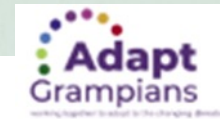


Small Towns Green Blue Infrastructure Guide

**Integrated Water Management and Climate
Adaptation at a local scale**

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Collaborating across the region



GBI in Small Towns

- *GBI is important in small towns*
- *Most will never have IWM Plans*
- *LG has the primary role*
- *Growing awareness, but limited capacity*
 - *Facilitate conversations*
 - *Test methods*
 - *Develop a Guide*

Blue infrastructure assets: those associated with collection, movement, retention & use of water in urban landscapes (tanks, gutters, swales, drains, ponds, wetlands, waterways).



Green infrastructure assets: living vegetation (turf, grasses, shrubs, trees) the soils that grow them & the places we find them (gardens, nature strips, road edges, parks, public open spaces).



Our small towns

- *Have unique character & features...*
 - *Community, geography, landscape, heritage*
- *Are facing major challenges...*
 - *Population decline*
 - *Unemployment*
 - *Ageing demographics*
 - *Loss of services*
 - *Climate change impacts*



- **Could lead to...**
 - **Infrastructure disruption, declining community health & productivity**
 - **Increased migration to larger centres**
 - **Increased demand for emergency services**
 - **Community fatigue**
- **Causing**
 - **Reduced viability & resilience of small towns**

Benefits of GBI in small towns

Social benefits



Improved urban amenity and liveability



Cooler landscapes reduce the urban heat island effect



Improved community physical and mental health

Environmental Benefits



Enhanced urban and aquatic biodiversity



Increased tree canopy and decreased air pollution



Increased stormwater/rainwater infiltration & moisture retention in soils

Economic benefits



Improved township entrances' kerbside appeal' for visitors



Better public open spaces - more significant usage and patronage



Increased opportunity for the use of alternative water



GBI in Small Towns

Principles & Techniques



GBI principles

- *A GBI approach aims to better utilise natural processes to control the quantity, velocity, and quality of water emanating from the urban landscape and improve living assets*

Ensure responsive and integrated design

Increase green-blue connectivity

Increase multifunctionality

Increase stormwater detention, retention and reuse

Apply holistic, systems thinking

Diversify water supplies

Protect, enhance and restore natural green features

Techniques – Roads

- *Why?*
 - *Significant footprint in small towns*
 - *Sealed pavement does not absorb any water, and generates stormwater runoff*
 - *Bitumen increases ground temperature*
- *What?*
 - *Increase stormwater detention, retention and reuse*
 - *Protect, enhance and restore natural green features*
- *How?*
 - *Minimise paved area to meet functional requirements*
 - *More permeable pavement than concrete or bitumen, e.g. gravel or paving*
 - *Use a lighter pavement colour to reduce heat absorption*
 - *Central vegetated buffers on wide streets*



Techniques – Car Parks

- *Why?*
 - *Large areas of unshaded space*
 - *Often paved with bitumen, some gravel*
 - *Significant heat impact, runoff*
- *What?*
 - *Increase stormwater detention, retention, reuse*
 - *Restore green features for shade, landscape amenity*
- *How?*
 - *Minimise impermeable paved areas*
 - *Consider permeable or unpaved segments, grass or gravel in less trafficked areas*
 - *Consider garden beds for vehicle separation barriers*
 - *Include canopy level trees for shade, amenity*
 - *Create passive irrigation opportunities for vegetation*



Techniques – street trees & nature strips

- *Why?*
 - *Street trees are a highly visible GBI in small towns*
 - *Provide shade, vistas and amenity as well as habitat*
 - *Greatly enhance the liveability and kerbside appeal*
 - *Nature strips are public land, but managed by adjacent resident, have many uses*
- *What?*
 - *Enhance and restore green features, diversity water sources*
 - *Ensure multifunctionality, through responsive & integrated design*
- *How?*
 - *Increase passive reuse of stormwater through permeable surfaces*
 - *Provide sufficient space, permeable surfaces for trees to thrive*
 - *Regular placement of larger trees suited to local conditions and canopy height trees where possible*



GBI in Small Towns

Developing an approach



GBI Opportunities

Level of decision-making, time frame of consequences	Types of processes within Local Government	Examples	Opportunity for GBI to add value
Strategic Long term	Corporate Plans	<ul style="list-style-type: none"> • Council Plan 	High
	Community or Place-based Plans	<ul style="list-style-type: none"> • Whole-of-township strategies & plans • Community Plans 	Very High
	Statutory Planning	<ul style="list-style-type: none"> • Strategic Land use Plans, • Framework Plans 	Very High
	Infrastructure Planning	<ul style="list-style-type: none"> • Rolling Capital Works Plan 	Very High
Tactical Medium term	Service Plans for functional areas	<ul style="list-style-type: none"> • Municipal Health and Wellbeing Plan • Asset Management Plans • Community Health Services 	High
	Statutory Planning	<ul style="list-style-type: none"> • Town Planning applications 	Low
Operational Short term	Service plans for specific areas	<ul style="list-style-type: none"> • Annual Works Programs 	Low

