367	8.55	8.96	9.28	9.60	9.88	10.16	10.43	10.70	10.96	11.22	11.47	11.72	11.97	12.20	12.43	12.87	13.31	13.72	14.12	14.90
	368	8.60	9.01	9.34	9.66	9.95	10.23	10.50	10.78	11.04	11.31	11.56	11.81	12.05	12.29	12.52	12.96	13.40	13.81	14.20	14.98
	369	8.63	9.04	9.37	9.69	9.97	10.25	10.52	10.79	11.06	11.32	11.57	11.82	12.07	12.30	12.53	12.97	13.41	13.82	14.21	15.00
	370	8.66	9.06	9.39	9.70	9.99	10.27	10.54	10.81	11.07	11.33	11.59	11.84	12.08	12.32	12.55	12.98	13.42	13.83	14.23	15.01
	371	8.68	9.09	9.42	9.73	10.02	10.29	10.57	10.84	11.10	11.36	11.62	11.86	12.11	12.34	12.57	13.00	13.45	13.86	14.25	15.03
	372	8.72	9.13	9.46	9.78	10.07	10.34	10.61	10.88	11.15	11.40	11.66	11.90	12.14	12.37	12.60	13.03	13.47	13.88	14.27	15.06
	373	8.74	9.15	9.49	9.81	10.10	10.38	10.66	10.93	11.20	11.46	11.72	11.97	12.22	12.45	12.68	13.12	13.57	13.98	14.38	15.17
Sunlands	374	8.80	9.22	9.55	9.88	10.17	10.45	10.73	11.01	11.28	11.55	11.80	12.06	12.30	12.54	12.77	13.22	13.66	14.08	14.47	15.26
	375	8.83	9.24	9.58	9.90	10.20	10.48	10.76	11.03	11.30	11.57	11.83	12.08	12.33	12.57	12.80	13.24	13.69	14.11	14.50	15.29
	376	8.86	9.27	9.60	9.92	10.21	10.49	10.77	11.05	11.31	11.58	11.84	12.09	12.34	12.58	12.82	13.26	13.71	14.12	14.52	15.31
Ramco	377	8.89	9.29	9.61	9.93	10.23	10.51	10.80	11.07	11.34	11.61	11.88	12.13	12.38	12.62	12.85	13.30	13.75	14.17	14.57	15.37
	378	8.94	9.34	9.67	10.00	10.29	10.57	10.86	11.13	11.41	11.67	11.93	12.19	12.44	12.68	12.91	13.36	13.80	14.22	14.62	15.40
	379	8.97	9.38	9.71	10.03	10.33	10.61	10.89	11.17	11.44	11.71	11.97	12.22	12.47	12.71	12.94	13.39	13.83	14.25	14.65	15.43
	380	8.99	9.39	9.72	10.03	10.33	10.60	10.89	11.17	11.44	11.72	11.98	12.23	12.48	12.72	12.96	13.40	13.85	14.26	14.66	15.45
Waikerie	381	9.03	9.44	9.77	10.10	10.39	10.67	10.95	11.23	11.49	11.76	12.02	12.27	12.52	12.76	12.99	13.44	13.88	14.30	14.70	15.48
	382	9.06	9.47	9.80	10.12	10.42	10.70	10.97	11.24	11.51	11.77	12.03	12.28	12.53	12.77	13.00	13.44	13.89	14.31	14.70	15.49
	383	9.08	9.48	9.82	10.14	10.44	10.72	11.00	11.27	11.55	11.82	12.08	12.33	12.58	12.82	13.06	13.50	13.95	14.36	14.76	15.55
	384	9.10	9.50	9.84	10.16	10.46	10.74	11.02	11.30	11.57	11.84	12.10	12.36	12.61	12.86	13.09	13.54	13.99	14.40	14.80	15.59
	385	9.13	9.54	9.88	10.21	10.51	10.79	11.07	11.35	11.62	11.88	12.14	12.39	12.65	12.89	13.13	13.57	14.02	14.44	14.84	15.62
	386	9.20	9.61	9.95	10.28	10.59	10.87	11.14	11.42	11.68	11.94	12.19	12.45	12.69	12.93	13.17	13.61	14.05	14.46	14.86	15.64
	387	9.24	9.65	9.99	10.31	10.61	10.88	11.16	11.42	11.69	11.94	12.20	12.45	12.70	12.94	13.17	13.61	14.05	14.47	14.86	15.64
	388	9.26	9.67	10.00	10.32	10.62	10.89	11.17	11.44	11.70	11.96	12.22	12.47	12.72	12.97	13.20	13.64	14.09	14.51	14.91	15.69
	389	9.30	9.72	10.05	10.38	10.69	10.96	11.23	11.50	11.76	12.01	12.27	12.53	12.78	13.02	13.25	13.69	14.14	14.55	14.95	15.73
	390	9.37	9.81	10.15	10.49	10.80	11.08	11.36	11.64	11.89	12.14	12.40	12.65	12.90	13.14	13.37	13.81	14.25	14.66	15.05	15.83
	391	9.41	9.85	10.19	10.53	10.83	11.12	11.40	11.67	11.93	12.18	12.44	12.69	12.94	13.18	13.41	13.85	14.29	14.71	15.10	15.87
Holder	392	9.41	9.85	10.19	10.53	10.84	11.13	11.42	11.69	11.96	12.21	12.47	12.73	12.98	13.22	13.45	13.89	14.33	14.75	15.14	15.91
	393	9.48	9.92	10.27	10.61	10.92	11.21	11.49	11.77	12.03	12.28	12.54	12.79	13.03	13.27	13.50	13.95	14.38	14.80	15.19	15.96
	394	9.53	9.96	10.31	10.65	10.96	11.25	11.53	11.80	12.06	12.31	12.57	12.82	13.07	13.31	13.54	13.98	14.42	14.83	15.22	15.99
	395	9.55	9.98	10.33	10.67	10.98	11.27	11.55	11.83	12.09	12.34	12.59	12.85	13.09	13.33	13.56	14.00	14.44	14.85	15.25	16.02
Lowbank	396	9.56	10.00	10.35	10.69	11.00	11.29	11.57	11.85	12.11	12.36	12.61	12.87	13.11	13.35	13.58	14.02	14.46	14.87	15.27	16.04
	397	9.60	10.03	10.37	10.71	11.02	11.31	11.59	11.87	12.13	12.38	12.64	12.89	13.14	13.38	13.61	14.05	14.49	14.90	15.30	16.07
	398	9.62	10.05	10.39	10.73	11.04	11.33	11.61	11.89	12.15	12.40	12.66	12.91	13.16	13.40	13.63	14.07	14.51	14.93	15.32	16.10
	399	9.65	10.08	10.42	10.75	11.06	11.35	11.64	11.91	12.17	12.42	12.68	12.93	13.18	13.42	13.65	14.10	14.54	14.95	15.34	16.12
	400	9.68	10.10	10.44	10.78	11.08	11.37	11.65	11.93	12.19	12.44	12.70	12.95	13.20	13.44	13.67	14.11	14.56	14.97	15.36	16.14
	401	9.71	10.13	10.47	10.81	11.12	11.41	11.70	11.97	12.23	12.48	12.74	12.99	13.24	13.48	13.71	14.15	14.59	15.00	15.40	16.17
	402	9.75	10.17	10.51	10.84	11.14	11.43	11.71	11.98	12.24	12.49	12.75	13.00	13.25	13.49	13.72	14.16	14.60	15.01	15.40	16.18
	403	9.76	10.17	10.51	10.84	11.15	11.44	11.72	12.00	12.26	12.51	12.77	13.03	13.28	13.52	13.75	14.19	14.64	15.05	15.45	16.23
	404	9.83	10.25	10.59	10.93	11.24	11.53	11.81	12.09	12.35	12.60	12.86	13.11	13.36	13.60	13.83	14.27	14.71	15.13	15.52	16.30
	405	9.87	10.28	10.62	10.96	11.26	11.55	11.84	12.11	12.37	12.63	12.89	13.14	13.39	13.63	13.86	14.31	14.75	15.17	15.56	16.34
	406	9.93	10.35	10.70	11.04	11.36	11.66	11.95	12.24	12.51	12.76	13.03	13.28	13.54	13.78	14.02	14.47	14.91	15.33	15.73	16.52
	407	9.95	10.37	10.71	11.05	11.37	11.67	11.96	12.24	12.51	12.77	13.04	13.30	13.55	13.79	14.03	14.48	14.93	15.35	15.75	16.53
	408	10.02	10.44	10.78	11.12	11.43	11.73	12.02	12.30	12.56	12.82	13.08	13.34	13.59	13.84	14.07	14.52	14.97	15.39	15.79	16.57
	409	10.04	10.46	10.80	11.15	11.46	11.76	12.05	12.34	12.61	12.87	13.13	13.39	13.65	13.90	14.13	14.59	15.04	15.46	15.87	16.66
	410	10.08	10.51	10.85	11.19	11.51	11.81	12.10	12.39	12.66	12.92	13.18	13.44	13.70	13.95	14.19	14.64	15.09	15.52	15.92	16.71
	411	10.12	10.54	10.89	11.23	11.54	11.84	12.13	12.41	12.68	12.94	13.21	13.47	13.72	13.97	14.21	14.67	15.12	15.54	15.94	16.74
	412	10.16	10.58	10.93	11.27	11.57	11.87	12.16	12.44	12.71	12.97	13.24	13.50	13.76	14.00	14.24	14.70	15.15	15.57	15.98	16.77
	413	10.17	10.59	10.94	11.28	11.59	11.89	12.18	12.46	12.73	12.99	13.25	13.52	13.77	14.02	14.26	14.72	15.18	15.61	16.02	16.82

