

RIVER TORRENS LINEAR PARK

STRATEGIC INTEGRATED ASSET MANAGEMENT PLAN



FUTURE TRENDS THAT MAY AFFECT THE LINEAR PARK AND ASSOCIATED ASSETS



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1 EXECUTIVE SUMMARY

- This report lists trends and changes that have been identified and which may affect the level of use of land and other assets comprising the Torrens Linear Park, or the nature of that use.
- The Linear Park and associated assets will be affected by trends operating at global, national, State, metropolitan and local scales, and over varying timeframes.
- **Increased costs for asset maintenance and replacement** are likely to arise due to climate change and the associated increase in the frequency and intensity of extreme weather events. Climate change will also indirectly affect Linear Park assets by changing patterns of use of the Linear Park in response to changed environmental conditions. **Costs to address and mitigate climate change impacts** on the Linear Park and its assets are also likely to be incurred.
- Expectations in relation to a “whole of life” approach to asset investment will have an impact on strategic asset management, as will changing expectations of users in relation to the use of technology for signage and wayfinding purposes.
- **Increased use of the Linear Park and its assets** will occur, based on anticipated growth in the population of metropolitan Adelaide, and planning objectives that much of the growth should occur as “infill” of established urban areas, some of it at high or medium density. Many of the areas designated to accommodate such infill development are in close proximity to the Linear Park. Similarly, a number of areas designated for more intensive employment or mixed-use development are close to the Linear Park.
- **Changes in the nature of activities** and the resulting demand for particular kinds of asset will arise from social changes such as the growing number of older people in the community; the expectation that people with disabilities should be encouraged and enabled to use the Linear Park; continuing increases in the popularity of walking, running and cycling; and the growing number of people who choose cycling as a mode of transport for commuting and recreational purposes.
- Strategic asset management will also need to take account of the importance of the Linear Park for its urban biodiversity values, and as a designated “greenway”, and balance increasing demand for use of the Linear Park for recreational and commuting purposes with investment that promotes these environmental values.

2 GLOBAL AND NATIONAL TRENDS

2.1 Climate change

- Australia is expected to experience significant environmental and economic impacts from climate change across sectors including water security, agriculture and infrastructure. Many of these impacts will arise from increases in the frequency and intensity of extreme weather events.¹
- Specifically in relation to South Australia, identified impacts include sea level rise and potentially greater storm surges; declines in future rainfall, with declines most notable in winter and spring, leading to decreased flows in water catchments; and despite a drier average, an increase in flood risk due to an increase in extreme rainfall events.²
- The average annual number of days above 35 degrees Celsius in Adelaide may increase from 17 currently, to 21-26 by 2030 and 24-47 by 2070. Heat-related stress, illness and death may increase among vulnerable people, particularly the elderly.³
- These impacts will be felt directly through their impacts on the Linear Park environment and assets; and indirectly through changes in the usage of the Linear Park.
- Climate change is likely to result in increased costs for asset maintenance and replacement. For example:
 - increased frequency of hot weather and declines in rainfall will shorten the lifespan of some plant species. Costs will be incurred through more frequent re-planting, or the establishment of more resilient species;
 - extreme rainfall events and associated flooding is likely to damage or destroy assets such as riverbanks, paths and bridges; and
 - sea level rise and storm surges may damage or destroy streamside assets along the lower reaches of the river.
- Indirect changes are harder to predict. For example:
 - an increase in the frequency of very hot summer days would decrease the volume of use of the Linear Park, particularly in the hottest late morning to early evening hours of those days;
 - generally warmer temperatures may however increase the volume of use of the Linear Park in periods such as early mornings and early evenings in spring and autumn, times which some people may now consider not warm enough; and
 - more frequent and severe flooding will decrease usage of the Linear Park, particularly if it blocks access to parts of the Linear Park or continuity of walking or cycling paths.

