



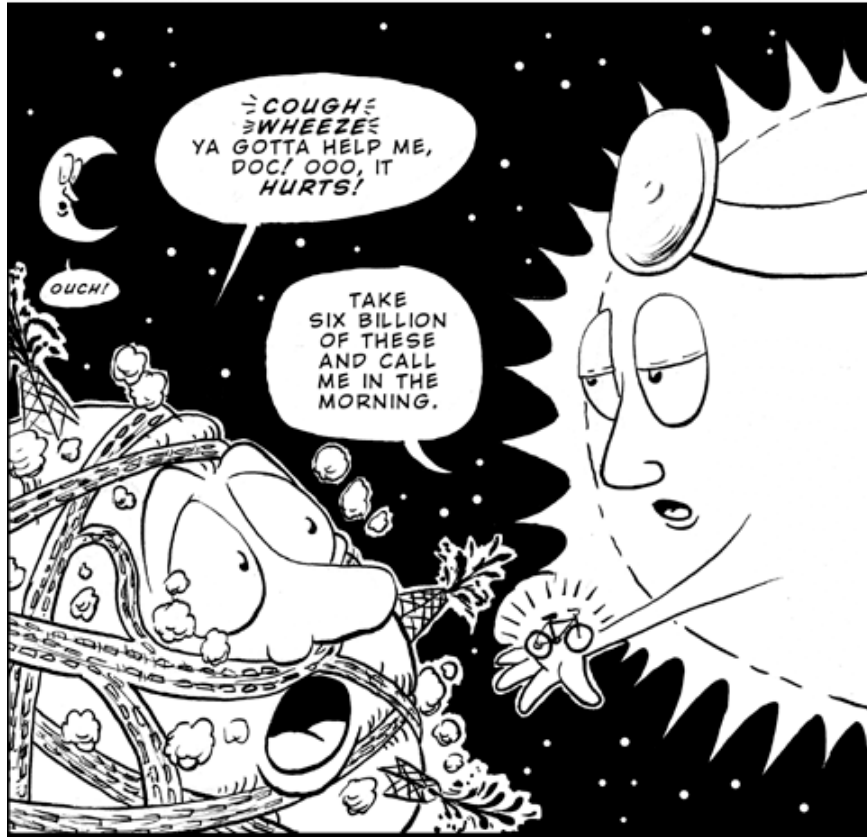
Bicycle Institute of South Australia/Port Adelaide Bicycle User Group:
Sustainable Transport for the 21st C.



The Port Adelaide 'Green Link' Proposal: Sustainable Transport for Adelaide's North-West. November 2005.

CYCLOTOON

BY NEAL SKORPEN



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Cycling is:

- fast & effective personal transport
- equitable & cheap for all
- easy for Government to support
- much safer than people think
- very efficient
- carbon neutral
- undemanding
- friendly & fun!

...& extremely good for your health!

Cycling is a Winner!

The Adelaide Green Link Project: Personal Transport for the 21st Century.
The Bicycle Institute of South Australia (BISA). 20/08/2014

Some Definitions:

A Sustainable Transportation System:

1. Allows the basic access needs of individuals and societies to be met:
 - Safely
 - in a manner consistent with human and ecosystem health
 - with equity within and between generations.

2. Is affordable:
 - operates efficiently
 - offers choice of transport mode
 - supports a vibrant economy.

3. Limits emissions and waste within the planet's ability to absorb them:
 - minimizes consumption of non-renewable resources
 - limits consumption of renewable resources to the sustainable yield level
 - reuses and recycles its components
 - minimizes the use of land and the production of noise.

From the Canadian Centre for Sustainable Transportation.

<http://www.cstctd.org/english/whatis.htm>

Active Transport:

"Active transport relates to physical activity undertaken as a means of transport. It includes travel by foot, bicycle and other non-motorised vehicles.

Use of public transport is also included in the definition as it often involves some walking or cycling to pick-up and from drop-off points.

Active transport does not include walking, cycling or other physical activity that is undertaken for recreation."

