

Background

Barwon Water and Colac Otway Shire Council are partnering with the Forrest community to investigate opportunities for wastewater improvements in the township.

This partnership acknowledges the growing role tourism plays in Forrest and the regional economy, and the increasing stress this may place on existing wastewater systems in the town.

External consultants Decentralised Water Consulting and Kernow Environmental Services have been appointed to support the project with technical studies and a detailed wastewater audit of the town.



Options Development Session

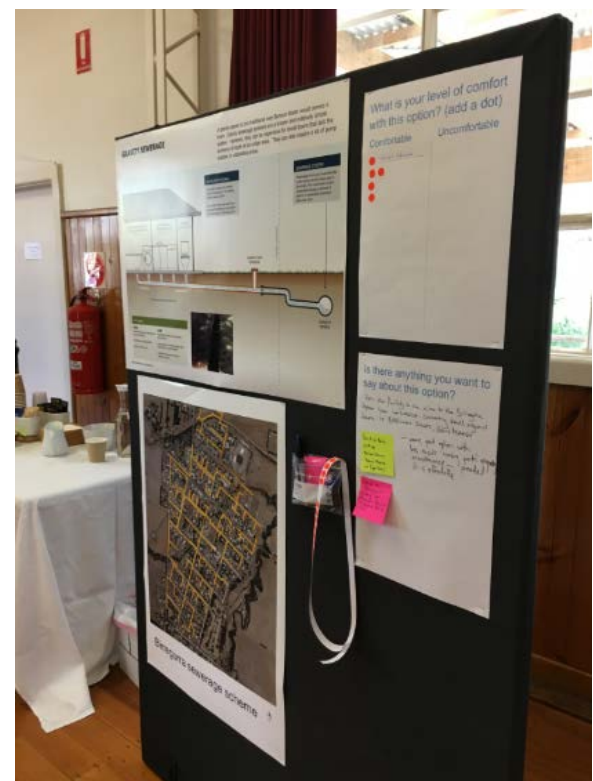
Barwon Water and Colac Otway Shire Council hosted a community open day on Sunday April 29 to discuss options to address ongoing management of wastewater in Forrest.

The open house was held at the Forrest Hall and ran from 10am to 4pm. Inside visitors could make their way through a series of posters with information on the project including:

- Background
- Wastewater audit;
- Seasonal visitors and public amenity;
- Options to address the wastewater issues,
- Cost information and Innovative ideas;
- Community vision and next steps.

At each poster, the community was asked their level of comfort and any other information they wished to add for each option.

Project team members from Barwon Water, Colac Otway Shire and Consultants Decentralised Water Consulting (DWC) have utilised the information obtained from this session to develop wastewater solutions for the town which incorporate the valuable feedback and insights from the community.



Community Feedback

At the April 2018 open day and subsequent community survey, we sought feedback to get an insight into the different options proposed. The following is a summary of the community's preferences of options.

Option	Comfortable	Uncomfortable	Undecided
Pressure Sewer	16	9	1
Gravity Sewer	14	9	1
Upgrade Onsite systems (Partial Containment)	13	10	-
Upgrade Onsite systems (Full Containment)	10	12	-
Septic Tank Effluent Pump/Gravity (STEP/STEG)	9	11	-
Business As Usual (continue existing situation)	1	18	-

Community Feedback

The key feedback and themes from the community session are summarised below. Also included is discussion on how the project team have incorporated this feedback into the solutions packages

Comment	Discussion / Incorporation into solutions
Preference for reticulated (conventional) sewerage, i.e. centralised system	<p>This has been included as a potential option (Solution Package 4). The focus has been on pressure sewer as it is generally cheaper, more innovative and less disruptive than gravity sewer.</p> <p>SP4 assumes potential installation of a local Water Recycling Plant which aligns with some community members preference for not pushing the treatment / management to somewhere outside Forrest ('don't push the problem out of town').</p>
Transfer the sewerage to the Birregurra Water Reclamation Plant	<p>This was investigated. Transfer to the existing Birregurra WRP would require a 28 km away pipeline and likely cost \$15-20M for the transfer alone and therefore is cost prohibitive.</p>
Provide value for money	<p>Cost to residents is a big consideration. Options which could involve flexibility and staging have been incorporated. Solution Package 1 is the best example of this.</p>
Improve existing poor stormwater infrastructure.	<p>SP1 involves some offsite discharge (greywater only) to stormwater. This option would involve upgrades to both septic systems and the stormwater systems and therefore provides dual benefits whilst trying to ensure costs are manageable.</p>
Cater for growth / tourist influxes	<p>Growth has been factored into design assumptions for all Solution Packages. In addition common to each option is proposed public toilet facilities in the main street.</p>
Management of 'septic' on-site systems	<p>A number of concerns were raised about the continued owner management of septic systems. The assumption for all Solution Packages is that all system components are managed by an independent competent and accountable authority. This includes on-site systems and other on property infrastructure.</p>
Use of treated water on-property for garden watering, lawn, etc.	<p>Community members were amenable to the idea of using treated water from watering on their property provided the system was operating correctly. On-property access to treated water for irrigation has been included as part of Solution Packages 1, 2 and 3.</p>
Use of treated water for local Community / Public Open Space – don't move the problem out of town.	<p>Some community members were also supportive of the idea of utilising treated water for irrigation of local community areas / public open spaces. This has been included as part of Solutions Package 1, 2, 3 and 4. The current 'potential' reuse sites have been selected based on available land and proximity to town. Further discussion with the community is required to refine these sites.</p>
Opportunities for innovation	<p>Each of the solutions packages incorporate innovative elements with them, these include Pressure/Smart Sewer Technology, Innovative WRP technology, Centralised reuse opportunities, Potential discharge to waterbody, Integrating water cycle management, Flexibility in staging, Secondary treatment system technology and Onsite small scale reuse opportunities across town.</p>