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	414	10.23	10.66	11.02	11.37	11.68	11.99	12.29	12.57	12.85	13.11	13.38	13.64	13.89	14.14	14.38	14.82	15.28	15.70	16.11	16.90
	415	10.25	10.68	11.03	11.38	11.69	12.00	12.29	12.58	12.86	13.12	13.39	13.65	13.91	14.16	14.39	14.84	15.29	15.72	16.13	16.93
	416	10.29	10.73	11.08	11.43	11.76	12.06	12.36	12.66	12.94	13.21	13.48	13.75	14.01	14.26	14.50	14.96	15.41	15.85	16.26	17.07
Overland Corner G.S.	417	10.34	10.77	11.13	11.48	11.80	12.11	12.41	12.70	12.98	13.25	13.52	13.78	14.04	14.29	14.53	14.99	15.44	15.88	16.29	17.10
	418	10.36	10.79	11.15	11.50	11.82	12.13	12.43	12.72	13.00	13.27	13.55	13.81	14.08	14.33	14.57	15.03	15.48	15.92	16.34	17.15
	419	10.39	10.82	11.18	11.53	11.85	12.16	12.46	12.75	13.03	13.30	13.58	13.84	14.11	14.36	14.60	15.06	15.52	15.96	16.38	17.20
	420	10.43	10.88	11.24	11.59	11.92	12.24	12.54	12.84	13.12	13.39	13.67	13.94	14.21	14.46	14.71	15.17	15.62	16.07	16.49	17.30
	421	10.46	10.90	11.26	11.62	11.95	12.26	12.57	12.86	13.15	13.42	13.70	13.97	14.23	14.49	14.73	15.19	15.65	16.10	16.52	17.33
	422	10.52	10.97	11.34	11.70	12.03	12.35	12.65	12.95	13.23	13.51	13.78	14.05	14.31	14.56	14.81	15.27	15.72	16.17	16.58	17.40
	423	10.56	11.00	11.37	11.73	12.06	12.38	12.68	12.98	13.26	13.53	13.81	14.07	14.33	14.58	14.83	15.29	15.74	16.19	16.60	17.42
	424	10.59	11.04	11.41	11.78	12.12	12.44	12.74	13.04	13.33	13.60	13.87	14.14	14.40	14.65	14.90	15.36	15.82	16.26	16.68	17.49
Overland Corner	425	10.65	11.10	11.47	11.83	12.17	12.49	12.79	13.09	13.37	13.64	13.92	14.19	14.45	14.70	14.94	15.41	15.86	16.30	16.72	17.54
	426	10.68	11.13	11.49	11.85	12.19	12.50	12.81	13.11	13.39	13.66	13.93	14.20	14.46	14.71	14.95	15.41	15.87	16.31	16.73	17.54
	427	10.70	11.14	11.51	11.87	12.20	12.52	12.83	13.12	13.40	13.68	13.95	14.21	14.47	14.73	14.97	15.43	15.88	16.33	16.74	17.56
	428	10.73	11.17	11.54	11.90	12.23	12.55	12.85	13.15	13.43	13.70	13.97	14.24	14.50	14.75	14.99	15.45	15.90	16.35	16.76	17.58
Banrock Station	429	10.76	11.20	11.56	11.92	12.25	12.56	12.86	13.16	13.44	13.71	13.98	14.25	14.51	14.76	15.00	15.46	15.92	16.36	16.77	17.59
	430	10.82	11.24	11.60	11.95	12.28	12.59	12.89	13.19	13.46	13.73	14.00	14.27	14.53	14.78	15.02	15.48	15.93	16.37	16.78	17.59
Lock 3	431	10.83	11.25	11.61	11.96	12.29	12.60	12.90	13.19	13.47	13.74	14.01	14.27	14.53	14.78	15.02	15.48	15.93	16.37	16.79	17.60

Table 6.4. Modelled River Murray water level profiles at each modelled QSA between Lock 3 and Lock 4.