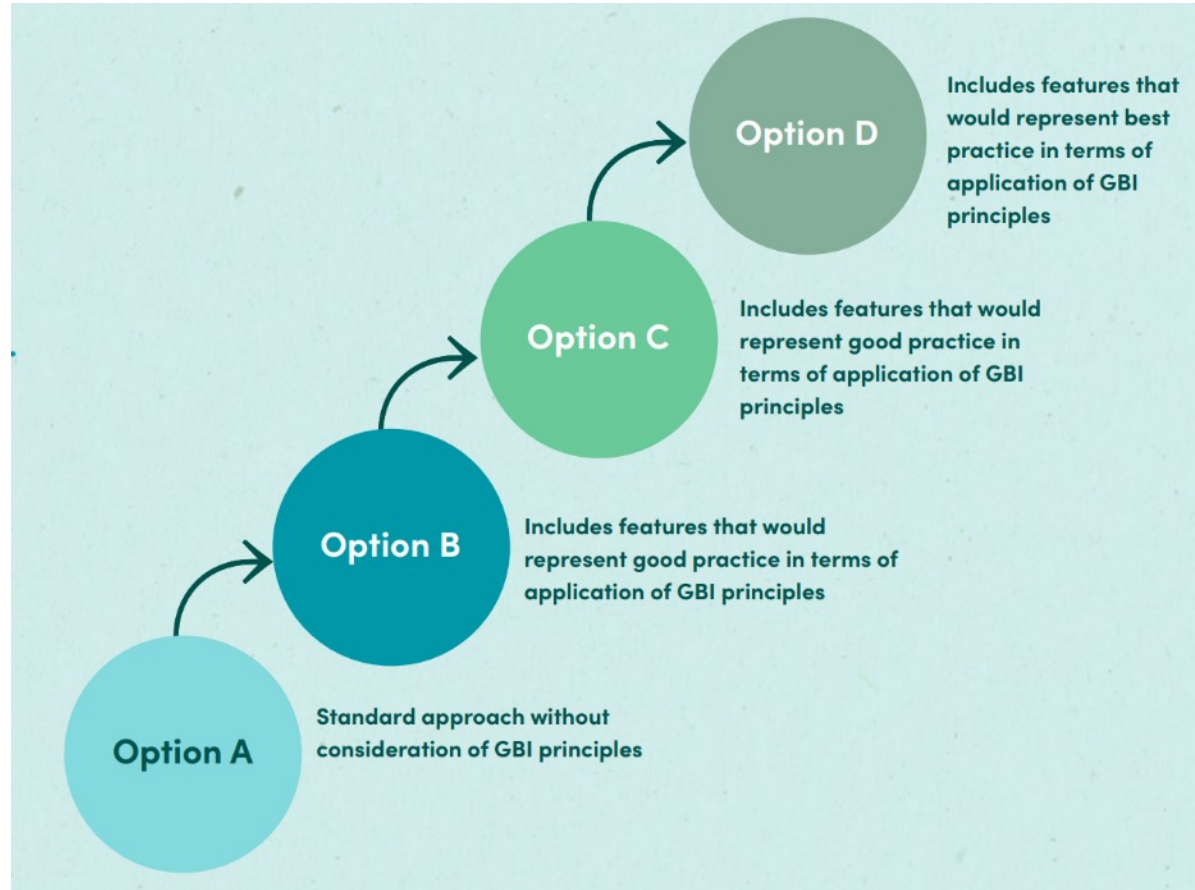
Method

The process for developing GBI opportunities should be relatively straightforward and involves:



- Identifying priority opportunities that warrant a GBI approach
- Develop all the options
- Screen the options
- Develop the business case

