NSW MODELLING AND MONITORING HUB

NSW WATER MONITORING SURVEY SUMMARY RESULTS

Report no: MHL2685
March 2019

What is the NSW modelling and monitoring hub (MaMH)?

- ➤ www.mamh.nsw.gov.au/
- ➤ The MaMH is a knowledge network established to coordinate and aid information sharing across government agencies, state owned corporations and local government in relation to water modelling and monitoring.

Why did the MaMH conduct a survey of water monitoring in NSW?

- ➤ Provide a snapshot of current NSW water monitoring datasets and activities.
- ➤ Assess NSW Government organisations' participation in existing data collaboration systems.
- ➤ Outline the hurdles to achieve data collaboration and the resources necessary for participation.

What is the MaMH working to achieve?

- ➤ More efficient water related services.
- ➤ Improved operations, planning and management of water assets.
- ➤ Strategic and coordinated investment in water monitoring.

RESPONSE RATE

27%

45 OF 168 TOTAL INVITED ORGANISATIONS

BIGGEST DATA CUSTODIANS
(monitoring locations)

1. Sydney Water (1,990,000)
2. Hunter Water (250,000)
3. WaterNSW (17,000)

NSW GOVERNMENT COLLABORATIVE TOOLS

78%

OF RESPONDANTS SAID 'YES' THERE IS A BENEFIT TO ADOPTING THE TOOLS

Respondents:
- DoI Water
- MHL
- OEH (incl. Beachwatch)
- Sydney Water
- WaterNSW
- Other key organisations (x4)
- Commonwealth and ACT authorities
- Power Utilities and resource corporations
- Irrigation Corps
- Local Government
- Local Land Services

DATA SHARING TOOL WITH HIGHEST ADOPTION RATE:

BoM Water Data Online

56% OF RESPONDENTS

BIGGEST OBSTACLE TO ADOPTION OF A DATA SHARING TOOL:

Resourcing

54% OF RESPONDENTS
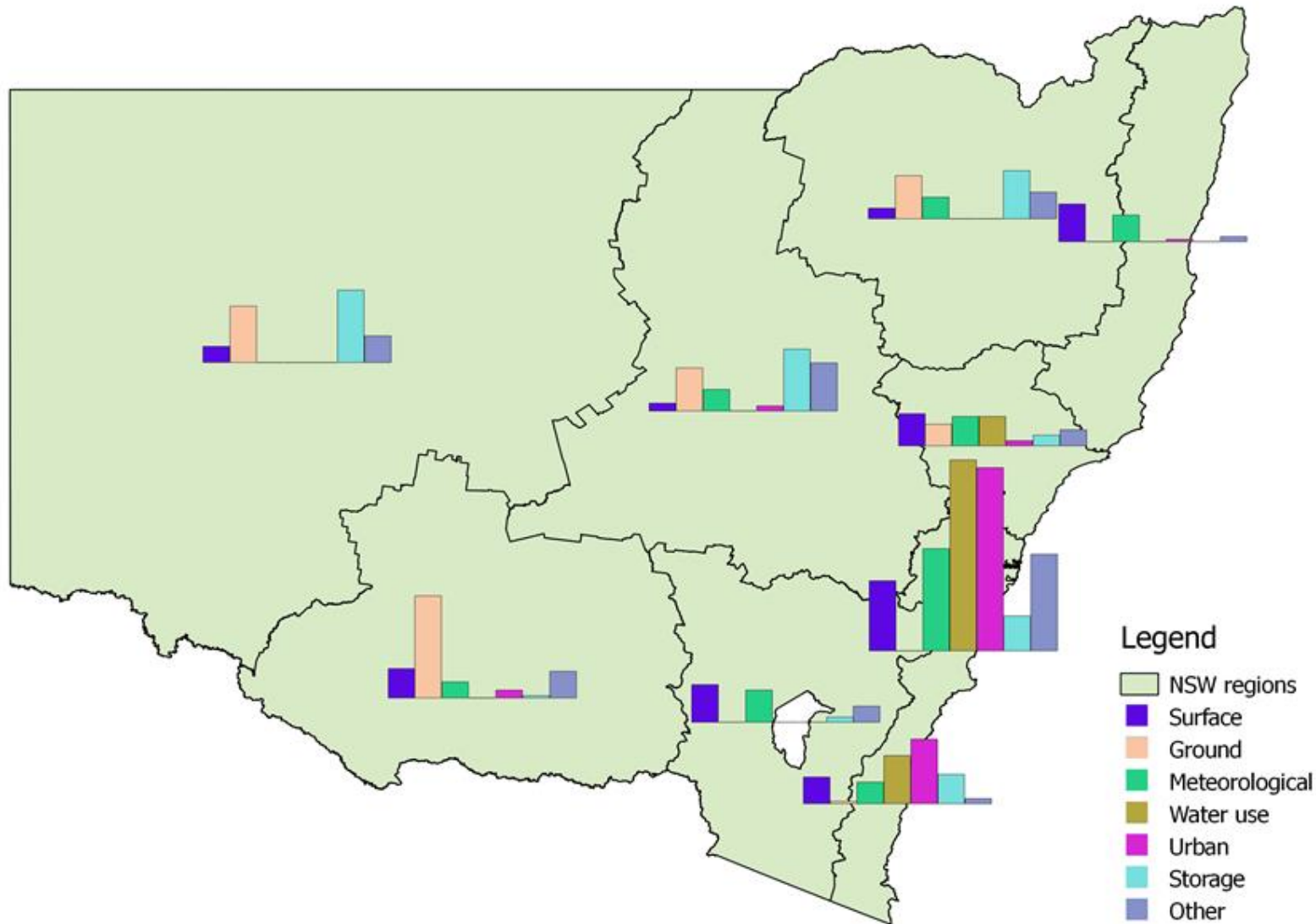
Location	No. of active monitoring locations (approx.)
North Coast	800
New England	1,500
Central West	1,000
Far West	1,000
Hunter Central Coast	252,000
North West Metro	399,000
Sydney Metro	595,000
South West Metro	595,000
Riverina	3,500
South Eastern	2,000
Illawarra South Coast	397,000

