



NSW MINERALS COUNCIL
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AGENDA
NSW Minerals Council

UHMD Joint Working Group Meeting - Water

**UHMD Resource Centre, Upstairs of the Town Square Shopping Centre
Suite 1, 159 John Street, Singleton NSW 2330**

Wednesday 11 May 2016: 10.00am-1.00pm

1. Welcome and apologies
2. Minutes and actions of the previous meeting
3. Water Resources Map project
4. Hunter Bioregional Assessment
5. MCA Water Accounting Framework
6. Hunter River Salinity Trading Scheme Review
7. Voids project
8. UHMD Annual Forum Report
9. Update on UHMD communications initiatives
10. Working group performance, relevance and strategic direction
11. Other business

DRAFT MINUTES

NSW Minerals Council UHMD – Joint Working Group - Water

**UHMD Resource Centre, Upstairs of the Town Square Shopping Centre
Suite 1, 159 John Street, Singleton NSW 2330**

Thursday 12 November 2015: 10.00am – 1.00pm

In attendance

David O'Brien (Chair)	Glencore
Chris New	Rio Tinto
Julie Thomas	Muswellbrook Coal
Wendy Bowman	NSW Mine Watch
Shane Davey	<i>Therresource</i>
Bob Mackie	<i>Therresource</i>
James Barben	Yancoal Australia
Ken Bray	Hunter Valley Water Users' Association
Bruce Devonport	Singleton Council
Andrew Rode	NSW Minerals Council

Apologies

Rebekah Gomez-Fort	NSW Department of Primary Industries
Greg Sullivan	NSW Minerals Council
Ron Fenwick	UHMD - Individual Contact
James Benson	Anglo American
Greg Lamb	The Bloomfield Group
Harry Egan	Peabody Energy

1. Welcome and Apologies

The Chair welcomed attendees and noted apologies. The Chair noted that a quorum had not formed for the meeting. The members present decided to proceed with the meeting in the absence of a formal quorum.

2. Confirmation of minutes of 6 August 2015

The minutes of the 6 August 2015 meeting were confirmed.

3. Simplification of UHMD minuting procedures

The working group accepted the proposal to simplify minutes.

4. Update on current projects

The working group noted the updates on current projects.

5. Update on JASC meeting outcomes

The working group noted the outcomes of the JASC meeting.

6. Voids project

The working group noted the updates to the voids project. It suggested that local councillors be invited to the Voids Workshop.

ACTIONS:

- NSWMC to invite Muswellbrook and Singleton councillors to the Voids Workshop.

7. MCA Water Accounting Framework

The working group suggested that the following changes be made to the Water Accounting Framework infographic:

- Better highlight environmental flows.
- Check rainfall figures.
- Summarise key statistics at the top.
- Reconfigure the infographic to suit a portrait layout.
- Break out the water analysis into regional, Hunter and Mining specific detail.

ACTION:

- NSWMC to update, check and recirculate the MCA Water Accounting Framework infographic.

8. Muswellbrook Mining Dialogue Community Day

The working group noted the upcoming Mining Dialogue Community Day and discussed and suggested various ways to promote the event.

9. Annual UHMD Workshop

The working group suggested that:

- A Singleton representative be included at the UHMD Annual Workshop Panel session (potentially

Gill Eason).

- A feedback form be provided at the workshop.
- Rather than discussing working group goals, to consider goals for the UHMD broadly, and discuss 5-year goals within working groups at a later date.

ACTIONS:

- NSWMC to invite a Singleton representative to speak at the Annual Workshop panel session.
- NSWMC to include a feedback form at the Annual Workshop.
- NSWMC to redesign program to focus discussion on goals of UHMD (rather than individual working groups). NSWMC to defer discussion on working group goals until the next JWG meeting.

10. Update on UHMD Communications Plan

The working group noted the updated UHMD Communications Plan.

11. Other Business

No other business.

The meeting closed at 11:40am.

