

APPENDIX 1

Rapid Waterway Condition Assessment Template

Stream Rapid Condition Assessment – DRAFT (V4 – 16-5-16)

Date/time:

Assessor:

Weather:

Water level and flow strength:

Transect Location (transect/band width of 20m)

- location description (streets, features, etc):

- ends points (GPS):
- compass bearing (from "south" end):
- length:

Photos:

upstream,

downstream,

left bank,

right bank,

transect south end to north,

transect north end to south

Note: "Left" bank and "right" bank applied as facing downstream (ie. looking in the direction of flow).

Cross Section

1

C. CHANNEL / WATERWAY FORM AND FEATURES (Descriptors Only, Not Scored)

C1. Waterway type (select one):

- ☐ Natural
- ☐ Modified or semi-natural (includes minor fill and bank modifications)
- ☐ Engineered/constructed (includes formalised or substantially shaped channel form)

C2. Channel style and modifications (briefly describe using relevant or applicable characteristics):

- sinuous
- meandering
- chain of ponds, or discontinuous channel
- indised
- flood benches/terraces
- wetlands
- degree of "containment" (ability for channel migration, natural or developed constraints)
- diverted or straightened channel
- engineered stream features – grassed swale, bank armouring, channelisation, levees, bridges, causeways, etc

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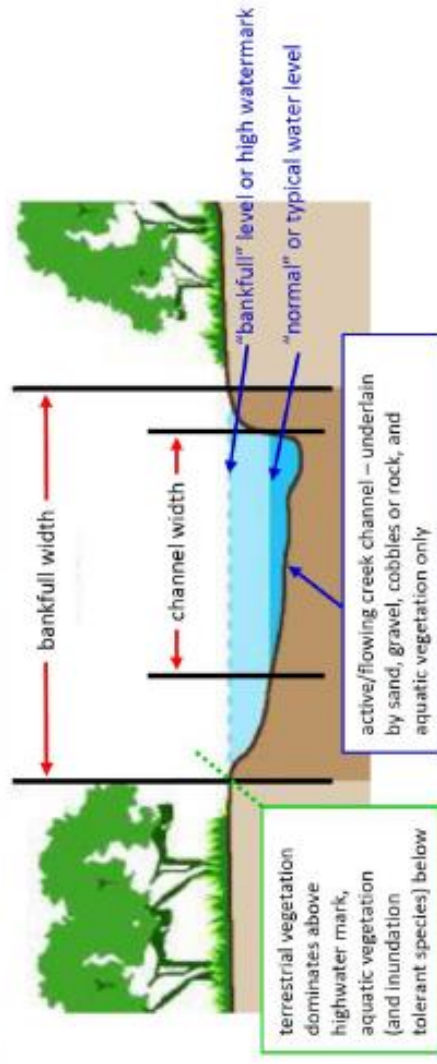
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C3. Widths:

- channel or baseflow width
- bankfull width



C4. Bed type/features description (briefly describe using relevant or applicable characteristics):

- run/flow, pool, pool/riffle sequence, bar, point bar, braiding
- bed material (bedrock, boulders, cobbles, pebbles, gravel, sand, silt/clay)
- gradient/fall





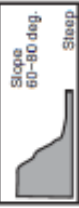



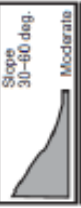











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C5. Bank slope and shape (select slope [left] and shape [right] for left and right bank, annotate diagrams as necessary):

Slope		Shape	
Left bank	Right bank	Left bank	Right bank
			
			
			
			
			

6/6 (10/30)

C6. Bank height (bed to top of bank, in 0.5m intervals):

Left bank

Right bank

C7. Bank material (type, in-situ or imported, etc):

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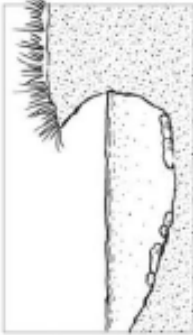
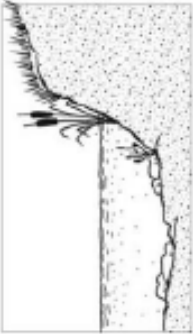
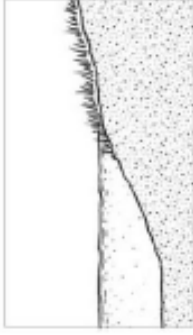
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B. BANK AND BED STABILITY / GEOMORPHOLOGY