¹ Australian Government, Department of the Environment and Energy, <https://www.environment.gov.au/climate-change/climate-science/impacts>, accessed 8 September 2016

² Australian Government, Department of the Environment and Energy, <https://www.environment.gov.au/climate-change/climate-science/impacts/sa>, accessed 8 September 2016

³ *ibid.*

- Climate change impacts might be addressed or mitigated through a number of asset management measures. For example:
 - as new areas of landscaping are established or existing sections maintained, plant species which are more resilient to impacts such as hot weather and flooding should be selected;
 - landscaping may also be able to mitigate some of the expected impacts of climate change on users of the Linear Park. Increased areas of tree canopy, for example, could provide additional shade for users on days of extreme heat; and
 - when existing infrastructure such as paths, bridges, public toilets, lighting and signage is renewed, or new infrastructure established, a key consideration should be to ensure that the infrastructure is robust enough to withstand expected climate change impacts.

Mitigation measures of this kind are likely to result in increased expenditure, compared to expenditure that would be incurred in the absence of climate change impacts.

2.2 Materials and technology

- Recent years have seen a trend, likely to continue in the future, towards taking a “whole of life cycle” approach to investment in infrastructure. When replacing an existing item of infrastructure, for example a bridge, consideration would be given to the use of recycled materials where appropriate. Costs of maintenance and, at the end of their useable life, removal and disposal of assets will also be a factor in strategic asset management planning. Application of these considerations to the Linear Park and its assets has the potential to improve the efficiency and sustainability of investment decisions.
- Changes in information and communication technology, and the way it is used, will change the expectations of many users of the Linear Park in relation to signage and wayfinding. Where a detailed map or plan might once have been expected and provided, some users now and in the future might find a display more useful if it includes interactive or dynamic content or it lets users access information on their own devices, for example by providing a barcode or download link. As these features and functions become more common, signage expenditure might need to increase, or be re-allocated, to meet the resulting expectations.

3 STATE AND METROPOLITAN TRENDS

3.1 Population growth and distribution

- An increase in the population of metropolitan Adelaide will increase the number of people who use the Linear Park, assuming that per-capita rates of use remain constant.
- The revised population growth scenario underlying metropolitan planning for Adelaide anticipates a growth of up to 545,000 people over the next 29 years, resulting in a total population for Greater Adelaide of 1,970,000 by 2045.⁴ While previously growth has occurred predominantly in the form of detached housing in northern and southern suburbs on the city fringe, the current metropolitan strategy seeks to reinforce a trend towards more diverse forms of housing in locations served by existing infrastructure and with established access to jobs and services. A key high-level target is for 85% of all new housing to be built within established areas by 2045. The metropolitan strategy therefore supports a review of planning policies to enable greater density developments in established suburbs, where appropriate.
- Since the Linear Park bisects metropolitan Adelaide through many of its longest-established residential, commercial and industrial areas, realisation of the metropolitan strategy is likely to result in a large increase in the number of residents who are close to the Linear Park, both in absolute numbers and as a proportion of the population of metropolitan Adelaide. This is reinforced by Policy P82 of the Draft 30 Year Plan, which seeks to ensure that urban development is aligned with the provision of appropriate community and green infrastructure, including walking and cycling paths and facilities, and public open space.
- Strategic planning should therefore recognise that some areas in close proximity to the Linear Park have been designated as particularly appropriate for residential growth. Correspondingly, the rate of growth in the overall level of usage of the Linear Park is likely to exceed the rate of population growth of metropolitan Adelaide as a whole.

3.2 Population ageing

- Growth in the number of older people, numerically and as a proportion of the total community, is experienced in many countries, including Australia. South Australia and Adelaide are experiencing this change to a greater degree than some other communities, with the median age of the State population increasing from 35 to 40 years between 1995 and 2015, compared to a national median age which increased from 34 to 37 over the same period.⁵
- Strategic asset planning should take into consideration that a larger number and proportion of users of the Linear Park are likely to be older. This may result in a change in the relative levels of demand for particular assets – for example less

⁴ Government of South Australia, 30-Year Plan for Greater Adelaide, Draft for Consultation, 2016 -

https://livingadelaide.sa.gov.au/content/uploads/2016/08/DPTI-30-Year-Plan_150dpi.pdf - accessed 12 September 2016.

⁵ Australian Bureau of Statistics, Publication 3101.0 – Australian Demographic Statistics, June 2015 – Population by Age and Sex, Australia, States and Territories -

<http://www.abs.gov.au/ausstats/abs@.nsf/featurearticlesbyCatalogue/7A40A407211F35F4CA257A2200120EAA?OpenDocument> – accessed 12 September 2016

demand for children's playground areas and more for walking and cycling trails. It may also change the way in which use of assets is distributed over time – for example, older users who no longer work full-time may wish to use the Linear Park during weekday working hours which previously experienced lower levels of demand.