From 'Be Active Australia: A Framework for Health Sector Action for Physical Activity 2005-2010'

http://www.dhs.vic.gov.au/nphp/publications/documents/nphp_baa_aug05_no_cover.pdf

Why Adelaide Needs GreenLink: Adelaide is a geographically large city with a relatively small revenue base and a limited capacity for sustaining an extensive public transport system. The city and State also appear extremely vulnerable to the likelihood of rising fuel costs and the fuel shortages now widely predicted over the coming decade. Adelaide's citizens remain 'locked in' to the private car for every-day transport simply because the city's size and the existing public transport system offer few alternatives for long-distance 'people movement'.

BISA and the Port BUG believe Adelaide needs an **Arterial Cycling Network** that *parallels* the main road system (at least in *function*) and offers clear alternatives to both car travel and on-road cycling, particularly for long distance '*arterial*' commuter routes and for vital *connectivity* between suburban centres.

Origins of the 'Green Link' Concept: The GreenLink proposal acknowledges the advantages as well as the limitations of 'main-road cycling', as well as the strengths and weaknesses of the current BikeDirect Network. It does *not* seek to replace either! We believe that an additional '*overlay*' of GreenLinks, supplementing and adding value to the current BikeDirect Network, is a logical '*next step*' for Government in meeting its commitments to:

- *fostering the increased cycling identified in the draft Transport Plan*
- *the goals of the State Activity Strategy and obesity-prevention plans*
- *supporting the States' Sustainability and Green House Gas strategies*
- *fulfilling the State Plan's aim to double use of Public Transport.*

We have also been mindful of a need to identify an over-all 'next step' for the Principal Bicycle Network that is:

- *financially realistic*
- *timely* in terms of community need
- *convenient* in terms of development opportunities and...
- providing *very obvious benefits* for the whole community

Obviously such an opportunity must also bring with it very positive political dividends!

Our Current Cycling Facilities: Bike lanes clearly offer a defined road space for cycling. However they are not an ideal solution to cycling's needs for the whole community, particularly where the realities of road design bring them into direct competition with car-space, road side parking etc. There are many arterial roads in Adelaide where it is proving very difficult to install cycling lanes due to traffic volumes, surrounding land use and parking and access issues - *Port Road being an important and very relevant example!*

Most of Adelaide's Principal Bicycle Network (the BikeDirect Network) therefore consists of marked and sign-posted local street routes, some main-road bike lanes and a limited number of off-road (and mostly shared) pathways.

BikeDirect's Need for Further Development: It seems clear to us that BikeDirect's predominant reliance on *road* cycling may not be meeting Adelaide's *latent need* for a system of high speed, safe and efficient long-distance cycling routes spanning the city. Around 70% of Adelaide's households contain an adult bicycle, yet this is clearly not reflected in the levels of cycling participation and use of the BikeDirect network that we might expect! We strongly suggest that BikeDirect needs an 'extra dimension' to properly fulfil its potential as Adelaide's PBN.

'Best Practice' Principles: The literature indicates several principles that have evolved for the provision of cycling facilities and encouraging cycling use in the community. These principles address:

- varying cycling tasks and trip destinations
- *differing needs* of individual cyclists.

The key issues in implementing these principles have proved to be cycling *safety* and *efficiency*, with the first imperative being provision of appropriate facilities for the *full range* of cycling tasks and *different* cycling destinations (see Table 1).

We should add that the research clearly indicates that *cycling itself is very safe*. Cycling safety issues arise mainly in the *interactions between bicycles and cars*. Minimising the hazards of such interactions is central to provision of safe cycling facilities!

Table 1. Catering for Different Cycling Tasks and Destinations.

Trip Type	Destinations	Typical Facilities Needed	Typical Length
Short	Local shops, playgrounds, schools, access to public transport	Local service-centre networks consisting of traffic calmed roads and where necessary, some off-road paths.	1-2km
Medium	Major service centres, work places	Inter-suburban routes, mostly local roads but partly on main roads with some use of off-road paths.	2-5km
Long	Cycle commuting and non-motorised access to all areas of the city	Metro-wide arterial bike routes. Mainly a mix of main-road bike lanes and dedicated off-road paths or 'bicycle boulevards'. Emphasis on <i>high speed</i> and <i>hazard-free</i> continuity.	5-25km

Each of these types of trip destinations tend to require different routes and levels of provision. These in turn are generally 'shaped' or determined by existing transport networks (availability of suitable roads, vacant public land, rail reserves etc). Localised networks in particular generally rely on the '*bicycle permeability*' potential of urban areas - the unique ability of the bicycle to 'filter through' (rather than 'go around') an urban area to get to a particular destination.