Note – assess immediate banks along main stream channel (or to bankfull width if stream banks are largely absent or on a single/simple channel profile), do not apply to outer banks on larger/complex stream corridors or floodways

B1. Bank slope:

		
Undercut	Steeply sloping (> 25°)	Gently sloping (< 25°)
Both banks 12	One bank 6 Both banks 6	One bank 3 Either bank 0

NSW 9-10

B2. Bank height (bed to top of bank, at bankfull height):

- over 2 metres, both banks **4**
- over 2 metres, one bank only **2**
- under 2 metres, both banks **0**

B3. Bank erosion and stability (undercutting and slumping, gully and channels, rills, sheet erosion and bare soil/substrate, exposed tree roots or infrastructure [eg. fencing, culverts], knickpoints and head-cutting, gully development):

- extensive (> 70% of banks) **20**
- considerable (40 to 70% of banks) **16**
- moderate (15 to 40% of banks) **8**
- minor (5 to 15% of banks) **5**
- negligible or absent (< 5% of banks) **0**

B4. Stabilising bank vegetation (effectiveness of vegetation in stabilising the streambank – especially grasses, herbs/forbs and deep-rooted plants – as a percentage ground surface coverage)

- <40% ground surface coverage – or limited or poor bank stabilisation **8**
- 40–70% ground surface coverage – or good bank stabilisation **4**
- >70% ground surface coverage – or very good bank stabilisation **0**

B5. Bed erosion and stability (eroded/eroding stream bed [bedrock exposure, sand/sediment removal, channel edge undercutting], scouring, bed/channel deepening, increased sediment flux/movement):

- Extensive (> 70% of bed) **5**
- Considerable (40 to 70% of bed) **2**
- Minor to Moderate (5 to 45% of bed) **0**

B6. Stabilising in-stream vegetation (aquatic vegetation in, or along margins of stream – non-floating vegetation only that will assist in bed stabilisation, exclude dryland species)

- no stabilising in-stream vegetation (<10% or absent) **1**
- stabilising in-stream vegetation present, >10% coverage **0**

TOTAL SCORE - Bank and Bed Stability / Geomorphology (max. 50)

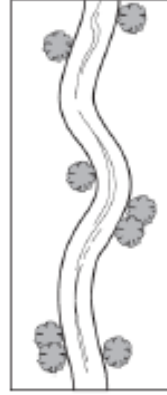
R. RIPARIAN VEGETATION AND HABITAT

Note – assess “natural” or “free-growing” unmanaged riparian vegetation cover only, but include regeneration/replanted areas, exclude open mown/landscaped grassed areas and managed parklands

R1. Width of riparian vegetation (include both native and introduced species) (excluding open mown/landscaped grassed areas and managed parklands):

- narrow <10 metres from high water mark **Left bank 7 Right bank 7**
- medium 10 to 25 metres from high water mark **Left bank 3 Right bank 3**
- wide >25 metres from high water mark **Left bank 1 Right bank 1**

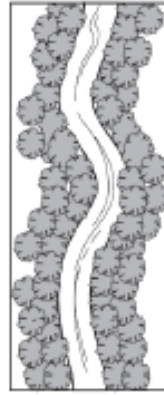
R2. Longitudinal continuity of riparian vegetation assess canopy and understorey continuity only (excluding groundcover and grass layers) (include both native and introduced species) (**NOTE** – assess a transect/band width of **50 metres**):



Very fragmented (no canopy or understorey continuity)
Left bank 3 Right bank 3



Discontinuous cover (frequent gaps of 25 to 30 metres canopy or understorey continuity)
Left bank 2 Right bank 2



Continuous cover (occasional/minor gaps in canopy or understorey continuity)
Left bank 0 Right bank 0

NSW 9-49

R3. Riparian vegetation cover by stratum (canopy >5 metres, understorey 1 to 5 metres, and groundcover <1 metre (include both native and introduced species) (estimate % canopy cover or foliage density):

Canopy (>5 metres)