Legend

- NSW regions
- Surface
- Ground
- Meteorological
- Water use
- Urban
- Storage
- Other

TOTAL NUMBER OF MONITORING LOCATIONS

Organisation	Surface water	Groundwater	Storage	Meteorological	Water use	Urban water	Other	Total
DoI Water	0	0	0	0	0	0	1,500	1,500
MHL	1,400	100	11	195	150	6	0	1,862
OEH (incl Beachwatch)	791	0	0	1	0	10	2	804
Sydney Water	8	0	250	238	1,980,000	640	0	1,981,136
WaterNSW	2,000	9,600	1,200	450	2,736	0	1,000	16,986
Other key organisations (x4)	234	384	32	1,728	250,350	0	0	252,728
Subtotal	**4,433**	**10,084**	**1,493**	**2,612**	**2,233,236**	**656**	**2,502**	**2,255,016**
Commonwealth and ACT authorities	92	4	6	80	2	5	0	189
Power utilities and resource corps	74	31	0	31	0	0	0	136
Irrigation corporations	19	1,261	0	0	2	0	0	1,282
Local government (metropolitan)	410	82	3	5	276	46	0	822
Local government (regional)	62	46	89	96	1,044	162	2	1,501
Local land services	0	0	0	0	0	0	0	0
Subtotal	*657*	*1,424*	*98*	*212*	*1,324*	*213*	*2*	*3,930*
Total	**5,090**	**11,508**	**1,591**	**2,824**	**2,234,560**	**869**	**2,504**	**2,258,946**

State-wide there are over 2.2 million monitoring locations (including water meters), or over 24,000 monitoring locations (not including water meters), based on survey results.

PRIMARY PURPOSE FOR MONITORING

PRIMARY PURPOSE FOR ACTIVE STATIONS

Legend: ■ Water resource monitoring ■ Operational and emergency activities ■ Environmental health monitoring ■ Compliance and trade monitoring ■ Investigative monitoring

Type	Water resource monitoring	Operational and emergency activities	Environmental health monitoring	Compliance and trade monitoring	Investigative monitoring
SURFACE WATER (33)	10%	26%	38%	13%	13%
GROUND WATER (19)	17%	16%	24%	26%	17%
STORAGE (18)	8%	65%	16%	7%	3%
METEOROLOGICAL (20)	11%	67%	11%	8%	3%
WATER USE (22)	%	10%	0%	89%	0%
URBAN WATER (28)	6%	74%	2%	17%	1%
OTHER (12)	25%	25%	13%	25%	12%

Key types:
Surface water - including creeks, streams, estuaries and coastal stations
Ground water - including bores and aquifers
Storage - including lakes and reservoirs
Meteorological - including rainfall, evaporation and weather stations
Water use - including meters, licensed water take and extraction
Urban water - including water supply, recycled water, wastewater and stormwater
Other - e.g. trade data, historical allocation data, water related spatial or remote sensing content, general water information.

