

# 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.



# Solutions Update Session

Barwon Water and the Colac Otway Shire Council hosted a community information session in July. The session focused on presenting four wastewater solutions packages designed for Forrest.

The four solutions incorporated community feedback and included innovative stormwater and greywater treatment, partial onsite containment, offsite treatment and pressure sewer systems.

20 people attended the session and they were able to talk with the project team, review the possible solutions and provide feedback.

The project now moves into the solutions assessment stage, where the community will have their say and assess each solution against the community vision and associated criteria with the view to making a community recommendation on a wastewater solution for Forrest.

The wastewater investigation is expected to be completed by the end of the year.



# How are we assessing

To ensure the preferred wastewater solution reflects the views of the community, solutions are being 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'.

We ask the community to consider the visioning aspects below when assessing their preferred solution

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

# Solutions Package 1 – Combine Stormwater Wastewater

Combined wastewater and stormwater management solution for Forrest township.

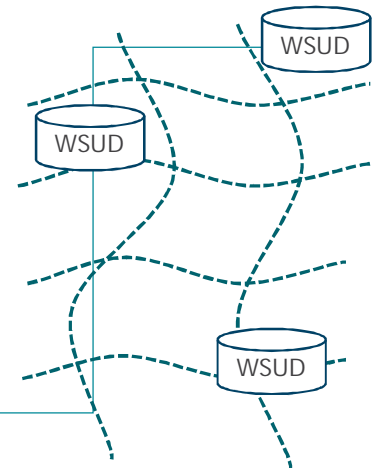
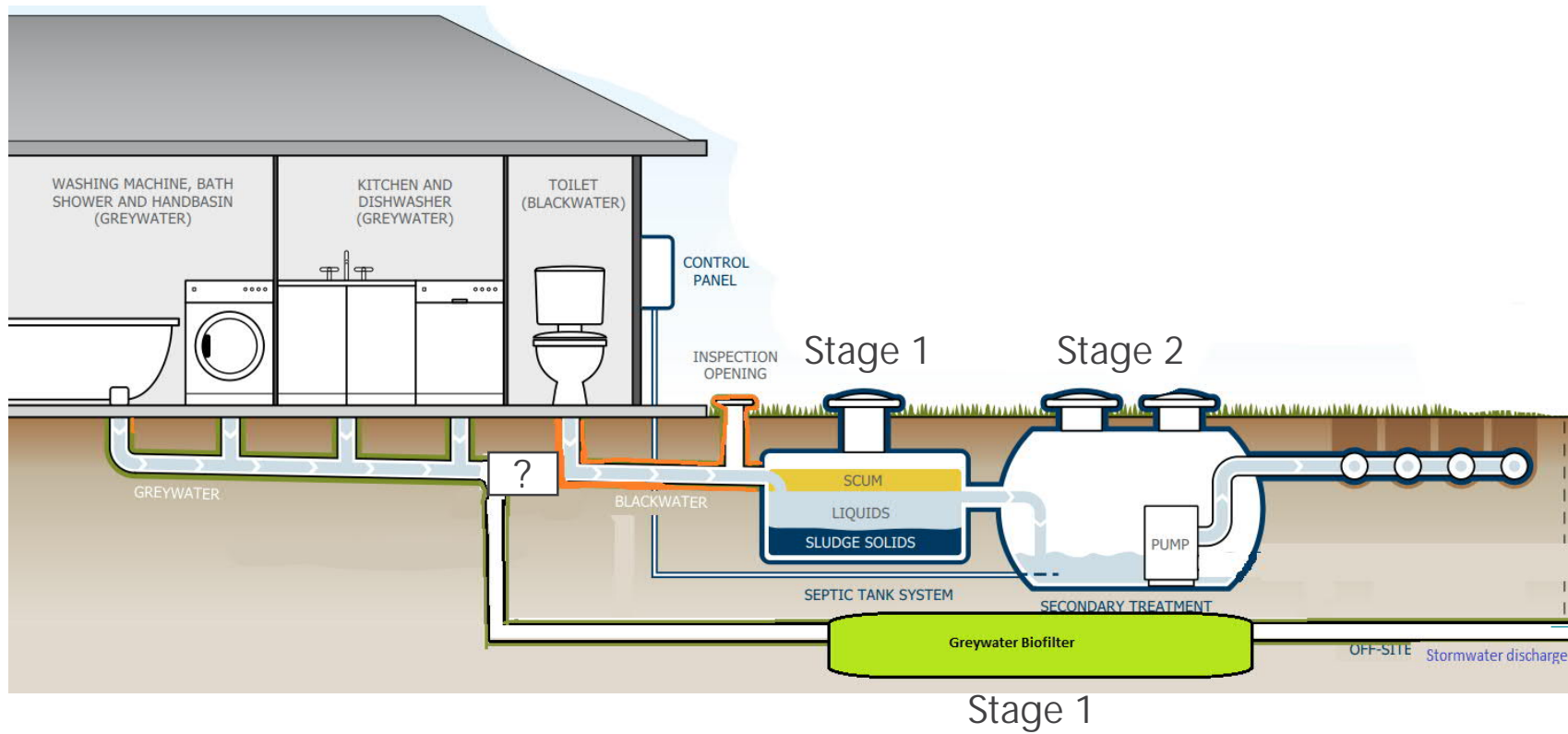
Pros	Cons
<ul style="list-style-type: none"><li>○ Incorporates stormwater treatment and management (another key issue)</li><li>○ Solution is most like the current wastewater system, i.e. not significant changes</li><li>○ Leverage and improve existing infrastructure</li><li>○ Lower community cost</li></ul>	<ul style="list-style-type: none"><li>○ Some (treated) off-site discharge to be retained</li><li>○ Some limits to expanding commercial businesses</li><li>○ Could potentially delay the wastewater problem</li><li>○ Limited ability for growth</li><li>○ Creates a more difficult management proposition</li></ul>