- zero to low, <30% canopy cover **Left bank 6 Right bank 6**
- moderate, 30-60% canopy cover **Left bank 2 Right bank 2**
- high, >60% canopy cover **Left bank 1 Right bank 1**

Understorey (1 to 5 metres)

- zero or sparse, <5% ground surface area **Left bank 2 Right bank 2**
- low to moderate, 5-30% ground surface area **Left bank 1 Right bank 1**
- moderate to high, >30% ground surface area **Left bank 0 Right bank 0**

Groundcover (<1 metre, and including leaf litter)

- low, <20% ground cover **Left bank 2 Right bank 2**
- moderate, 20-60% ground cover **Left bank 1 Right bank 1**
- high >60% ground cover **Left bank 0 Right bank 0**

R4. Percentage of introduced species by stratum (canopy >5 metres, understorey 1 to 5 metres, and groundcover <1 metre), :

Percentage of introduced species	Canopy (>5 m)	Understorey (1 to 5 m)	Groundcover (<1 m)
Introduced species dominating (>75%), high levels of weed invasion	3	5	2
Mix of introduced and native species (each within the approximate range of 40 to 60%), moderately to heavily weed infested	2	3	1
Few (or no) introduced species, and predominantly (> 80%) native vegetation, low level of weed invasion	0	0	0

(Note: If no canopy or understorey layer present score 0 for that strata)

Record significant weeds or dominant introduced species present (for canopy and understorey only) and any declared noxious weeds (across any strata):

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R5. Integrity of native riparian vegetation (considering strata present and structural integrity, species diversity/density, age classes, tree health, and regeneration/recruitment):

- poor/degraded (substantially modified/impacted) 4
- fair 1
- good to excellent (natural or near natural condition) 0

R6. Habitat features (standing dead trees, hollow-bearing trees, fallen logs, boulders):

- absent 1
- present (at least 2 features within transect) 0

TOTAL SCORE - Riparian Vegetation and Habitat (max. 55)

A. AQUATIC (IN-STREAM) HABITAT

A1. In-stream and stream-edge aquatic vegetation (submerged, floating and emergent aquatic vegetation – algae, macrophytes, stoneworts, ribbon weeds, reed/rushes/sedges, etc – exclude dryland species along channel/water edge):

- negligible, absent or greatly modified **7**
- sparse (<10% coverage of bed/edge) **3**
- moderate (10-40% coverage of bed/edge) **1**
- abundant (>40% coverage of bed/edge) **0**

A2. Percentage of introduced aquatic vegetation species:

- moderate to high levels of introduced aquatic species (>35%) **2**
- low levels of introduced aquatic species (<35%) **1**
- negligible levels of, or no, introduced aquatic species **0**

Record any declared noxious aquatic weed species present:

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A3. Extent of stream cover/shading (from all sources – shading/overhanging vegetation [canopy cover], root/bank overhang, trailing vegetation [in-stream or stream-edge], man-made structures, etc) assess as percentage shade offered under "high sun"

- little or no stream cover/shading (<30%) **6**
- moderate to good stream cover/shading (30-60%) **3**
- extensive stream cover/shading (>60%) **1**

A4. In-stream habitat features (snags, logs and large woody debris [>10 centimetre diameter], roots, snags, dumped aquatic vegetation, accumulated organic matter, grouped rocks/boulders, pools and riffles, deeper pools, etc):

- negligible or absent **4**
- occasional /scattered habitat features **2**
- abundant/frequent and/or varied habitat features **0**

A5. Smothering by mobile sediments and sediment deposition in channel percentage of streambed covered by fine/mobile sediment (sufficient to smother stones/cobbles):

- large area of bed covered by mobile fine sediment (>80% bed coverage) **6**
- significant build-up of gravel, sand or fine sediment (50 to 80% bed coverage, typically on bends and at obstructions) **2**
- some deposits of sand, gravel and silt (20 to 50% bed coverage, typically in pools and on bars and bends) **1**
- Little sediment deposited (<20% bed coverage, no obvious reduction in channel depth) **0**

TOTAL SCORE - Aquatic (In-Stream) Habitat (max. 25)

D. DISTURBANCES AND PRESSURES

Note – assess a transect/band width of 50 metres.

