Tuart Lakes Lifestyle Village – Water Recycling – From Planning to Delivery

Mike Hollett - Chief Executive Officer











National Lifestyle Villages Group



The Business

- NLV is the leading lifestyle village developer / operator in Western Australia
 - •9 villages; 2,500 home sites (~50% tenanted) and pipeline sites to support the next 2-3 years of growth
- Ecofit Homes is one of the largest modular home builders in Western Australia
 - Allows guaranteed supply of homes to NLV villages and capture of additional margins; construction period of 10 weeks
 - Opportunities arising from various sectors e.g. government investment in the regions to support affordable housing
- NLV villages offers a unique 'lifestyle' proposition; aimed at growing group of 45-70yo active retirees:
 - Affordable housing product that is 40-55% below comparable residential options
 - Active resort & community lifestyle combined with centralized maintenance services (i.e. a hassle-free, fun lifestyle)
- The combined group also offers turnkey service for development and management of community-styled residential, especially appealing to government and passive, private land owners

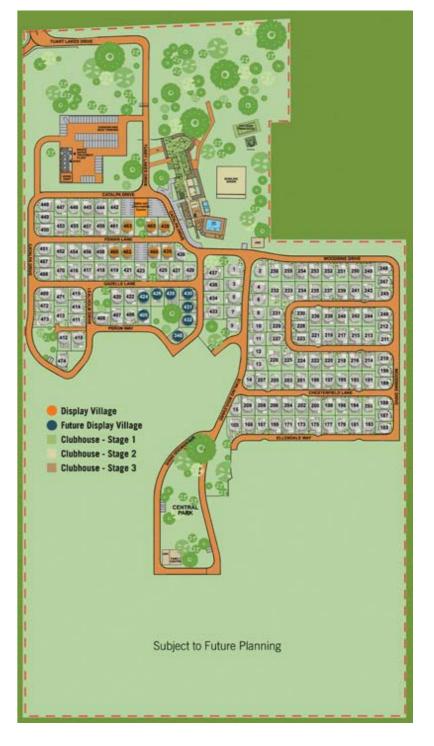
Tuart Lakes Lifestyle Village

N L V GROUP

- •NLV's 7th village
- •470 dwellings
- On a 25ha site
- Considerable water and wastewater constraints
- Water and Gas services brought over 2.5km
- 40km South of Perth.



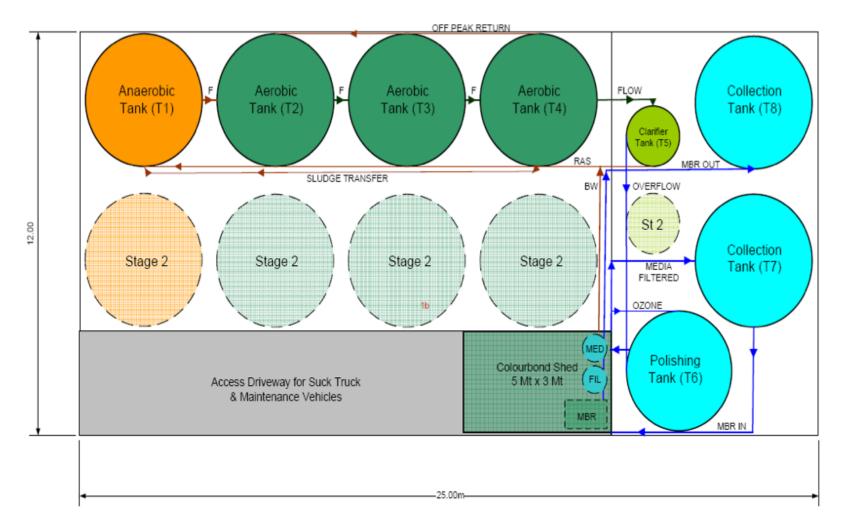




Opportunity for a Waste Water Treatment Plant Onsite



- The development was unable to be serviced by the East Rockingham treatment plant, due to capacity constraints.
- All other statutory planning conditions could be met.
- Providing the opportunity to use a wastewater treatment system that will be owned and operated by TLLV as a non water utility service provider (a first for metropolitan WA).