**Whole of community  
cost \$8.9M  
\$61,500/Lot**

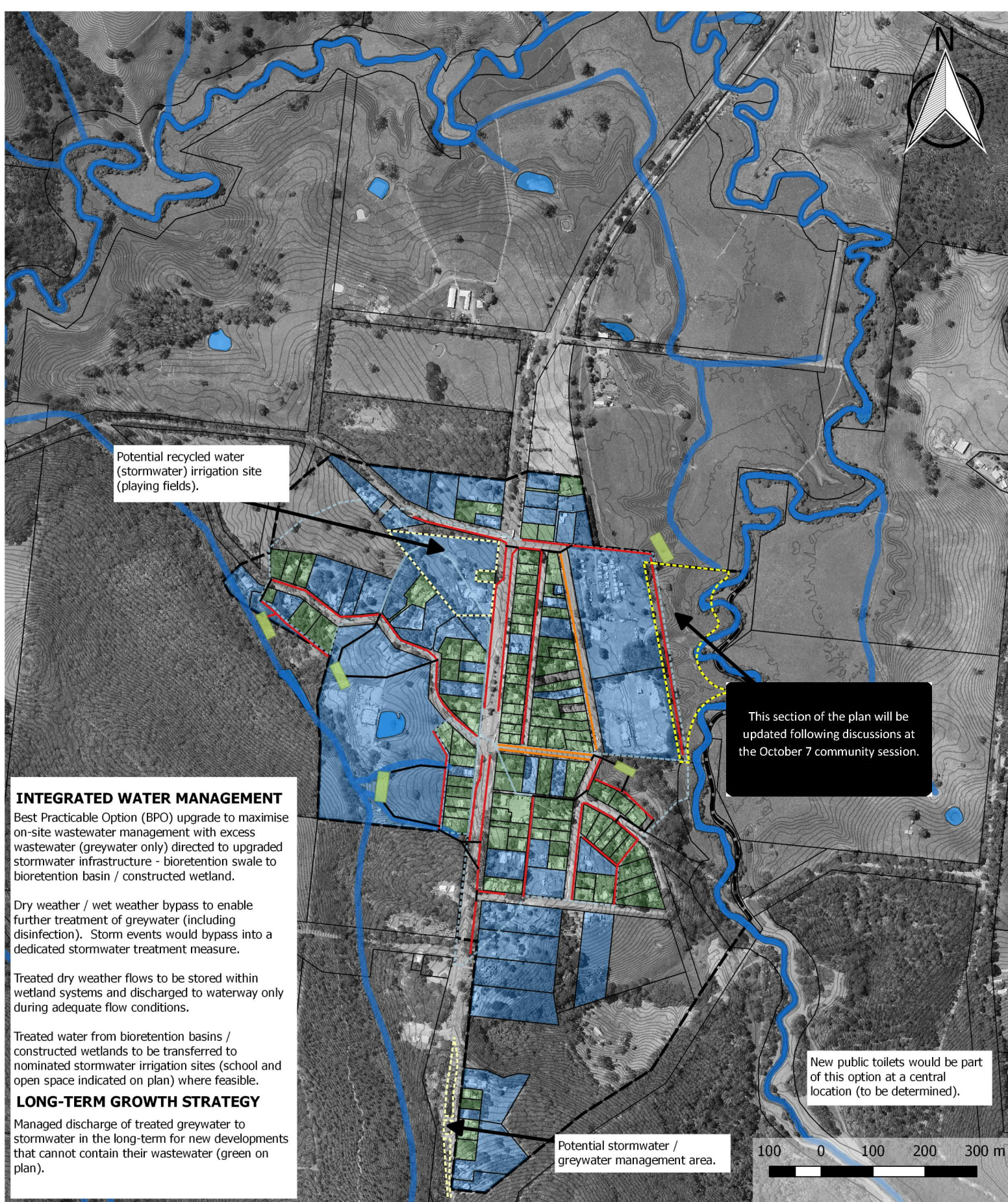




# Solutions Package 1



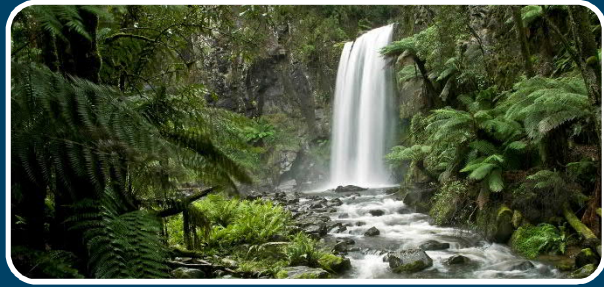




**Figure 4 Forrest Wastewater Investigation: Solutions Package 1 Servicing Layout - Integrated Water Management Approach**



# Solutions Package 1 – Assessment Key Points



## Ensure protection of human and environmental health

- Improves both wastewater and stormwater pollutant loads
- Additional risks when combining wastewater with stormwater



## Enhance community and way of life

- Least potential for economic benefit
- Reduced ability to address commercial business expansion