D1. Stormwater outlets/pipes and water discharge points:	
• present, bank/discharge guttering or erosion evident	6
• present, without GPT/SQID	3
• present, with GPT/SQID	1
• absent	0
D2. Surrounding land use and potential levels of waterway impacts:	
• high impact land uses – industrial areas, service stations and fuel/chemical storage, activities with extensive excavation/fill/stockpiles [including disused sites]), unsewered residential areas, unfenced grazing and stock access, etc	6
• medium impact land uses – residential and commercial areas, major transport corridors (road and rail), sewer vents and overflow points, etc	2
• low impact land uses – parkland, open space, etc	1
• negligible/zero impact land uses – bushland, national parks, etc	0
D3. Bank disturbances, encroachments and developments (score any present):	
• unauthorised encroachments (stream bank alienation, lawns and gardens, unapproved clearing of riparian vegetation or impediment of regeneration)	2
• excavation or fill (unauthorised works only) (excluding garden waste)	2
• stock access/tracking and grazing pressures	1
• unsealed causeways or vehicle access	1
• extensive trample tracks and footpads and/or recreational use (including informal/unapproved facilities)	1
• managed/landscaped parks and open spaces	0
• negligible or absent	0
D4. Occurrence of in-stream and stream-edge litter and gross pollutants:	
• large litter common (tyres, drums, bricks, shopping trolleys, etc)	2
• occasional large pieces of litter, or small litter common (drink containers, plastics, paper/wrappings, etc)	1
• occasional small litter items, or negligible litter obvious	0
D5. Garden/green waste dumping:	
• present	2
• absent	0
D6. Visible water pollution/pollutants (algal blooms or filamentous algae, water surface sheen, discolouration, rust deposits, odours, etc):	
• present	1
• absent	0

TOTAL SCORE - Disturbances and Pressures (max. 20)

Total Condition Assessment Scores:

Bank and Bed Stability / Geomorphology (50)

Riparian Vegetation and Habitat (55)

Aquatic (In-Stream) Habitat (25)

CONDITION ASSESSMENT TOTAL (max. 130)

Score Range	Stream Condition
0 - 15	Excellent
16 - 35	Good
36 - 60	Fair
61 - 85	Poor
> 85	Highly Degraded

Disturbances and Pressures (max. 20)

Adjusted Total (max. 150)

APPENDIX 2

Policy and Planning Context – Relevant Plans/Reports Summary

Open Space and Recreational Needs Study 2011

Recommendations

- No. 22 - Complete the first stage of the walkway along Farmers Creek and commence detailed designed for stage two. High priority (not costed).
- No. 28 - Continue to develop the recreation corridor along Farmers Creek (mapped in Appendix 2 as extending from Saywell Street Park to the council depot on the Sewage Treatment Plant access road). High and ongoing (not costed).
- No. 18 - Walking and cycling are likely to continue to increase in popularity, so too will the demand on Council to provide safe, quality connections and meandering paths. Walking is the preferred physical activity option for the majority of people and is growing as the population ages. The community will continue to demand more walking options to meet this need.
- No. 7 - Any significant park upgrade or new park proposed by Council ... should be designed by, or reviewed by, a person with the appropriate skills – most often a landscape architect. High priority and ongoing (cost will vary depending upon the role).
- Priority Recommendations (for the Lithgow Precinct) - Continue to develop the recreation corridor along Farmers Creek, linking residential areas and key community hubs (retail hubs, schools and so on).

Council Views

Councillors recognised that “development of additional walking and cycling opportunities is important, particularly for our aging community”.

The Section 355 Sports Advisory Committee acknowledged that “walking and cycling will continue to be popular activities” and that “a foot/bike path along Farmers Creek safely linking Tony Luchetti Sportsground, Watsford Oval, Conran Oval, Glanmire Oval and Marjorie Jackson Oval (collectively where major junior sports are played) would be beneficial”.

The Section 355 Environmental Advisory Committee considered “the most important priority Council should consider for the Lithgow LGA” was “access to a quality walking system” which included “long distance trails, short walks in natural areas; a series of urban walks and cycling circuits”. The walk along Farmers Creek was cited in particular and that “access to seats for resting, water and shade need to be considered along this circuit”.