Approximate location	River dist. km	Water levels in metres AHD at QSA flows 80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Loch Luna/Lock 3	432	10.85	11.23	11.61	11.96	12.28	12.59	12.89	13.18	13.45	13.72	13.99	14.25	14.50	14.75	15.00	15.45	15.90	16.34	16.75	17.55
	433	10.88	11.25	11.63	11.97	12.29	12.60	12.90	13.18	13.46	13.73	13.99	14.26	14.51	14.76	15.00	15.45	15.90	16.34	16.75	17.55
	434	10.90	11.27	11.64	11.98	12.30	12.61	12.90	13.19	13.46	13.73	14.00	14.26	14.51	14.76	15.00	15.45	15.90	16.34	16.75	17.55
	435	10.92	11.28	11.65	11.99	12.31	12.61	12.90	13.19	13.47	13.73	14.00	14.26	14.51	14.76	15.00	15.46	15.90	16.34	16.75	17.55
Kingston on Murray	436	10.94	11.30	11.66	12.00	12.32	12.62	12.91	13.20	13.47	13.73	14.00	14.26	14.52	14.76	15.00	15.46	15.90	16.34	16.75	17.55
	437	10.97	11.32	11.68	12.02	12.33	12.63	12.92	13.20	13.48	13.74	14.01	14.27	14.52	14.77	15.01	15.46	15.90	16.34	16.75	17.55
	438	11.02	11.36	11.71	12.04	12.35	12.64	12.93	13.21	13.49	13.75	14.01	14.27	14.52	14.77	15.01	15.46	15.91	16.34	16.75	17.56
	439	11.04	11.37	11.72	12.04	12.35	12.64	12.93	13.21	13.48	13.75	14.01	14.27	14.52	14.77	15.01	15.46	15.90	16.34	16.75	17.56
	440	11.11	11.45	11.80	12.13	12.43	12.73	13.01	13.29	13.56	13.82	14.09	14.34	14.59	14.83	15.07	15.50	15.93	16.36	16.77	17.56
	441	11.13	11.46	11.81	12.13	12.44	12.73	13.02	13.30	13.56	13.82	14.09	14.34	14.59	14.83	15.07	15.50	15.93	16.36	16.77	17.56
	442	11.14	11.47	11.82	12.14	12.44	12.74	13.02	13.30	13.57	13.83	14.09	14.35	14.59	14.84	15.07	15.50	15.93	16.36	16.77	17.56
Cobdogla	443	11.16	11.49	11.83	12.15	12.45	12.74	13.02	13.30	13.57	13.83	14.09	14.35	14.59	14.84	15.07	15.50	15.93	16.36	16.77	17.56
	444	11.20	11.51	11.84	12.16	12.46	12.75	13.03	13.31	13.57	13.83	14.09	14.35	14.59	14.84	15.08	15.50	15.93	16.36	16.77	17.56
	445	11.21	11.52	11.85	12.16	12.46	12.75	13.03	13.31	13.58	13.83	14.10	14.35	14.60	14.84	15.08	15.50	15.93	16.36	16.77	17.56
	446	11.21	11.52	11.85	12.16	12.46	12.75	13.03	13.31	13.58	13.83	14.10	14.35	14.60	14.84	15.08	15.50	15.93	16.36	16.77	17.56
	447	11.27	11.57	11.89	12.20	12.49	12.77	13.05	13.32	13.59	13.84	14.10	14.36	14.60	14.84	15.08	15.50	15.94	16.37	16.77	17.56
	448	11.28	11.58	11.90	12.20	12.49	12.78	13.05	13.32	13.59	13.84	14.11	14.36	14.60	14.84	15.08	15.50	15.94	16.37	16.77	17.56
	449	11.31	11.59	11.91	12.21	12.50	12.78	13.06	13.33	13.59	13.84	14.11	14.36	14.60	14.85	15.08	15.50	15.94	16.37	16.77	17.56
	450	11.33	11.61	11.92	12.22	12.50	12.78	13.06	13.33	13.59	13.84	14.11	14.36	14.60	14.85	15.08	15.50	15.94	16.37	16.77	17.56
Moorook	451	11.35	11.63	11.93	12.23	12.51	12.79	13.06	13.33	13.59	13.85	14.11	14.36	14.61	14.85	15.08	15.50	15.94	16.37	16.77	17.56
	452	11.44	11.71	12.01	12.29	12.57	12.84	13.11	13.37	13.63	13.88	14.14	14.38	14.63	14.87	15.10	15.51	15.94	16.37	16.77	17.56
	453	11.44	11.71	12.01	12.29	12.57	12.84	13.11	13.37	13.63	13.88	14.14	14.39	14.63	14.87	15.10	15.51	15.95	16.37	16.77	17.56
	454	11.46	11.73	12.03	12.31	12.59	12.86	13.12	13.38	13.64	13.89	14.15	14.40	14.64	14.88	15.11	15.52	15.95	16.38	16.78	17.57
	455	11.48	11.75	12.04	12.32	12.60	12.86	13.13	13.39	13.65	13.90	14.15	14.40	14.64	14.88	15.11	15.52	15.95	16.38	16.78	17.57
	456	11.51	11.77	12.06	12.34	12.61	12.88	13.14	13.40	13.66	13.90	14.16	14.41	14.65	14.88	15.12	15.52	15.95	16.38	16.78	17.57
	457	11.53	11.78	12.07	12.35	12.62	12.88	13.15	13.41	13.66	13.91	14.16	14.41	14.65	14.89	15.12	15.53	15.95	16.38	16.78	17.57
	458	11.56	11.80	12.09	12.36	12.63	12.89	13.16	13.41	13.67	13.91	14.17	14.41	14.65	14.89	15.12	15.53	15.96	16.38	16.78	17.57
	459	11.58	11.82	12.10	12.37	12.64	12.90	13.17	13.42	13.68	13.92	14.18	14.42	14.66	14.90	15.13	15.53	15.96	16.39	16.79	17.57
	460	11.62	11.85	12.13	12.40	12.66	12.93	13.19	13.44	13.70	13.94	14.20	14.44	14.68	14.92	15.15	15.55	15.98	16.40	16.80	17.59
New Residence	461	11.65	11.88	12.16	12.42	12.69	12.95	13.21	13.47	13.72	13.96	14.21	14.46	14.70	14.93	15.16	15.56	15.99	16.41	16.81	17.60
	462	11.69	11.92	12.19	12.45	12.72	12.97	13.23	13.49	13.73	13.98	14.23	14.47	14.71	14.94	15.18	15.58	16.00	16.43	16.82	17.61
	463	11.72	11.95	12.21	12.47	12.73	12.99	13.24	13.50	13.75	13.99	14.24	14.48	14.72	14.95	15.19	15.59	16.01	16.43	16.83	17.62
	464	11.76	11.99	12.25	12.51	12.77	13.03	13.28	13.53	13.78	14.02	14.27	14.51	14.75	14.98	15.21	15.61	16.03	16.45	16.85	17.63
	465	11.79	12.02	12.28	12.53	12.79	13.04	13.29	13.54	13.79	14.03	14.28	14.52	14.75	14.99	15.22	15.62	16.05	16.47	16.87	17.65
	466	11.84	12.08	12.36	12.63	12.89	13.15	13.40	13.65	13.90	14.14	14.39	14.63	14.86	15.09	15.32	15.72	16.13	16.55	16.94	17.71
	467	11.89	12.14	12.42	12.68	12.94	13.20	13.45	13.70	13.94	14.18	14.42	14.66	14.89	15.12	15.35	15.74	16.15	16.56	16.95	17.72
	468	11.93	12.17	12.44	12.70	12.96	13.21	13.46	13.71	13.95	14.19	14.43	14.67	14.90	15.13	15.36	15.75	16.16	16.57	16.96	17.72
	469	11.98	12.22	12.49	12.74	12.99	13.24	13.48	13.73	13.97	14.21	14.45	14.68	14.91	15.14	15.37	15.76	16.17	16.58	16.97	17.73
	470	12.03	12.28	12.54	12.78	13.02	13.26	13.51	13.75	13.99	14.22	14.47	14.70	14.93	15.16	15.39	15.78	16.19	16.60	16.99	17.75
	471	12.09	12.34	12.60	12.83	13.07	13.30	13.54	13.78	14.01	14.25	14.49	14.72	14.95	15.18	15.40	15.79	16.20	16.61	17.00	17.76
	472	12.11	12.37	12.62	12.85	13.08	13.31	13.55	13.79	14.02	14.26	14.50	14.73	14.96	15.18	15.41	15.80	16.20	16.62	17.00	17.76
	473	12.20	12.47	12.72	12.95	13.18	13.40	13.63	13.86	14.09	14.31	14.55	14.78	15.00	15.22	15.44	15.83	16.23	16.64	17.03	17.78
	474	12.26	12.53	12.78	13.00	13.22	13.43	13.65	13.88	14.10	14.33	14.56	14.78	15.01	15.23	15.45	15.83	16.24	16.64	17.03	17.78
	475	12.34	12.60	12.85	13.07	13.29	13.50	13.71	13.93	14.15	14.38	14.60	14.83	15.05	15.27	15.49	15.87	16.27	16.67	17.06	17.81
	476	12.41	12.67	12.92	13.14	13.35	13.55	13.76	13.97	14.18	14.40	14.63	14.85	15.06	15.28	15.50	15.88	16.28	16.68	17.07	17.82
	477	12.45	12.72	12.97	13.18	13.39	13.59	13.80	14.01	14.22	14.44	14.66	14.88	15.10	15.32	15.53	15.91	16.31	16.72	17.10	17.84
	478	12.48	12.75	13.00	13.22	13.42	13.62	13.83	14.04	14.25	14.46	14.68	14.90	15.12	15.33	15.55	15.93	16.32	16.73	17.11	17.86
	479	12.52	12.80	13.05	13.27	13.48	13.68	13.88	14.09	14.30	14.51	14.73	14.94	15.16	15.37	15.58	15.96	16.36	16.76	17.14	17.89
	480	12.54	12.81	13.06	13.28	13.49	13.68	13.88	14.09	14.29	14.50	14.72	14.94	15.15	15.37	15.58	15.96	16.36	16.77	17.16	17.91
Pyap	481	12.58	12.87	13.13	13.35	13.57	13.77	13.98	14.20	14.41	14.63	14.86	15.08	15.30	15.52	15.74	16.13	16.53	16.94	17.33	18.09
Katarapko Creek	482	12.63	12.91	13.18	13.41	13.63	13.84	14.05	14.27	14.49	14.71	14.93	15.15	15.37	15.59	15.81	16.20	16.61	17.01	17.40	18.15