## Establish an equitable and affordable solution

- Second lowest community cost
- Funding and management structure required before proceeding



## Create flexible wastewater options for the future

- Limited flexibility for growth



## Showcase innovation and best practice

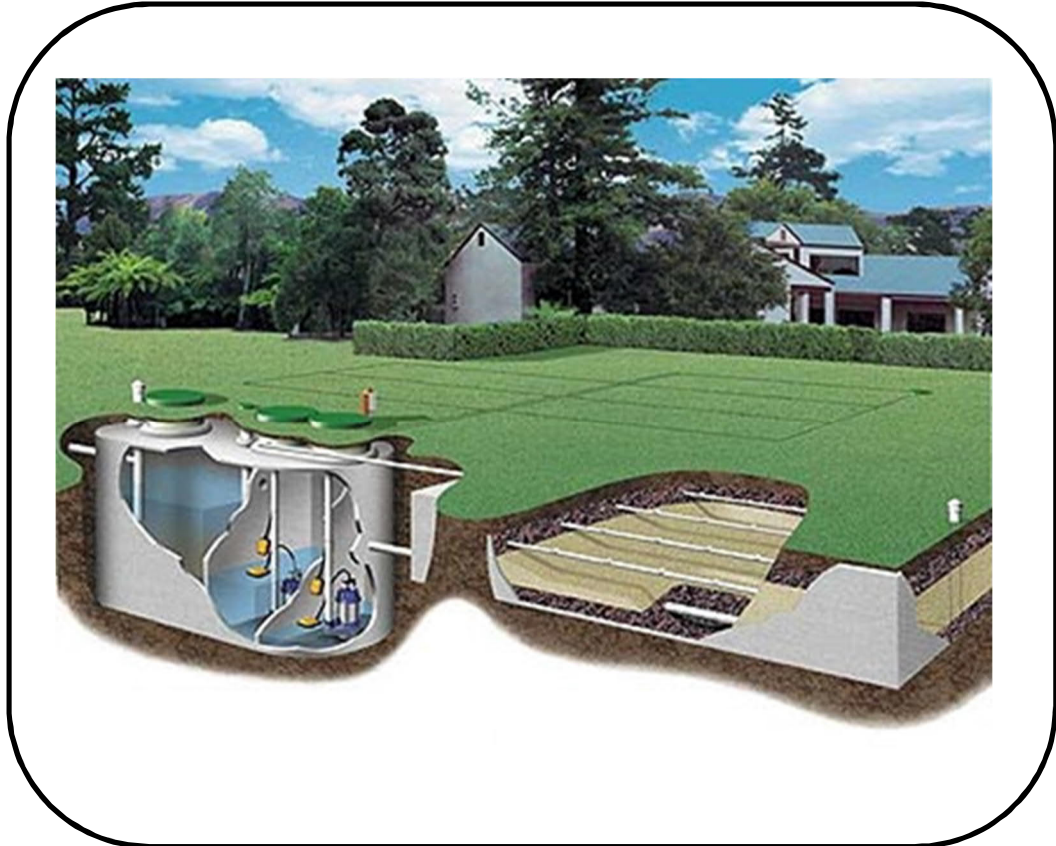
- Option incorporates stormwater and wastewater treatments in an integrated way

# Solutions Package 2 – On-site treatment & cluster management

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.

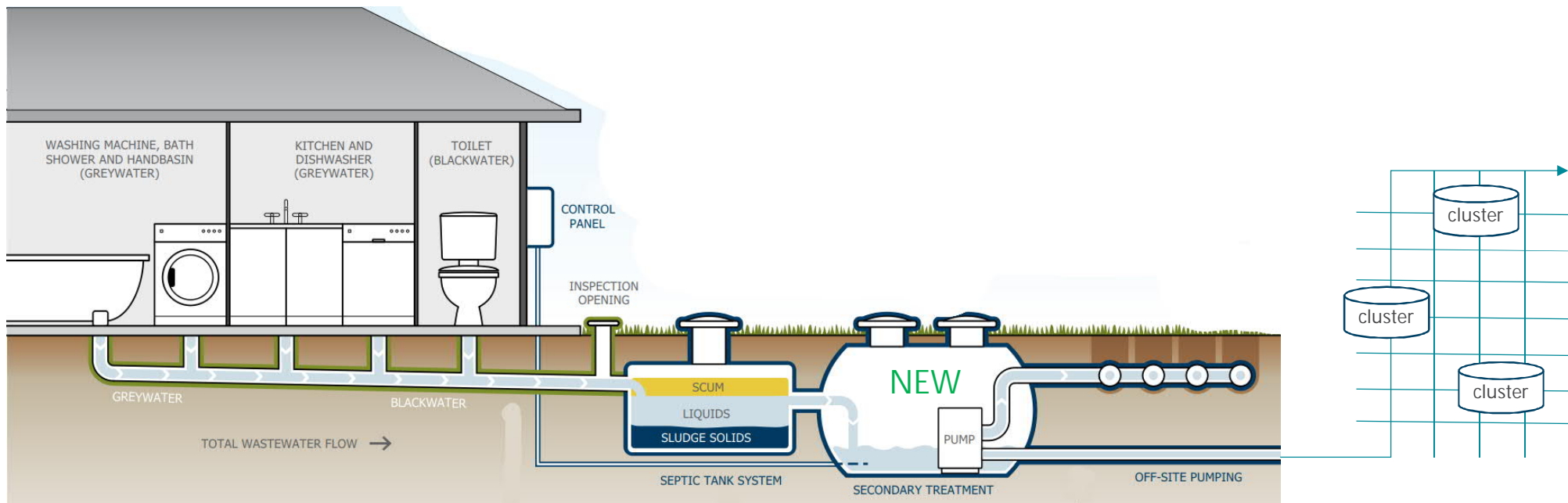
Pros	Cons
<ul style="list-style-type: none"><li>○ Small scale reuse opportunities across town</li><li>○ Fully upgraded secondary treatment systems on-site</li><li>○ Ability to use treated wastewater on property (garden watering, etc.)</li><li>○ No requirement for a large wastewater treatment plant</li></ul>	<ul style="list-style-type: none"><li>○ Reduced flexibility on each lot due to requirement for on-site management to be maximised</li><li>○ Challenges reusing all excess recycled water throughout the town in Forrest climate.</li></ul>

