Bombala Treated Water supply Presentation

SNOWY MONARO REGIONAL COUNCIL

Bombala Water Quality

1. Water quality is variable depending on drought or floods
    1. Stagnant water with sludge build up in droughts
    2. High turbidity and contamination washed into river during high rain events

2. Intermittent discoloured water into network
    1. Settled turbidity in water network – when suspended (dirty water complaints)

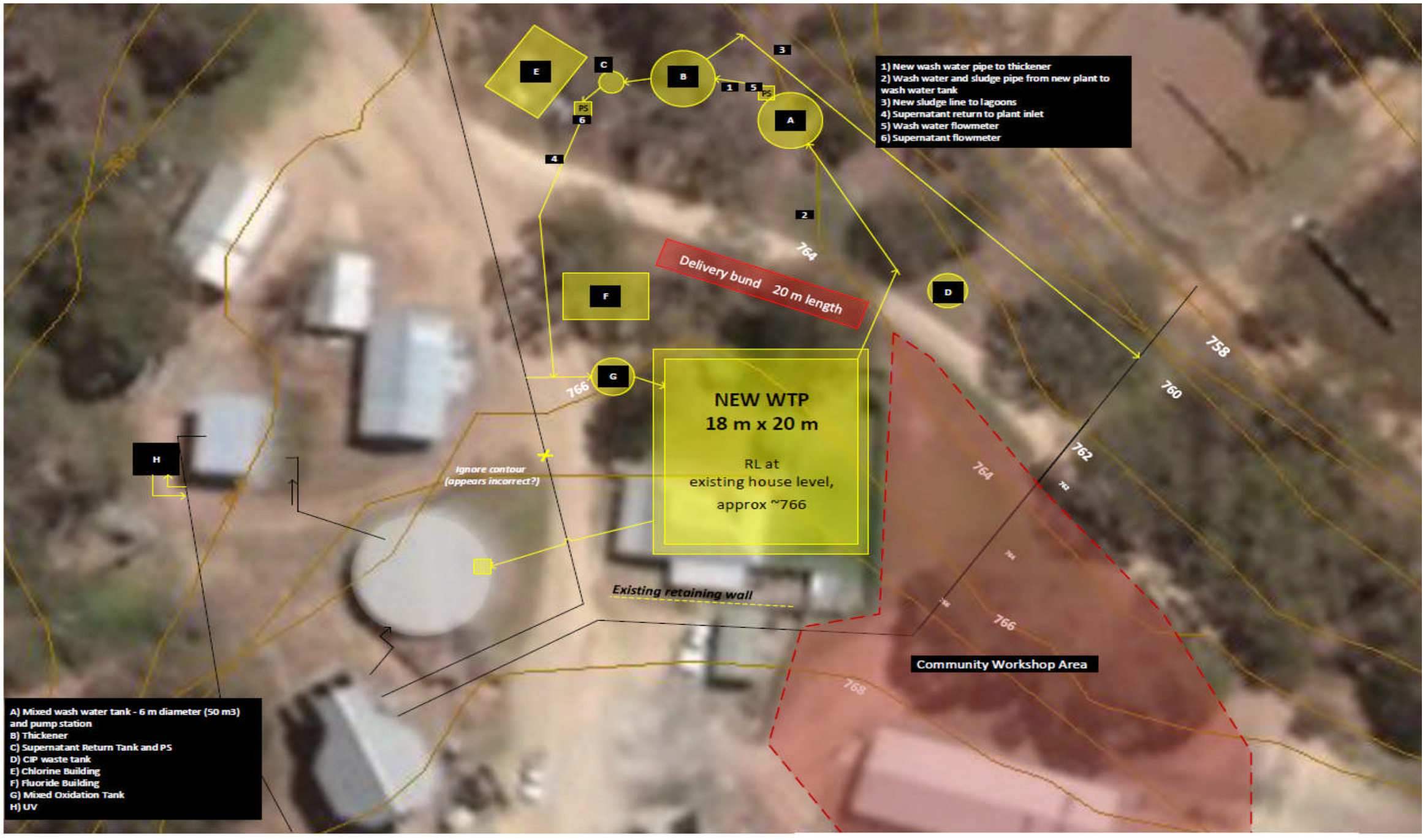
3. Iron & manganese:
    1. Water containing iron and manganese can stain clothes, discolour plumbing fixtures, and sometimes add a “rusty” taste and look to the water.
    2. These materials form a coating on the inside of the water main and, when they break loose, a customer will sometimes complain of “dirty” water.
    3. can look like crystal clear water leaving plant but turn red/brown colour in network