3.3 People with disabilities

- People with disabilities are entitled to expect the same level of access to recreational and cultural opportunities as other members of the community. In South Australia, 357,100 people, or 21.5% of the State's population, reported having a disability in 2012.⁶
- As authorities maintain, replace and renew Linear Park assets, consideration should be given to how best to ensure that people with disabilities are encouraged and enabled to use and enjoy the Linear Park.

3.4 Leisure, recreation and health

- There is evidence of increasing regular participation in physical activity in South Australia over the period 2001 to 2010. Walking, aerobics/fitness, cycling and running/jogging were among the activities with the highest levels of participation, both at State and national levels.⁷
- These popular kinds of physical activity are ones which require little sport-specific public infrastructure, and are easily undertaken on footpaths, trails, linear parks and cycle paths. Asset planning for the Linear Park should anticipate and accommodate increased demand for facilities of this kind.

3.5 Changes in transport mode choices

- As cycling and walking increase in popularity, there is some evidence that private motor vehicle ownership and use is becoming less prevalent. Declines in the percentage of young people who hold a driver's licence, for example, have been reported for some North American and European countries; and an observed decline in the licensing of Victorians between 18 and 29 years of age has been attributed to factors including a preference for public transport or walking, and an increased incidence of working from home.⁸
- Other observed trends may also point to a decline in rates of ownership and use of private motor vehicles. Higher-density housing with fewer car parking spaces, associated with ownership of a single car per household, will encourage walking or cycling to be used for trips which might otherwise have been undertaken with private motor vehicles. A greater awareness of the costs of fuel, insurance, maintenance and other costs of private vehicle ownership and use may similarly encourage people to actively substitute other modes of transport. Where higher-

⁶ Government of South Australia, Office for Recreation and Sport, *People with a Disability* (2016) – accessed online at http://www.ors.sa.gov.au/sport_and_recreation/inclusion/people_with_disability on 12 September 2016.

⁷ Government of South Australia, Office for Recreation and Sport, *Trends in Recreation and Sport* (2011) – accessed online at <https://www.recsport.sa.gov.au/sport-active-recreation/documents/Trends%20in%20Recreation%20and%20Sport%20Participation%20Final.pdf> on 12 September 2016.

⁸ Royal Automobile Club of Victoria, "Young adult licensing trends and travel modes", September 2015, accessed online at <https://www.racv.com.au/wps/wcm/connect/8d05bf804f2e7e7b9addff79ddd7afa9/racv-young-adult-licensing-trends-and-travel-modes-report.pdf?MOD=AJPERES&CACHEID=8d05bf804f2e7e7b9addff79ddd7afa9> on 12 September 2016.

density housing is built in locations close to existing commercial and community facilities, walking and cycling may become attractive alternatives to the expense, environmental impact, congestion and potential delays associated with private motor vehicle use.

- Cycle use to access the Adelaide CBD increased at an annual rate of 9.9% between 2003 and 2014, to reach 8,500 between 7:00am and 7:00pm on the average weekday.⁹
- Despite these indications, private motor vehicle remains the predominant transport mode for work and leisure purposes for most Australians, and on some measures private motor vehicle ownership and use is more prevalent in South Australia than in other states. South Australia's rate of ownership of passenger vehicles (613 per 1,000 persons) was the highest of any state or territory in 2013, and in 2011, Adelaide had the highest rate of use of passenger vehicles for travel to work purposes (84%).¹⁰
- Asset planning for the Linear Park will need to consider not only likely increases in usage, but how that usage will be distributed over time. For example, use of cycle paths for commuter purposes is strongly concentrated on weekday early mornings and late afternoons; while use for recreational purposes is greatest on Saturdays and Sundays, but is more evenly spread across those days.¹¹

⁹ Government of South Australia "Cycling Facts" - <https://www.sa.gov.au/topics/transport-travel-and-motoring/cycling/cycling-facts> - accessed on 12 September 2016.

¹⁰ Australian Bureau of Statistics, Publication 4102.0 – Australian Social Trends, July 2013, "Car Nation", accessed online at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features40July+2013> on 12 September 2016.