**Whole of community cost**  
**\$8M**  
**\$55,500/Lot**

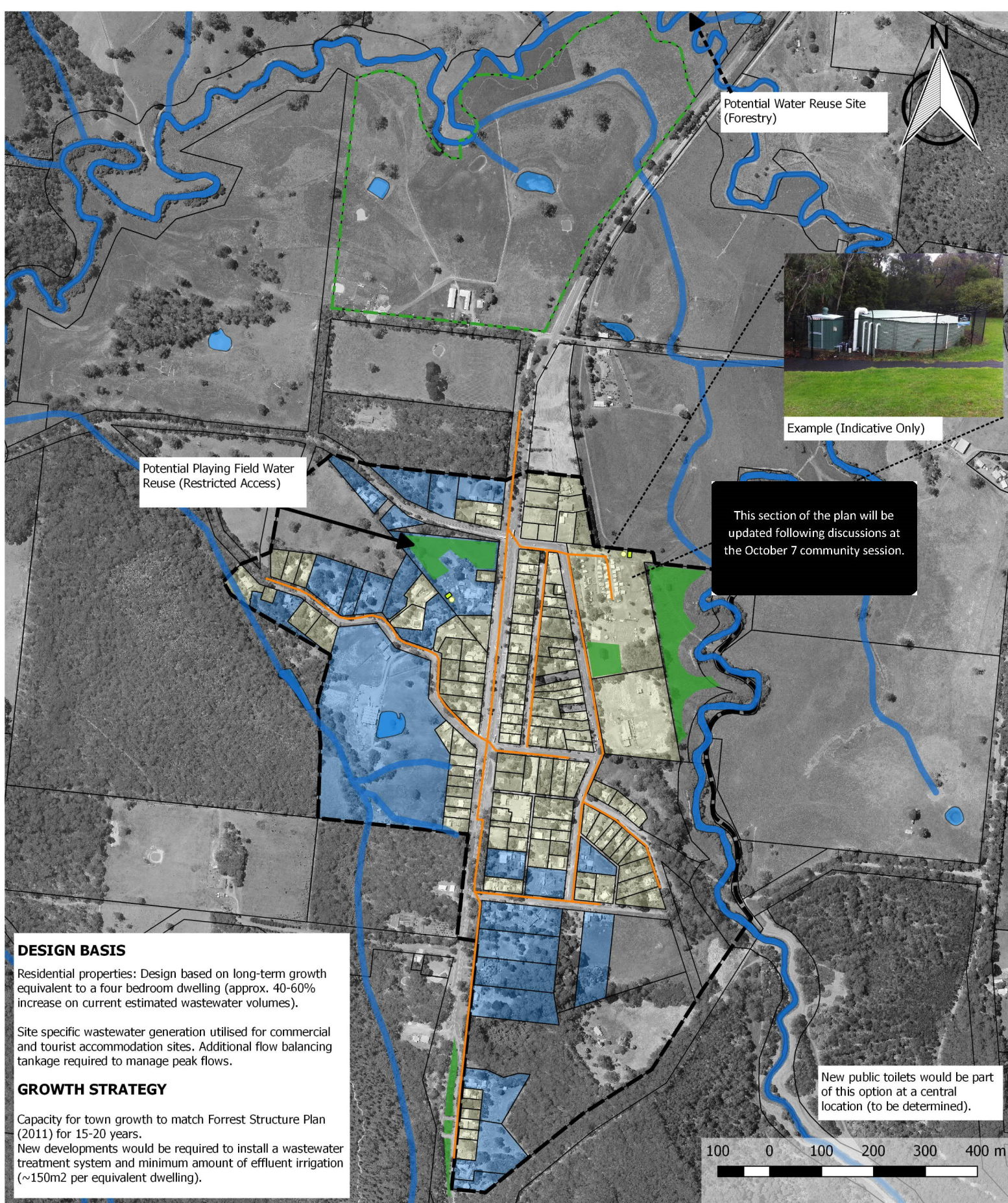




# Solution Package 2





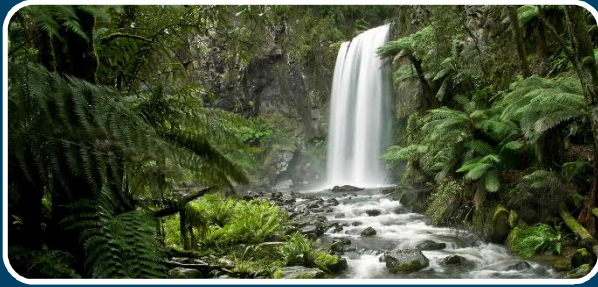


**Figure 5 Forrest Wastewater Investigation: Solutions Package 2 Servicing Layout – Partial On-site Containment with Cluster Irrigation / Reuse**