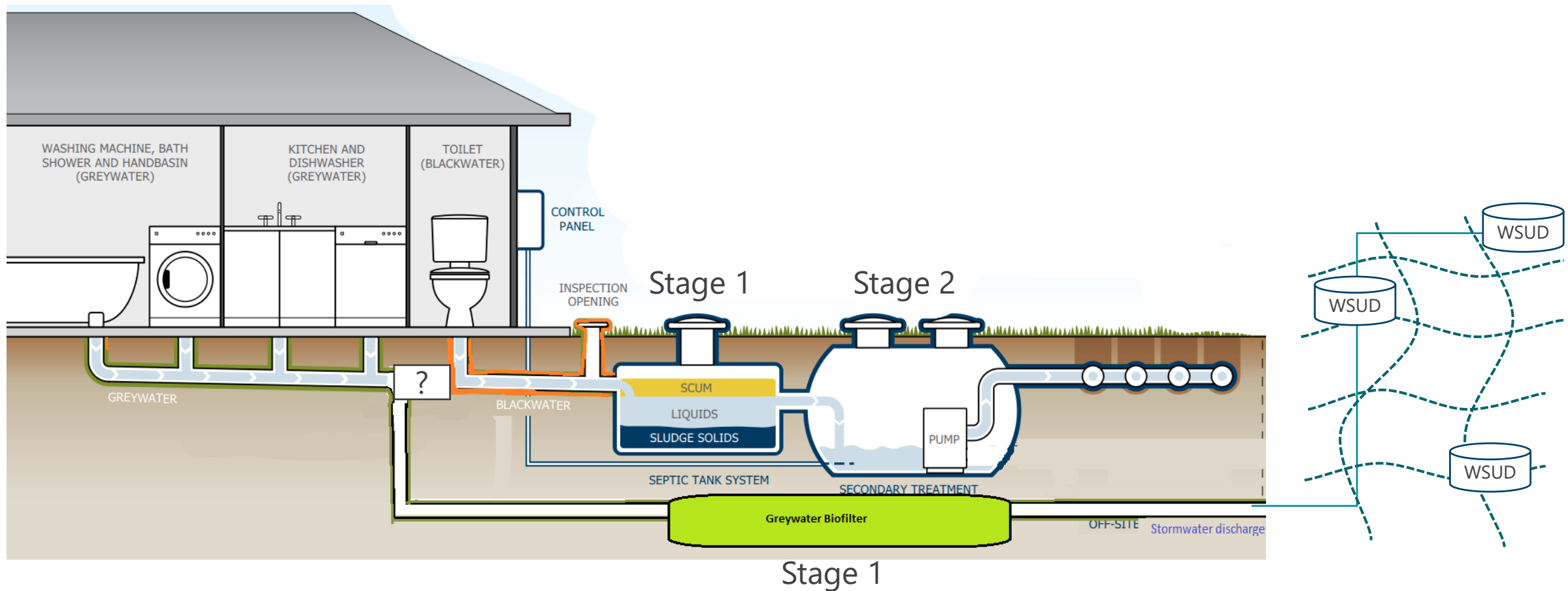
Proposed Wastewater Solutions

Our consultant has taken the feedback into account to group options together into a series of wastewater solutions for the township. Each of these solutions are not equal in delivering the agreed community vision for wastewater. They also will have different levels of regulatory challenges for implementation. This will be explored with the community and during the solutions assessment/evaluation phase (Late Aug/Sep).

Solution	Technology	Description	Potential Innovative Elements	Indicative Cost
Baseline <i>(Not compliant)</i>	Business As Usual (BaU)	Incremental (owner driven) upgrade existing septic systems to achieve full on-site containment where feasible over 20 year period.	Nil	\$2-3M
Solution Package 1	IWCM	Combined wastewater and stormwater management solution for Forrest township.	Integrating water cycle management Flexibility in staging Secondary treatment systems onsite Discharge to waterbody	\$7-11M
Solution Package 2	Partial onsite containment with cluster irrigation	Upgraded on-site systems across properties which are compliant with EPA requirements. Excess wastewater not able to be managed on-site is to be transferred to multiple local cluster reuse systems for subsurface irrigation across community / public open space.	Small scale reuse opportunities across town Secondary treatment systems onsite Discharge to waterbody	\$7.5-8.5M
Solution Package 3	Partial onsite containment with central irrigation	Upgraded on-site systems across properties which are compliant with EPA requirements. Excess wastewater not able to be managed on-site is to be transferred to a single central reuse / irrigation system.	Centralised reuse opportunity Secondary treatment systems onsite Discharge to waterbody	\$8.5-10.1M
Solution Package 4	Pressure Sewerage to Water Recycling Plant	Sewage pumped from every property into a pressure sewer system which transfers the sewage to a Water Recycling Plant (WRP) for treatment and reuse by irrigation	Pressure/Smart Sewer Technology Innovative WRP Centralised reuse opportunities Discharge to waterbody	\$12.9 – 16.7M

Note: The requirement for public toilets is common to all solutions packages. The locations for the possible water recycling and reuse sites are conceptual only at this stage. Although an indicative site is currently shown, further investigations and consultation with local landowners will occur in order to select a preferred site depending on which solution is selected.