**Actions arising from meeting on 12 November 2015
UHMD Water Joint Working Group Meeting**

Action	Responsibility	Status
1. Welcome and Apologies		
2. Confirmation of Minutes of 6 August 2015		
3. Simplification of UHMD Minuting Procedures		
4. Update on current projects		
5. Update on JASC meeting outcomes		
6. Voids project		
<ul style="list-style-type: none"> • NSWMC to invite Muswellbrook and Singleton councillors to the Voids Workshop. 	NSWMC	Completed
7. MCA Water Accounting Framework		
<ul style="list-style-type: none"> • NSWMC to update, check and recirculate the MCA Water Accounting Framework infographic. 	NSWMC	Completed
8. Muswellbrook Mining Dialogue Community Day		
9. Annual UHMD Workshop		
<ul style="list-style-type: none"> • NSWMC to invite a Singleton representative to speak at the Annual Workshop panel session. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to include a feedback form at the Annual Workshop. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to redesign program to focus discussion on goals of UHMD (rather than individual working groups). NSWMC to defer discussion on working group goals until the next JWG meeting. 	NSWMC	Completed / refer to Item 10
10. Update on UHMD Communications Plan		
11. Other business		

Agenda Item 3

WATER RESOURCES MAP

Update

DRE has prepared a test version of an updated Common Ground mapping platform that includes most of the water layers that the JWG - Water requested. It is not clear when the updated version will be released.

FOR INFORMATION / DISCUSSION

Agenda Item 4

HUNTER BIOREGIONAL ASSESSMENT

Issue

The Bioregional Assessment Programme (BAP) has released a *Coal and coal seam gas resource assessment* for the Hunter subregion.

Background

The coal and coal seam gas resource assessment for the Hunter subregion summarises the known coal and coal seam gas resources and developments as at November 2015. It is available for download here: <http://data.bioregionalassessments.gov.au/product/NSB/HUN/1.2>

The information in this product will be used to develop the coal resource development pathway.

Coal and coal seam gas resources

Coal and coal seam gas resources in the Hunter subregion are contained within the Hunter, Newcastle and Western coalfields of the geological Sydney Basin. The major economic coal seams mined in the Hunter Coalfield are part of the Greta and the Wittingham coal measures.

Current activity and tenements

As at May 2015 there were 25 operating coal mines and complexes in the Hunter subregion. Six mines were either in care and maintenance or had recently closed. No coal seam gas is currently produced in the Hunter subregion, although a number of wells have been drilled for exploration.

Proposals and exploration

As at November 2015 there were 27 proposals to extend or expand existing operations and 15 proposals to initiate new mines. These are shown in the figure below.

Agenda Item 5

MCA WATER ACCOUNTING FRAMEWORK

Issue

The presentation of 2014 MCA Water Accounting Framework (WAF) information continues to progress. NSWMC is has requested water figures for 2015 from companies.