In a number of European countries (most notably the Netherlands), specific efforts have also been directed to meeting the differing needs of *less* and *more* 'secure' cyclists, resulting in the provision of *different* and *alternative* routes between common destinations, each catering for different 'types' of cyclist.

There has also been acknowledgement that cycling and walking have in common:

- higher vulnerability in interactions with motorised traffic and...
- *very great* personal and environmental benefits.

There is an obvious conflict here that must be resolved! The most convenient solution to removing traffic hazards in Australia has been the use of 'shared use' paths. However shared pathways are used far less in those

European countries with the greatest volumes of cycling commuters - probably because the problems stemming from bicycle/pedestrian interactions are far more apparent than they are in Australia. One of Adelaide's longest bike paths, the Southern Veloway, paralleling the Southern Expressway is for cycling only! Indeed walking on this path has proved quite dangerous for those who have tried it!

BikeDirect and the Port/City Route: Adelaide's BikeDirect relies mainly on using local roads and the principle of 'permeability' for relatively efficient cycling over *short to medium distances*. As the term might suggest, while 'permeability' may be ideal for short to medium length trips, it does *not* necessarily equal efficiency or high speed travel *over longer distances*. Using the marked BikeDirect route maps, on a trip from Port Adelaide to the Adelaide Parklands, a cyclist will encounter:

- approximately 30 right-angle corners
- a great variety of cycling conditions to watch out for
- several main road crossings (mostly uncontrolled by lights or other means)!

[Map: Port/City via BikeDirect]

BikeDirect route cyclists also have to negotiate the additional hazards of *hundreds* of driveway exits and parked cars and many intersections, as well as sharing main roads with commercial and rush-hour traffic! We do *not* believe that this is the way to ensure cycling can compete with car use on a daily basis and fulfil its potential for the whole community! *Such an inefficient route over a considerable distance - approximately 16km - would not be tolerated by car commuters and we see no reason why commuting cyclists should have to put up with this either!*

As an alternative the Port Adelaide/City GreenLink will provide a *high-speed commuting link* and the direct *inter-suburban 'connectivity'* that effectively eliminates most of these problems! It will also provide an ideal model for creation of similar GreenLinks elsewhere across the Metro Area!

Defining a 'Bicycle Arterial': We define a 'bicycle arterial' as:

- a long-distance, dedicated and high speed bicycle route
- connecting major urban destinations
- designed specifically to link with Local Networks along the way
- serving *exactly the same function* for cyclists as arterial roads serve for drivers
- applying to both on-road bike-lanes and off-road paths.

The key definitional issue is provision for unobstructed and hazard-free, fast, longer-distance cycling!

We note that it is common to hear car drivers complain of bicycles 'holding up' motor traffic. Cycle commuters will also complain that cars 'hold up' their own progress! Bicycle Arterials on *or paralleling* major arterial road routes would resolve this conflict. We have already mentioned the difficulties of cycling on Port Road. **The Port/City GreenLink along the Port Adelaide rail line represents a prime opportunity for creation of such a parallel Bicycle Arterial!**

Need for Integration of 'Active Transport': A more recent developed and perhaps one of the most exciting aspects of cycling best-practice is the *integration of walking and cycling facilities into the mainstream transport system*. This has generally focussed on integration of Active Transport - walking and cycling - with train and bus travel, but has also included linkage of walking and cycling facilities with taxi routes, community bus links, car pooling arrangements etc.

Such 'integrated' or 'inter-modal' travel has potential to greatly extend the use of Active Transport. Any increase in Active Transport will of course *directly*:

- *reduce car use*
- *increase activity levels and reduce weight and inactivity-related health costs*
- *reduce transport-related pollution and energy use.*

Establishing *integrated* Active Transport facilities has immediate potential to provide significant 'value-adding' to any specific cycling or walking facilities, and will certainly provide an enhanced '*sustainability dividend*' in meeting the State's planning targets! Of course, an integrated approach to Active Transport could also increase demand for Public Transport, thus making it *more viable* through the increased patronage involved! In 2005 we feel it is no longer acceptable for Government to take a 'single-constituency' focus in any measures encouraging more Sustainable Transport! The needs of *all transport users* must be acknowledged!

