



WYANGALA DAM WALL RAISING PROJECT

Project update

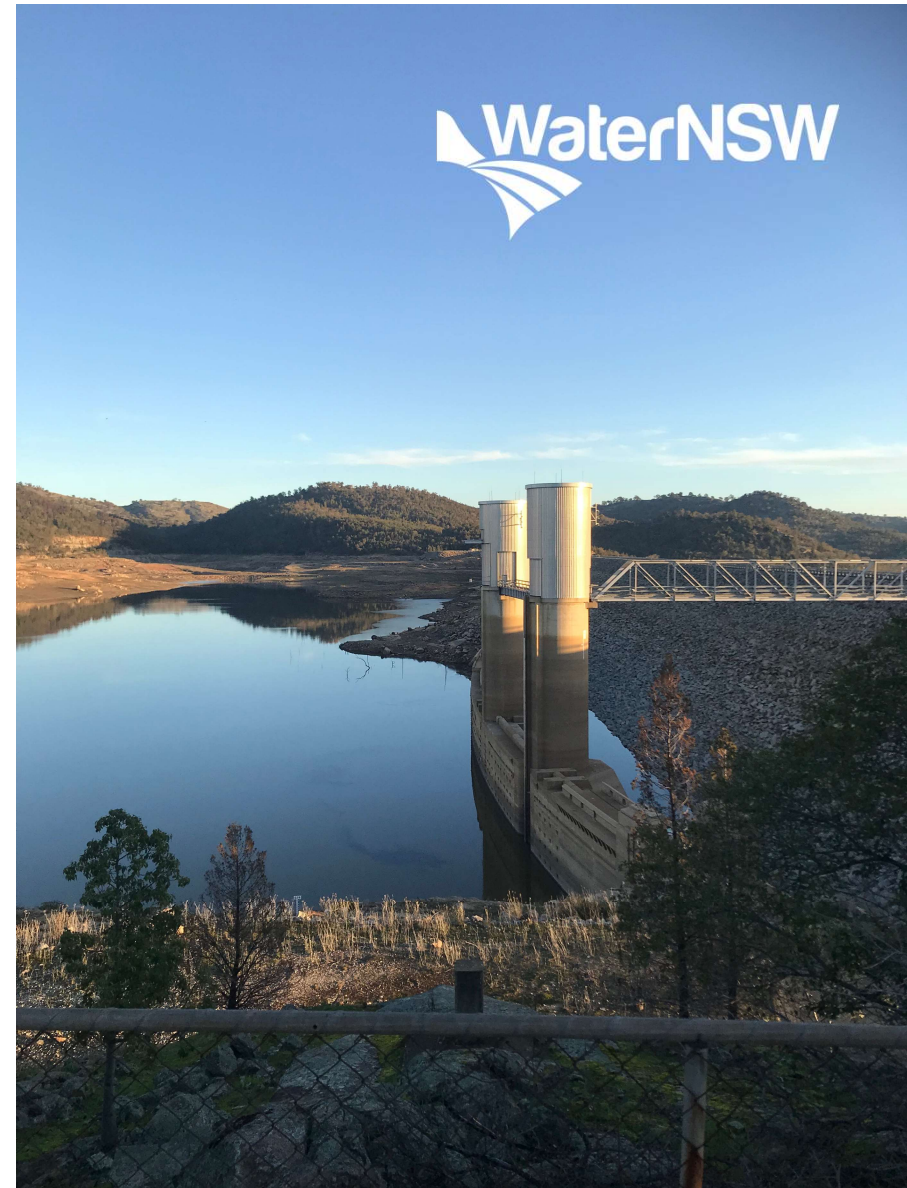
Wyangala
May 2021



Agenda

- Acknowledgement of Country
- Introductions
- Project update
- Environmental assessment update
- Engagement
- Connect with us
- Questions

WaterNSW



The background of the slide is a close-up photograph of numerous spherical water treatment media, likely anthracite or similar granular activated carbon. The media are densely packed and show a variety of colors, including dark brown, reddish-brown, and yellowish-brown, indicating different stages of use or different types of media. The lighting is somewhat dim, creating a textured, almost abstract pattern.

Acknowledgement of Country

Background

Since late 2019 we have been developing the project

- Finalising the concept design
- Field work almost complete
- Procurement for a new Wyangala Water Treatment Plant
- Shortlisting of main construction proponents
- Preparation of inputs for final business case
- Engaging with stakeholders, communities and Aboriginal parties
- Establishing a project office



- 2014** NSW Government funds a feasibility study into Cranky Rock Dam
Federal Government identifies new dam on Belubula River (Needles Gap) for feasibility investigations
Lachlan identified as priority catchment under NSW State Infrastructure Strategy
- 2015** Feasibility study phase 1 recommends a further study into build and non-build options
- 2016** Feasibility study – phase 2 investigations continue
- 2017** Feasibility study – phase 2 investigations continue
- 2018** Feasibility study (phase 2) completed
June
Wyangala Dam Wall Raising project identified in 20-year Infrastructure Options Study
NSW Government provides funding for project's final business case
- 2019** NSW Government lists project in Critical Needs (Water Supply) Act 2019
NSW and Commonwealth Governments announce funding for project
- 2020** Concept design started
Environment Impact Statement preparation and assessments started
Site investigations and environmental field studies started
Landholder engagement started
Community information sessions and webinars started