Approximate	River dist.	Water levels in metres AHD at QSA flows																	
location	**km**	**80 GL/d**	**90 GL/d**	**100 GL/d**	**110 GL/d**	**120 GL/d**	**130 GL/d**	**140 GL/d**	**150 GL/d**	**160 GL/d**	**170 GL/d**	**180 GL/d**	**190 GL/d**	**200 GL/d**	**210 GL/d**	**220 GL/d**	**240 GL/d**	**260 GL/d**	**280 GL/d**	**300 GL/d**	**341 GL/d**
	483	12.67	12.96	13.23	13.47	13.70	13.91	14.13	14.35	14.57	14.79	15.02	15.25	15.47	15.69	15.91	16.30	16.70	17.11	17.49	18.24
	484	12.71	13.00	13.27	13.51	13.74	13.96	14.18	14.40	14.62	14.85	15.08	15.30	15.52	15.74	15.96	16.35	16.75	17.15	17.54	18.28
	485	12.81	13.09	13.36	13.60	13.82	14.04	14.25	14.47	14.69	14.90	15.13	15.35	15.57	15.78	16.00	16.38	16.78	17.18	17.56	18.30
	486	12.84	13.12	13.39	13.62	13.85	14.06	14.28	14.49	14.71	14.93	15.15	15.37	15.59	15.80	16.02	16.40	16.80	17.20	17.58	18.31
	487	12.89	13.17	13.43	13.67	13.89	14.10	14.32	14.53	14.75	14.97	15.19	15.41	15.62	15.84	16.05	16.43	16.83	17.23	17.60	18.34
	488	12.96	13.24	13.50	13.73	13.95	14.16	14.37	14.58	14.80	15.01	15.23	15.44	15.66	15.87	16.08	16.46	16.86	17.25	17.62	18.35
Loxton	489	13.03	13.31	13.57	13.79	14.01	14.22	14.43	14.64	14.85	15.06	15.27	15.49	15.70	15.91	16.12	16.49	16.89	17.28	17.65	18.38
	490	13.10	13.37	13.62	13.85	14.06	14.27	14.48	14.68	14.89	15.10	15.31	15.52	15.73	15.93	16.15	16.52	16.91	17.29	17.67	18.39
	491	13.15	13.41	13.66	13.88	14.10	14.30	14.50	14.71	14.91	15.12	15.33	15.53	15.74	15.95	16.16	16.53	16.92	17.30	17.67	18.40
	492	13.21	13.47	13.71	13.93	14.14	14.34	14.54	14.74	14.94	15.14	15.35	15.55	15.76	15.96	16.17	16.54	16.93	17.31	17.68	18.41
	493	13.25	13.49	13.73	13.95	14.16	14.35	14.55	14.75	14.95	15.15	15.35	15.56	15.76	15.97	16.18	16.55	16.93	17.32	17.68	18.41
Loxton North	494	13.28	13.52	13.75	13.97	14.17	14.37	14.57	14.76	14.96	15.16	15.37	15.57	15.77	15.98	16.18	16.55	16.94	17.32	17.69	18.42
	495	13.34	13.59	13.81	14.02	14.22	14.41	14.61	14.80	14.99	15.19	15.39	15.59	15.79	16.00	16.20	16.57	16.95	17.33	17.70	18.42
	496	13.38	13.63	13.85	14.06	14.26	14.45	14.63	14.82	15.02	15.21	15.41	15.61	15.81	16.01	16.22	16.58	16.96	17.34	17.71	18.43
	497	13.43	13.67	13.88	14.08	14.27	14.46	14.65	14.84	15.03	15.22	15.42	15.62	15.82	16.02	16.22	16.59	16.97	17.35	17.71	18.43
	498	13.49	13.72	13.93	14.13	14.32	14.50	14.69	14.88	15.07	15.26	15.46	15.66	15.85	16.05	16.25	16.62	16.99	17.37	17.74	18.45
	499	13.53	13.77	13.98	14.17	14.37	14.55	14.73	14.92	15.11	15.30	15.49	15.69	15.89	16.08	16.28	16.64	17.02	17.39	17.76	18.47
Rilli Reserve	500	13.60	13.82	14.03	14.22	14.41	14.59	14.77	14.95	15.14	15.33	15.52	15.72	15.91	16.11	16.31	16.66	17.04	17.41	17.77	18.49
	501	13.61	13.84	14.05	14.24	14.42	14.61	14.79	14.97	15.15	15.34	15.53	15.73	15.92	16.12	16.32	16.67	17.04	17.42	17.78	18.49
	502	13.67	13.88	14.08	14.27	14.45	14.63	14.80	14.99	15.17	15.35	15.54	15.74	15.93	16.12	16.32	16.68	17.05	17.42	17.78	18.50
	503	13.69	13.90	14.10	14.28	14.46	14.64	14.81	14.99	15.17	15.36	15.55	15.74	15.94	16.13	16.33	16.68	17.05	17.43	17.79	18.50
	504	13.73	13.93	14.12	14.30	14.48	14.66	14.83	15.01	15.19	15.38	15.57	15.76	15.95	16.14	16.34	16.69	17.06	17.44	17.79	18.51
	505	13.78	13.97	14.15	14.33	14.50	14.67	14.85	15.02	15.20	15.39	15.57	15.77	15.96	16.15	16.34	16.70	17.07	17.44	17.80	18.51
	506	13.82	14.01	14.19	14.36	14.53	14.70	14.87	15.04	15.22	15.40	15.58	15.77	15.96	16.15	16.35	16.70	17.07	17.44	17.80	18.51
	507	13.86	14.04	14.20	14.37	14.54	14.70	14.87	15.04	15.22	15.40	15.59	15.77	15.96	16.15	16.35	16.70	17.07	17.44	17.80	18.51
	508	13.88	14.05	14.21	14.38	14.55	14.71	14.88	15.05	15.23	15.41	15.59	15.78	15.97	16.16	16.36	16.71	17.08	17.45	17.81	18.51
	509	13.93	14.09	14.25	14.41	14.58	14.74	14.91	15.08	15.25	15.43	15.61	15.80	15.99	16.18	16.37	16.72	17.09	17.46	17.82	18.52
	510	13.98	14.14	14.30	14.45	14.62	14.78	14.94	15.11	15.28	15.46	15.64	15.82	16.01	16.20	16.39	16.73	17.10	17.47	17.82	18.53
	511	14.04	14.19	14.35	14.50	14.65	14.81	14.97	15.14	15.30	15.48	15.66	15.84	16.03	16.21	16.40	16.75	17.11	17.48	17.83	18.54
	512	14.11	14.26	14.41	14.56	14.72	14.87	15.03	15.19	15.36	15.53	15.71	15.89	16.07	16.25	16.44	16.79	17.15	17.51	17.86	18.57
Katarapko Creek	513	14.15	14.31	14.47	14.63	14.79	14.95	15.11	15.28	15.45	15.62	15.80	15.98	16.16	16.34	16.53	16.87	17.23	17.59	17.93	18.63
	514	14.23	14.40	14.57	14.73	14.89	15.04	15.20	15.36	15.52	15.69	15.86	16.04	16.22	16.39	16.58	16.91	17.26	17.62	17.96	18.65
	515	14.27	14.43	14.60	14.75	14.91	15.06	15.21	15.37	15.53	15.70	15.87	16.05	16.23	16.40	16.59	16.92	17.28	17.63	17.97	18.66
Lock 4	516	14.39	14.57	14.73	14.89	15.05	15.20	15.35	15.51	15.66	15.83	16.00	16.17	16.34	16.51	16.69	17.02	17.36	17.71	18.05	18.73

Table 6.5. Modelled River Murray water level profiles at each modelled QSA between Lock 4 and Lock 5.