4. Bore drilling & feasibility tests
    1. Note that bores were only ever a supplement to river supply
    2. Drilling and feasibility/sustainability testing of bore holes
        1. No sustainability of supply
        2. Poor volume L/s

Issues with Upgrade of the Current Bombala WTP

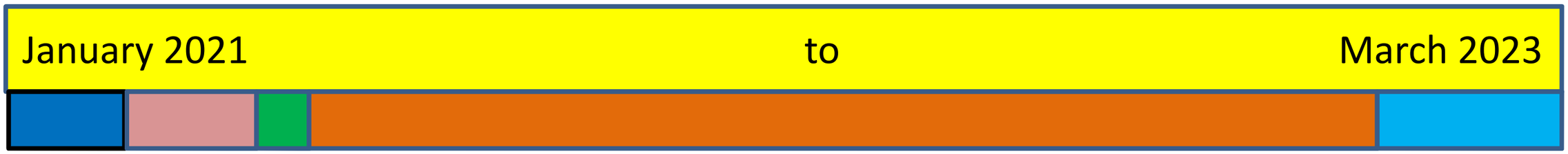
- Many assets are 39 years old which is excessive for Mech/Elec systems and equipment not maintained properly for many years until 2017.
- Incorrect clarification to remove solids
- Incorrect iron & manganese oxidation process
- No control of taste/odour and Trihalomethanes (THS)
- Requires extensive upgrades to chemicals area needed for reliability, WHS and regulatory compliance
- Some structural uncertainty that it will in fact last the distance (eg filter movement)
- Clarifiers may not be reliable treatment process for high colour/low turbidity/changing alkalinity and water temperature conditions
- Risk of plant offline for longer than expected (leading to increased CAPEX)
- Estimated carting of water supply ~ $14,000/d
- Uncertain residual life of filters and clarifiers
- Continued confined space at filter valves (WH&S)

New WTP: Site Layout



Option 2 & 3 – New WTP location

Projected Timeline



- **Contract/Project Management appointment –**
  - **out end January 2021 & appointed 1st Week in March**
- **Design & Construct contract – Development and tender –**
  - **awarded early May 2021**
- **Site establishment/Mobilisation –**
  - **On Site end May 2021**
- **Construction Period – 18 months –**
  - **Commissioning end November 2022**
- **Contractor O&M proving period (Quality of water – plant performance)**
  - **3 months after commissioning**

Recommended Option

Item	Upgrade existing WTP Clarifier/filters+ GAC+ Disinfection/UV + THM stripping	Preferred Option New - WTP DAF/MF + GAC + Disinfection/UV + THM stripping
Performance- Water Quality	✓✓ (clarifier uncertain)	✓✓✓
Operability	✓✓	✓✓✓✓
Env&WHS	✓✓ (ongoing poor access to filter valves)	✓✓✓
Construction complexity	✓ (existing structure and uncertain time offline needing carting in water risks)	✓✓✓✓
Easy procurement	✓✓✓✓	✓✓✓✓

Recommendations

- The key features of the preferred Option to go to the next stage of this project are;
    - Treatment process; Pre-oxidation + Dissolved Air Floatation (DAF) + Membrane filtration + GAC + UV+ chlorination then chloramination + THM stripping
    - Buildings: designed to suit bushfire rating of the area (as well as some structures e.g.mens shed is not on Council land so will be left undisturbed)
    - Location; at existing old house site and decommission existing WTP but possibly reuse existing building for some of the chemical systems and for administration/spares storage
        - New wash water/sludge system; wash water/sludge holding tank and pumps to thickened and then concentrated sludge to existing sludge ponds and supernatant tank and supernatant return pumps to WTP inlet
- Construct separate purpose built building for chlorination
- Engage specialist contractor for purpose built fluoridation building
- It is also not recommended to pursue any further the option of groundwater (Bores) (based on test results in March 2020)

Thank you