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



# Solutions Package 2 – Assessment Key Points



## Ensure protection of human and environmental health

- Does not address stormwater issues
- Relies on effluent management throughout town which could be difficult



## Enhance community and way of life

- Requires backyard space / gardens for irrigation field
- Allows for further economic development



## Establish an equitable and affordable solution

- Lowest community cost
- Funding and management structure required before proceeding



## Create flexible wastewater options for the future

- On-lot treatment and irrigation limits flexibility of lot in the future
- Some uncertainty in availability of public open space for growth



## Showcase innovation and best practice

- Advanced ('smart') on-site treatment systems
- Reuse of recycled water throughout the town

# Solutions Package 3 – On-site treatment & centralised management

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.

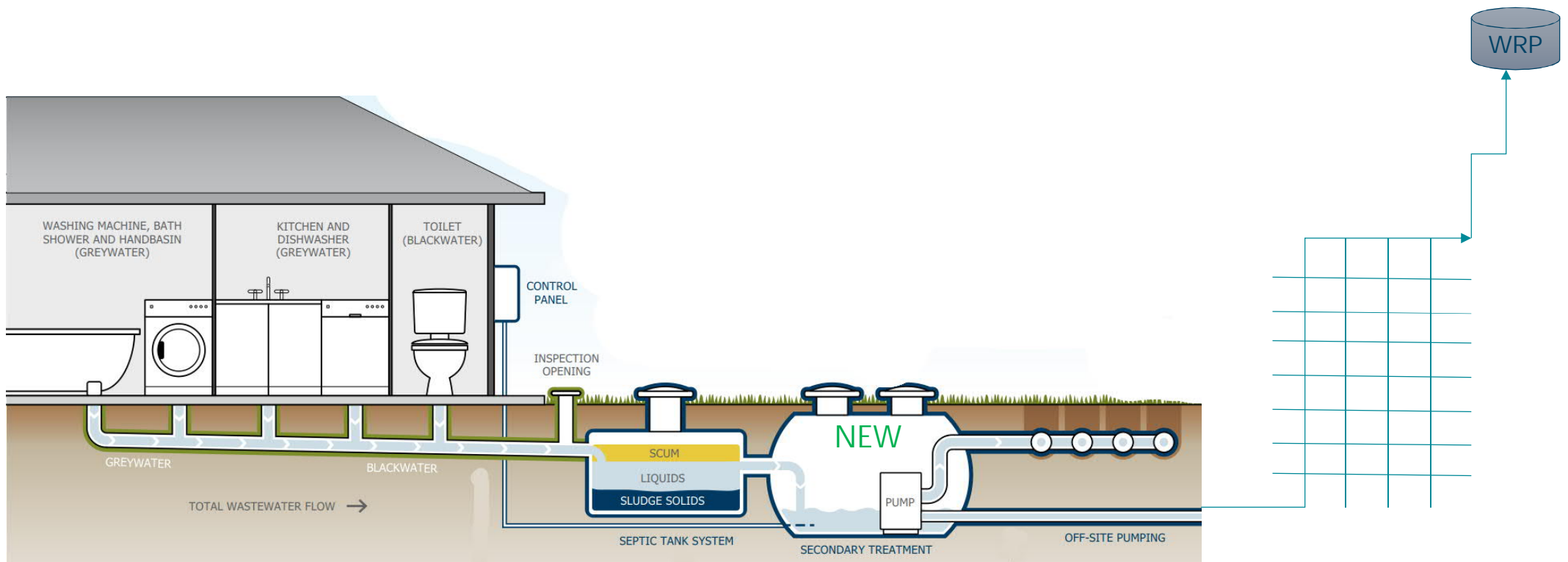
Pros	Cons
<ul style="list-style-type: none"><li>○ Recycled water reuse opportunities</li><li>○ Fully upgraded secondary treatment systems onsite</li><li>○ No requirement for an ugly wastewater treatment plant</li><li>○ More flexibility for property development and town growth due to less reliance on effluent being managed onsite</li></ul>	<ul style="list-style-type: none"><li>○ Some wastewater still retained on the property</li><li>○ Higher community cost</li></ul>