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Lock 4	517	14.48	14.66	14.83	14.99	15.15	15.29	15.44	15.59	15.75	15.90	16.07	16.23	16.40	16.57	16.74	17.06	17.40	17.75	18.08	18.76
	518	14.54	14.73	14.90	15.06	15.21	15.35	15.50	15.64	15.79	15.95	16.11	16.28	16.44	16.60	16.78	17.09	17.43	17.77	18.11	18.79
	519	14.58	14.77	14.94	15.10	15.25	15.39	15.53	15.68	15.83	15.99	16.15	16.32	16.48	16.64	16.82	17.13	17.47	17.81	18.14	18.82
	520	14.63	14.82	15.00	15.16	15.31	15.46	15.60	15.75	15.90	16.06	16.22	16.39	16.55	16.71	16.88	17.19	17.53	17.86	18.20	18.87
Gurra Gurra Creek	521	14.72	14.92	15.11	15.28	15.44	15.59	15.74	15.88	16.03	16.18	16.34	16.50	16.66	16.81	16.97	17.27	17.59	17.92	18.24	18.90
	522	14.77	14.97	15.15	15.32	15.48	15.62	15.77	15.91	16.06	16.21	16.36	16.52	16.67	16.83	16.99	17.28	17.60	17.92	18.25	18.90
	523	14.82	15.02	15.20	15.37	15.52	15.66	15.80	15.95	16.09	16.24	16.39	16.55	16.70	16.85	17.01	17.31	17.62	17.94	18.27	18.92
	524	14.88	15.08	15.26	15.43	15.58	15.72	15.86	16.00	16.15	16.29	16.45	16.61	16.75	16.90	17.06	17.36	17.67	17.99	18.31	18.96
	525	14.92	15.12	15.31	15.48	15.63	15.78	15.91	16.05	16.19	16.34	16.49	16.65	16.79	16.94	17.09	17.38	17.70	18.01	18.33	18.98
Berri	526	14.96	15.17	15.36	15.53	15.68	15.82	15.96	16.10	16.24	16.38	16.53	16.68	16.83	16.97	17.12	17.41	17.72	18.03	18.35	19.00
	527	15.00	15.21	15.41	15.58	15.74	15.89	16.03	16.17	16.32	16.46	16.62	16.77	16.92	17.06	17.21	17.49	17.79	18.10	18.41	19.06
	528	15.05	15.26	15.47	15.64	15.81	15.96	16.10	16.25	16.39	16.54	16.70	16.85	17.00	17.14	17.28	17.54	17.83	18.13	18.44	19.08
Martin's Bend	529	15.08	15.30	15.51	15.69	15.86	16.01	16.15	16.30	16.45	16.60	16.75	16.91	17.05	17.19	17.33	17.59	17.88	18.18	18.49	19.12
	530	15.14	15.36	15.58	15.76	15.93	16.08	16.23	16.38	16.52	16.67	16.82	16.98	17.12	17.26	17.40	17.67	17.95	18.26	18.56	19.19
	531	15.19	15.42	15.64	15.83	16.00	16.16	16.31	16.47	16.62	16.77	16.93	17.09	17.24	17.38	17.52	17.79	18.08	18.38	18.68	19.29
	532	15.22	15.45	15.68	15.87	16.05	16.21	16.36	16.52	16.67	16.83	16.99	17.15	17.30	17.45	17.59	17.87	18.16	18.46	18.76	19.37
	533	15.27	15.51	15.75	15.95	16.13	16.29	16.45	16.62	16.77	16.94	17.10	17.27	17.42	17.57	17.72	18.01	18.31	18.61	18.89	19.48
	534	15.29	15.54	15.77	15.97	16.16	16.33	16.49	16.65	16.81	16.97	17.14	17.31	17.46	17.61	17.76	18.05	18.34	18.64	18.93	19.51
	535	15.33	15.58	15.82	16.03	16.22	16.39	16.56	16.73	16.89	17.07	17.24	17.41	17.57	17.73	17.88	18.17	18.48	18.78	19.06	19.63
	536	15.39	15.65	15.90	16.12	16.32	16.50	16.68	16.86	17.04	17.21	17.39	17.58	17.75	17.92	18.09	18.39	18.69	18.98	19.25	19.78
	537	15.45	15.71	15.96	16.19	16.39	16.58	16.76	16.94	17.12	17.29	17.47	17.65	17.82	17.99	18.15	18.45	18.75	19.03	19.29	19.81
Lyrup	538	15.48	15.75	16.00	16.23	16.44	16.63	16.81	17.00	17.18	17.36	17.54	17.73	17.90	18.06	18.23	18.52	18.81	19.09	19.35	19.86
	539	15.52	15.79	16.05	16.28	16.49	16.69	16.88	17.07	17.25	17.44	17.63	17.81	17.99	18.15	18.31	18.60	18.90	19.17	19.42	19.93
	540	15.57	15.85	16.11	16.34	16.56	16.75	16.94	17.13	17.32	17.50	17.69	17.88	18.05	18.21	18.38	18.67	18.96	19.24	19.49	20.00
	541	15.59	15.87	16.14	16.37	16.59	16.79	16.99	17.18	17.37	17.56	17.74	17.93	18.11	18.27	18.44	18.73	19.03	19.31	19.56	20.07
	542	15.63	15.92	16.19	16.43	16.66	16.86	17.06	17.25	17.44	17.63	17.82	18.01	18.18	18.34	18.51	18.81	19.10	19.38	19.64	20.14
	543	15.69	15.98	16.26	16.50	16.73	16.94	17.14	17.34	17.53	17.72	17.91	18.10	18.28	18.44	18.61	18.91	19.20	19.48	19.73	20.23
	544	15.77	16.06	16.35	16.60	16.82	17.03	17.23	17.43	17.63	17.82	18.00	18.19	18.36	18.53	18.69	18.99	19.28	19.55	19.80	20.30
	545	15.80	16.09	16.37	16.62	16.84	17.05	17.25	17.45	17.64	17.83	18.02	18.21	18.38	18.54	18.71	19.00	19.29	19.56	19.81	20.31
	546	15.84	16.13	16.40	16.65	16.87	17.08	17.28	17.48	17.67	17.86	18.04	18.23	18.40	18.56	18.73	19.02	19.31	19.58	19.83	20.32
	547	15.88	16.16	16.43	16.67	16.89	17.10	17.30	17.50	17.69	17.87	18.06	18.24	18.41	18.57	18.74	19.03	19.32	19.59	19.84	20.33
	548	15.92	16.20	16.46	16.70	16.91	17.12	17.32	17.51	17.70	17.89	18.07	18.25	18.42	18.59	18.75	19.04	19.33	19.60	19.85	20.34
	549	15.96	16.24	16.49	16.72	16.94	17.14	17.33	17.53	17.71	17.90	18.08	18.26	18.43	18.59	18.76	19.05	19.33	19.60	19.85	20.34
	550	16.00	16.27	16.52	16.75	16.96	17.16	17.35	17.54	17.73	17.91	18.09	18.27	18.44	18.60	18.77	19.05	19.34	19.61	19.86	20.35
	551	16.07	16.34	16.58	16.80	17.01	17.20	17.39	17.58	17.76	17.94	18.12	18.30	18.47	18.62	18.79	19.08	19.36	19.63	19.87	20.37
	552	16.10	16.37	16.61	16.83	17.04	17.23	17.42	17.60	17.79	17.97	18.14	18.32	18.49	18.65	18.81	19.10	19.38	19.65	19.89	20.38
	553	16.17	16.44	16.68	16.90	17.10	17.29	17.47	17.66	17.83	18.01	18.18	18.36	18.52	18.68	18.84	19.12	19.41	19.67	19.91	20.40
	554	16.26	16.52	16.76	16.97	17.17	17.36	17.54	17.72	17.90	18.07	18.24	18.41	18.58	18.73	18.89	19.17	19.44	19.70	19.94	20.43
Settler's Bend	555	16.29	16.55	16.78	16.99	17.19	17.38	17.56	17.74	17.91	18.08	18.25	18.42	18.59	18.74	18.90	19.18	19.45	19.71	19.95	20.43
	556	16.31	16.56	16.79	17.01	17.20	17.39	17.57	17.74	17.92	18.09	18.26	18.43	18.59	18.75	18.90	19.18	19.45	19.71	19.95	20.43
	557	16.36	16.61	16.83	17.04	17.24	17.42	17.59	17.77	17.94	18.11	18.28	18.45	18.61	18.77	18.92	19.20	19.47	19.73	19.97	20.45
Plush's Bend	558	16.41	16.65	16.87	17.08	17.28	17.46	17.63	17.80	17.97	18.14	18.31	18.49	18.65	18.80	18.95	19.22	19.50	19.75	19.99	20.47
	559	16.46	16.70	16.92	17.13	17.32	17.50	17.67	17.84	18.01	18.18	18.35	18.52	18.68	18.83	18.98	19.25	19.52	19.77	20.01	20.49
	560	16.53	16.77	17.00	17.21	17.41	17.59	17.76	17.93	18.10	18.27	18.43	18.60	18.76	18.91	19.06	19.32	19.58	19.83	20.06	20.54
	561	16.62	16.87	17.09	17.30	17.50	17.68	17.85	18.03	18.19	18.35	18.51	18.68	18.83	18.98	19.12	19.37	19.63	19.88	20.11	20.57
Lock 5	562	16.69	16.94	17.18	17.40	17.60	17.78	17.95	18.13	18.29	18.45	18.60	18.76	18.91	19.06	19.20	19.45	19.70	19.93	20.16	20.62

Table 6.6. Modelled River Murray water level profiles at each modelled QSA between Lock 5 and Lock 6.