Background



Key benefits

- Increase storage capacity of the dam by 53%
- Significantly improves:
 - **drought resilience**
 - **Water reliability**
 - **flood attenuation**
- Increases capability to manage high inflow/flood events



Confirmed FSL



Confirmed 10m Full Supply Level

- Environmental Impact Statement
- Final business case
- Concept design
- Holiday Park planning work



2021 activities



Environmental field surveys and investigations continue



Landholder engagement continues



Community information sessions and webinars continue



Environmental Impact Statement public display for consultation



Final business case developed



Construction partner procurement



Detailed design starts



Construction of Water Treatment Plant at Wyangala starts



Construction planning for Holiday Parks finalised

New Water Treatment Plant



Project progress

- Benefits
- 'No regrets' project
- Planning pathway
- Procurement – Enviropacific Services
- Construction and commissioning

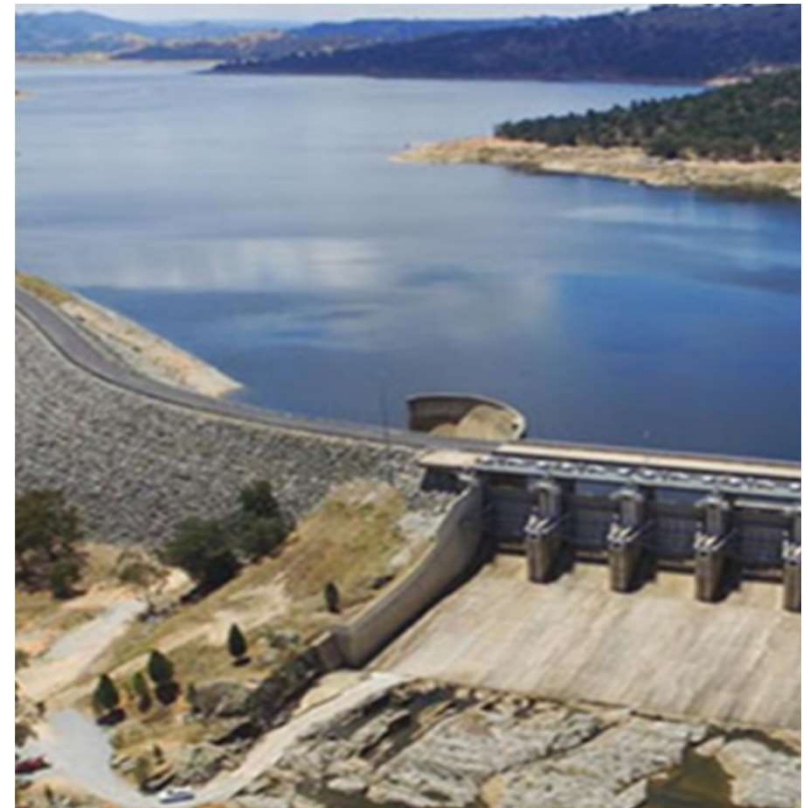


Procurement process



Alliance partnership development

- Shortlisted two separate contractors, **Acciona** and **Seymour Whyte** for main construction work
- Appoint successful main construction work contractor
- Start main construction delivery



Construction



Construction staging program

- Dam must remain operational
- Manage operation and construction safety
- Construction is expected to take up to four years

Clay and rock required

- Materials to be sourced locally and as close to project site as possible
- Considering expanding rock quarry used for previous dam construction



Stage 1 - Preparing downstream foundation

Stage 2 – Placing downstream rock fill

Stage 3 – Removing existing dam crest

Stage 4 – Start raising dam wall

Stage 5 – Finish raising dam wall

Construction



Workforce accommodation

- Dedicated local construction workforce accommodation
- Investigating former dam construction workforce accommodation site
- Dedicated workforce between 100 and 300 – additional indirect workforce



Previous construction workforce accommodation

Safety and our approach



- Risk management
- Contractor selection
- Safety expectations
- Behaviours in community
- Working together



Dam Safety Management



- Dam safety risk profile to be maintained throughout
- Dam safety emergency management plans updated to be reflective of the operations and management at each stage of construction
- This will include any modification to the operational (and air space) rules
- Emergency management plans and protocols will be shared with the Local Emergency Management Committee at each stage throughout the project



Environmental assessment

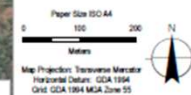


Key features

- 10m increase in Full Supply Level
- Modify spillway to suit new FSL and embankment
- Modify intake towers to suit new FSL
- New saddle dam near the entrance of Wyangala Waters Holiday Park