The location of the Port/City 'GreenLink' immediately to the North of the Port Adelaide rail line has particularly strong potential for fostering Integrated Active Transport use. The Port Adelaide GreenLink represents the common needs and interests of cycling, walking and use of public transport - the needs of the whole community!

Adelaide is An Ideal 'GreenLink' City: Adelaide is highly suited to such a Green Link Network. Although the post-war and greater Adelaide Metro Area has been formed on the presumption of unlimited access to private motor car, the area of the city bounded by the Hills Face Zone in the East and South, and Grand Junction Road in the North, was essentially designed and developed in an era dominated by rail and non-motorised road travel. This has left a legacy of spacious rail reserves and many long and wide suburban boulevards - often directly paralleling each other! Adelaide is also essentially flat and open - ideal for cycling! From its inception, Adelaide also developed around a large number of 'village' communities and the basic framework of this settlement pattern remains, particularly in the orientation and connectivity of our main road and our rail systems.

Adelaide's layout thus presents ideal opportunities for the development of a *Metro-wide 'Green Link' network*, offering many possibilities for connectivity with existing local cycling and walking networks! These would 'feed' the Green Link (just as local and connector roads 'feed' arterial roads) and the Green Link, in turn would offer a level of connectivity and usefulness to the local networks hitherto not readily apparent or available!

The provision of GreenLinks is a natural 'next step' in providing for Active Transport across Adelaide!

Fuel Realities: The past 2 years have seen a rise in petrol and diesel pump prices in South Australia of around 70%. While there is much discussion of this as 'market fluctuation', the fact remains that we face an entirely uncertain fuel future. All the evidence points to underlying and intersecting crises involving two major forces:

- **rising international demand** - demand for petroleum fuels is rapidly increasing worldwide, and especially in the rapidly developing 'giant' economies of Asia
- **falling production** - declining production in virtually all of the world's major oil provinces is exceeding discovery of new reserves and resource replacement.

This combination of circumstances means that demand is *exceeding* what can be *produced and supplied* to the market. South Australians will inevitably face high and probably increasing fuel costs and possibly uncertain

supplies for the foreseeable future. Adelaide's car-dependent transport system is likely to become increasingly difficult to sustain for families and lower income earners.

Health Realities: Adelaide, South Australia and indeed Australia as a whole faces a generational and epidemic increase in obesity and weight and exercise-related diseases. The potential burdens in health costs for the current and future generations are incalculable (though clear examples can be seen in the USA and in Australia's own Indigenous communities)! It is essential that our mainstream transport system provides for safe and efficient *Active Transport choices* by South Australians.

Infrastructure Realities: Many of our arterial roads - including Port and Grand Junction Roads which directly serve the Western Suburbs - make no or very minimal on-road provisions for cycling. Port and Grand Junction Roads in particular present major difficulties for installation of such cycling infrastructure due to:

- their length
- difficulties in accommodating even minimal-width bike lanes
- their enormous traffic densities and congestion, particularly at peak periods
- their high percentage of heavy commercial traffic.

These roads also present major *barriers* to inter-suburban cycling, both as very poor routes and because they are dangerous to cross! Without very major infrastructure changes, the prospect increased cycling on such roads does not seem likely. Yet both of these roads are active cycling routes, carrying quite steady volumes of cycling traffic during the day (though many cyclists on Grand Junction Road seem to use the footpaths)!

Planning & Action: There are several urgent and intersecting issues driving Adelaide's demand for a more sustainable personal transport system:

- rapidly rising rates of exercise-related youth obesity and conditions such as diabetes and cardiovascular disease, and need to reduce associated health costs stemming from inactive lifestyles (particularly effecting our children)
- congested arterial roads with little prospect of affordable 'road-building' solutions
- increasing rates of cycling injuries and deaths on arterial roads as more people take up cycling in crowded traffic conditions
- increasing dependence on motor transport with associated increases in air and noise pollution
- increasing dependence on costly and possibly unreliable foreign oil supplies
- our need to drastically reduce our disproportionately large per-capita greenhouse gas emissions (of which 25% or more stem from our society's dependence on motor transport)
- maintaining 'connectivity' and viability of local communities and our city as a whole..