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Lock 5	563	16.77	17.03	17.27	17.49	17.70	17.88	18.05	18.22	18.38	18.53	18.69	18.84	18.99	19.13	19.27	19.51	19.75	19.97	20.19	20.65
Paringa	564	16.83	17.10	17.35	17.57	17.78	17.96	18.14	18.31	18.47	18.62	18.78	18.93	19.08	19.22	19.36	19.60	19.82	20.04	20.25	20.70
	565	16.84	17.11	17.37	17.60	17.81	18.00	18.18	18.35	18.51	18.67	18.83	19.00	19.15	19.30	19.44	19.68	19.92	20.14	20.35	20.78
	566	16.89	17.17	17.43	17.66	17.88	18.07	18.26	18.44	18.60	18.77	18.93	19.10	19.25	19.40	19.55	19.79	20.02	20.23	20.43	20.85
	567	16.95	17.23	17.49	17.72	17.93	18.12	18.30	18.48	18.65	18.81	18.98	19.14	19.30	19.45	19.59	19.83	20.06	20.26	20.46	20.88
Renmark	568	16.99	17.27	17.53	17.76	17.97	18.17	18.35	18.52	18.69	18.85	19.01	19.18	19.33	19.49	19.63	19.86	20.09	20.29	20.48	20.90
	569	17.05	17.33	17.60	17.83	18.05	18.24	18.42	18.60	18.77	18.93	19.09	19.25	19.41	19.56	19.70	19.93	20.15	20.35	20.55	20.96
	570	17.11	17.39	17.66	17.90	18.11	18.31	18.49	18.67	18.84	19.00	19.17	19.34	19.49	19.64	19.78	20.02	20.23	20.43	20.62	21.03
	571	17.18	17.46	17.73	17.97	18.18	18.38	18.56	18.74	18.91	19.07	19.24	19.41	19.57	19.72	19.86	20.09	20.31	20.50	20.69	21.09
	572	17.23	17.51	17.77	18.00	18.21	18.41	18.59	18.76	18.93	19.10	19.27	19.44	19.59	19.74	19.88	20.11	20.33	20.52	20.71	21.11
	573	17.29	17.57	17.83	18.06	18.27	18.46	18.64	18.81	18.98	19.15	19.33	19.50	19.65	19.80	19.94	20.17	20.37	20.57	20.76	21.15
	574	17.33	17.60	17.85	18.08	18.29	18.48	18.65	18.83	18.99	19.16	19.34	19.51	19.66	19.81	19.95	20.17	20.38	20.57	20.76	21.16
	575	17.39	17.66	17.91	18.14	18.35	18.54	18.71	18.88	19.05	19.21	19.39	19.56	19.71	19.85	19.99	20.22	20.43	20.62	20.80	21.20
	576	17.44	17.70	17.96	18.18	18.39	18.58	18.75	18.92	19.09	19.25	19.43	19.59	19.74	19.89	20.02	20.25	20.46	20.64	20.83	21.23
	577	17.52	17.78	18.02	18.24	18.44	18.62	18.79	18.96	19.12	19.28	19.45	19.61	19.77	19.91	20.05	20.27	20.48	20.66	20.85	21.24
	578	17.61	17.85	18.08	18.28	18.48	18.66	18.82	18.99	19.15	19.31	19.48	19.64	19.79	19.93	20.07	20.29	20.50	20.69	20.87	21.27
	579	17.65	17.89	18.11	18.31	18.50	18.68	18.84	19.00	19.16	19.32	19.49	19.65	19.80	19.95	20.08	20.31	20.51	20.70	20.88	21.28
	580	17.71	17.94	18.15	18.34	18.52	18.70	18.85	19.02	19.18	19.33	19.50	19.66	19.81	19.95	20.09	20.31	20.52	20.71	20.89	21.28
	581	17.76	17.97	18.18	18.36	18.54	18.71	18.87	19.03	19.19	19.34	19.51	19.67	19.82	19.96	20.10	20.32	20.52	20.71	20.89	21.29
	582	17.80	18.01	18.20	18.38	18.56	18.73	18.88	19.04	19.20	19.35	19.52	19.67	19.82	19.96	20.10	20.32	20.52	20.71	20.89	21.28
	583	17.85	18.05	18.23	18.40	18.57	18.74	18.89	19.05	19.20	19.36	19.52	19.68	19.83	19.97	20.10	20.32	20.53	20.71	20.89	21.28
	584	17.93	18.11	18.27	18.43	18.59	18.76	18.90	19.06	19.22	19.37	19.53	19.69	19.84	19.98	20.11	20.33	20.53	20.72	20.90	21.29
	585	17.98	18.15	18.31	18.46	18.62	18.78	18.92	19.08	19.23	19.38	19.54	19.70	19.85	19.99	20.12	20.34	20.54	20.73	20.91	21.30
	586	18.04	18.21	18.36	18.51	18.66	18.81	18.95	19.10	19.25	19.40	19.56	19.72	19.86	20.00	20.13	20.35	20.55	20.73	20.92	21.30
	587	18.10	18.28	18.42	18.57	18.71	18.86	19.00	19.14	19.29	19.43	19.59	19.75	19.89	20.03	20.16	20.38	20.58	20.76	20.94	21.33
	588	18.15	18.33	18.48	18.62	18.77	18.91	19.04	19.19	19.33	19.47	19.62	19.77	19.92	20.05	20.18	20.40	20.61	20.79	20.98	21.36
	589	18.18	18.36	18.52	18.66	18.81	18.95	19.08	19.22	19.36	19.51	19.66	19.81	19.95	20.08	20.22	20.43	20.64	20.83	21.01	21.39
	590	18.24	18.42	18.58	18.73	18.88	19.02	19.15	19.29	19.42	19.56	19.71	19.86	19.99	20.13	20.26	20.47	20.67	20.86	21.04	21.42
	591	18.28	18.47	18.64	18.79	18.95	19.09	19.22	19.35	19.49	19.62	19.77	19.91	20.05	20.18	20.31	20.53	20.73	20.92	21.10	21.48
	592	18.31	18.51	18.67	18.83	18.98	19.13	19.26	19.40	19.53	19.67	19.81	19.96	20.10	20.23	20.36	20.58	20.78	20.97	21.15	21.53
	593	18.34	18.54	18.71	18.87	19.03	19.17	19.31	19.45	19.58	19.72	19.86	20.02	20.15	20.28	20.41	20.63	20.84	21.02	21.21	21.59
	594	18.38	18.59	18.76	18.93	19.09	19.24	19.38	19.52	19.66	19.80	19.95	20.11	20.24	20.38	20.50	20.73	20.93	21.12	21.30	21.68
	595	18.42	18.63	18.81	18.97	19.14	19.29	19.43	19.57	19.71	19.85	20.00	20.15	20.29	20.42	20.55	20.77	20.97	21.16	21.34	21.71
	596	18.46	18.67	18.85	19.03	19.19	19.34	19.48	19.62	19.76	19.90	20.05	20.20	20.33	20.46	20.59	20.81	21.01	21.19	21.37	21.74
	597	18.55	18.77	18.96	19.13	19.30	19.45	19.58	19.72	19.86	19.99	20.13	20.27	20.41	20.53	20.65	20.86	21.06	21.24	21.41	21.77
	598	18.60	18.82	19.01	19.19	19.35	19.50	19.63	19.76	19.90	20.03	20.17	20.31	20.44	20.56	20.68	20.89	21.08	21.26	21.43	21.79
	599	18.67	18.89	19.08	19.26	19.41	19.56	19.69	19.82	19.95	20.08	20.21	20.35	20.49	20.60	20.72	20.93	21.12	21.30	21.47	21.82
	600	18.72	18.95	19.14	19.32	19.47	19.61	19.74	19.87	20.00	20.12	20.26	20.39	20.52	20.64	20.75	20.96	21.15	21.32	21.49	21.84
	601	18.80	19.03	19.22	19.40	19.56	19.70	19.83	19.96	20.09	20.21	20.34	20.47	20.60	20.72	20.83	21.03	21.22	21.39	21.56	21.90
	602	18.86	19.09	19.28	19.47	19.62	19.77	19.90	20.03	20.16	20.28	20.41	20.54	20.66	20.78	20.89	21.10	21.28	21.46	21.62	21.96
Murtho	603	18.92	19.15	19.35	19.54	19.70	19.84	19.98	20.11	20.24	20.36	20.49	20.62	20.75	20.86	20.98	21.18	21.36	21.53	21.70	22.03
	604	18.97	19.20	19.40	19.58	19.74	19.89	20.02	20.16	20.28	20.41	20.54	20.67	20.79	20.91	21.02	21.22	21.40	21.57	21.73	22.06
	605	19.01	19.24	19.44	19.63	19.78	19.93	20.07	20.20	20.32	20.45	20.58	20.71	20.83	20.94	21.05	21.25	21.44	21.61	21.77	22.09
	606	19.06	19.31	19.51	19.70	19.86	20.01	20.15	20.28	20.41	20.53	20.66	20.79	20.91	21.02	21.13	21.33	21.51	21.68	21.84	22.16
	607	19.09	19.34	19.55	19.74	19.90	20.05	20.19	20.32	20.45	20.58	20.70	20.83	20.95	21.07	21.18	21.38	21.56	21.73	21.89	22.21
	608	19.18	19.42	19.63	19.82	19.97	20.12	20.26	20.39	20.52	20.64	20.77	20.89	21.01	21.12	21.23	21.43	21.61	21.78	21.94	22.25
	609	19.22	19.47	19.67	19.86	20.02	20.17	20.31	20.44	20.57	20.70	20.82	20.95	21.07	21.18	21.29	21.49	21.67	21.83	21.99	22.30
	610	19.34	19.58	19.78	19.97	20.14	20.30	20.44	20.57	20.71	20.84	20.98	21.10	21.22	21.33	21.44	21.65	21.84	22.01	22.18	22.50
	611	19.43	19.67	19.86	20.05	20.22	20.37	20.52	20.64	20.78	20.90	21.03	21.16	21.27	21.38	21.49	21.70	21.88	22.05	22.23	22.54
Chowilla Creek	612	19.58	19.83	20.03	20.20	20.36	20.51	20.65	20.78	20.91	21.03	21.16	21.28	21.39	21.50	21.61	21.80	21.98	22.16	22.32	22.64
	613	19.63	19.85	20.04	20.21	20.36	20.51	20.65	20.77	20.90	21.02	21.15	21.28	21.40	21.50	21.61	21.80	21.98	22.15	22.30	22.62

Approximate location	River dist. km	Water levels in metres AHD at QSA flows 80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
	614	19.67	19.88	20.06	20.23	20.39	20.53	20.68	20.79	20.93	21.05	21.18	21.29	21.41	21.51	21.62	21.81	21.99	22.16	22.31	22.62
	615	19.73	19.94	20.12	20.29	20.45	20.60	20.74	20.86	21.00	21.12	21.26	21.39	21.50	21.60	21.71	21.90	22.09	22.27	22.43	22.76
	616	19.81	20.00	20.16	20.33	20.47	20.62	20.76	20.88	21.01	21.13	21.27	21.39	21.51	21.61	21.71	21.92	22.10	22.26	22.42	22.74
	617	19.91	20.10	20.25	20.40	20.54	20.68	20.81	20.91	21.04	21.16	21.30	21.42	21.53	21.63	21.74	21.94	22.12	22.27	22.43	22.75
	618	20.03	20.21	20.34	20.48	20.60	20.72	20.85	20.95	21.08	21.19	21.33	21.46	21.56	21.66	21.77	21.96	22.14	22.28	22.44	22.77
Lock 6	619	20.11	20.28	20.41	20.53	20.63	20.75	20.87	20.96	21.08	21.20	21.34	21.46	21.57	21.67	21.78	21.97	22.14	22.29	22.46	22.78

Table 6.7. Modelled River Murray water level profiles at each modelled QSA between Lock 6 and Lock 7.