Further detail



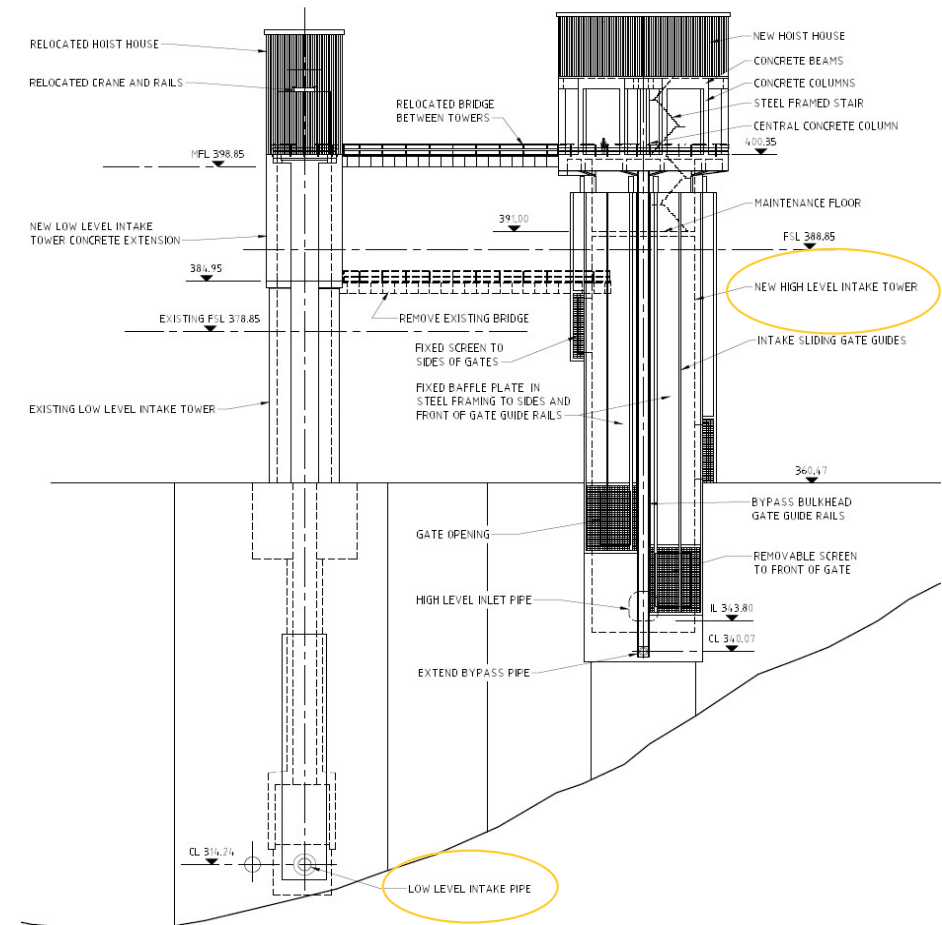
Operation

Flood

- Downstream flood model assess conditions under design storm events under existing and proposed dam operations
- Enhanced operational flexibility to manage flood events

Water quality, cold pollution and algae

- Modify existing towers to provide multiple intake points
- This reduces impacts from cold water pollution



Environmental update



Specialist studies update



Terrestrial biodiversity
field work complete,
assessment underway



Aquatic ecology
field work complete,
assessment underway



Aboriginal Cultural heritage
upstream field work complete,
assessment underway,
downstream Cultural Values
field work underway



Non-Aboriginal heritage
field work complete, draft
assessment complete



Traffic and transport
assessment underway



Noise and vibration
field work complete, draft
assessment complete



Air quality
field work complete, draft
assessment complete



Health impacts
assessment underway



Contamination and soils
draft assessment
complete



Hydrology
modelling and
assessment underway



Flood
modelling and
assessment underway



**Environmental Sustainable
Development (ISCA)**
draft assessment complete



**Landscape and
visual impact**
draft assessment complete



Social impacts
assessment underway



Waste
draft assessment complete



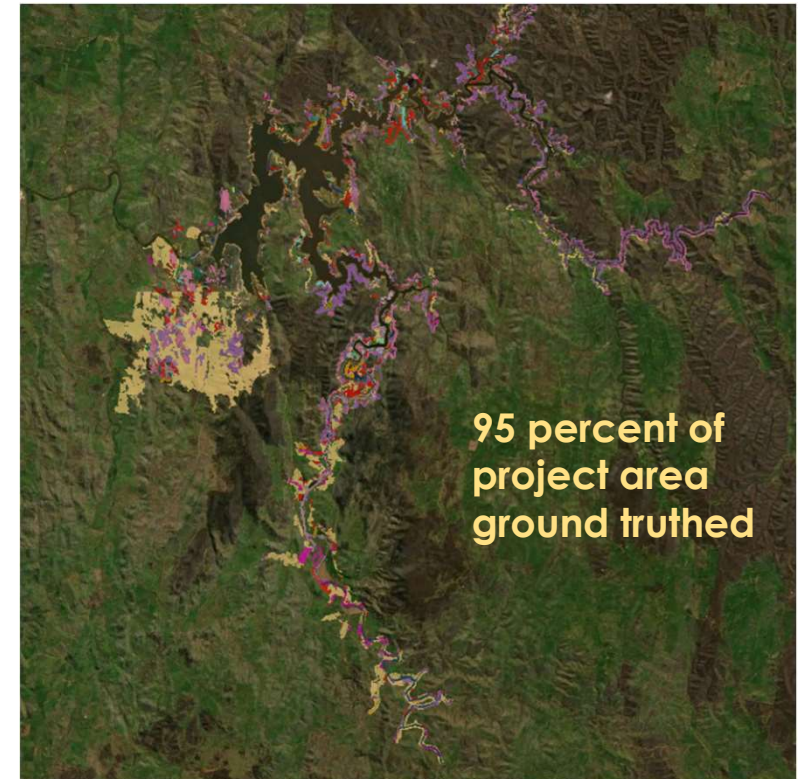
**Climate change risk
and greenhouse gas**
draft assessment complete