Solutions Package 1



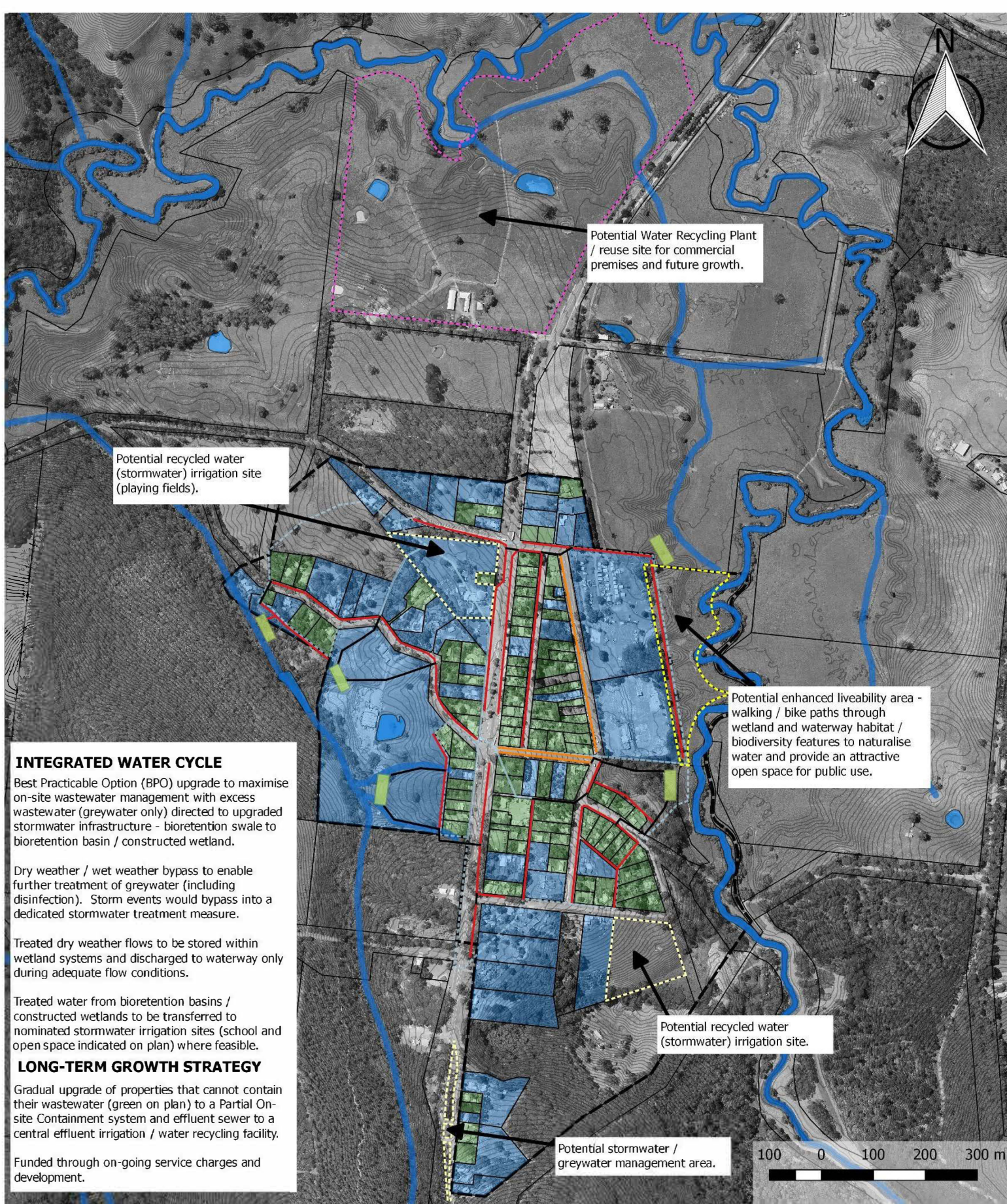
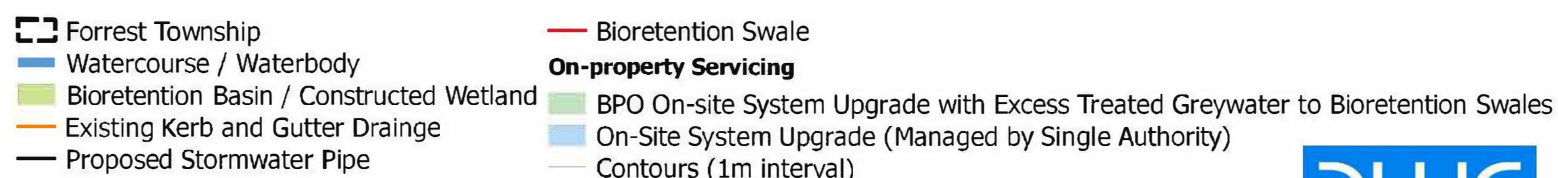


Figure 5 Forrest Wastewater Investigation: Solutions Package 1 Servicing Layout - Integrated Water Cycle Approach