**Whole of community  
cost \$10.1M  
\$70,200/Lot**

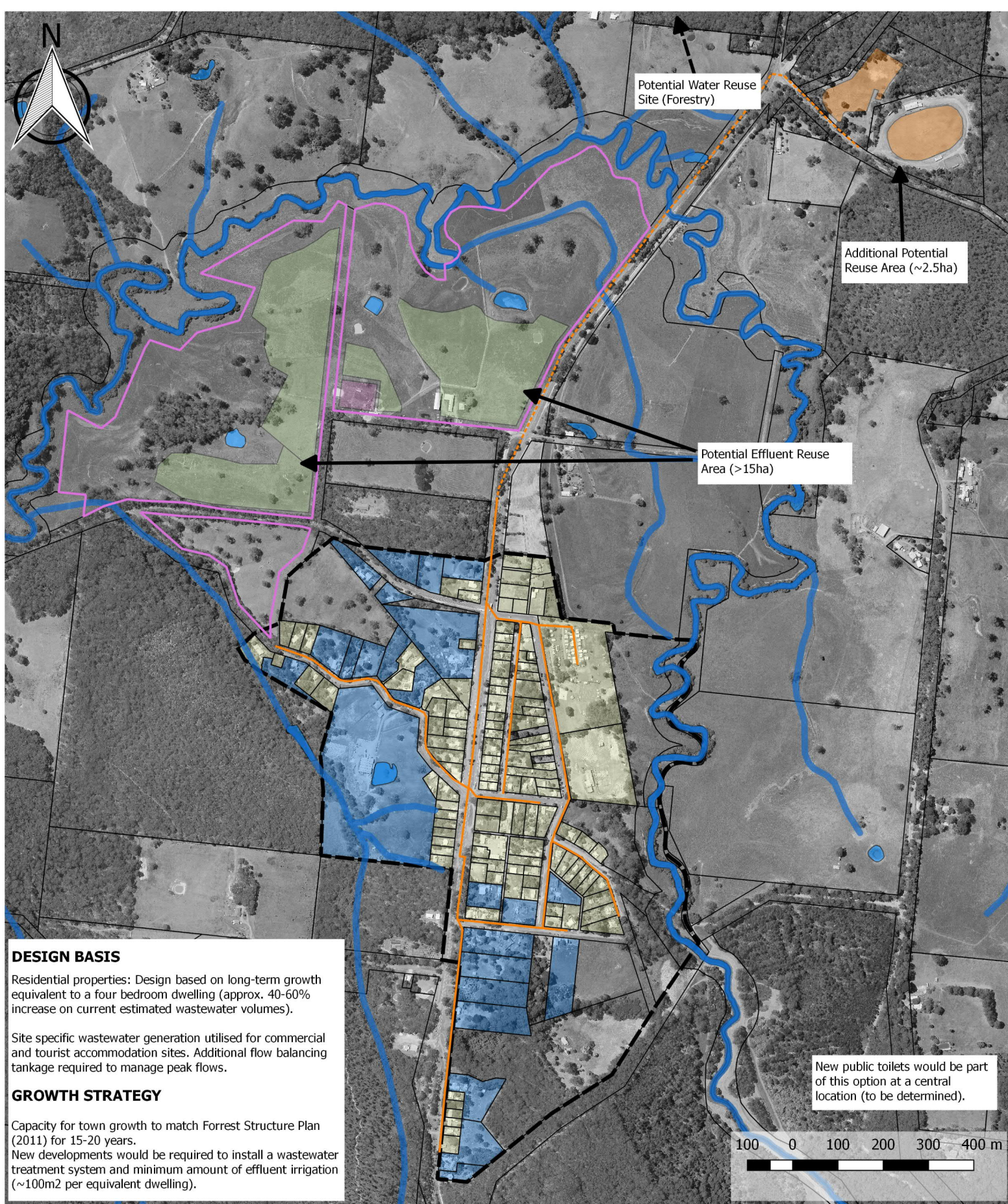




# Solution Package 3







**Figure 6 Forrest Wastewater Investigation: Solutions Package 3 Servicing Layout – Partial On-site Containment with Central Irrigation / Reuse**

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



# Solutions Package 3 – Assessment Key Points



## Ensure protection of human and environmental health

- Does not address stormwater issues
- SP2 and 3 contain or collect all effluent for controlled management



## Enhance community and way of life

- Allows for increased development
- All wastewater initially treated on-site and not at a centralised plant



## Establish an equitable and affordable solution

- 2nd highest community cost
- Funding and management structure required before proceeding



## Create flexible wastewater options for the future

- Off-site effluent management increases flexibility for growth
- More flexibility for growth on lot than SP1 and 2 due to less reliance for onsite disposal



## Showcase innovation and best practice

- Advanced ('Smart') on-site treatment systems
- Small smart recycling facility with limited aesthetic impacts