Background

2014 MCA WAF promotional material

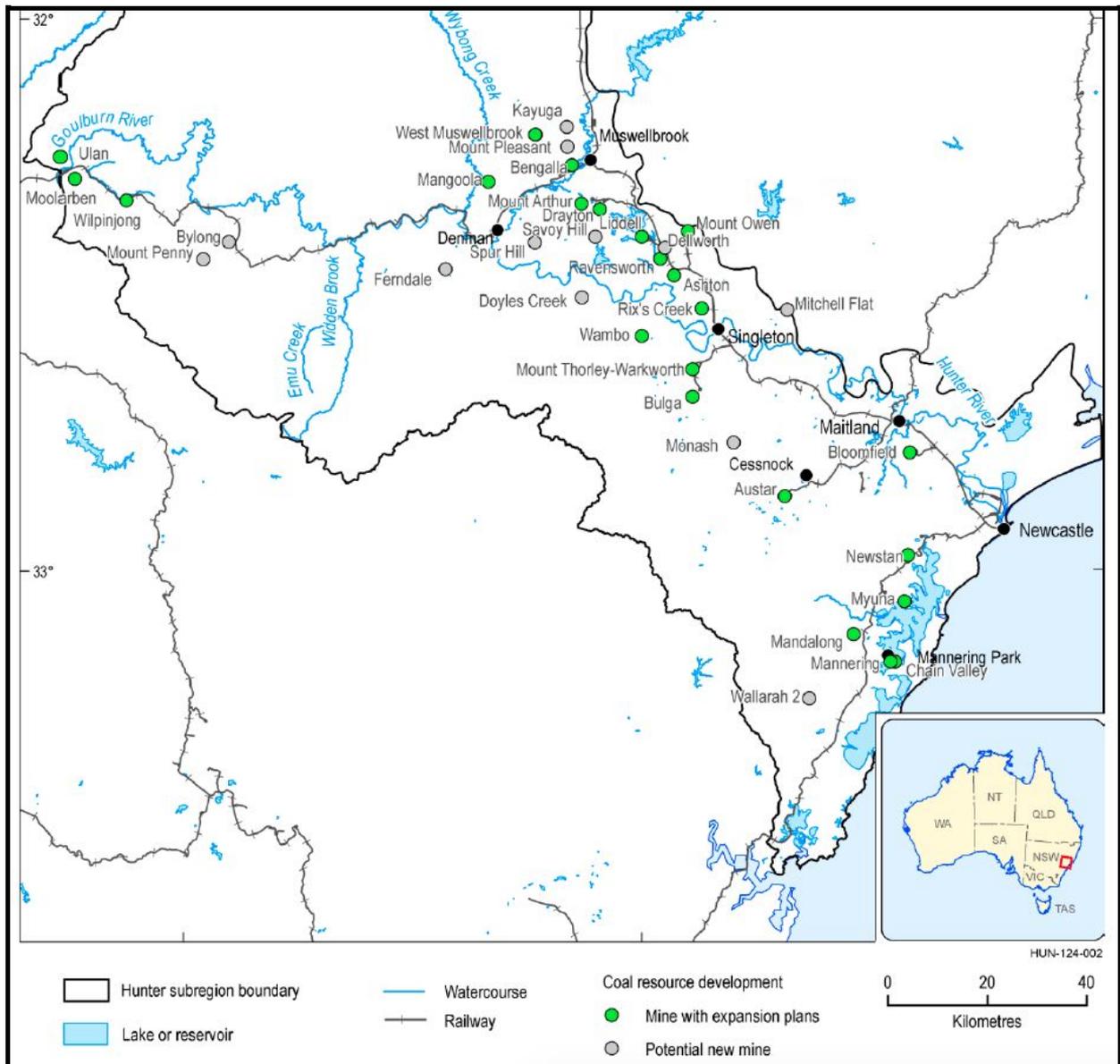
Following advice from the NSWMC Communications Director and Media Director, the publication of the MCA WAF data for 2014 will have a multi-tiered approach:

- Release of the information as an exclusive to the Newcastle Herald, supported by:
 - A media release.
 - An 'advert' summary of key information for print media and social media (see attached).
 - Detailed results to be uploaded on the UHMD webpage (see attached infographic).
- Paid advertising of the 'advert' for the Muswellbrook Chronicle and Singleton Argus, shortly after the Newcastle Herald.
- Potential radio opportunities, depending on the level of interest.

2015 MCA WAF

NSWMC is currently collating data for the 2015 MCA WAF summary. Gilbert & Associates will be engaged to assist with the quality assurance and comparisons.

FOR INFORMATION / DISCUSSION



FOR INFORMATION / DISCUSSION

THE HUNTER RIVER

A precious water resource for the Upper Hunter community.



Upper Hunter Mining Dialogue

2014 was a drier than average year. That year

**195
BILLION
LITRES**

entered the Hunter River system.

Of that water,

48%

flowed past Singleton, and contributed to the environmental needs of the river.

49%

was extracted and used by farmers, residents and businesses.

Mining used less than

3%

of the water in the system.