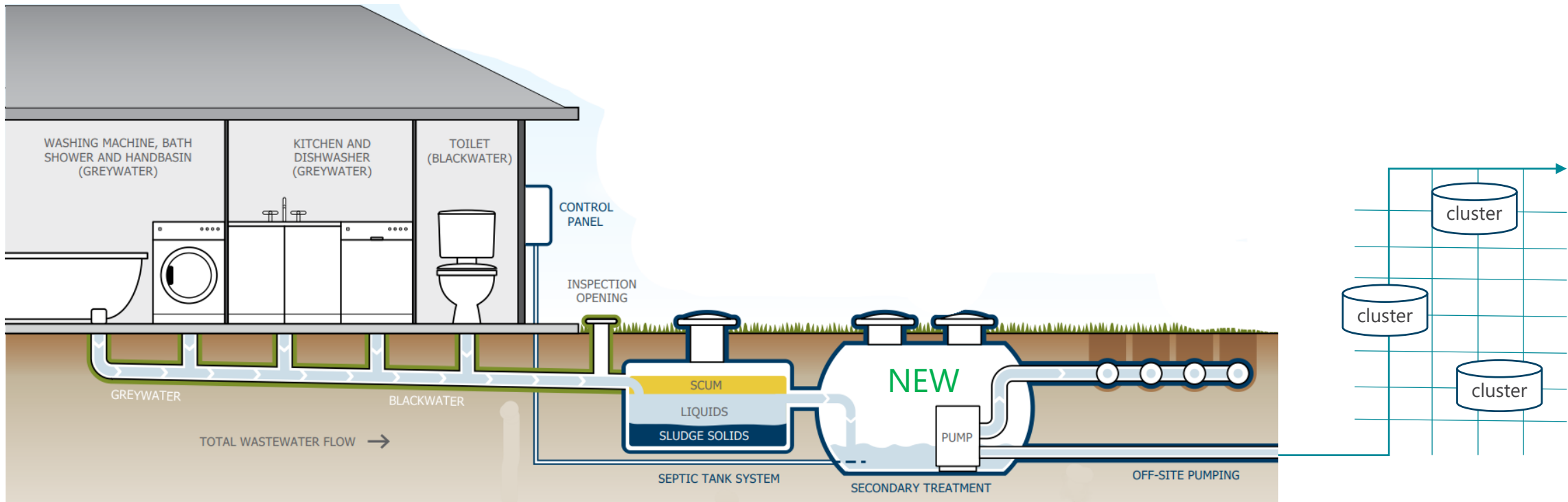


Note: The requirement for public toilets is common to all solutions packages. The locations for the possible water recycling and reuse sites are conceptual only at this stage. Although an indicative site is currently shown, further investigations and consultation with local landowners will occur in order to select a preferred site depending on which solution is selected.

What do you think?

- Need to understand the difference between the green and blue properties and what this means.
- Use old system, water roses on property
- Cost effective
- A combination of Solution Packages 1 and 3 would be my preference
- Do we have to re-visit this option when a property fails in 10-20 years
- This solution is good that it takes excess water off site in times of high usage
- This solution is 'band-aid' approach and a short term solution
- Is anyone else using this solution? Is there any feedback (positive or negative) from these towns/communities?
- Does this solution need to cater for different septic and greywater bio-filters for different uses (e.g. businesses, large families and small families) (families ebb and flow in their numbers over time)
- Solution package 1 is cheapest to install, but can be expensive for most residents.
- Solution packages 2 and 3 involve more disruption to residents, but have benefit of standardising on-site servicing
- Solution package 4 is the most 'future-proof' option

Solution Package 2



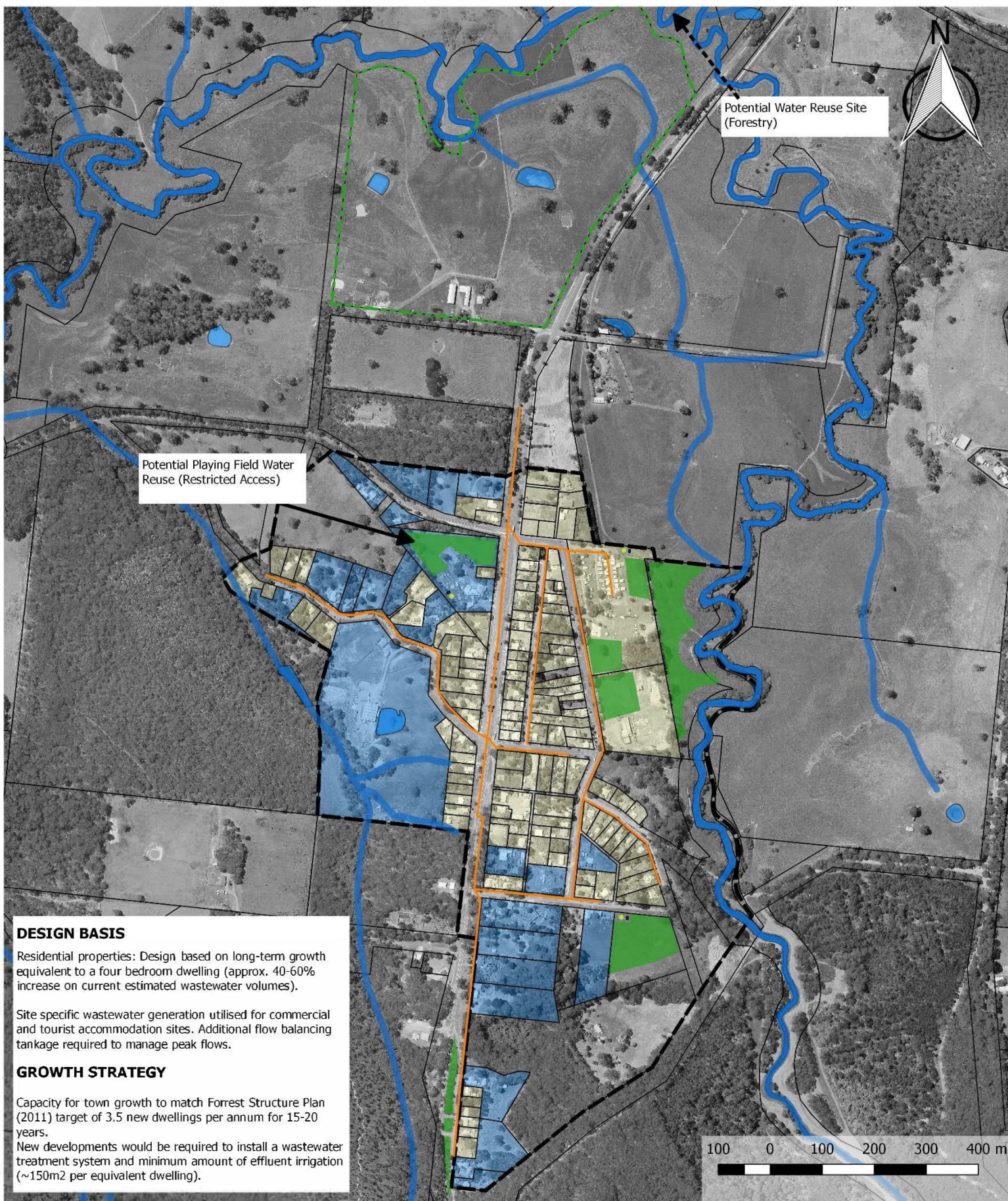


Figure 6 Forrest Wastewater Investigation: Solutions Package 2 Servicing Layout – Partial On-site Containment with Cluster Irrigation / Reuse