Identify and Screen Options



GBI in Small Towns

Case Studies

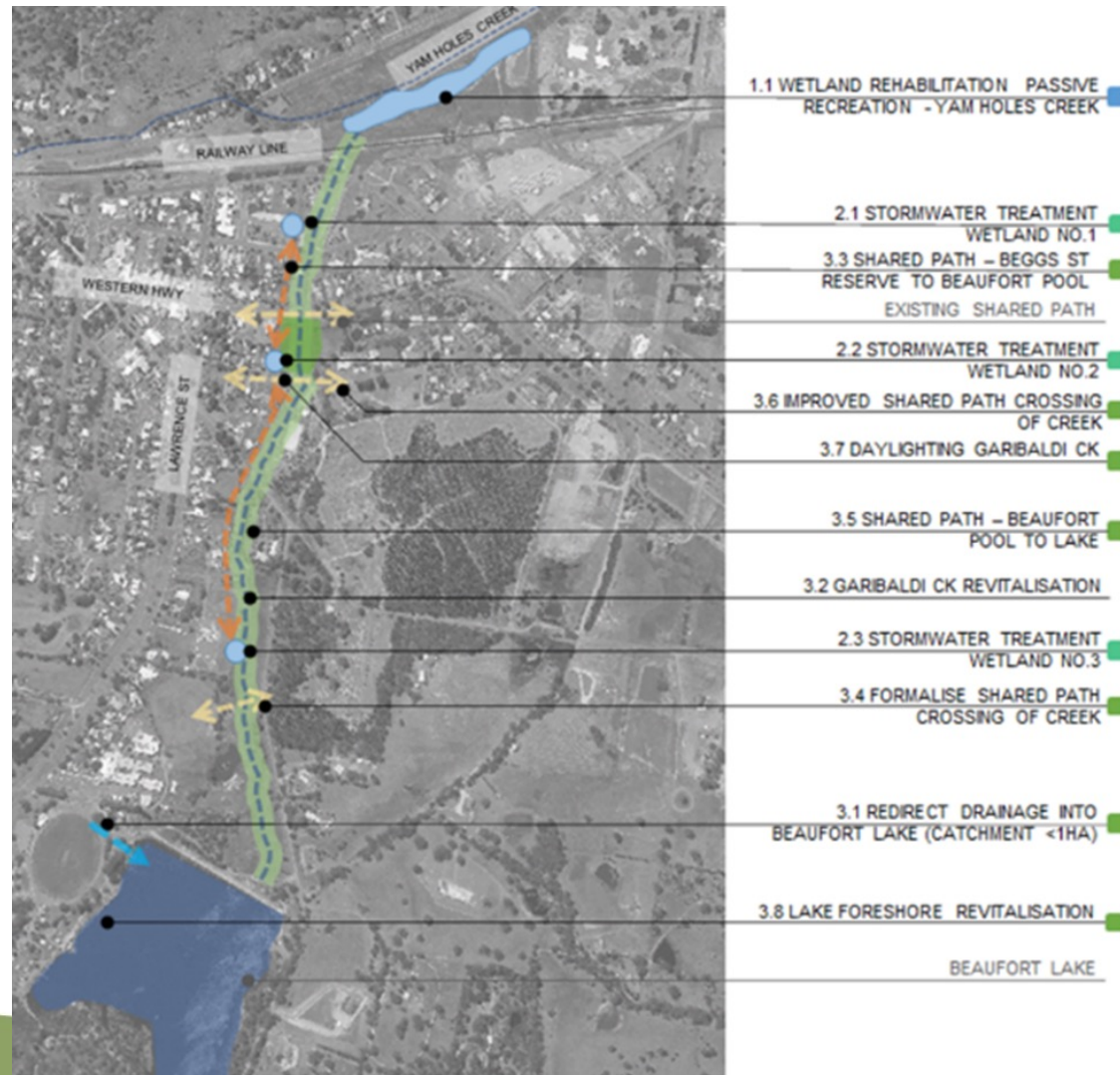
Beaufort Green-Blue links

The problem

- *Beaufort Lake is shallow, has a small catchment, prone to high evaporation and drying in summer, amenity lost when most needed*
- *Garibaldi Creek is degraded, offers little enviro or social values, experiences flooding at the highway*