# Solutions Package 4 – Pressure Sewer 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.

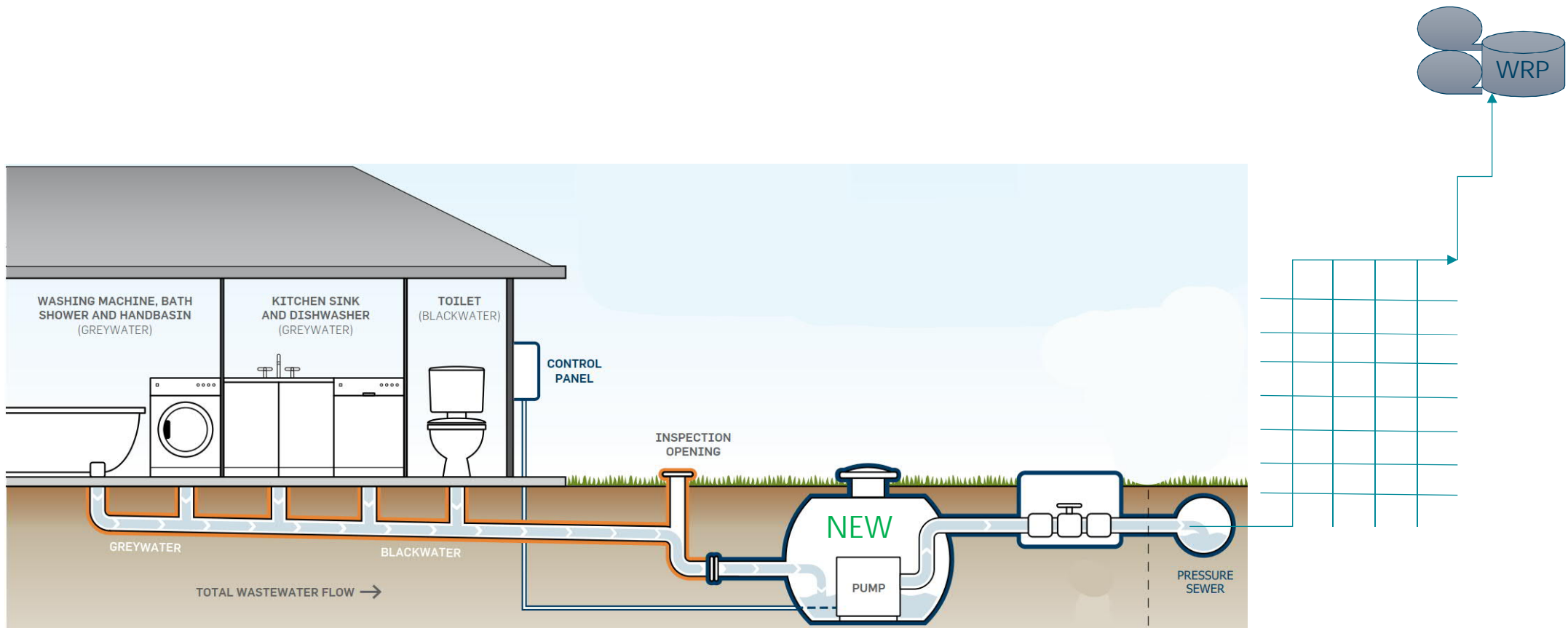
Pros	Cons
<ul style="list-style-type: none"><li>○ Pressure/Smart Sewer Technology</li><li>○ Centralised reuse opportunities</li><li>○ Opportunities for disposal to river</li><li>○ Most flexibility on lot as all treatment and management</li></ul>	<ul style="list-style-type: none"><li>○ Requires a large wastewater treatment plant in the town</li><li>○ Treatment plants generally are very difficult to site</li><li>○ Most expensive solution (considerably)</li><li>○ Town growth likely to trigger need for waterway discharge.</li></ul>

**Whole of community cost**  
**\$16.7M**  
**\$116,000/Lot**

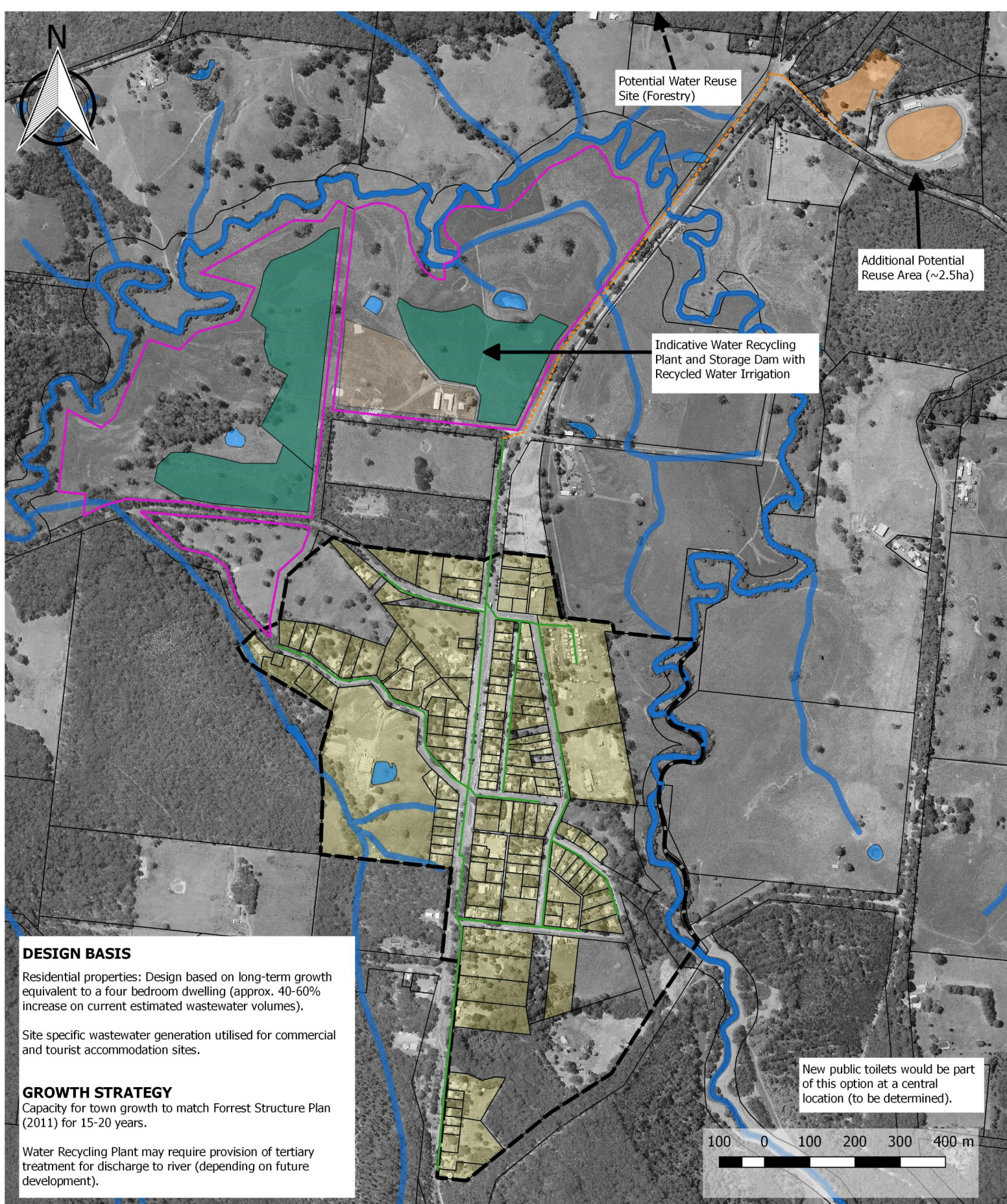




# Solution Package 4







**Figure 7 Forrest Wastewater Investigation: Solutions Package 4 Servicing Layout – Reticulated Pressure Sewerage to Water Recycling Plant**