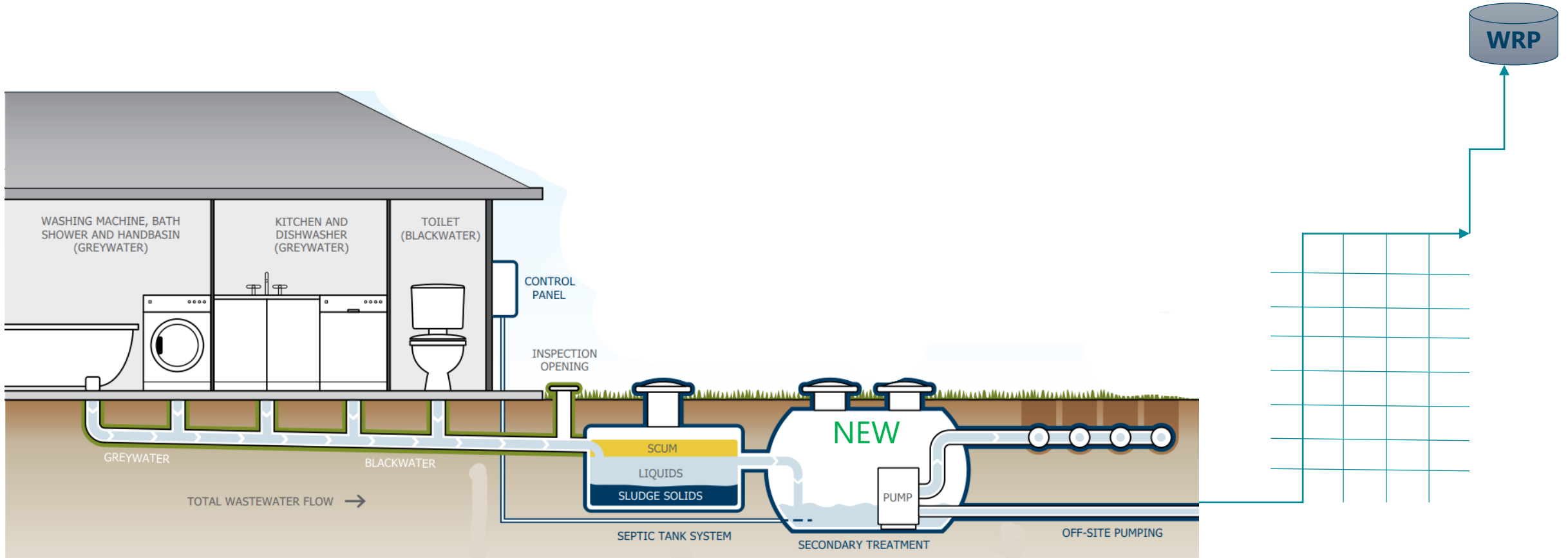
- | | |
|--------------------------------|---|
| Forrest Township | Indicative Future Water Reuse Site (Cater for Growth) |
| Watercourse / waterbody | Potential Community / Public Open Space Water Reuse Areas |
| Effluent Sewer (indicative) | On-Property Servicing |
| Control/Pump Shed (indicative) | Partial On-site Management with Excess to Sewer |
| Storage Tank (indicative) | On-Site System Upgrade (Managed by Single Authority) |

Note: The requirement for public toilets is common to all solutions packages. The locations for the possible water recycling and reuse sites are conceptual only at this stage. Although an indicative site is currently shown, further investigations and consultation with local landowners will occur in order to select a preferred site depending on which solution is selected.

What do you think?

- Need to list other service costings to residents
- Happy to be disposing effluent around the town and on property
- Question the viability of disposal sites
- Do we have to re-visit this option when a property fails in 10-20 years
- What would the cluster systems look like? Concern over visual impact.
- New control panel and pump suggests extra costs
- How big are the systems?
- Solution package 1 is cheapest to install, but can be expensive for most residents.
- Solution packages 2 and 3 involve more disruption to residents, but have benefit of standardising on-site servicing
- Solution package 4 is the most 'future-proof' option