Approximate location	River dist. km	Water levels in metres AHD at QSA flows																			
		80 GL/d	90 GL/d	100 GL/d	110 GL/d	120 GL/d	130 GL/d	140 GL/d	150 GL/d	160 GL/d	170 GL/d	180 GL/d	190 GL/d	200 GL/d	210 GL/d	220 GL/d	240 GL/d	260 GL/d	280 GL/d	300 GL/d	341 GL/d
Lock 6	620	20.22	20.36	20.46	20.57	20.67	20.77	20.87	20.95	21.07	21.18	21.31	21.43	21.53	21.62	21.73	21.92	22.10	22.25	22.41	22.73
	621	20.24	20.39	20.49	20.59	20.69	20.78	20.89	20.97	21.08	21.19	21.32	21.44	21.54	21.64	21.74	21.94	22.11	22.26	22.42	22.75
	622	20.28	20.43	20.53	20.64	20.73	20.82	20.92	21.00	21.11	21.22	21.35	21.46	21.57	21.66	21.76	21.96	22.13	22.28	22.44	22.77
	623	20.31	20.46	20.56	20.67	20.76	20.86	20.96	21.03	21.14	21.25	21.37	21.49	21.59	21.69	21.79	21.98	22.16	22.30	22.46	22.79
	624	20.33	20.48	20.59	20.70	20.79	20.89	20.99	21.06	21.17	21.27	21.40	21.52	21.62	21.71	21.82	22.01	22.19	22.34	22.49	22.81
	625	20.40	20.55	20.66	20.77	20.86	20.95	21.05	21.12	21.22	21.32	21.44	21.56	21.65	21.74	21.85	22.04	22.22	22.36	22.52	22.85
	626	20.44	20.60	20.70	20.81	20.90	20.99	21.09	21.16	21.26	21.35	21.47	21.59	21.68	21.77	21.87	22.06	22.24	22.38	22.53	22.86
	627	20.46	20.62	20.73	20.84	20.93	21.02	21.12	21.20	21.30	21.39	21.51	21.63	21.72	21.81	21.91	22.10	22.28	22.43	22.58	22.91
	628	20.49	20.66	20.77	20.89	20.99	21.09	21.19	21.26	21.37	21.46	21.58	21.70	21.79	21.88	21.98	22.17	22.34	22.48	22.63	22.95
	629	20.53	20.70	20.82	20.95	21.06	21.16	21.26	21.34	21.44	21.54	21.65	21.78	21.86	21.95	22.05	22.24	22.42	22.56	22.70	23.03
	630	20.56	20.74	20.87	21.00	21.11	21.21	21.32	21.40	21.50	21.60	21.71	21.83	21.92	22.01	22.11	22.31	22.49	22.64	22.78	23.11
	631	20.60	20.80	20.93	21.07	21.18	21.28	21.39	21.46	21.56	21.66	21.77	21.90	21.99	22.08	22.17	22.37	22.54	22.68	22.83	23.15
	632	20.66	20.86	21.00	21.14	21.24	21.35	21.45	21.53	21.63	21.72	21.84	21.96	22.05	22.13	22.23	22.42	22.59	22.74	22.88	23.21
	633	20.71	20.92	21.06	21.20	21.30	21.40	21.51	21.58	21.68	21.78	21.89	22.01	22.10	22.18	22.28	22.47	22.64	22.78	22.93	23.26
	634	20.75	20.97	21.11	21.26	21.37	21.47	21.58	21.66	21.76	21.86	21.97	22.10	22.18	22.27	22.37	22.57	22.74	22.89	23.04	23.37
	635	20.82	21.04	21.20	21.35	21.47	21.57	21.68	21.76	21.86	21.96	22.06	22.19	22.27	22.36	22.45	22.65	22.82	22.97	23.11	23.44
Custom's House	636	20.87	21.11	21.27	21.44	21.55	21.66	21.77	21.85	21.95	22.04	22.15	22.28	22.36	22.44	22.54	22.73	22.91	23.05	23.20	23.53
SA/VIC Border	637	20.90	21.14	21.32	21.49	21.61	21.72	21.84	21.92	22.02	22.11	22.22	22.35	22.43	22.52	22.61	22.81	22.99	23.15	23.29	23.63
	638	20.96	21.21	21.39	21.58	21.70	21.82	21.94	22.02	22.12	22.22	22.33	22.46	22.54	22.63	22.72	22.92	23.10	23.25	23.40	23.74
	639	21.02	21.28	21.47	21.67	21.80	21.92	22.04	22.13	22.23	22.33	22.44	22.57	22.65	22.72	22.82	23.02	23.20	23.35	23.49	23.84
	640	21.10	21.38	21.58	21.79	21.92	22.05	22.17	22.27	22.37	22.47	22.56	22.69	22.76	22.84	22.92	23.11	23.29	23.43	23.57	23.90
	641	21.15	21.44	21.65	21.86	22.00	22.13	22.25	22.34	22.45	22.54	22.64	22.76	22.83	22.90	22.99	23.18	23.36	23.50	23.64	23.98
	642	21.22	21.53	21.75	21.96	22.10	22.22	22.35	22.43	22.54	22.63	22.72	22.85	22.93	23.00	23.08	23.27	23.45	23.59	23.74	24.06
	643	21.31	21.63	21.87	22.08	22.22	22.34	22.46	22.55	22.65	22.74	22.83	22.95	23.03	23.10	23.17	23.37	23.54	23.69	23.83	24.13
	644	21.39	21.71	21.95	22.16	22.29	22.40	22.52	22.61	22.70	22.80	22.89	23.00	23.07	23.14	23.21	23.40	23.57	23.72	23.86	24.18
	645	21.48	21.80	22.03	22.24	22.36	22.47	22.58	22.67	22.76	22.84	22.94	23.05	23.12	23.18	23.26	23.44	23.60	23.76	23.90	24.20
	646	21.56	21.88	22.11	22.31	22.43	22.53	22.64	22.72	22.81	22.89	22.98	23.09	23.15	23.22	23.29	23.47	23.64	23.79	23.93	24.25
	647	21.62	21.94	22.17	22.36	22.48	22.58	22.68	22.76	22.84	22.92	23.01	23.11	23.17	23.23	23.31	23.48	23.64	23.80	23.93	24.25
	648	21.69	22.02	22.24	22.42	22.53	22.62	22.71	22.78	22.86	22.94	23.01	23.12	23.18	23.23	23.31	23.48	23.64	23.79	23.93	24.24
SA/NSW Border	649	21.76	22.09	22.30	22.47	22.57	22.66	22.75	22.81	22.89	22.96	23.03	23.14	23.20	23.26	23.33	23.49	23.65	23.81	23.95	24.25
	650	21.88	22.21	22.42	22.57	22.66	22.74	22.82	22.88	22.95	23.03	23.09	23.20	23.26	23.31	23.39	23.55	23.71	23.86	24.00	24.31
	651	22.02	22.36	22.56	22.70	22.78	22.85	22.92	22.98	23.05	23.11	23.17	23.28	23.34	23.39	23.46	23.63	23.79	23.94	24.08	24.38
	652	22.17	22.53	22.71	22.84	22.92	22.98	23.05	23.11	23.17	23.23	23.28	23.40	23.45	23.50	23.57	23.73	23.88	24.03	24.16	24.46
	653	22.30	22.66	22.85	22.96	23.03	23.10	23.17	23.22	23.28	23.34	23.38	23.49	23.55	23.59	23.66	23.81	23.95	24.10	24.22	24.50
	654	22.42	22.79	22.97	23.10	23.17	23.23	23.30	23.35	23.41	23.46	23.50	23.61	23.66	23.71	23.77	23.92	24.05	24.20	24.32	24.59
	655	22.50	22.85	23.03	23.15	23.22	23.28	23.35	23.40	23.45	23.51	23.54	23.65	23.70	23.75	23.81	23.94	24.07	24.21	24.33	24.60
	656	22.55	22.87	23.04	23.15	23.22	23.28	23.34	23.39	23.44	23.49	23.53	23.63	23.68	23.72	23.78	23.92	24.05	24.18	24.30	24.56
	657	22.61	22.90	23.06	23.17	23.23	23.29	23.35	23.40	23.45	23.50	23.53	23.63	23.67	23.72	23.77	23.91	24.03	24.15	24.26	24.54
	659	22.81	23.09	23.24	23.36	23.42	23.49	23.56	23.61	23.67	23.73	23.75	23.88	23.93	23.98	24.04	24.18	24.31	24.44	24.57	24.82
	660	22.88	23.16	23.33	23.44	23.52	23.59	23.66	23.72	23.79	23.86	23.87	24.00	24.06	24.11	24.18	24.34	24.47	24.60	24.72	24.98
	661	22.95	23.24	23.40	23.52	23.59	23.67	23.74	23.80	23.87	23.94	23.95	24.09	24.15	24.20	24.27	24.42	24.55	24.68	24.80	25.05
	662	23.01	23.30	23.46	23.58	23.66	23.73	23.80	23.87	23.93	24.00	24.02	24.16	24.22	24.27	24.33	24.49	24.62	24.76	24.88	25.13
	663	23.05	23.33	23.50	23.61	23.69	23.77	23.84	23.90	23.97	24.04	24.06	24.19	24.26	24.31	24.37	24.53	24.66	24.80	24.92	25.17
	664	23.10	23.39	23.55	23.66	23.74	23.82	23.89	23.95	24.02	24.09	24.11	24.24	24.30	24.35	24.42	24.57	24.70	24.84	24.96	25.22
	665	23.15	23.43	23.59	23.70	23.78	23.85	23.93	23.99	24.06	24.13	24.15	24.28	24.34	24.39	24.45	24.60	24.73	24.88	25.00	25.26
	666	23.22	23.49	23.64	23.75	23.83	23.90	23.97	24.03	24.10	24.17	24.19	24.31	24.37	24.42	24.48	24.64	24.76	24.91	25.03	25.27
	667	23.25	23.52	23.66	23.77	23.85	23.92	24.00	24.06	24.12	24.19	24.21	24.34	24.40	24.45	24.51	24.66	24.78	24.92	25.05	25.29
	668	23.29	23.54	23.69	23.79	23.87	23.94	24.02	24.08	24.14	24.21	24.23	24.36	24.42	24.47	24.53	24.69	24.81	24.95	25.07	25.32
	669	23.32	23.58	23.72	23.83	23.90	23.98	24.05	24.11	24.18	24.24	24.27	24.39	24.45	24.50	24.57	24.72	24.84	24.98	25.10	25.35
	670	23.36	23.61	23.75	23.86	23.93	24.01	24.08	24.14	24.21	24.27	24.29	24.42	24.48	24.53	24.59	24.74	24.86	25.00	25.13	25.37
	671	23.40	23.65	23.79	23.89	23.97	24.04	24.12	24.17	24.24	24.31	24.33	24.45	24.51	24.56	24.62	24.77	24.89	25.03	25.15	25.39