UPPER HUNTER WATER BALANCE



Upper Hunter Mining Dialogue

Mining's water use

The Upper Hunter Mining Dialogue assessed water use by the mining industry in the Upper Hunter in 2014. Using a common accounting framework, mining companies have reported their water inflows and outflows from operations. This has helped them to manage their water use and embark on water saving and reuse opportunities.



ALMOST 10x

as much water evaporated from the Hunter River System storage dams as was extracted from the Hunter River System by mining companies

The mining industry used

JUST 3%

of the Hunter River System's water

ONLY 12%

of mining water was sourced from higher quality sources such as rivers and alluvial groundwater

48%

of mine water is sourced from onsite rainfall and runoff

34%

of water was sourced from deep aquifers that are of limited use to other water users due to their high salinity

The mining industry

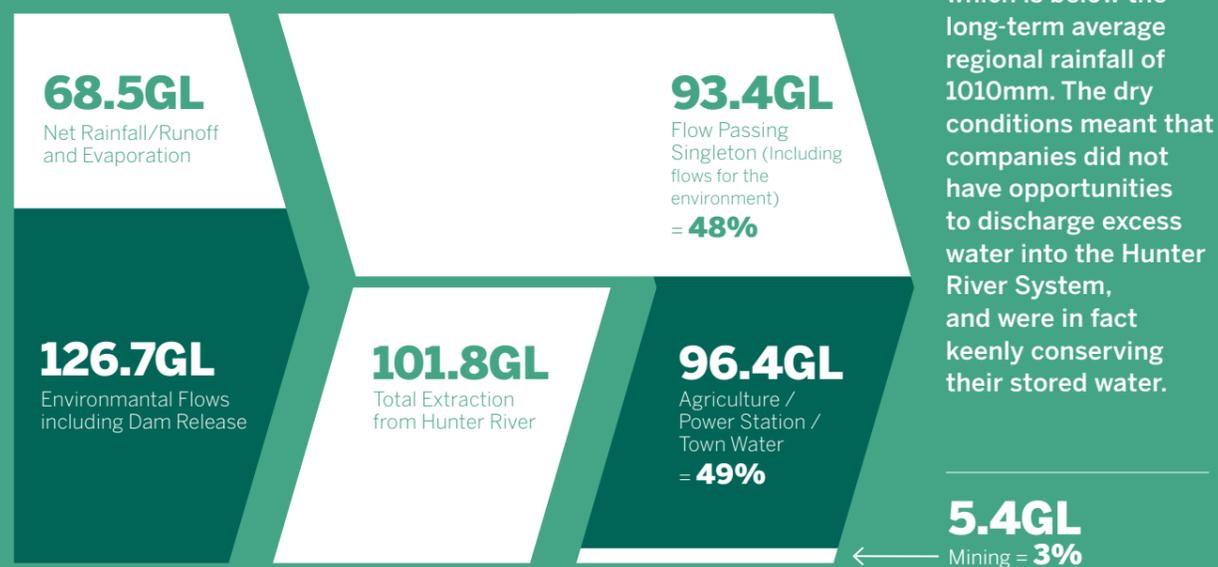
REUSES 51%

of its water onsite

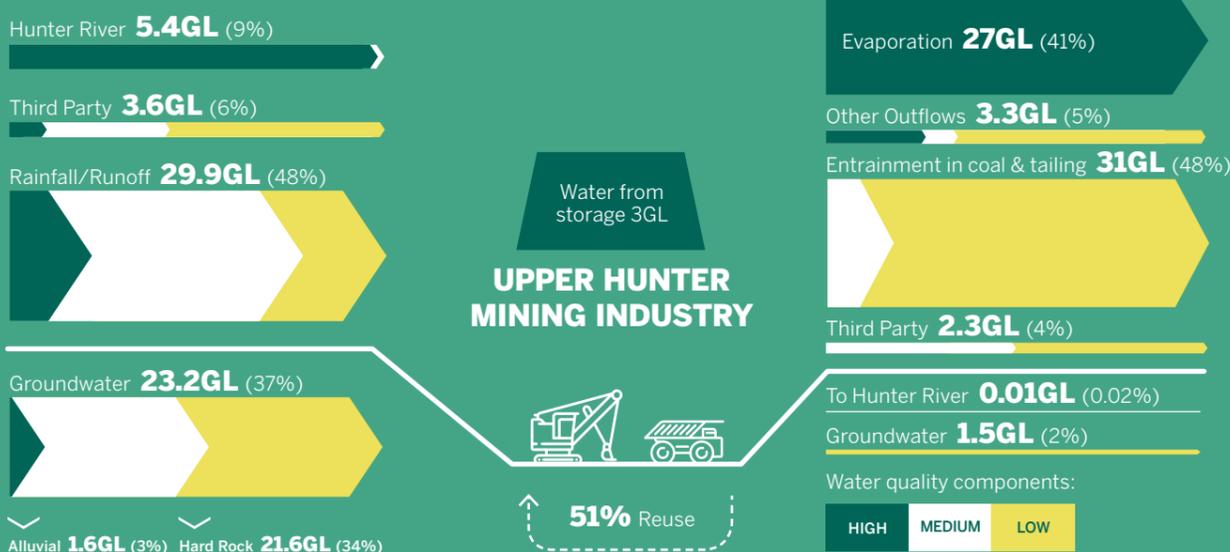
Only **0.02%**

of mine water was discharged into the Hunter River

Hunter River System Extraction



Mining Industry Water Use Balance



To find out more about the UHMD, visit miningdialogue.com.au

The NSW Minerals Council has compiled the data in this infographic using the best available information, its accuracy is limited and the information must not be relied upon to inform any other purpose. The NSW Minerals Council does not take any responsibility and relinquishes its liability for any consequences of relying upon the information contained within. References: NSW Environment Protection Authority 2013, Hunter Catchment Salinity Assessment, prepared by the Office of Environment and Heritage.

Agenda Item 6

HUNTER RIVER SALINITY TRADING SCHEME REVIEW

Issue

The Hunter River Salinity Trading Scheme (HRSTS) Review has been progressed through the EPA's release of a draft Amendment Regulation and a supporting 'Report and Recommendations'.

Background