Problem of a Fragmented Approval System



The development of the site highlighted significant inadequacies in the regulatory approval system. The government approach to the approvals process was fragmented and required separate approvals from each agency.

Each government department would only deal with its own regulatory framework which created major development delays and expensive solutions to address the regulatory concerns.

- 1. Water balance study over 470 home site
 - Volume of Treated water generated per day (150,000 litres/day)
 - Design of Irrigation System and identification of POS areas, maximum capacity
 - Target N and P values
 - Phase A irrigate POS, examine Phase B using water to flush toilets in homes
- 2. Detailed Design, including treated water qualities (including irrigation system)
- 3. DoH Preliminary Works Approval
- 4. DEC Works Approval
- 5. City of Rockingham sign off
- 6. WAPC (subdivision condition later removed)
- 7. Construct the WWTP
- 8. Commission and Validate plant
- 9. ERA Water Services Operating Licence
- 10. DOH Recycled Water Supply Scheme Approval

Cost of the system was matched by the cost of consultants due to report requirements of the process >\$500,000

Approval Process



Approval for the TLLV recycled water system for National Lifestyle Villages required the preparation of numerous technical reports that addressed the individual concerns of the key regulatory and licensing agencies.

Applications and supporting technical documentation needs to be prepared for:

- Department of Health, in the form of a Recycled Water Scheme Application;
- Department of Environment and Conservation, in the form of a Works Approval Application; and
- Economic Regulation Authority, in the form of an Operating Licence Application.
- City of Rockingham as the signing authority
- WAPC subdivision Application



Issues



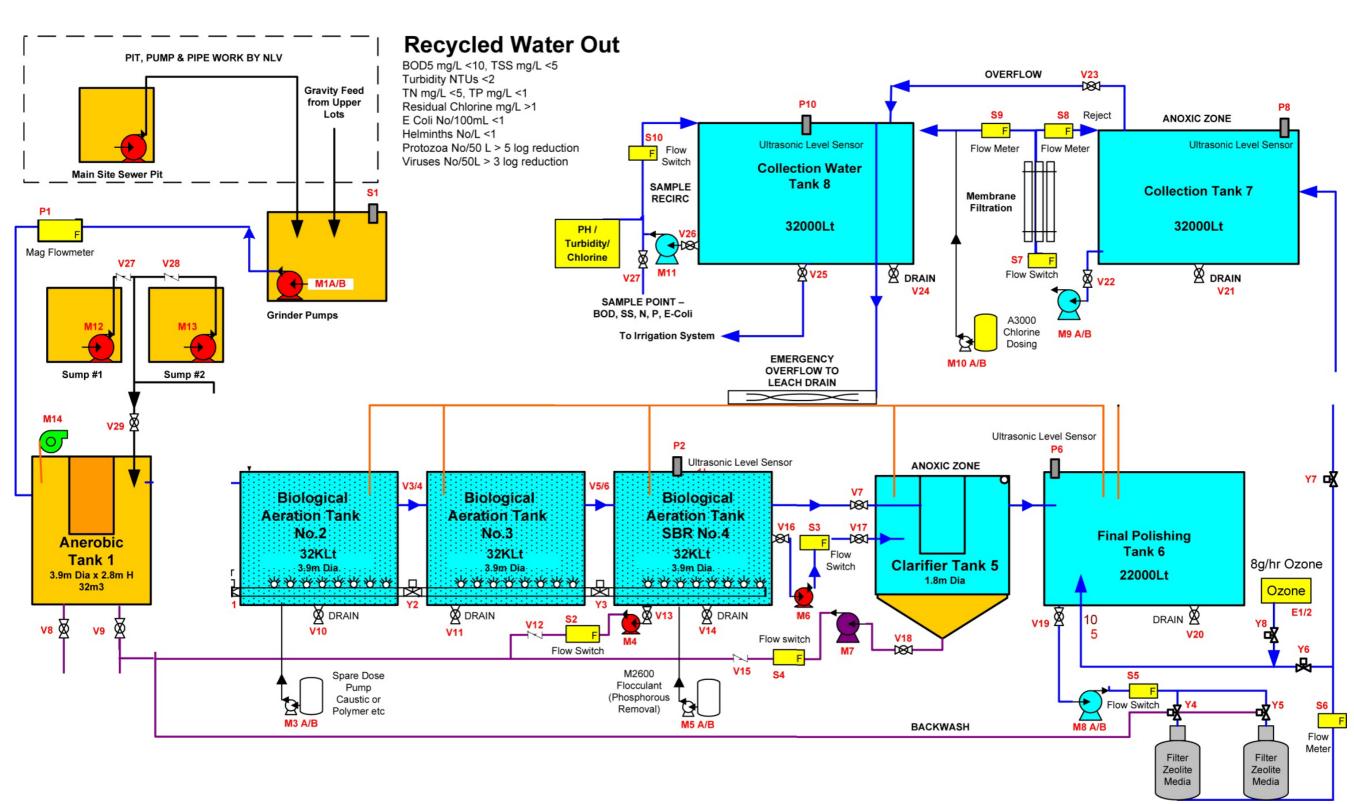
Key issues identified include:

- Licensing an approved service provider other than WA's main Water and Wastewater Utility (Water Corporation);
 - There is no suitable mechanism to achieve this in a time and cost efficient manner
 - Partly a product of the evolution of a monopoly utility provider framework
 - Outdated Legislation/Approval Instruments
- Incomplete and complex Draft Western Australia Recycled Water Guidelines, that are inconsistent with National and other States Guidelines
 - Creates a very convoluted, complex set of hurdles to be overcome.
- Liaising with multiple regulatory agencies and the lack of communication between these agencies;
 - Considerable overlap in regulatory requirements
 - Similar information required in various formats by different agencies
 - No recognition of the information provided to other stakeholders
- Gaps in regulators knowledge of wastewater and recycled water system technology; and
- Significant approval timeframes (well in excess of 6 months, a time currently achievable in other states)



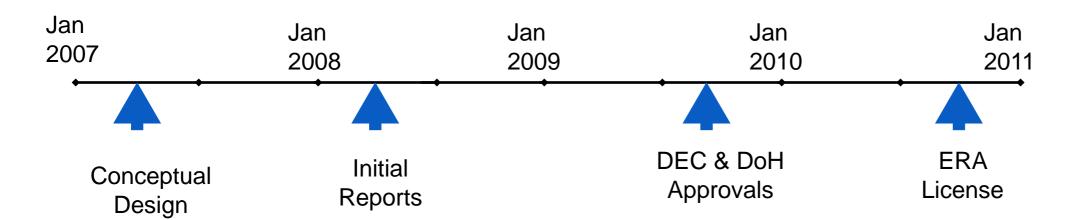
Waste Water Recycle System for NLV Tuart Lakes Development – Rev 1





Timeline





- Community Consultation 2007
- Concept Design April 2007
- DEC Approval Application May 2007
- Health Risk Assessment report Nov 2008
- Land Capability Assessment Dec 2008
- Operator training program Nov 2008
- Environmental Risk Assessment Nov 2008
- Water Balance Investigation Nov 2008
- Nutrient Irrigation Management Plan Dec 2008
- DoH 'In principal' Approval Sept 2009
- DEC Works Approval Sept 2009
- Asset management Plan Oct 2009
- ERA License Application- Sewerage Services Oct 2009
- Water Services Operating License Sept 2010

Suggestions



Suggested solutions include:

- Create a central approving authority that coordinates the requirements of each current regulatory authority;
- Create a single inter-agency guidance document for the approving authority;
- provide external technical support for the agencies from a centralized working group of dedicated professionals.

Results/Benefits for Similar Projects:

The process that was followed for the TLLV project has clearly identified for similar recycled water schemes to be approved by regulatory authorities:

- The level, type and nature of technical documentation required for the respective approvals;
- Required level of stakeholder liaison;
- Environmental monitoring requirements; and
- Treatment system technology requirements.