Biodiversity

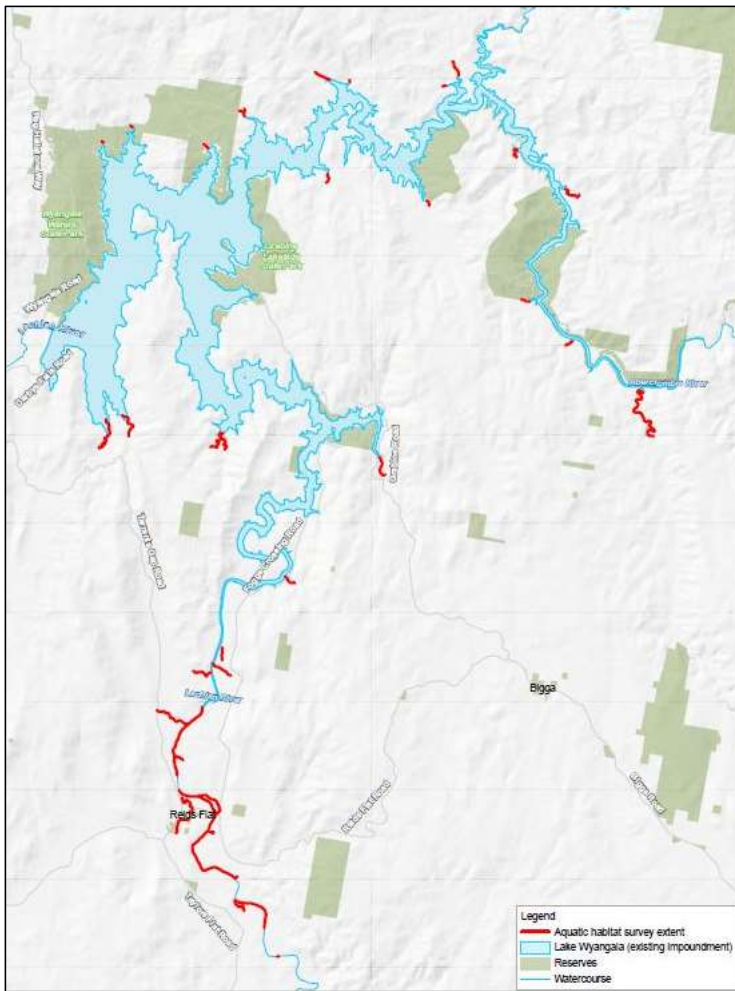


Our approach

- NSW Biodiversity Assessment Method (BAM)
- Producing a Biodiversity Development Assessment Report (BDAR)
- Assessing impacts to listed threatened species and ecological communities, migratory species, and wetlands of international importance
- Targeted flora and fauna seasonal surveys (between April 2020 – January 2021)
- Biodiversity offset strategy – investigations underway
- Department of Agriculture, Water and Environment (DAWE) has determined controlled action (EPBC Act) and assessed under the Bilateral Agreement



Aquatic Ecology



We have

- Used DPI Fisheries data
- Then carried out targeted fish habitat surveys
- Identify habitat potentially impacted
- Consider options to minimise or mitigate impacts to aquatic fauna
- Prepare a detailed assessment
- Develop an offset strategy based on residual impacts
- Ongoing engagement with DPI Fisheries

Heritage and Cultural Values



Our work so far

- Cultural heritage in accordance with DECCW 2010
- 15 Registered Aboriginal Parties (RAPs)
- Update on Aboriginal Cultural Heritage Assessment Report (ACHAR) progress is:
 - Project methodology consultation with RAPs – complete
 - Subsurface test excavations upstream with RAPs – complete
 - Field surveys with RAPs – to be complete 2021
 - Analysis of materials – underway
 - Preparation of an ACHAR – underway
 - Consultation with RAPs and Aboriginal Stakeholders - ongoing
- Cultural heritage survey focuses on values upstream and downstream of the dam – ongoing
- Cultural values interviews with Aboriginal elders, Local Aboriginal Land Councils and RAPs – to be complete 2021

Social impact



What is covers

- Describe existing social environment
- Involve targeted interviews
- Assesses impacts and benefits during construction and operation
- Recommend measures to mitigate and manage identified impacts
- Be prepared in line with leading practice

Note: Cumulative impacts being considered (two construction workforces - the dam and Cowra Hospital)