Solution Package 3



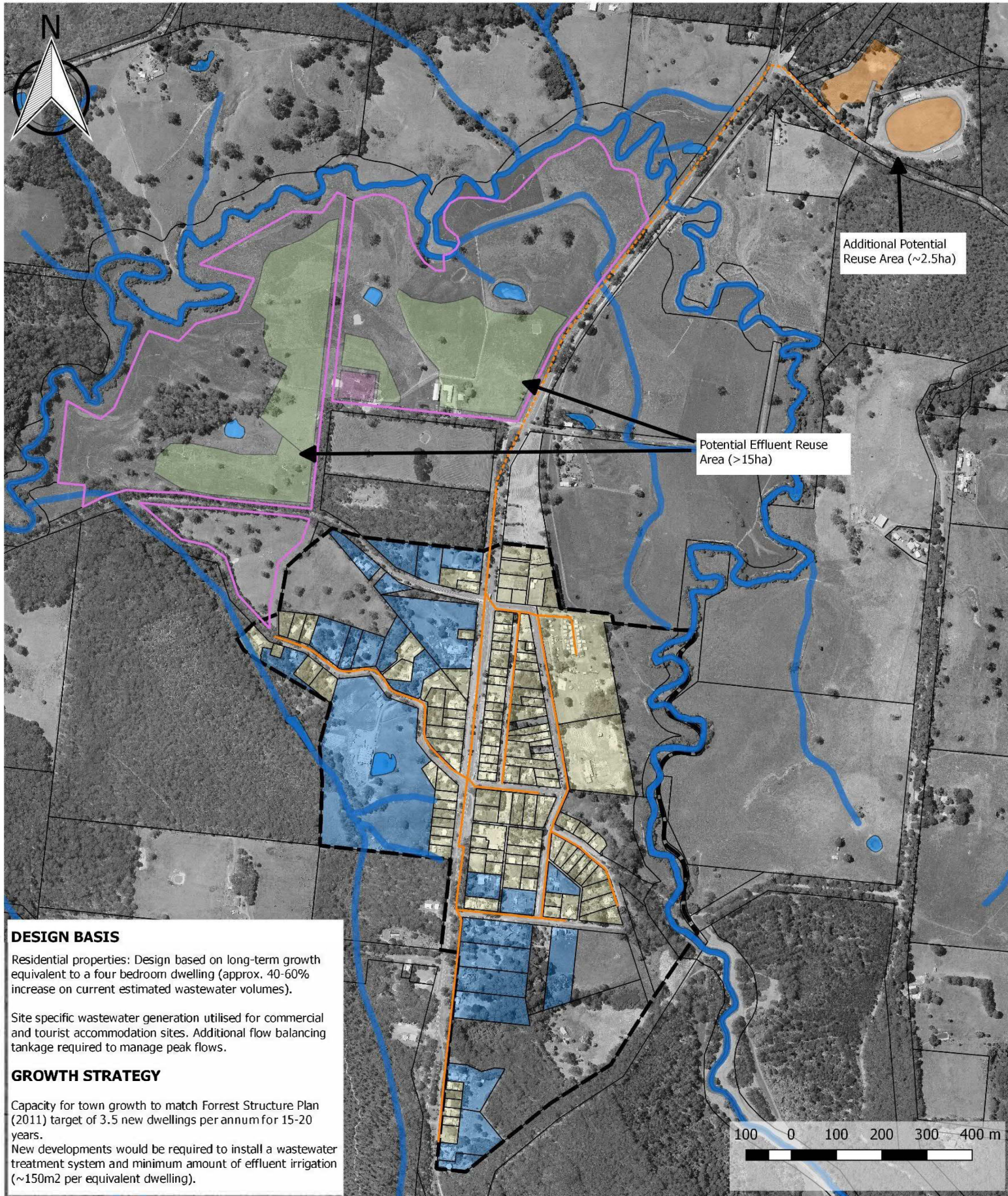


Figure 7 Forrest Wastewater Investigation: Solutions Package 3 Servicing Layout – Partial On-site Containment with Central Irrigation / Reuse

- | | |
|----------------------------------|--|
| Forrest Township | Indicative Water Recycling Plant Footprint |
| Watercourse / waterbody | Indicative Useable Land (Forrest Recreation Reserve) |
| Effluent Sewer (Indicative) | On-Property Servicing |
| Recycled Water Main (Indicative) | Partial On-site Management with Excess to Sewer |
| Indicative Cluster Reuse Site | On-Site System Upgrade (Managed by Single Authority) |

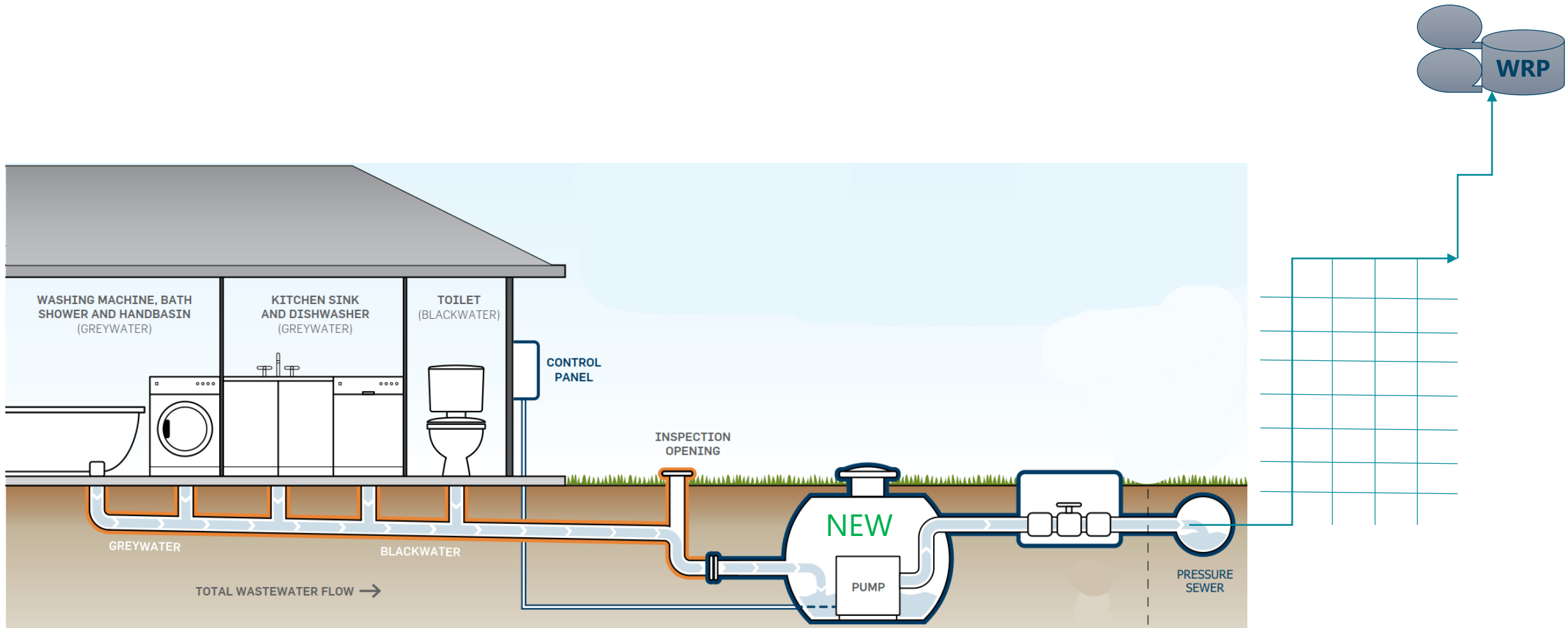
Note: The requirement for public toilets is common to all solutions packages. The locations for the possible water recycling and reuse sites are conceptual only at this stage. Although an indicative site is currently shown, further investigations and consultation with local landowners will occur in order to select a preferred site depending on which solution is selected.