¹¹ Government of South Australia "Cycling Facts" - <https://www.sa.gov.au/topics/transport-travel-and-motoring/cycling/cycling-facts> - accessed on 12 September 2016.

4 LOCAL TRENDS

4.1 Residential infill development

- As outlined above, the Draft 30 Year Plan for Greater Adelaide includes as a target that 85% of all new housing should be built within established areas by 2045.
- “Infill” areas within close proximity to parts of the Linear Park are already being developed for residential purposes to medium or high density, or have been designated for that purpose. For example:
 - within the Draft 30 Year Plan, the Adelaide CBD and parts of the Park Lands frame are recognised as being suitable for higher density (including high-rise) residential development. This is reflected in completed, under-construction and approved residential development, and a projected population increase for the Adelaide City Council Local Government Area from 23,753 in 2016 to 32,887 in 2031¹². Many of the areas accommodating this growth are close to, and readily accessible to, the Linear Park;
 - in the City of Charles Sturt, land at Bowden and Hindmarsh, close to the Linear Park, has been assigned the Urban Core Zone. Development of this land as a mixed-use, higher-density urban infill precinct commenced in 2011 and is continuing; and
 - land adjoining the Paradise Interchange of the North-eastern busway, south of the Linear Park in the City of Campbelltown, has been zoned Suburban Activity Node Zone to encourage the provision of medium-density residential development, including affordable housing, with compatible commercial land uses.
- The Draft 30 Year Plan also identifies areas targeted for public housing renewal under the Renewing our Streets and Suburbs program, including close to the Linear Park in Campbelltown, Brompton and Torrensvile.
- The nature of some infill development, in the form of townhouses or apartments at densities higher than traditional suburban residential areas, is likely to increase the rate at which residents use public open space areas, including the Linear Park, compared to residents who have larger areas of private open space. Planning for the Linear Park should take into consideration the specific locations which have been or are likely to be designated for infill development, and should anticipate higher levels of usage concentrated around those locations.
- More intensive development in areas close to the Linear Park has the potential to increase the volume of run-off into drains and ultimately into the river. While the Draft 30 Year Plan does seek to manage and reduce this impact (Policy P111), planning for the Linear Park should consider whether existing and planned future drainage assets have the capacity to accommodate any increase in run-off volumes caused by more intensive urban development.

¹² Government of South Australia, *Population Projections for South Australian Local Government Areas 2011-31*, February 2016 release, http://www.dpti.sa.gov.au/_data/assets/excel_doc/0010/253378/Local_Government_Area_Projections_2011_2031.xls, accessed on 13 September 2016

4.2 Employment and activity centres

- Together with an increase in residential infill development, the Draft 30-Year Plan for Greater Adelaide includes policies directed towards increasing residential and mixed-use development within activity centre and transit corridor catchments. For example:
 - the old Royal Adelaide Hospital site will be rezoned in the short term to stimulate investment and grow the city population; and
 - within the City of Adelaide, the revitalisation of the Adelaide Riverbank as a destination for recreation, learning, entertainment and culture will be supported by improved pedestrian and cycle connections to better integrate it with the City and its surrounds.
- Other designated activity centres at Campbelltown, Bowden and Fulham Gardens are within close proximity to, and readily accessible from, the Linear Park. The Klemzig and Paradise stations of the north-eastern busway are close to eastern sections of the Linear Park. To the west, sections of the Linear Park are close to Bowden Railway Station and to bus services along Henley Beach Road and other main road corridors.
- Planning for the Linear Park should anticipate that increased residential, employment, commercial and recreational activity at designated activity centres, and better links between those centres and the Linear Park, are likely to increase and concentrate usage of the Linear Park in the vicinity of the centres, as well as increasing the number of pedestrians and cyclists who use the Linear Park to access those activities.

4.3 Biodiversity

- The Draft 30 Year Plan for Greater Adelaide includes, as well as policies in relation to residential and commercial intensification, support for the enhancement of urban biodiversity through the development of greenways in transit corridors and along major watercourses and linear parks (Policy P88). Greenways are to be landscaped with local indigenous species where possible, to contribute to urban biodiversity outcomes (Policy P89).
- Planning for the Linear Park will need to balance increasing demand from recreational users and commuters with these objectives in relation to biodiversity.