Hydrology and Flooding



River System Modelling

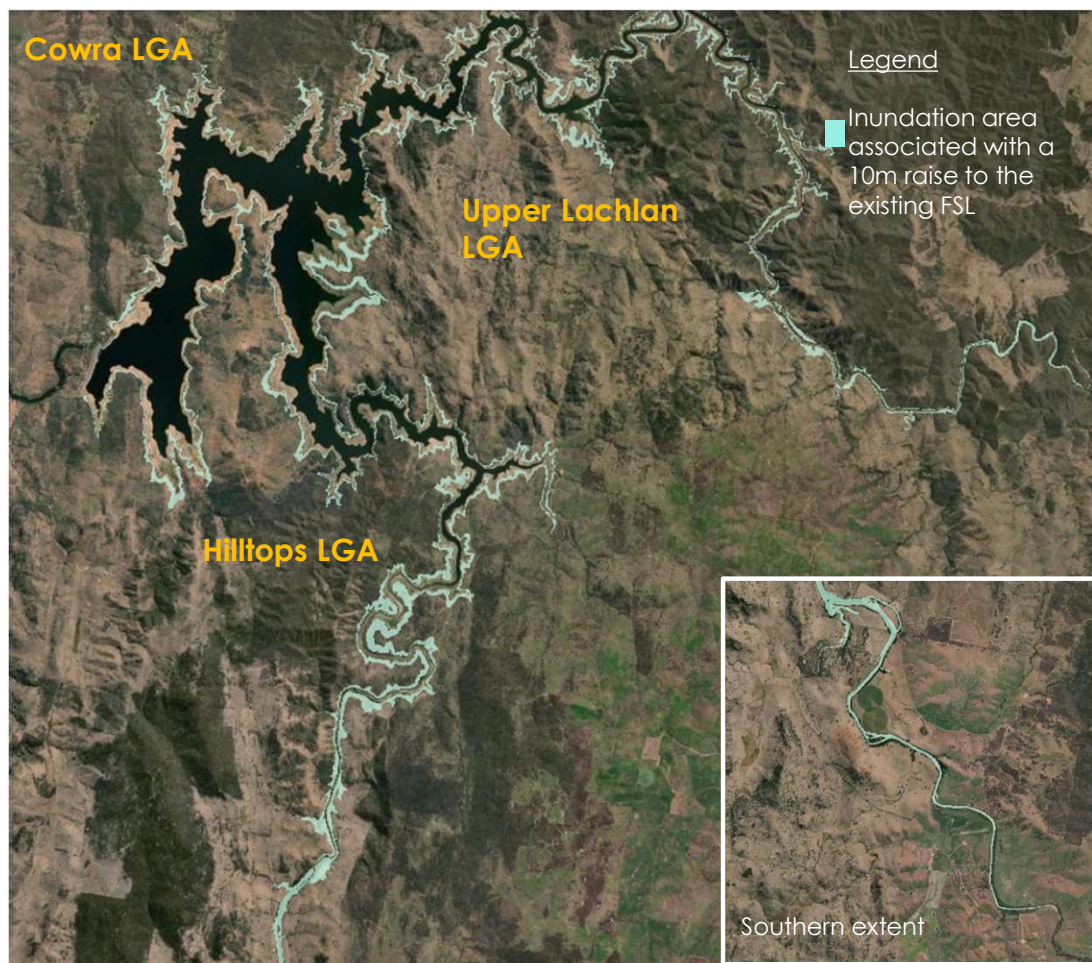
- What is the day to day behaviour of the river basin system - both existing and proposed
- Numerous inputs
- Outputs relevant to the project

Flood Modelling

- Design storm event based
- Focuses on flood events
- Quantifies downstream hydraulics in more detail
- Represents up to extreme flood events
- Uses field survey
- Includes downstream and upstream



Inundation levels to date

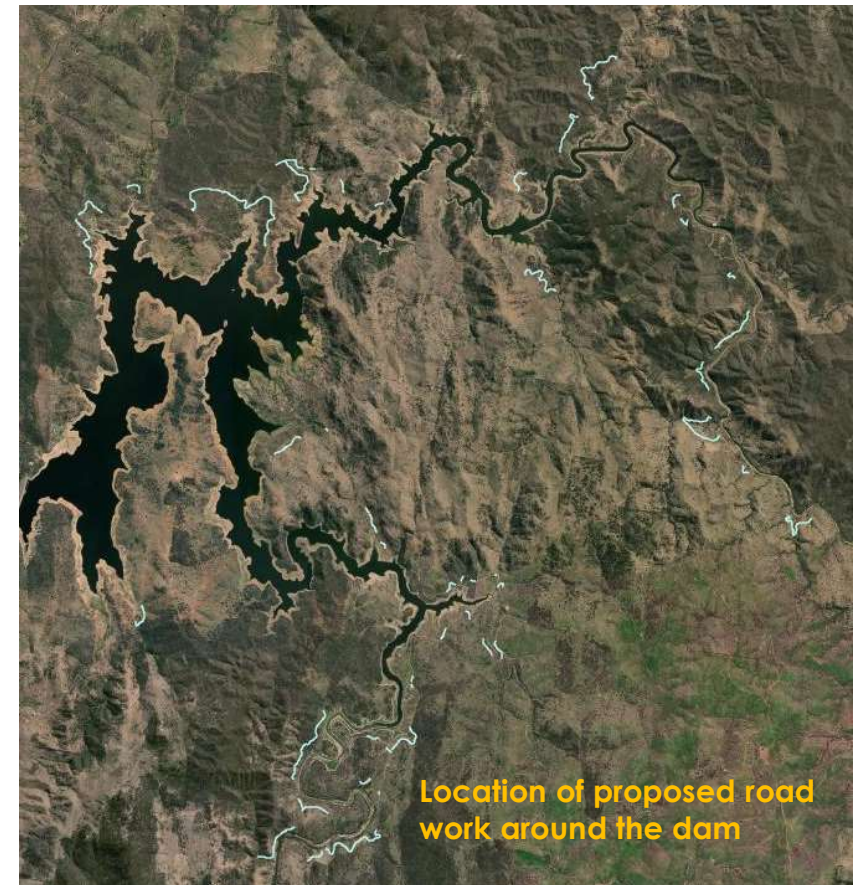


Ancillary work



Ancillary work impact areas and activities include:

