

## Summary of Handwritten Notes of Dr Matt Colloff

Provided to Murray-Darling Basin Royal Commission, 14 June 2018

As a guide, the basic content is as follows (the pages are numbered):

pp. 10-13. 27 April 2011. Initial meeting with Ian Burns, Director Environmental Hydrology at MDBA and head of the ESLT team. Basic overview of MDBA's progress on modelling environmental water requirements. Key text (p. 12): "EWAs are still those in the Guide [to the Basin Plan] but there's an internal review of operational feasibility of env[ironmental] water objectives.

pp. 29-31. 13 May 2011. First meeting of CSIRO Multiple Benefits of the Basin Plan Project with MDBA ESLT team [MDBA: Ian Burns, Matt O'Brien, Peter Bridgeman, Gavin Pryde. CSIRO staff present: myself, Sue Cuddy, Carmel Pollino, Paul Rustomji and Geoff Podger]. Key text (p. 30-31): agreement to work with MDBA to scope and refine ecological responses and share information? Yes.

pp. 35-53. 18 May 2011. Detailed workshop and briefing from MDBA ESLT team about their ESLT modelling approach, and from CSIRO to MDBA on our hydrological modelling approach [MDBA: Gavin Pryde, Mike Machin, Peter Bridgeman, Matt Coleman; CSIRO: Myself, Paul Rustomji, Tony Arthur, Brad Shermann, Carmel Pollino, Yun Chen]. Key text (p. 39-42), Gavin Pryde, Overview of modelling since the Guide, Qs - how did you calculate your SDLs, what will you get for it ecologically, and even if you could get it, how would you operationalise it? [A] Works and measures: removing outliers, purchasing easements; whole heap of hairs on it. Scale of change in GL [of SDLs] can be reduced by works and measures. (p. 41) Modelling approaches: "PUSH" model, i.e. working from the environmental outcome you want to achieve the SDL you want. "PULL" model: working from the reduction in SDL required to meet the environmental water requirement. (p. 42) Flow diagram of modelling sequence, including assessment of results against environmental targets, reductions in [irrigation] diversions and 3rd party impacts. (p. 46) ESLT "Pick-a-box" model: in-house model to improve linkages and deal with feedback from the guide [that the amount of water required for the environment was too high].

pp. 107-112. 8 July 2011. Modelling information exchange meeting with MDBA ESLT team. Key text (p. 108): MDBA suggesting us to use their set of measurements (metrics; e.g. flow duration, flood duration, base-flow; *not data*), not ours. (p. 110) Some EWRs have been revised and are still evolving. (p. 111): MDBA reckon our method is better... Way to go is Matt Coleman [MDBA] and Paul [Rustomji, CSIRO project hydrologist] to work together informally and semi-independently & we stay in contact.

pp. 162-164. 21 Sept 2011. CSIRO internal phone hookup w. Carol Couch (Program Leader, Water for a Healthy Country Flagship, WfHC). Discussion of our report to MDBA and concerns about the project and the science quality.

pp. 175-176. 12 October 2011. Meeting with Bill Young (WfHC Director), Carol Couch and Ian Prosser (WfHC Deputy Director). Bill talked with Jody Swirepek (MDBA, General Manager Environment) about our engagement with MDSBA hydrologists [and concerns that our report shows] 2800 [GL] meets [only] 55% of [ecological] targets. [I was asked, at Jodie's request, to disengage from the MDBA ESLT team]. (p. 176): Interim report gone to MDBA from Bill [Young et al., 2011, Science review of an Environmentally Sustainable Level of

Take for the MDB; (the review of the ESLT report)]. Burns doc. [the ESLT report] does not follow program logic & follows prioritising of indicator sites.

pp. 183-186. 19 October, 2011. Multiple Benefits Project Steering Committee meeting w. MDBA. Key text (p. 185) [message from Tony Webster, MDBA general manager social & economic research and chair, steering committee]: MDBA would be very cautious about the overlap between what Paul [Rustomji] is doing in terms of interpretation and what MDBA is doing because MDBA have done more analysis the reasons that [ecological] targets have not been met [under an SDL reduction of 2800 GL].

pp.191-196. 25 October 2011. Meeting with Ian Burns and Carol Couch. Carol Couch stated our results need to be attuned to the results that are presented in the [forthcoming] Basin Plan [and forthcoming ESLT report].

pp. 232-236. 7 December 2011. Multiple Benefits Project Steering Committee meeting w. MDBA. Tony Webster and Ian Burns state there is probably good reason not to include [in our report] EWRs [environmental water requirements to meet ecological objectives, and whether those objectives were met; the 'traffic lights' table]. Ian Prosser: Differences [between our findings and MDBA's] boil down to interpretation. (p. 237) decided to delete Paul Rustomji's hydrological modelling chapter from our report. (p 236) it is going to be hard [for the CSIRO team] to reconcile EWRs and ESLT outputs. There is no way we can interpret their results, which are not tied to the flow scenarios.

pp. 239-242. Meeting with Ian Burns. Ian pointed out the problem with our "traffic lights" table from MDBA's perspective: it is not an adequate representation of their results. (p. 241) MDBA see the reporting that CSIRO has done as undermining the Basin Plan [message from Jodie Swirepik and Rhondda Dixon]. Requests from MDBA to remove "traffic lights" tables and related data from the CSIRO Multiple Benefits report: options canvassed.