Parks Management and Engineering Services officers identified the development of “a good pedestrian (walk and cycle) path system in the urban areas” as one of Council’s two highest priority for their department, and that “the first stage is to complete a link along Farmers Creek in Lithgow”.

“A better quality walk/cycle network” was identified as one of three “top priority infrastructure needs” by Council’s Community Development officers.

Community Views

One of two key messages from the Lithgow Community Workshop was the “need to further promote and develop walking and cycling opportunities”.

The Strategy summarised the workshop’s walking and cycling discussions noting that – “Walking and cycling are also popular pursuits within Lithgow. Opportunities exist to further promote and develop walk and cycleways. Ideally, Lithgow would enjoy a network of walking and cycling opportunities that provide loops and links to key facilities and open space areas. It may

be worth pursuing access to unused railway easements to help create these links. Additional seating is required along these walking circuits. In large parks ... simple walking loops (potentially with exercise stations) could be developed.”

Recreation and Physical Activity Demand, Participation and Constraints

The Strategy cites (then) current Recreation and Physical Activity data for New South Wales as a whole noting that:

- walking is the single most frequently undertaken activity at a 35.8% population participation rate;
- running (10.7%) and cycling (9.0%) are also in the top five activities;
- informal, unstructured activities have substantially higher participation rates than organised sports; and
- older people are more likely to participate in informal or unstructured activities;

Considering these trends, and the specific demographic and socio-economic of the Lithgow LGA, the Strategy identifies that:

- it will be important for Council to maximise opportunities for walking and cycling, as these are popular physical activity options;
- unstructured recreation and physical activity pursuits, such as walking (and swimming), will be more sought by the area’s aging population;
- the provision of “low cost and easily accessible recreation and physical activity opportunities” will be an imperative, in recognition of the area’s older population and high proportion of low income earners; and
- an aging population will “put pressure on Council to implement and continue to extend its footpaths and trails network particularly linking residential areas with parks and senior-orientated venues”.

A survey of more than 200 households across the Lithgow LGA identified “more walk and cycling tracks” as the second highest need (or priority) for the region – with 14% of respondents citing the lack of these facilities as a “negative” limiting their participation in recreation and physical activity.

The “main barriers” identified as preventing people from walking and cycling in the Lithgow LGA included:

- lack of connections/linkages between streets and open spaces;
- lack of pathways within parks, open spaces and streets;

- isolated parks and open spaces where people feel unsafe;
- parks and open spaces lacking aesthetic appeal;
- poor quality pathways and roads that are poorly maintained;
- lack of facilities (toilets, seats, shade, drinking water, parking) provided in parks and along pedestrian/cycle paths;
- heavy traffic with limited or no pedestrian and cycle crossings; and
- lack of on-road bicycle lanes and unsafe road conditions.

The Strategy recommends that Council should aim to develop “pathway systems” with paths in urban areas to be “developed [wherever possible] to be all-weather (concrete) and wide enough to cater for a range of users including pedestrians, people in wheelchairs/mobility scooters, bicycles, scooters and those with other general mobility issues”. Supporting infrastructure recommended included “shaded seats at regular intervals, water taps/bubblers and both directional and informative signage”.

Shared Path Networks, Park Settings and Standards

The Strategy defined a “Recreation Corridor or Recreation Linkage” as “linear parks or recreation corridors are embellished to provide pedestrian linkages that connect recreation facilities, other types of open space, residences, community infrastructure and commercial areas, or form a circuit, or create linkages and access via land beside riversides, creeks and waterways”. Infrastructure is provided to facilitate recreation use, including a formed path, with an “attractive recreation setting”. These linear parks and links provide physical, visual and cognitive linkages of open space areas and community facilities or form a circuit; provide opportunities for cycleways and walkways; or create linkages along and access to riversides, creeks and waterways. The envisaged Farmers Creek Open Space and Recreation Corridor precisely fits this definition of a “recreation corridor or recreation linkage”.