- Relocating existing public and private roads and infrastructure (**blue**)
- Relocating facilities within both Wyangala Waters and Grabine Lakeside Holiday Parks



Wyangala



Localised impacts and potential mitigations

Early key impacts identified for Wyangala during construction, if the project is approved include:

- Traffic
- Noise and vibration
- Air quality
- Social

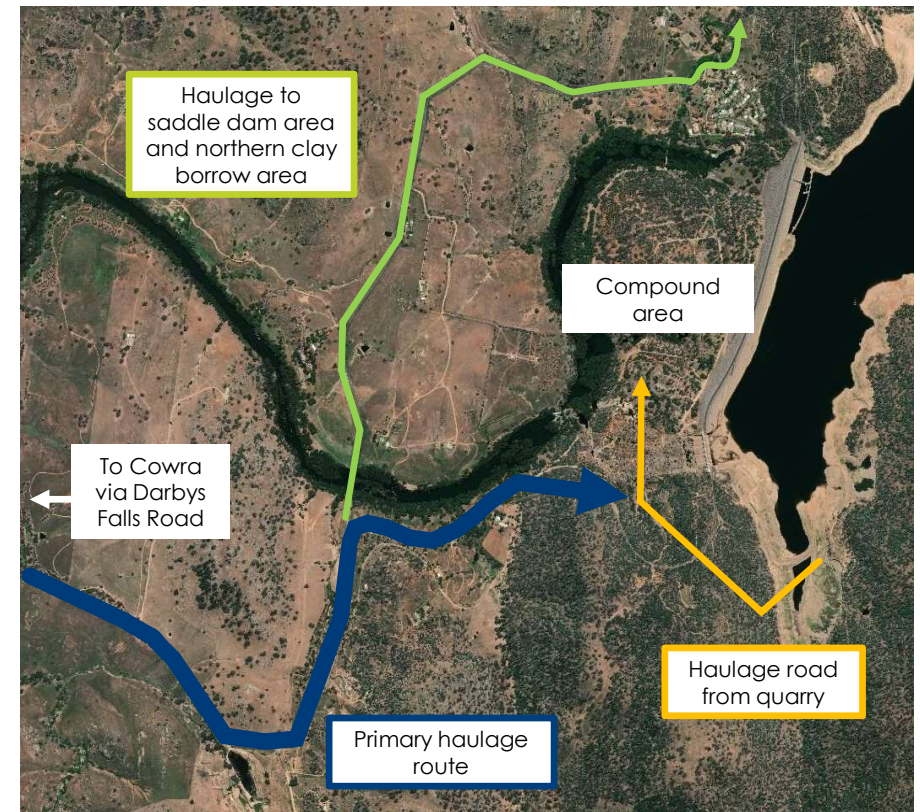


Construction traffic – routes



Proposed route to construction area

- Primary route (blue) to the construction area via Darby Falls Road from Cowra and then via a new haulage road across spillway into compound area
- Vehicle movements required along green route for proposed saddle dam and possible clay borrow sites
- Heavy vehicle movements for rock materials to use a dedicated project route orange to avoid them being on public roads
- Use of Reg Hailstone Way has been identified to be limited to light vehicles only



Construction traffic - volumes



Traffic volumes (still being confirmed)

- Vehicle movements would be for:
 - Deliveries of equipment
 - Deliveries of materials
 - Workforce arrivals and departures
 - Workforce, equipment and materials moving between construction areas
- Initial one-way movements per day (worst case scenario):
 - Intersection of **Darby Falls Road south and Trout Farm Road:** about 25 light vehicles and 210 heavy vehicles
 - Entering **Wyangala Village** via west Sixth Avenue: about 250 light vehicles and 200 heavy vehicles
 - Along **Reg Hailstone Way:** about 50 light vehicles and no heavy vehicles



Traffic – potential mitigation



Mitigation design and construction planning

- Diverting movements off public roads and away from villages
- Completing road safety audit to identify issues along routes

Mitigation during construction

- Construction Traffic Management Plan including traffic control plans
- Examples of mitigation measures used on major projects include:
 - Tracking of vehicles for location and speed
 - Restricting movements at school start and finishing times
 - Moving oversized equipment and plant at night where possible including NSW Police supervision
 - Restricting movements during peak holiday periods

Noise and vibration - methodology



We have

- Undertaken noise and vibration assessment in accordance with relevant guidelines
- Undertaken monitoring for background noise levels at:
 - Wyangala Waters Holiday Park
 - 58 Waugoola Road (in village)
 - 185 Trout Farm Road (west of dam)
 - 3542 Darby Falls Roads (south-west)
- Undertaken a quantitative assessment for construction including modelling potential noise levels
- Undertaken a qualitative assessment for operation – unlikely to be a change in noise level for dam operations