It seems clear that Adelaide's car-dependent transport system imposes major costs on our community in negative health outcomes, pollution, loss of amenity, injuries and deaths, inflexibility and inequality and vulnerability to fuel supply disruption. The need to plan *now* for provision of more sustainable forms of urban transport areas is widely understood and acknowledged. What we need is action!

Our Challenge - Sustainable Transport in the West: It is very clear that there is a strong *latent demand* in the Western community for *more active and less costly* transport options. Research shows that provision of appropriate transport alternatives is rapidly followed by corresponding change in transport behaviours. Build the facilities, provide the options, and people will use them!

TransportSA has acknowledged that the Western Suburbs of Adelaide have generally been less well served by existing bicycle facilities than many other areas of Adelaide. Those seeking to cycle, walk or use public transport in the West face particular challenges from the overwhelming daily presence of thousands of freight vehicles associated with the concentration of industries in the Western and North Western areas.

Notably, there are also far fewer *off-road* cycling and walking routes servicing the Western and North-Western suburbs of Adelaide than elsewhere in the city. Those wishing to cycle are forced to share road space with a wide range of trucks and dense, heavy traffic. Fatalities and injuries are relatively frequent, particularly on major routes such as Grand Junction and Port Roads. Many feel this to be an inequitable and socially unsustainable situation!

Why Provide Sustainable Transport Choices?

- **Options, Choices & Equity:** Lack of access to *sustainable transport choices* and *alternative options* will see people *continue* to depend on private motor vehicle use, despite increasing costs and inefficiency. Those who can no longer afford to run their cars may well find themselves living in increasingly isolated communities without ready transport to work, education, shopping, recreation and services. Lack of options condemns people to inactivity. This scenario faces the unemployed, children and youth, and the aging population in particular!
- **Active Transport & Health:** Experience in Europe and elsewhere indicates that without the *specific provision* of Active Transport facilities, we will not see significant change to our increasing rates of obesity and related diseases. Active lifestyles are essential to human health but are often difficult to sustain today without provision for safe use of *daily use of Active Transport!*
- **GreenHouse Gas Reduction:** Despite our best intentions, without provision of *real sustainable transport options*, the practical, every-day challenge of our city's size will *severely limit* our capacity to change transport behaviours and reduce our excessive greenhouse gas production!
- **Example From Elsewhere:** Speaking of the need for change faced by Brisbane, Queensland MP Andrew McNamara recently indicated that:

'emphasis needs to be on public transport and better rail links so that we can move people without cars rather than... continue building infrastructure specifically for cars (and a) need to reengineer and redesign suburbs so that kids can ride bikes to schools and people can walk to shops, and that jobs are in the suburbs where people live rather than a 25 minute car drive away.'

The GreenLink Proposal: We propose establishing a 16km 'GreenLink' linking the bicycle and pedestrian networks of Adelaide's CBD *directly* to Port Adelaide and associated Western suburbs. The Port/City GreenLink offers a rare opportunity for a readily achievable, multi-mode rapid-transit route. It is a realistic and timely

opportunity to initiate a *practical transformation* of Adelaide's transport system via specific provision for the key North West sector of the city. We believe that this Port Adelaide/City 'GreenLink' is an exciting, realistic and enormously attractive opportunity 'waiting to happen'.