Key purposes:
Water resource assessment monitoring - Long term monitoring primarily concerned with water quantity, availability and sustainability, including strategic long term assessments.
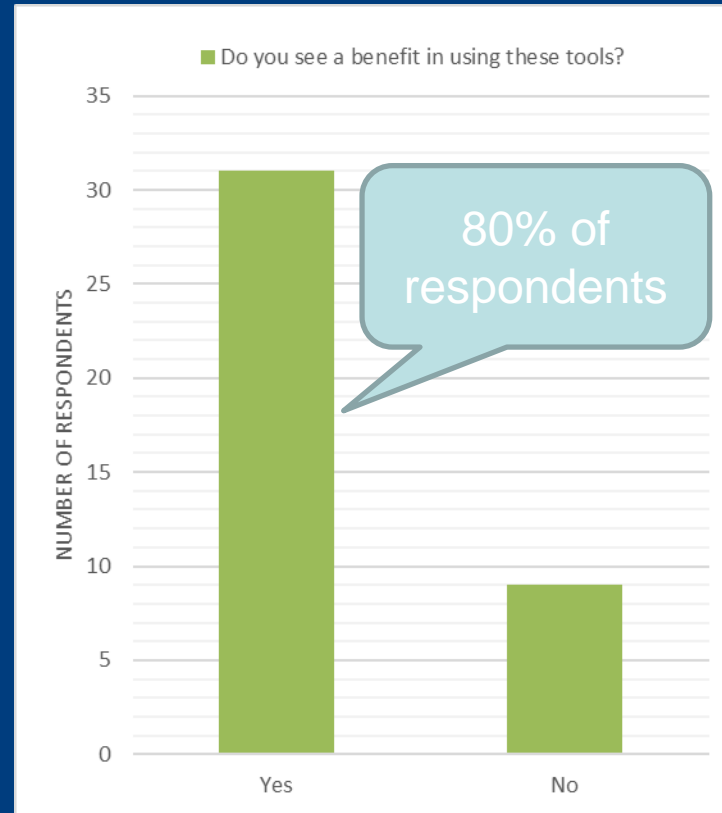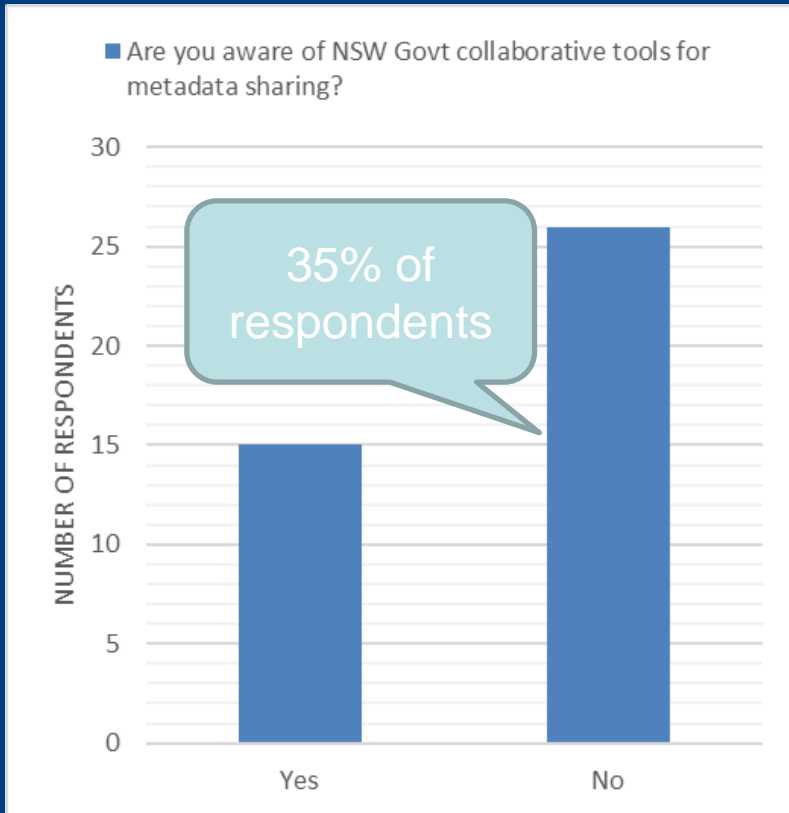**Operational monitoring** - Long-term monitoring primarily concerned with day to day decisions making, system operations and emergency responses.