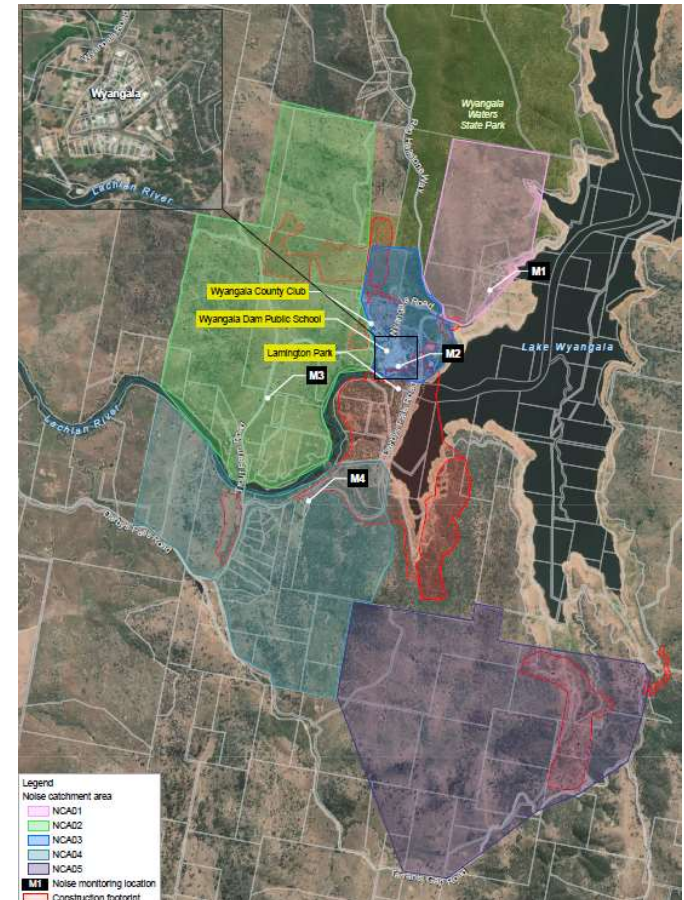


Construction noise impacts



We have

- Identified noise catchment areas (NCAs)
- Construction noise impacts considered worst case scenarios (assessed based on all activities occurring at same time).
- Assessment group receivers by type and location then on a receiver by receiver basis



Construction noise impacts



Summary of preliminary modelling by NCAs

- **Wyangala Waters Holiday Park** (NCA01) – Site establishment and embankment works at saddle dam may cause exceedances; impacts expected at two properties
- **West of dam** (NCA02) – Most work may cause exceedances ; impacts expected at one property
- **Main village centre** (NCA03) – Site establishment, embankment and intake towners work and operation of the construction compound may cause exceedances; Impacts expected at one property
- **South of river** (NCA04) – Site establishment, potential clay borrow and spillway work may cause exceedances; Impacts expected to majority of properties
- **Along Tarrents Gap Road** (NCA05) – Site establishment and potential clay borrow may cause exceedances ; impacts expected at one property

Construction noise impacts



Summary of preliminary modelling in areas

- **Road work** – Construction work for realignments and improvements may cause exceedances; Impacts about 53 receivers within 800 metres
- **Reids Flat** – Construction work for bridge may cause exceedances; Impacts about 15 receivers within 700 metres
- **Vegetation** – Removal work may cause exceedances; Impacts properties at Wyangala, Wyangala Waters and Grabine Lakeside holiday parks and Oaky Creek Road in close proximity
- **Road traffic** – Not predicted to exceed criteria
- **Blasting** – Proximity and size of charge may cause some exceedances; Impacts to be considered in Blast Management Plan

Noise – potential mitigation



Mitigation design and construction planning

- Adjusting work areas to increase distance to nearest properties, where possible
- Timing noisy work outside particularly periods (avoid holiday periods)

Mitigation during construction

- Noise and Vibration Management and Blast Management plans
- Examples of mitigation measures used on major projects include:
 - Ongoing consultation
 - Notify community of noisy activities
 - Out of hours works procedure
 - Respite periods
 - Reduce noise at source (equipment and plant)
 - Structure condition surveys (vibration impact areas)

Air quality - methodology



We have

- Undertaken air quality assessment in line with NSW EPA requirements
- Air quality assessment looks at the worst case scenarios for:
 - Particulate matter, including Total Suspended Particulates (TSP), PM10 and PM2.5
 - Products of combustion (Oxides of Nitrogen (NO_x), Nitrogen Dioxide (NO₂), Carbon Monoxide (CO) and Sulfur Dioxide (SO₂))
 - Odours
 - Metal fumes
- Undertaken a quantitative assessment for construction – modelling potential air quality impacts.
- No operational assessment undertaken as no emissions from general dam operations existing and future