The Strategy identifies four “Park Settings” intended to provide diversity within a recreation and open space network - by varying the physical, social and managerial contexts of a site to offer a range of recreational settings and possible experiences. Three of these are particularly applicable to the envisaged Farmers Creek Open Space and Recreation Corridor (through the Lithgow urban area):

- urban setting - predominantly open, mown grass areas or hardened sites (paved), there may be a few trees providing shade and limited landscaping/garden beds, adjacent built infrastructure dominates view lines;
- semi-urban setting - substantial mature tree canopy over most of the park with predominantly mown grass areas underneath, recreation activity areas may include some paving (but only in small amounts), some parts of the park may have under-storey (particularly on the boundaries screening adjacent land uses), view lines still include adjacent built infrastructure however these no longer dominate; and
- semi-natural setting - substantial mature tree canopy over most of the park with large areas of the park covered by under-storey vegetation, recreation occurs in developed nodes which are likely to be mown, and along highly accessible pedestrian paths (walking and cycling).

Specific to any proposed pedestrian pathway access network the Strategy recommends that path surface material “will reflect the park setting and desired degree of accessibility (e.g. natural settings are enhanced with grass or gravel paths and board-walking)”. Access paths in “local recreation” parks are recommended as having a 1.2 metre minimum width while “district recreation” parks may contain walk/cycle circuits at least 2 metres wide.

Greater Lithgow City Council Bicycle Plan- 1998

Recommended “an off-road path along Farmers Creek corridor”, from the Methven Estate in the west (in the Fullagars Avenue area) to Oakey Park in the east – initially as an unsealed/gravel route, and subsequently sealed. This “Farmers Creek Route” is identified as “a major off-road path” to be “sealed as pathway for shared bicycle and pedestrian use” and established in conjunction with Council’s efforts in “developing this area for open space to promote tourism and physical activity”.

“Farmers Creek Route” is identified as one of three priority projects, for staged implementation over a four year programme.

Community survey (245 questionnaires, both cyclists and non-cyclists) indicated that “a route along Farmers Creek appears to be very popular as a means of encouraging future cycling”.

Community survey also “identified that the single most important reason people stated for not cycling was ‘the lack of facilities available’ “.

Recommended off-road routes as “shared pedestrian cycle paths of a preferred minimum width of 2.5 metres with a reservation to allow for landscaping where appropriate”.

Stressed the importance of:

- accessing and linking trip generators – such as “open space, schools and shops”;
- route continuity and linkages;
- creating circuits;
- clear route marking and directional signage, shared path and bicycle logos;
- improving intersections and road crossings to enhance cyclist safety
- catering for a range of users – children, novices, family groups, seniors, tourists, and commuters; and
- bicycle parking at destinations and key points.

Path provision to encourage seniors to cycle for exercise and transport, and alternative equipment types (“tricycles with baskets”).

Lithgow Generic Community Lands Plan of Management 2013

This Plan of Management classifies (in accordance with the *Local Government Act 1993*) and provides management directions or guidelines for all lands that are owned and/or managed by Lithgow City Council and categorised as “community lands” (excluding Blast Furnace Park and other sites of cultural heritage significance). It includes Crown lands under Council’s management.

Community land categorised as either Sportsground, Park, Natural Area or General Community Use – as well as Crown lands – occur along the Farmers Creek corridor though the Lithgow urban area.

Enhancing the Farmers Creek corridor to deliver improved recreational, amenity, environmental and water quality outcomes is consistent with the objectives of these community land categorises.

Lithgow Land Use Strategy 2010 – 2030

The Strategy identifies (in relation to identifying and meeting changing community needs when planning for open space and recreation) the need for planning “to keep pace with and respond to the changing needs of the community as a result of aging and other demographic indicators such as household size and income”. The Strategy recognises the LGA’s rapidly ageing population and significantly increasing percentage of people over 55 years old, with the need to “provide for increased focus on planning and design to promote active ageing/walkability and range of open space and recreational facilities” to meet these changing needs. It specifically acknowledged that an older population is more likely to seek unstructured pursuits such as walking, with resulting continued pressure on Council to extend the footpath and trails network. Overall recreational activity trends away from structured sporting activity in favour of pursuits such as walking were also noted. Managing accessibility and equity in open space planning, considering accessibility and ensuring a reasonable spatial distribution of open space and recreation opportunities within urban centres, as also seen as an issue. This included the availability of low cost and easily accessed opportunities for older populations and low income earners.