In late January 2016, EPA released an Amendment Regulation 2016 in relation to its review of the Hunter River Salinity Trading Scheme (HRSTS). It also released a 'Report and recommendations' to support the review, which stated that *"the EPA will consider the most appropriate mechanism for further investigating the issue of other contaminants that may be present in participant discharge waters and their impacts on the Hunter River catchment."*

The documents are available here:

<http://www.epa.nsw.gov.au/licensing/hrsts/regreview.htm>

NSWMC's submission recommended that *"In collaboration with the Upper Hunter Mining Dialogue, the EPA should investigate and characterise the chemistry of discharge water and the effect of its interaction on the Hunter River catchment."*

The EPA has subsequently advised NSWMC that:

"The EPA's Hunter Office is in the process of scoping out a project to:

- *Characterise and assess the potential impacts of metals in mine discharges from Upper Hunter coal mines; and*
- *Assess the potential impacts of the metals on the receiving environment.*

The mining industry will be consulted on the project proposal. The EPA will also work with relevant licensees to develop pollution reduction studies, which will be incorporated into their licences. The conditions are likely to require licensees to:

- *Monitor concentrations of metals and metalloids in their mine water discharges.*
- *Assess the likely impact of those parameters on the receiving environment.*
- *Report on the findings of those investigations.*

The EPA will then consider the findings of these studies, individually and collectively, and determine whether any additional work is needed to reduce metal concentrations and loads being discharged."

FOR INFORMATION / DISCUSSION

Agenda Item 7

VOIDS PROJECT

Issue

The voids project deliverables have been finalised with the development of a workshop report, a water quality review and a void water quality monitoring guidance note.

Background

Voids workshop report

Golder Associates hosted a successful voids workshop on 25 November 2015, in Muswellbrook. Dr Clint McCullough (Golder) also spoke on the radio about the project. Golder has prepared a workshop report (attached) that captures feedback received and makes several recommendations.