Construction air quality



Visual amenity
Dust on private property
Dust in water tanks



Particulate matter TSP,
PM₁₀ and PM_{2.5}



NO_x, NO₂, SO_x and CO
pollutants from machinery
and blasting



Emissions from vehicles
Emissions from plant and
equipment



Odours from
contaminated land
Stockpiling of green waste

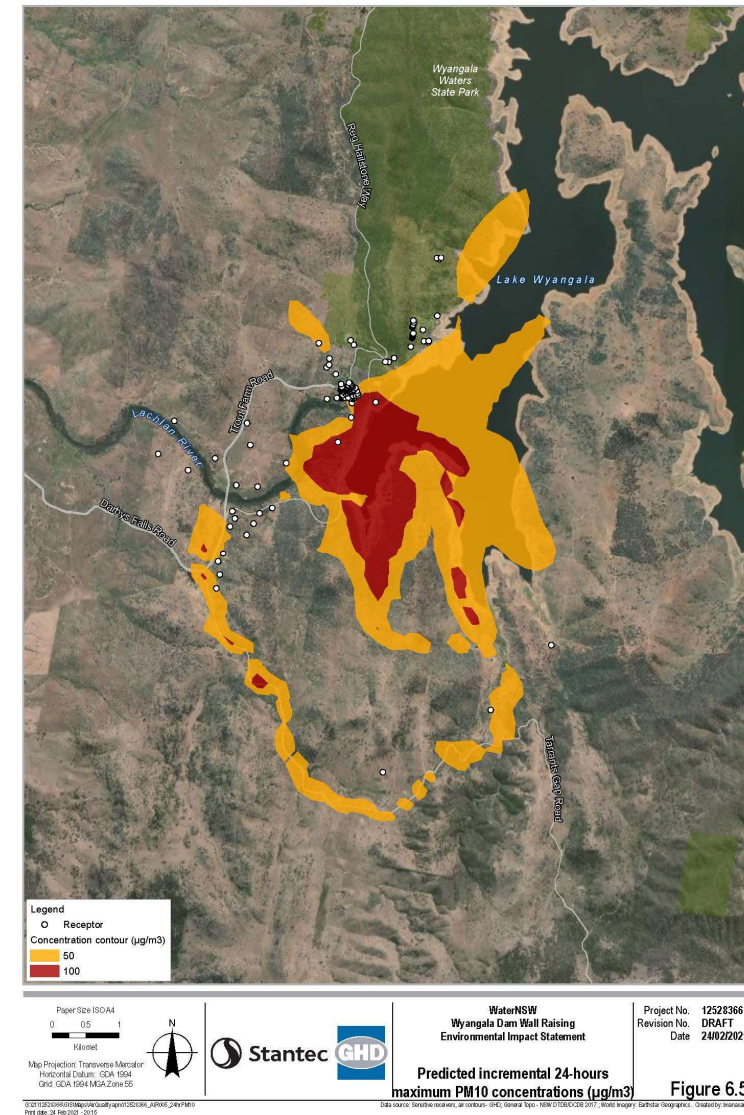


Metal fumes from cutting
and grinding for
demolishing spillway

Construction air quality

Summary of preliminary impacts

- Worst-case scenario impacts to properties
 - Located within 50 metres of heavy vehicle routes
 - Located within 30 metres of construction activities
- Most significant dust expected at four properties
- Targeted management at sources effective in mitigating impacts



Air quality – potential mitigation



Pre-construction & planning

- Develop a Construction Air Quality Management
- Construction methodology
- Stage construction activities
- Maximise separation between plant/equipment and properties
- Plant and equipment selected to reduce emissions
- Develop a real time air quality compliance monitoring network

Construction

- Use water carts on unsealed routes
- Install wheel washers at exits and use street sweepers
- Maintain clean construction site
- Create permanent and temporary wind breaks for stockpiles
- Apply chemical suppressants to routes and stockpiles
- Implement a real time air quality compliance monitoring network

Social



Project-specific plans

- Industry participation plan
- Workforce management plan
- Communication management plan
- Temporary workforce accommodation plan
- Aboriginal engagement plan

Strategies for wellbeing including participation in sporting and community groups and access to mental health services

Cowra Police will also be consulted in developing a worker Code of Conduct and workforce policies associated with use of the club.



Connect with us



Wyngaladamproject
@waterNSW.com.au



1800 735 822



Wyngala dam wall raising
project community group



WaterNSW.com.au

Wyangala Dam Wall Raising



 Improving long term water security and drought resilience in the Lachlan Valley

May 2021

ENGAGEMENT TO DATE

 Local community sentiment
84% support

43 Community events  attendees **419**

 Registered Aboriginal Parties **15**

 **89** Stakeholder briefings

108  Landowner meetings

LOCAL OPPORTUNITIES

315  Local businesses registered

 **10** Local businesses engaged

CONNECTING WITH YOU

333 Emails in  **6,950** Emails out

304 Calls in  **352** Calls out

 **368** Media stories

784 group members  **8** posts
9 comments
49 reactions

24,689 Webpage views 

 **22** Complaints received to date

WHAT'S HAPPENING IN MAY?

- Our quarterly project newsletter will be published for the community, stakeholders and businesses.
- Preliminary Environmental Impact Statement - we are holding early localised input sessions in person 17, 18, 19 and 20 May at Wyangala, Woodstock, Darbys Falls, Reids Flat and Bigga. For event details and to RSVP, [click here](#).
- Our next round of Community Information Sessions will be held in person at Crookwell and online 11, 12, 13 and 21 May . For event details and to RSVP, [click here](#).



Thank you

Questions