- Forrest Township
- Watercourse / waterbody
- Pressure Sewer (Indicative)
- Recycled Water Main (Indicative)
- Indicative Site for Water Recycling Plant
- Indicative Footprint of Water Recycling Plant
- Indicative Water Recycling Plant Farm Irrigation Area
- Indicative Useable Land (Forrest Recreation Reserve)
- On-Property Servicing**
- Pressure Sewer



# Solutions Package 4 – Assessment Key Points



## Ensure protection of human and environmental health

- Removes all on-site treatment
- Outcomes no better than SP2 and 3 (potentially worse after town growth).



## Enhance community and way of life

- Requires a wastewater treatment plant within Forrest
- General opposition to plants due to odour, visual, noise, etc.



## Establish an equitable and affordable solution

- Highest community cost
- Funding and management structure required before proceeding



## Create flexible wastewater options for the future

- Scheme quite inflexible as full solution required at day 1
- Opens possibility of subdivision of smaller lots



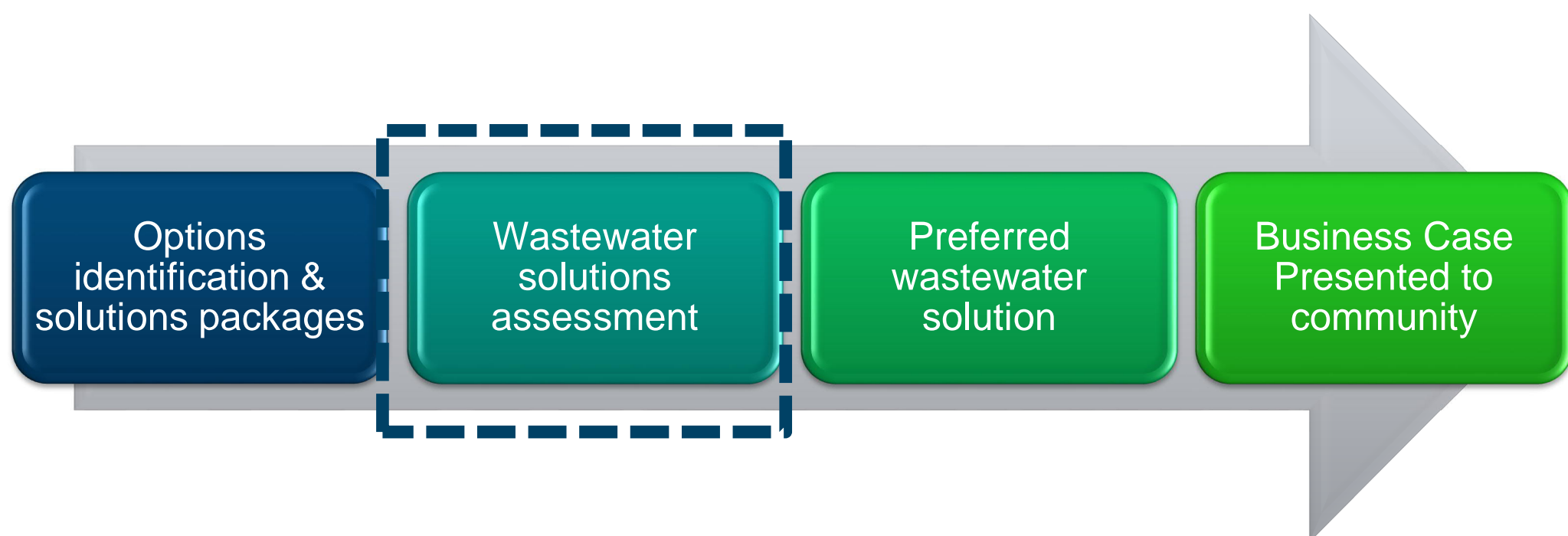
## Showcase innovation and best practice

- Smart pressure sewer system
- Disposal to waterways / environmental flows

# Next steps

The solutions assessment phase will identify a community preferred solution to address wastewater issues in Forrest.

A business case for the project will be presented to the community. We anticipate this to occur in towards the end of the year





# 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 assessment session (Oct 8), a letter and all display information will be posted to residents and businesses. These people will be invited to provide their assessment on the solutions.

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](mailto:rhys.bennett@barwonwater.vic.gov.au)

Kate Vallence

p) 03 5226 2518 or 0428 407 961

Email: [kate.vallence@barwonwater.vic.gov.au](mailto:kate.vallence@barwonwater.vic.gov.au)

Colac Otway Shire Council

Doug McNeill

p) (03) 5232 9562

Email: [doug.mcneill@colacotway.vic.gov.au](mailto:doug.mcneill@colacotway.vic.gov.au)

James Maw

p) (03) 5232 9400 or 0427 862 361

[james.maw@colacotway.vic.gov.au](mailto:james.maw@colacotway.vic.gov.au)