Of particular relevance for the envisaged Farmers Creek Open Space and Recreation Corridor:

- the Lithgow Strategic Analysis (SWOT Analysis) included in the Strategy identified the provision of “linkages between open space areas for walking and cycling” as an opportunity; and
- the Strategy included a specific reference to “improving and expanding the pedestrian and bicycle network” (as item T5 under G6. Providing infrastructure for growth”).

The Strategy also:

- notes that flooding “particularly along Farmers Creek in Lithgow” will impact upon the planning of future land use in this area;
- acknowledges that the Lithgow urban area “has the basis for a substantial stormwater management system”, of both concrete pipes and open channels, which empty into Farmers Creek but without “any stormwater management structures or controls”; and
- recognises the need to provide for greater focus to Crime Prevention through Environmental Design (CPTED).

Lithgow Flood Study Review Report 2015

This report was primarily on a hydrological investigation of flooding in the Farmers Creek catchment (and Marrangaroo Creek catchments) drawing data from a number of sources – ranging from LiDAR (Light Detection and Ranging) survey data to anecdotal reports and private photographs. Its objective was to “define flood behaviour in terms of flows, water levels and flooding patterns for floods ranging between 5 and 200 year ARI, as well as for the PMF” (Probable Maximum Flood). The study applied rainfall runoff hydrologic modelling of the Farmers Creek catchment and associated urban drainage system to determine flows – including overland flows – and used this information in a hydraulic model to assess peak water levels and flow patterns. The study determined and mapped flood levels/areas for differing return intervals for the land along Farmers Creek its major tributaries and drainage system. It also identified an “Interim Flood Planning Area (IFPA) for Lithgow - for areas subject to both main stream flooding and major overland flows.

The study did not identify/recommend any detention basins, off-line wetlands or other flood mitigation/management measure in or along Farmers Creek upstream of the Great Western highway that were pertinent to the masterplan. However the study’s flood mapping was included in the constraints and opportunities assessment and plans.

Lithgow Community Strategic Plan 2025

The following two “Principle Activity Areas” in the Lithgow Community Strategic Plan 2025 are especially relevant:

- Developing Our Built Environment; and
- Enhancing Our Natural Environment.

The following extracts from the Strategic Plan are relevant in relation to the envisaged Farmers Creek Open Space and Recreation Corridor.

The Developing Our Built Environment theme identifies “providing additional open space and recreational areas across the LGA” as an issue with relevant challenges to:

- “Establish a system of cycleways and pedestrian paths to provide links between major cultural and recreational facilities, residential areas and town centres”;
- “Ensure developments within our parks, open spaces and community facilities take into account the needs of a range of groups – including families, youth, older people and people from culturally and linguistically diverse backgrounds”; and
- “Improve the recreation, natural and urban areas for the benefit of residents and visitors”.

Another identified issue is “to provide a variety of community facilities suitable for all ages, and connect points of destination within towns and villages” with the associated challenge of providing “a variety of cultural and recreational facilities suitable for all ages”.

Objective 3.2 in relation to the Developing Our Built Environment priority area is to ensure “sustainable and planned growth through the provision of effective public and private transport options and suitable entertainment and recreational facilities to enhance the lifestyle choices of the community”, and the applicable desired outcomes are:

- at 3.2.4 Cycleways and Walkways - To establish a system of cycleways and pedestrian paths to provide links between major cultural and recreational facilities and town centres (3.2.4.1);
- at 3.2.10 Recreational Facilities - To develop recreational facilities that will meet the needs of the community now and into the future (3.2.10.1); and

- at 3.2.6 Heritage - To Identify, preserve, improve and promote the LGA’s indigenous and non-indigenous built and natural heritage (3.2.6.1).

The Enhancing Our Natural Environment theme identifies minimising the effects of climate change as an issue, with the associated challenge to “develop infrastructure for walking and cycling”. Objective 4.1 for this priority area is to “conserve and preserve the natural environment whilst balancing the impact of development to ensure a sustainable and healthy community”, and the applicable desired outcomes are:

- at 4.1.3 Biodiversity - To responsibly manage natural resources through the control of environmental and noxious weeds (4.1.3.2);
- at 4.1.5 Natural Heritage - To identify, preserve, improve and promote the LGA’s indigenous and non-indigenous built and natural heritage (4.1.5.1); and
- at 4.1.6 Water - To protect our waterways and provide safe drinking water (4.1.6.1).