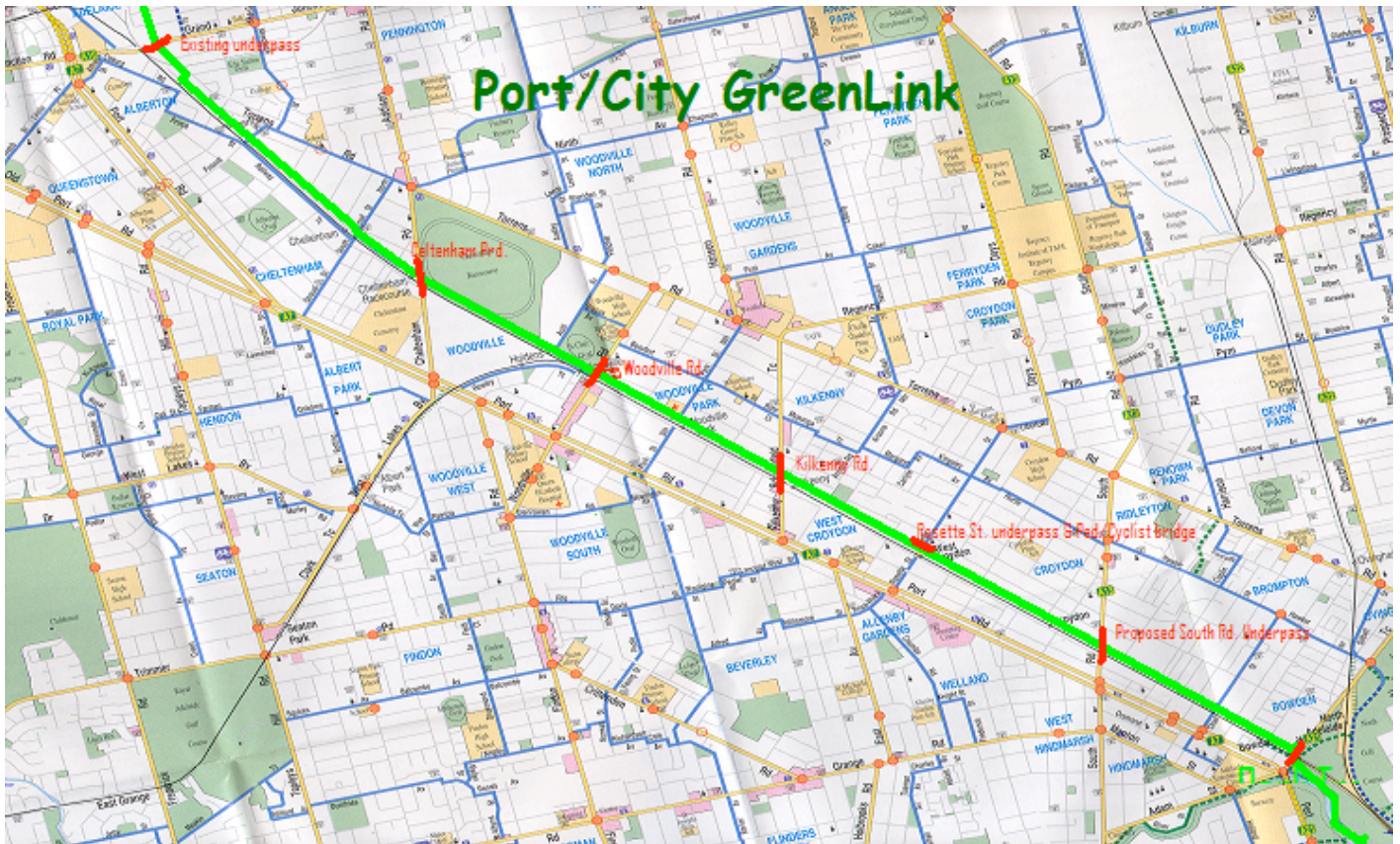
Metro Planning Review: This GreenLink opportunity is *entirely* consistent with the 'transit development zones' proposed in the Government's draft Metro Planning Review (Transport & Planning Group). The Port/City GreenLink runs down the middle of one such zone (see Map 1 below)!

GreenLink Location: This link would be located for most of its length on the well established, lightly used and very attractive 'railway boulevards' of Croydon, Woodville, Cheltenham and Alberton:

- **Day Terrace, in Croydon and Kilkenny (see Fig. 1)**
- **Belmore Terrace in Woodville (see Fig. 2)**
- **Buller Terrace in Cheltenham and Alberton (see Fig. 3).**

These picturesque roads (see Map #1) run alongside and immediately to the North of the Port/City rail line and consist of wide, very lightly used streets in close proximity to the rail line and with well established tree plantations. They are already closed to through-traffic!

Map 1: Port Adelaide/City GreenLink - Route Overview.