Environmental health monitoring - Long-term monitoring primarily associated with monitoring water environmental health and water quality.
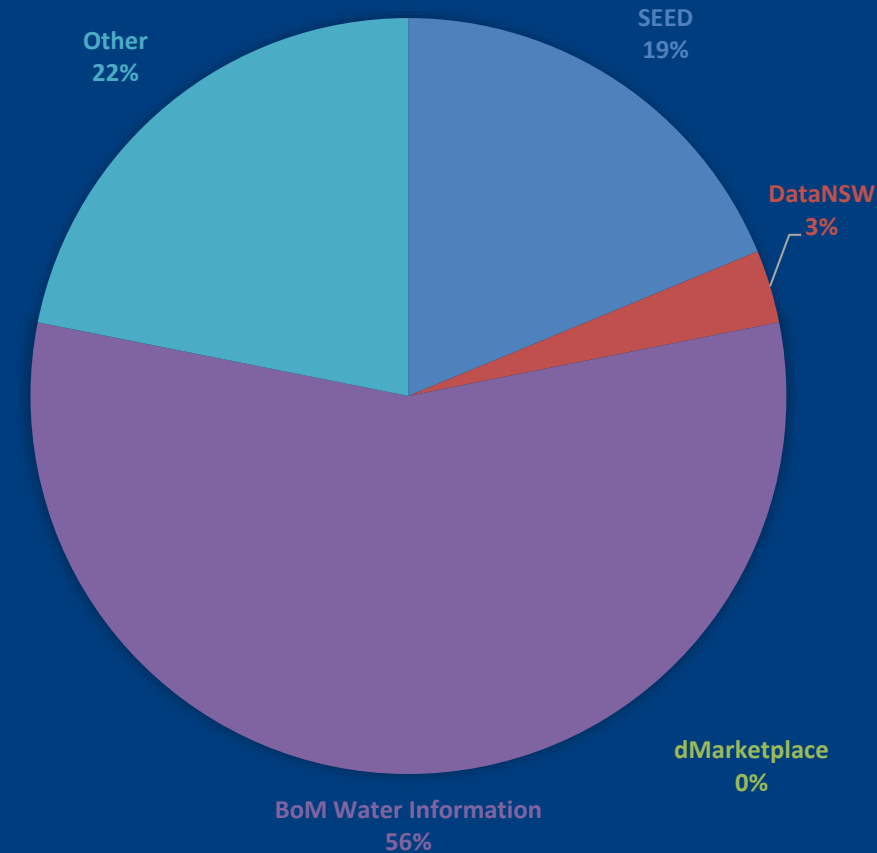**Compliance and trade monitoring** - Long-term monitoring primarily associated with legislative, government agreements and licence requirements.
Investigative monitoring - Short-term monitoring related primarily to incidents and special requests.