Approximate	River dist.	Water levels in metres AHD at QSA flows																			
location	**km**	**80 GL/d**	**90 GL/d**	**100 GL/d**	**110 GL/d**	**120 GL/d**	**130 GL/d**	**140 GL/d**	**150 GL/d**	**160 GL/d**	**170 GL/d**	**180 GL/d**	**190 GL/d**	**200 GL/d**	**210 GL/d**	**220 GL/d**	**240 GL/d**	**260 GL/d**	**280 GL/d**	**300 GL/d**	**341 GL/d**
	672	23.45	23.69	23.83	23.94	24.02	24.09	24.17	24.23	24.30	24.37	24.39	24.51	24.57	24.62	24.68	24.83	24.95	25.08	25.20	25.44
	673	23.55	23.79	23.93	24.04	24.12	24.20	24.27	24.33	24.40	24.47	24.50	24.62	24.67	24.73	24.79	24.93	25.05	25.18	25.29	25.51
	674	23.59	23.82	23.96	24.07	24.15	24.23	24.31	24.37	24.43	24.50	24.53	24.66	24.72	24.77	24.83	24.98	25.09	25.22	25.33	25.55
	675	23.61	23.84	23.97	24.08	24.16	24.24	24.32	24.38	24.44	24.51	24.54	24.66	24.73	24.78	24.84	24.98	25.10	25.22	25.33	25.56
	676	23.63	23.85	23.98	24.09	24.17	24.25	24.33	24.39	24.45	24.52	24.55	24.67	24.74	24.79	24.85	24.99	25.10	25.23	25.34	25.56
	677	23.65	23.86	23.99	24.10	24.18	24.26	24.34	24.40	24.46	24.53	24.56	24.68	24.74	24.79	24.85	25.00	25.11	25.23	25.34	25.56
	678	23.67	23.88	24.01	24.11	24.20	24.27	24.35	24.41	24.47	24.54	24.58	24.69	24.75	24.80	24.86	25.00	25.11	25.24	25.35	25.57
	679	23.75	23.94	24.07	24.17	24.25	24.33	24.41	24.47	24.53	24.60	24.64	24.74	24.81	24.85	24.91	25.06	25.16	25.28	25.38	25.60
	680	23.81	24.01	24.13	24.23	24.31	24.39	24.46	24.52	24.59	24.66	24.69	24.80	24.86	24.91	24.97	25.11	25.22	25.34	25.45	25.66
	681	23.90	24.08	24.20	24.30	24.38	24.45	24.53	24.58	24.64	24.71	24.74	24.84	24.90	24.95	25.01	25.15	25.25	25.37	25.47	25.69
	682	23.94	24.12	24.25	24.35	24.42	24.49	24.57	24.62	24.68	24.74	24.77	24.87	24.93	24.98	25.04	25.18	25.29	25.41	25.51	25.73
	683	24.01	24.18	24.31	24.41	24.49	24.56	24.64	24.68	24.75	24.81	24.84	24.95	25.01	25.05	25.11	25.26	25.37	25.50	25.61	25.82
	684	24.11	24.29	24.42	24.52	24.60	24.67	24.75	24.80	24.86	24.93	24.96	25.06	25.12	25.17	25.23	25.37	25.48	25.61	25.71	25.93
	685	24.18	24.35	24.48	24.59	24.67	24.75	24.82	24.87	24.93	25.00	25.03	25.15	25.21	25.25	25.32	25.45	25.56	25.70	25.81	26.01
	686	24.24	24.40	24.53	24.63	24.72	24.79	24.86	24.91	24.97	25.04	25.07	25.19	25.25	25.30	25.36	25.49	25.60	25.73	25.84	26.05
	687	24.29	24.44	24.57	24.67	24.75	24.83	24.90	24.95	25.02	25.08	25.11	25.22	25.29	25.33	25.39	25.53	25.64	25.77	25.87	26.08
	689	24.50	24.65	24.77	24.87	24.95	25.02	25.10	25.15	25.21	25.28	25.31	25.42	25.48	25.53	25.59	25.74	25.84	25.97	26.07	26.27
	690	24.58	24.73	24.86	24.95	25.04	25.11	25.18	25.24	25.31	25.37	25.39	25.52	25.58	25.63	25.69	25.83	25.93	26.06	26.17	26.38
	691	24.65	24.80	24.92	25.01	25.09	25.17	25.24	25.29	25.36	25.42	25.44	25.56	25.62	25.67	25.73	25.87	25.97	26.09	26.20	26.41
	692	24.75	24.89	24.99	25.08	25.15	25.22	25.30	25.36	25.42	25.48	25.50	25.61	25.67	25.72	25.78	25.91	26.01	26.14	26.24	26.45
	693	24.80	24.93	25.03	25.12	25.19	25.26	25.32	25.38	25.44	25.50	25.52	25.64	25.70	25.75	25.81	25.93	26.03	26.16	26.26	26.47
	694	24.86	24.99	25.09	25.17	25.25	25.31	25.38	25.44	25.50	25.56	25.58	25.70	25.76	25.80	25.86	26.00	26.09	26.22	26.32	26.53
Rufus River/Lock 7	696	25.03	25.17	25.28	25.38	25.47	25.55	25.63	25.70	25.78	25.85	25.89	26.03	26.10	26.16	26.23	26.38	26.50	26.66	26.78	27.03

7 References

Australian Institute for Disaster Resilience (2017). *Australian Disaster Resilience Handbook Collection, Guideline 7-3 Flood Hazard*, Supporting document for the implementation of Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia.

Asha, S. and Yamagata, K. (2024). *Lock 6-Lock 7 model calibration*, Technical Notes, DHI Water & Environment Pty Ltd.

Bloss, C.M., Eckert, G. and Cetin, L. (2015a). *River Murray flood mitigation planning: Assessment of flood consequences*, DEWNR Technical report 2015/56, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide.

Bloss, C., Montazeri, M. and Eckert, G. (2015b). *Flood mapping of the River Murray floodplain in South Australia*, DEWNR Technical report 2015/57, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide.

Copernicus Sentinel data (2024). *Copernicus Data Space Ecosystem Browser*, European Union, accessed 11 December 2024, <https://browser.dataspace.copernicus.eu/>.

Department of Energy and Climate (2024). *SILO – Australian climate data from 1889 to yesterday*, Queensland Government, accessed 11 December 2024, <https://www.longpaddock.qld.gov.au/silo/>.

Department of Energy, Environment and Climate Action (2024). *Water Measurement Information System (WMIS)*, State Government of Victoria, accessed 11 December 2024, <https://data.water.vic.gov.au/surface-water>.

Department for Environment and Water (2021a). *SARFIIP First Operations – Hydrodynamic model review, update and scenario modelling*, DEW Technical note 2021/05, Government of South Australia, Department for Environment and Water, Adelaide.

Department for Environment and Water (2021b). *SARFIIP – Refinement and calibration of Pike and Katarapko floodplain flexible mesh models*, DEW Technical note 2021/19, Government of South Australia, Department for Environment and Water, Adelaide.

Department for Environment and Water (2024). *Water Data SA*, Government of South Australia, accessed 11 December 2024, <https://water.data.sa.gov.au/>.

DHI (2006). *Chowilla Floodplain Hydrodynamic Model*, report for Department of Water, Land and Biodiversity Conservation.

Intergovernmental Committee on Surveying and Mapping (2024). *Elvis - Elevation and Depth - Foundation Spatial Data*, accessed 11 December 2024, < https://elevation.fsdf.org.au/>.

Montazeri, M. and Gibbs, M. (2019). *Production of 80,000 ML/day flood inundation map for the South Australian section of River Murray*, DEW Technical Note 2020/01, Government of South Australia, Department for Environment and Water, Adelaide.

Water Technology (2009). *Chowilla Floodplain Hydraulic Model Redevelopment and Calibration*, report for South Australian Murray–Darling Basin Natural Resource Management Board.

Government of South Australia

Department for Environment and Water