Engineering Requirements: The GreenLink would consist of a mix of high quality and unobstructed *on-road bicycle lanes* (mainly on the 3 existing 'railway boulevards') connecting with relatively short but similarly spacious and high quality off-road 'arterial' pathways.

Relatively few major modifications are required for the major part of the route's length, especially for the sections West of South Road. Some additional planning and engineering may be required for:

- **Section A:** between Park Trc and South Road - may require use of rail reserve and/or resumption of private land.
- **Section B:** adjacent to the Kilkenny and Croydon railway stations - may require use of rail reserve & reconstruction of current pedestrian bridges.
- **Section C:** between Fussel St, Alberton and the bicycle/pedestrian underpass at Grand Junction Road - may require limited reconstruction &/or rerouting of existing shared-use pathways
- Sections marked in Red across the route represent need for main-road crossings (either controlled or uncontrolled with traffic calming measures). **See Map 2 below.**

Map 2: Port Adelaide/City GreenLink - Sections that may require special provision.

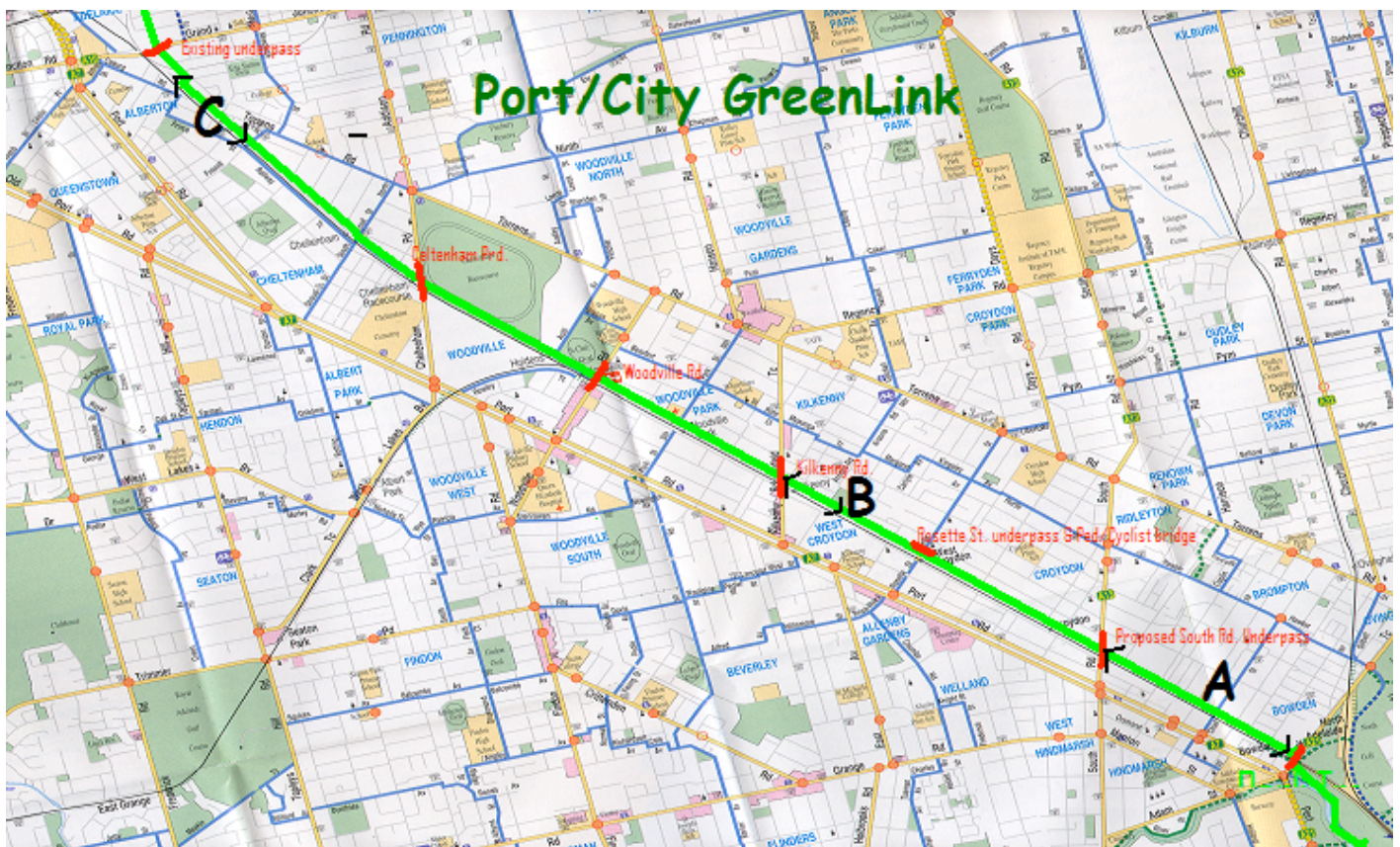


Fig. 1: GreenLink Route - Day Trc, Croydon (looking West).



Fig. 4. Potential GreenLink Route - Woodville Park (adj. Woodville Railway Station).



Fig. 2: GreenLink Route - Belmore Trc, Woodville (looking West).



Fig. 5, 6 & 7: Potential GreenLink Route - adj. Actil site, Cheltenham.



Fig. 3: GreenLink Route - Buller Trc, Cheltenham & Alberton (looking East).



Fig. 6.



Fig. 7.



Fig. 8: 'Ready Made' GreenLink -Race Course,
(looking East)



Mapping the Route: BISA and the Port BUG have recently completed an initial survey of the route for this Green Link running along the Northern side of the Port Adelaide-to-City rail line from the Parklands cycle paths to the existing bicycle networks of Gillman and Port Adelaide. The total distance is approximately 16km.

We believe the route we have mapped (see Map 3):

- is likely to be far more efficient and safer than any alternative cycle route located on adjacent main roads
- rivals the Linear Park and the new Coastal Way in visual interest, variety and amenity
- provides a safe and efficient long-distance urban cycling environment for a wide range of users
- is closely integrated with the Port Adelaide and Grange to City rail lines and numerous related bus links
- provides many opportunities for increased local community development, including services such as recreation areas, play grounds, house hold shopping, coffee shops, service centres and urban residential consolidation