The key recommendation relates to the establishment of a Upper Hunter regional committee on mine voids. NSWMC has discussed this with the Division of Resources and Energy. DRE believes that this should be broadened to rehabilitation generally and ties in with the Upper Hunter Synoptic Plan. DRE therefore suggested that NSWMC meet with the Department of Planning and Environment and DRE to progress the recommendation.

Voids water quality review

Golder Associates has updated and finalised its water quality review document (refer attached).

Void water quality monitoring guidance note

Dr McCullough has also prepared a void water quality monitoring guidance note (attached).

UNSW ACARP Research Project on Voids

The UNSW (led by Dr Wendy Timms) completed a high-level research project on voids in the Upper Hunter, which generated some interesting results (see attached summary). NSWMC met with UNSW to discuss their results on 1 April 2016. UNSW is subsequently preparing an application for funding for research on voids from ACARP (Australian Coal Industry's Research Program).

Recommendation

NSWMC recommends that the working group provide any suggestions on appropriate next steps in progressing voids related issues and promoting the completed voids research project.

FOR INFORMATION / DISCUSSION

Australian Centre for Sustainable Mining Practices

Future scenarios for mine voids from open cut mining in the Hunter Valley

19 January 2016

Research by a team from the Australian Centre for Sustainable Mining Practices (ACSMP) at UNSW Australia is looking at future scenarios for mine voids that are left by open cut mines in the Hunter Valley

Alexandra Fegan, Dr Wendy Timms and Dr Simit Raval have summarised their research progress so far.

Final voids of open cut coal mines are a potential issue for water resources and communities, particularly as the number, depth and size of voids increases. A review of available information on mine voids within the Hunter Valley indicated there are currently plans for 30 final voids, with a combined footprint of 3,840 hectares (~38 km² or 0.18% of the total region). Reported plans for final void use was varied: backfilled and rehabilitation to a stable landform (n=6), coal and tailings placement (n=7), water storages (n=6), while others were yet to be decided. Mine void areas are small compared with 19,570 hectares of mining disturbed land and 8,188 hectares of rehabilitated mining land in this region (Summerhayes, 2011).

Based on this review, mine void models (A to F) were designed to typify a range of realistic site conditions (eg. A was 300 ha, 200 m depth; B was 40 ha and 250 m depth). An indication of the feasibility of backfilling each void type was evaluated with a semi-quantitative approach. It was found that backfill might be economically feasible only for void types B and E, with various assumptions including a strip ratio of 4:1 (waste:ore) and the number and type of earth moving equipment deployed. However, backfill of other void types was unlikely to be feasible, given a back fill time >5 years during mine rehabilitation. Thus, alternative beneficial uses of many open final voids are required.

Numerical models (n=18) for water level and salinity of open voids over 500 years were then developed in Goldsim software, taking into account evaporation losses

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A void left by coal mining that is now used for crayfish farming, Western Australia (Photo: W. Timms)

and mass balance of water and salt on a monthly time step. For each void type (A to F), equilibrium water levels and salinity were modelled for 3 scenarios - 0 and 4 ML/day groundwater inflow, and a groundwater in flow rate to achieve an equilibrium water level near the top of the void. Preliminary results will be presented for water salinity and level trends for the 18 models. Results indicated water salinity at 500 years was fresh (n=6), brackish water (n=9), moderately saline (n=2), and seawater salinity (n=1), and thus with a range of beneficial uses for the water. These results extend and confirm model results by Hancock et al. (2005), though both approaches have several limitations. Final voids that could be brackish or saline should be designed as groundwater sinks (no flow away from the void) with negligible risk of overflow from the top of the void. Further work is recommended to evaluate future scenarios for voids on a case by case basis, including for water storage, aquaculture, pumped hydro storage, and the possibility of wetlands managed for carbon sequestration.

For further information contact w.timms@unsw.edu.au

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Agenda Item 8

UHMD ANNUAL FORUM REPORT

Issue

The UHMD held a successful Annual Forum on 9 December 2015 in Singleton.