DWC
DECENTRALISED WATER CONSULTING

What do you think?

- How do the pumps work?
- This solution is harder to manage. Might have to come back this option to upgrade (same goes for solutions 1 and 2)
- As with solution package 2, the new secondary treatment is a cost and disruption to all residents, but servicing of systems by an overall body would be good
- Do we have to re-visit this option when a property fails in 10-20 years
- Solution package 1 is cheapest to install, but can be expensive for most residents.
- Solution packages 2 and 3 involve more disruption to residents, but have benefit of standardising on-site servicing
- Solution package 4 is the most 'future-proof' option

Solution Package 4



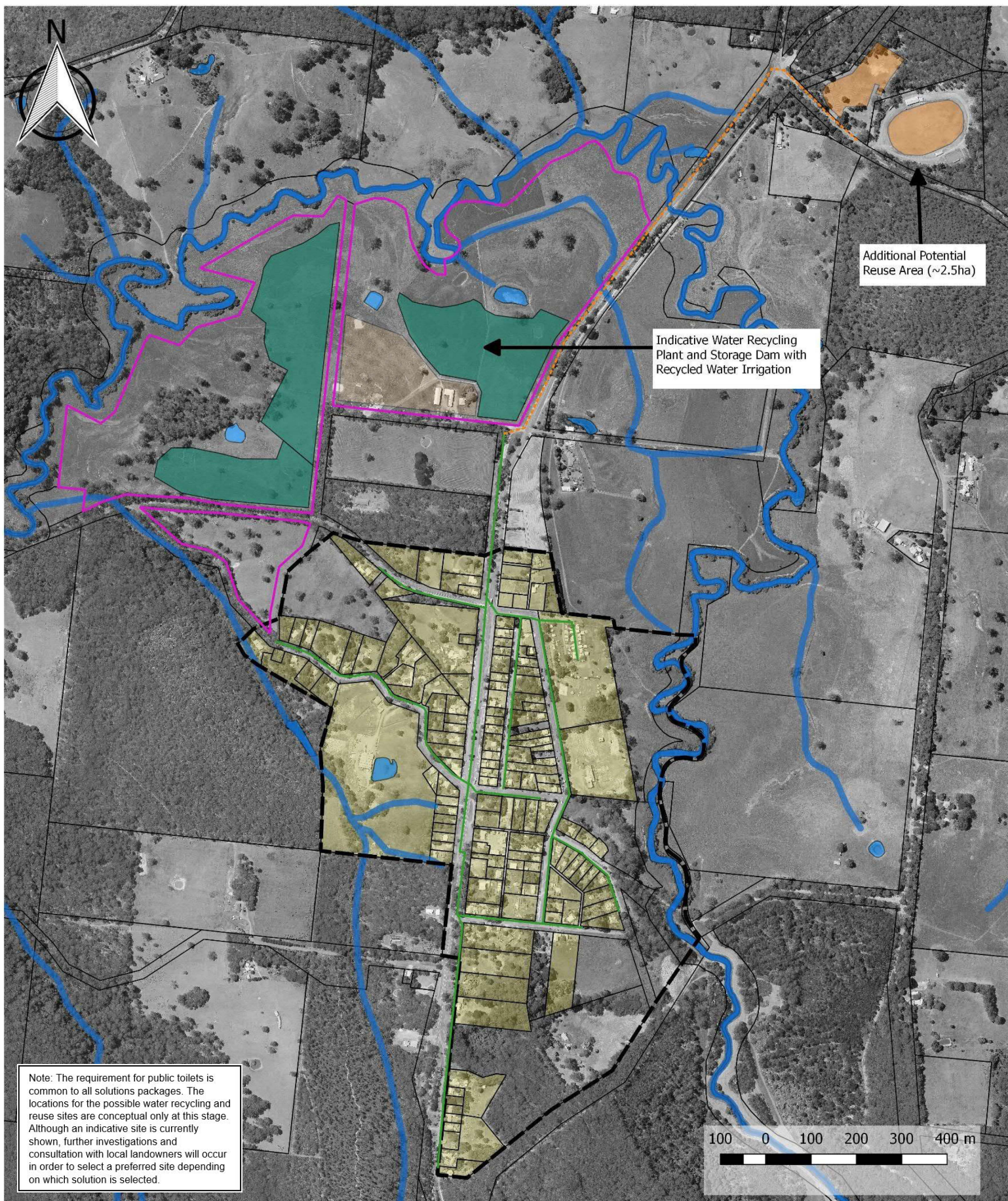


Figure 8 Forrest Wastewater Investigation: Solutions Package 4 Servicing Layout – Reticulated Pressure Sewerage to Water Recycling Plant



What do you think?