Council Combined Delivery Program 2013-2017 and Operational Plan 2015-2016

Council’s Operational Plan 2015-2016 identifies the following actions and performance targets relevant to the envisaged Farmers Creek Open Space and Recreation Corridor:

- at 3.2.06 Heritage (3.2.6.1 - To identify, preserve, improve and promote the LGA’s indigenous built and natural heritage) - Implement works at Blast Furnace Park and nearby precinct in relation to safety and interpretive signage (action), with the construction of raised walkways, viewing platforms, fenced pathways and interpretive signage (performance target); and
- at 4.1.3 Biodiversity (4.1.3.2 - To responsibly manage natural resources through the control of environmental and noxious weeds) - Weed control of natural water courses (action), with weed control undertaken at Farmers Creek (performance target).

The following relevant 2015-2016 budget allocations are identified for the Enhancing Our Natural Environment Priority Area:

- \$10,000 (capital expenditure) – for Farmers Creek Vegetation;

- \$35,000 (recurrent expenditure) – for Farmers Creek Environmental Improvement; and
- \$20,000 (recurrent expenditure) – for noxious weed control and removal (whole LGA).

The following relevant 2015-2016 budget allocations are identified for the Developing Our Built Environment Priority Area (all are capital expenditure allocations):

- \$5,000 – for the Lithgow Heritage and Interpretive Trail;
- \$55,000 – for Lithgow parks and gardens;
- \$100,000 (plus expenditure of \$300,000 income) – for Blast Furnace Park Cultural Heritage Precinct development;
- \$60,000 – for footpath construction (whole LGA);
- \$70,000 – for recreational facilities (whole LGA); and
- \$100,000 – for urban drainage improvements (whole LGA).

Lithgow Strategic Asset Management Plan 2012-2022

Footpaths and recreation facilities are two of twelve classes of assets for which the Lithgow Strategic Asset Management Plan set outs management and maintenance directions and expenditures over a ten year timeframe.

In relation to footpaths the Plan acknowledges the “community desire to extend footpath/cycleway along Farmers Creek linking recreation areas” and restates the strategic objective “to establish a system of cycle ways and pedestrian paths to provide links between major cultural and recreational facilities and town centres”. One of the Plan’s stated aims is “extension of footpaths and cycle ways to comply with increased use by community”. It proposes a budget allocation of a rolling annual amount of \$80,000 for cycleways/footpaths from 2013-14 onwards.

The Asset Management Plan is linked to and operationalises elements of the Lithgow Community Strategic Plan 2025. In regard to “Our Built Environment Programs” it identifies the following actions relevant to the envisaged Farmers Creek Open Space and Recreation Corridor.

At 3.2.4 Cycleways and Walkways, to achieve the desired outcome “to establish a system of cycleways and pedestrian paths to provide links between major cultural and recreational facilities and town centres” (3.2.4.1), the Asset Management Plan identifies implementing elements of the Lithgow Open Space and Recreation Needs Study, including the following actions:

- developing and progressively implement sections to the Corridor concept linking residential areas and key points of interests;
- providing interpretive signage, seating and interactive experiences along cycleways and pedestrian paths;
- incorporating fitness/obstacle courses in the design of shared cycleway and pedestrian paths;
- identifying and developing cycleways and trails to link towns and villages; and
- developing and maintaining accessible footpaths in the Lithgow urban area.

At 3.2.10 Recreational Facilities, to achieve the desired outcome “to develop recreational facilities that will meet the needs of the community now and into the future” (3.2.10.1), implementing elements of the Lithgow Open Space and Recreation Needs Study, implement the Open Space and Recreation Needs Study (and others) in relation to the following actions:

- developing and upgrading ... recreational facilities to meet the needs of the community; and
- identifying community and environmental assets that can be maximised and exploited for the benefit of the local community and which also add to the attractiveness of the region for present and future residents and investors.

In regard to “Our Natural Environment Programs”, at 4.2.3 Climate Change, it identifies the action of increasing “sustainable transport use e.g. walking, cycling for work and recreation” as one way to help realise the desired outcome of significantly reducing carbon emissions within the LGA. (4.2.3.1).