Background

The UHMD Annual Forum report was reviewed by the JASC and finalised and published in March 2016.

The overwhelming feedback this year related to a focus on communications and community engagement. This included suggestions to resurvey the community to gauge their perception of the Dialogue, engage and educate the broader community about the work of the Dialogue, and reinvigorate UHMD membership and promote the projects. Specifically there were several suggestions around creating roadside viewing and information displays about both mining and the UHMD. There were also suggestions relating to increasing collaboration between the mining companies and educating mining employees to be able to promote the UHMD. Other common suggestions related to promoting tourism and economic opportunities post mine closure.

RECOMMENDATION

NSWMC recommends that the working group provide any comment, feedback or recommendations regarding the report and any suggested action(s).

FOR INFORMATION/ DISCUSSION

Agenda Item 9

UPDATE ON UHMD COMMUNICATIONS INITIATIVES

Issue

The UHMD held a successful Muswellbrook Community Day event on 25 November 2015. There are a number of other communications initiatives currently being planned.

Background

Muswellbrook Mining Dialogue Community Day

The Mining Dialogue Community Day in Muswellbrook on 25 November 2015 featured:

- A sit-down breakfast with Muswellbrook Chamber of Commerce members.
- A showcase of UHMD projects in a gallery.
- Tours of Mangoola's rehabilitation.
- A live 2NM radio broadcast and interviews with Upper Hunter and mining-related representatives.
- A presentation to school students from the Tom Farrell Institute.
- A workshop on mine voids.

Overall the Community Day was successful - however NSWMC considers that the breakfast, radio broadcast and void workshop were particularly successful and beneficial.

Some lessons learnt following this initial event include:

- The unsuitability of weekday (during working hours) for significant promotional events. This is due to a reasonably low turnout for showcasing of UHMD projects.
- The need to be flexible and realistic regarding timings for mine tours, as there were some significant delays and a cancellation.
- That hotter days should be avoided and/or shade / air conditioning should be provided.

The JASC's feedback on the day was that any future promotional events should be focussed on providing mine tours of UHMD related projects. The tours should be held in conjunction with existing initiatives/events on weekends (for the general public), and held on weekdays (for school children).

Other recent initiatives

The UHMD recently progressed its focus on communications through:

- A trade booth at the Singleton Community Day (part of the Hunter Coal Festival) on 2 April 2016.
- A presentation, trade booth and Gold Sponsorship at the Tom Farrell Institute 2016 Rehabilitation Conference on 7 April 2016.
- A trade booth at the Tocal Field Day over 29 April - 1 May 2016.
- The preparation of various UHMD promotional collateral.
- The preparation of a basic community survey for use at the above field days.

Future initiatives

Future communications initiatives that are planned include:

- Undertaking UHMD website updates.
- A detailed UHMD resurvey of the community.
- Investigating options for providing mine tours to Upper Hunter schools.

FOR INFORMATION/ DISCUSSION

Agenda Item 10

WORKING GROUP PERFORMANCE, RELEVANCE AND STRATEGIC DIRECTION

Issue

NSWMC is interested to discuss the working group members' perspectives on how the working group is performing and whether the activities and issues are still relevant and important for members. Any suggestions on the strategic direction of the UHMD and this working group are welcome.

Background

To prompt thinking and discussion, NSWMC poses the following questions for consideration:

- How well do you believe the working group is performing?
- Are the working groups projects, activities and issues still relevant and important and of interest?
- Are the working group goals still relevant?
- What could be improved to make the working group more effective?
- Are there any strategic changes that could be made to the UHMD or the working group?

The working group goals are provided, for reference:

1. To develop a better understanding of the region's water resources and the existing and potential impacts of development on the Hunter Valley catchment.
2. Demonstrate and promote responsible and efficient use and management of water in the Hunter Valley.

RECOMMENDATION

That the working group provide feedback on the working group's performance, relevance and any areas that could be improved.

FOR INFORMATION / DISCUSSION