The Opportunity

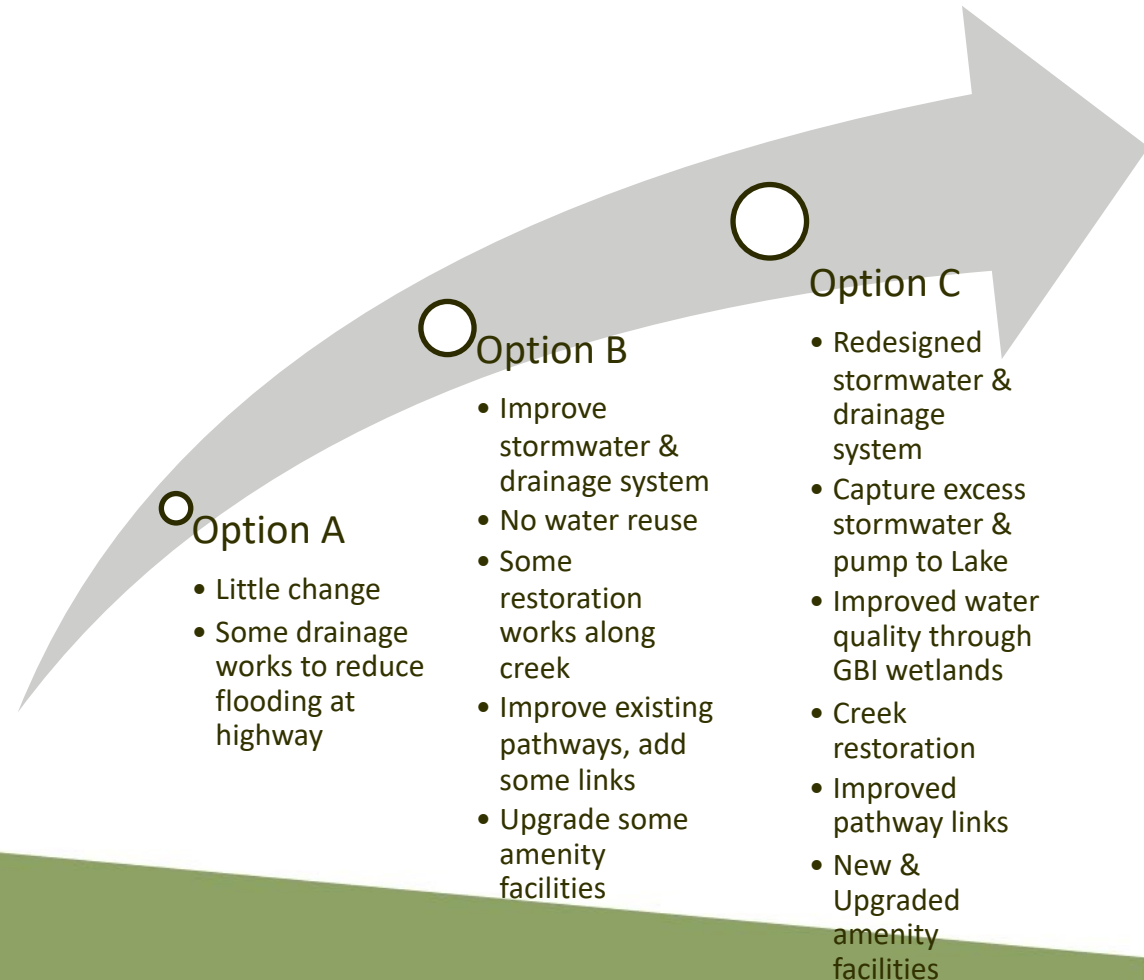
- *Council interest in getting water to the Lake, improving town amenity and pathways for local and visitors after the bypass*



Beaufort Green Blue Links

The GBI solution

- *Developed 3 Options*
- *Option A not acceptable given growth & community interest*
- *Option B considered interim step*
- *Option C Selected*
 - *a significant icon project for the town*
 - *Improved value and amenity for Lake & caravan park*
 - *Opportunity for external funding due to water reuse*



Beaufort Green Blue Links

Lessons

- *Started with many fragmented ideas*
- *GBI process – opportunistic & helped bring it together*
- *GBI Concept Plan was critical step*
 - *Ability to present the idea as a potential vision to community – strong support*
 - *Ability to pitch to potential partners & investors – allows for components to get \$*
- *Has kick started smaller steps*
 - *Upgrading existing play facilities*
 - *Funding proposal for master plan*



Haddon, Golden Plains Shire

GBI principle	Option A	Option B	Option C
Increase multi-functionality	No change, retain existing table and chairs	Replace table and chairs	<ul style="list-style-type: none"> • Replace table and chairs • Develop Landscape Plan for entire site • Add raised beds for a community garden
Protect, enhance and restore natural green features	No change, leave vegetation as is	<ul style="list-style-type: none"> • Removal of some older vegetation and weeds • Replant with local indigenous species 	<ul style="list-style-type: none"> • Removal of some older vegetation and weeds • Replant with local indigenous species
Increase stormwater detention, retention and reuse	No change; rely on potable water for outdoor use	<ul style="list-style-type: none"> • Increase water retention through onsite mulching 	<ul style="list-style-type: none"> • Onsite mulching • Install water tanks to reduce reliance on potable water use

“Get some runs on the board – start small and stimulate interest”



Lessons for LG

- *Utilise stakeholder engagement opportunities (staff & community)*
- *Align GBI with Council's strategic directions & services*
- *Align GBI with broader community aspirations & goals*
- *Develop an internal GBI champion*
- *Engage with planners & agree on guidance for GBI solutions*
- *Assess the Capital Works Plan for potential GBI opportunities*
- *Consider GBI techniques in procurement, renewals & upgrades*
- *Measure the benefits, report back on success & lessons*

Questions?



https://adaptgrampians.com.au/wp-content/uploads/2022/02/21470_Green-and-Blue-Infrastructure_final_10Jan.pdf