- The most 'future proof' option and does away with all the individual on-site servicing
- Consider using the water for food production such as apples, nuts, etc
- Best option
- Awesome!
- Best option, also apply for funding through tourism
- Concerned that this solution could lead to increased development
- Don't need a crystal ball!
- New residents (growth) will expect this system (the next generation).
- Prefer this option but treatment plant has to be out of town (north east location has better soil)
- Prefer this option, residents (most) have not been able to manage on-site wastewater (black water and grey water) treatment for the past 30 years for various reasons. Needs to be managed by an authority such as Barwon Water.
- Solution package 1 is cheapest to install, but can be expensive for most residents.
- Solution packages 2 and 3 involve more disruption to residents, but have benefit of standardising on-site servicing
- Solution package 4 is the most 'future-proof' option

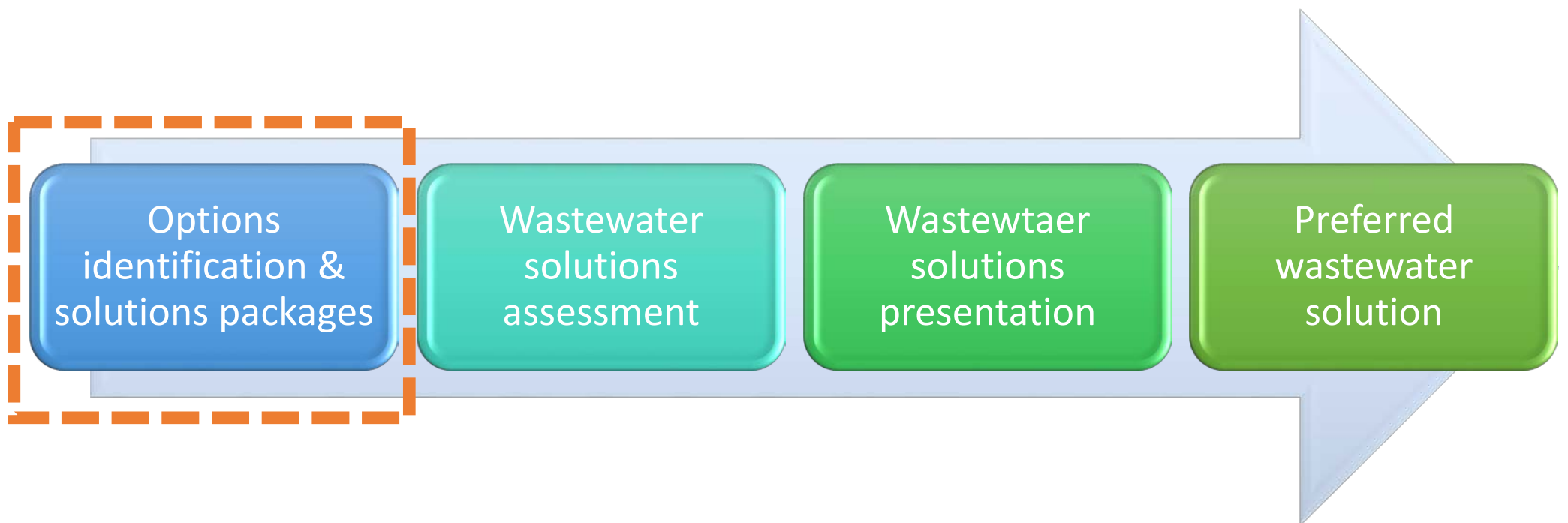
Next steps

The solutions have now been prepared and presented to the community.

The solutions assessment phase will identify a community preferred solution to address wastewater issues in Forrest. We anticipate this to occur in August September, 2018.

Solutions will be assessed against the criteria established by the community.

A business case for the project will be presented to the community. We anticipate this to occur in December, 2018.



How are we assessing

To ensure the preferred wastewater solution reflects the views of the community, solutions will be assessed against the developed and agreed community vision and associated measurements as follows:

The Forrest wastewater management solution will be innovative and cost effective, whilst providing protection of public health, environment and the ‘Forrest way of life’.

During the solutions assessment process, assessment will be undertaken with the community and will be assessed against the visioning aspects below:

Visioning aspect	How will this be measured?
Ensure protection of human and environmental health	<ul style="list-style-type: none">• Reduction in pollution to waterways• Reduction of offsite discharges• Estimated reduction in disease burden
Enhance community and way of life	<ul style="list-style-type: none">• Economic impact to Forrest• Increase to Tourism• Change to population/resident make up• Community support for solution
Establish an equitable and affordable solution	<ul style="list-style-type: none">• Up-front costs and life cycle costs• Fair and equitable distribution of costs
Create flexible wastewater options for the future	<ul style="list-style-type: none">• Ability to stage/adapt• Ability to cater for residents and visitors (tourism)
Showcase innovation and best practice	<ul style="list-style-type: none">• Opportunities for water recycling and energy recovery.• Level of flexibility of options• Showcase / case study potential• Level of water cycle integration

Keeping in touch

Barwon Water and Colac Otway Shire Council will continue to keep the community informed as the project progresses.

Following the wastewater solutions session (July 8), a letter and all display information will be posted to residents and businesses. These people will be invited to provide comment on the solutions.

As with previous correspondence, the project team will communicate via a range of mediums including website (www.yoursay.barwonwater.vic.gov.au/forrest), mail outs, workshops, listening posts, information sessions, drop in sessions, phone calls and emails.

Should you wish to speak to anyone in the project, here are contact details:

Barwon Water

Rhys Bennett

p) 03 5226 2328

Email: rhys.bennett@barwonwater.vic.gov.au

Kate Vallence

p) 03 5226 2518 or 0428 407 961

Email: kate.vallence@barwonwater.vic.gov.au

Colac Otway Shire Council

Doug McNeil

p) (03) 5232 9562

Email: doug.mcneill@colacotway.vic.gov.au

James Maw

p) (03) 5232 9400 or 0427 862 361

james.maw@colacotway.vic.gov.au

Forrest follow-up wastewater audits

From July 9, Colac Otway Shire Council will be conducting follow-up wastewater audits on properties in Forrest with the aim of addressing compliance issues identified in the 2017 audit of systems.

The audits assist Council in determining how well a property owner's wastewater system is performing and Council will work with property owners to determine what might be needed to ensure the system is functioning properly.

Audits will also be conducted on properties which were unable to be accessed and assessed in the previous audit.

Kernow Environmental Services, who undertook the 2017 audits, will be conducting the follow-up audits and engagement with property owners in Forrest on behalf of Colac Otway Shire Council.

Homeowners of affected properties will have recently received a letter via mail or email from Council to arrange appointment times. Property owners are encouraged to contact Kernow direct, alternatively Council may be contacted on 5232 9400.