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NSW GOVERNMENT COLLABORATIVE TOOLS

DATA SHARING TOOL PARTICIPATION

■ Are you aware of NSW Govt collaborative tools for metadata sharing?

35% of respondents

NUMBER OF RESPONDENTS

Yes No

■ Do you see a benefit in using these tools?

80% of respondents

NUMBER OF RESPONDENTS

Yes No

Other 22%
SEED 19%
DataNSW 3%
dMarketplace 0%
BoM Water Information 56%

32 respondents

DO YOU SEE A BENEFIT IN USING A COLLABORATION TOOL?

Feedback themes:

- Data sharing tools would be helpful for informing decisions such as land use decisions and planning.

- It is important to know the locations of monitoring stations.

- Yet to identify a need for the data sharing tools.

- Currently utilise direct data sharing websites.

- Customers prefer to have one location to access data (one stop shop).

- There is a need to share data but don't see a large benefit in sharing metadata.

- Our Business Information Model project recommended Data.NSW as the solution.

OBSTACLES TO DATA COLLABORATION TOOL PARTICIPATION
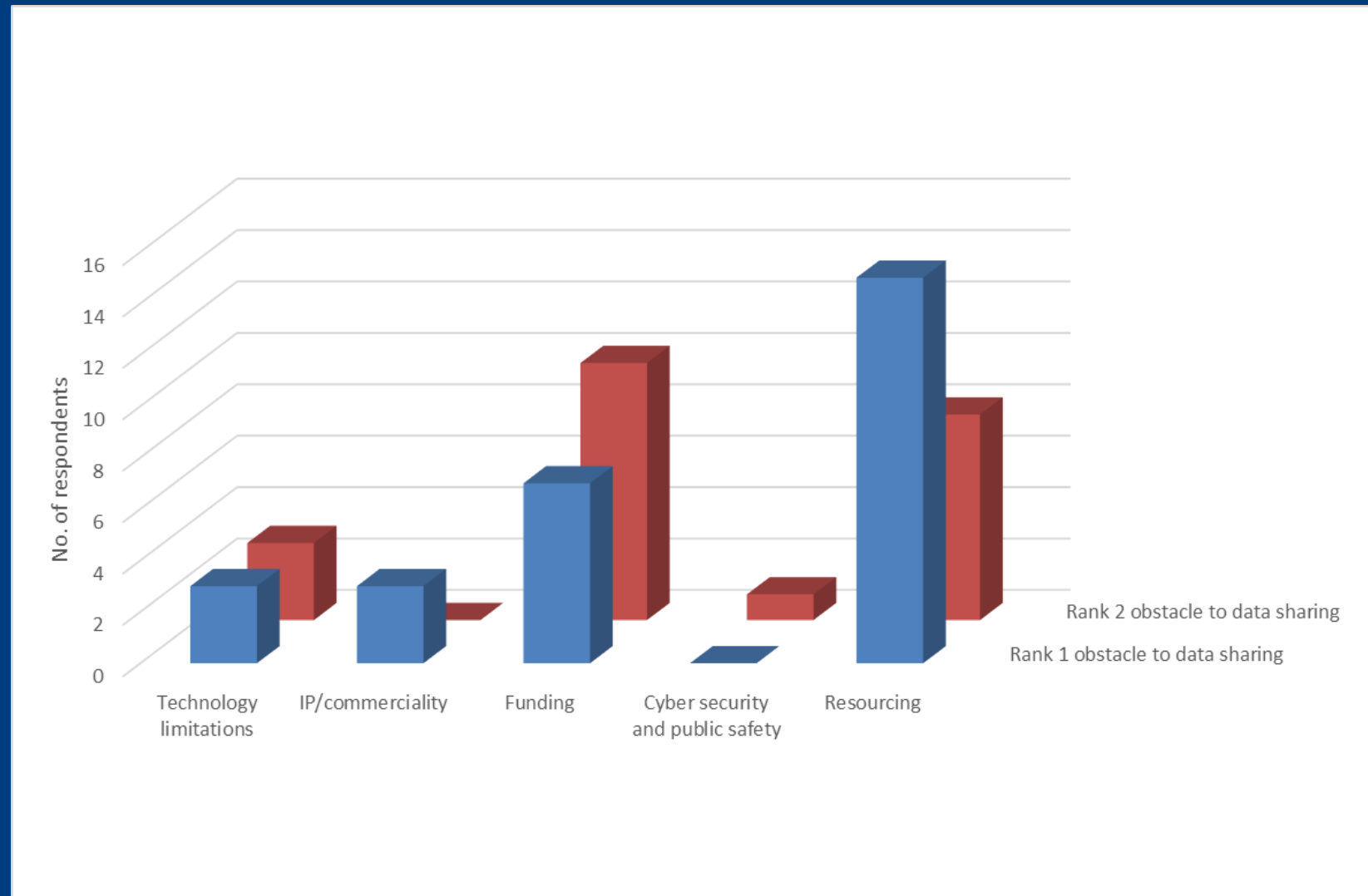
WHAT WOULD ENABLE USE OF A COLLABORATION TOOL?

Feedback themes:

- Communication from relevant departments and explanation of how the tools would be relevant and beneficial to each organisation and to the public.

- Development of a tool to suit all end user needs.

- Promotion and awareness of the tools available.

- Appropriate training and protocols for use, particularly with regards to cyber security and intellectual property.

- Secure funding and resourcing.

The survey sought to gather budgets by monitoring type but these are incomplete.

Key organisations noted that it is difficult to identify monitoring budgets which are comparable across organisations.

The survey sought to identify budgets required to overcome obstacles to data collaboration participation.

Key organisation responses were incomplete as respondents were not sure of the steps for data collaboration.

In the 2019/20 financial year the MaMH proposes to develop business cases to better quantify monitoring budgets and funding sources which enable data collaboration.

MaMH's strategic conclusions from the survey results:

Respondents to the survey are generally unaware of data sharing tools but see benefits to sharing water information.

Water monitoring information needs are growing and now is the right time to coordinate state wide water modelling and monitoring information collaboration.

There are existing government collaboration platforms, which have the potential to meet future needs.

There is a close dependency between water modelling and monitoring with opportunities to better inform water management decision making.

The MaMH's 2019/20 recommendations include:

Develop water modelling and monitoring metadata guidelines and tools to enable a consistent approach for sharing information.

Case studies to pilot data sharing through Data.NSW, and a framework that facilitates the management and sharing of water model metadata.

Develop business cases to enable water information collaboration to quantify resources, costs and potential benefits.