- links with many associated local and regional cycling networks.

The Benefits: The Port GreenLink will bring many economic and social benefits for both the City Centre and Port Adelaide, as well as for local communities along the way and Adelaide as a whole.

It will ensure:

- efficient and safe Active Transport between Port Adelaide and the City
- that cycling can become an *immediately viable* personal transport choice for both commuting and recreational or fitness cycling
- ready bicycle access to all of the suburbs and associated cycling networks along the way
- easy walking connectivity between adjacent suburbs & easy pedestrian access to public transport, particularly to the several stations along the Port/City rail line.

The Adelaide Green Link Project: Personal Transport for the 21st Century.

The Bicycle Institute of South Australia (BISA). 20/08/2014

In many ways the Port/City GreenLink has potential to 'future-proof' Adelaide's Western Suburbs, providing opportunities for much healthier and more sustainable lifestyles for a relatively disadvantaged sector of the City.

Broader Possibilities: This potential for facilitating *safer* and *much increased* use of every-day walking, cycling and public transport use could also be realised elsewhere in Adelaide. BISA has identified several other opportunities for creating a more extensive network of 'GreenLinks' across the Metro Area, building on existing transport assets and directly facilitating the greatly extended use of Adelaide's existing bicycle and walking networks (including the BikeDirect Network).

These include potential for similar GreenLink routes:

- to the SouthWest along the Glenelg Tramway
- extending Northwards from the City network along Churchill Road and associated railway reserves to link up with the Salisbury and Levels Campus bicycle networks
- utilising the rail reserves and existing but undeveloped pathways and quiet streets at Wayville and Mitcham.

Port/City GreenLink - Planning & Funding Opportunities:

South Road Crossing - Crossing South Road at peak-hour presents a formidable obstacle to pedestrians and cyclists alike. The Government has recently signalled, in the State Infrastructure Plan, its intention to 'underground' South Road from a point North of the Port/City rail crossing to somewhere near Grange Road. This presents an ideal opportunity to include a bicycle and pedestrian link in the rail 'bridge' that will need to be built and removes a major obstacle to the creation of a Port/City GreenLink.

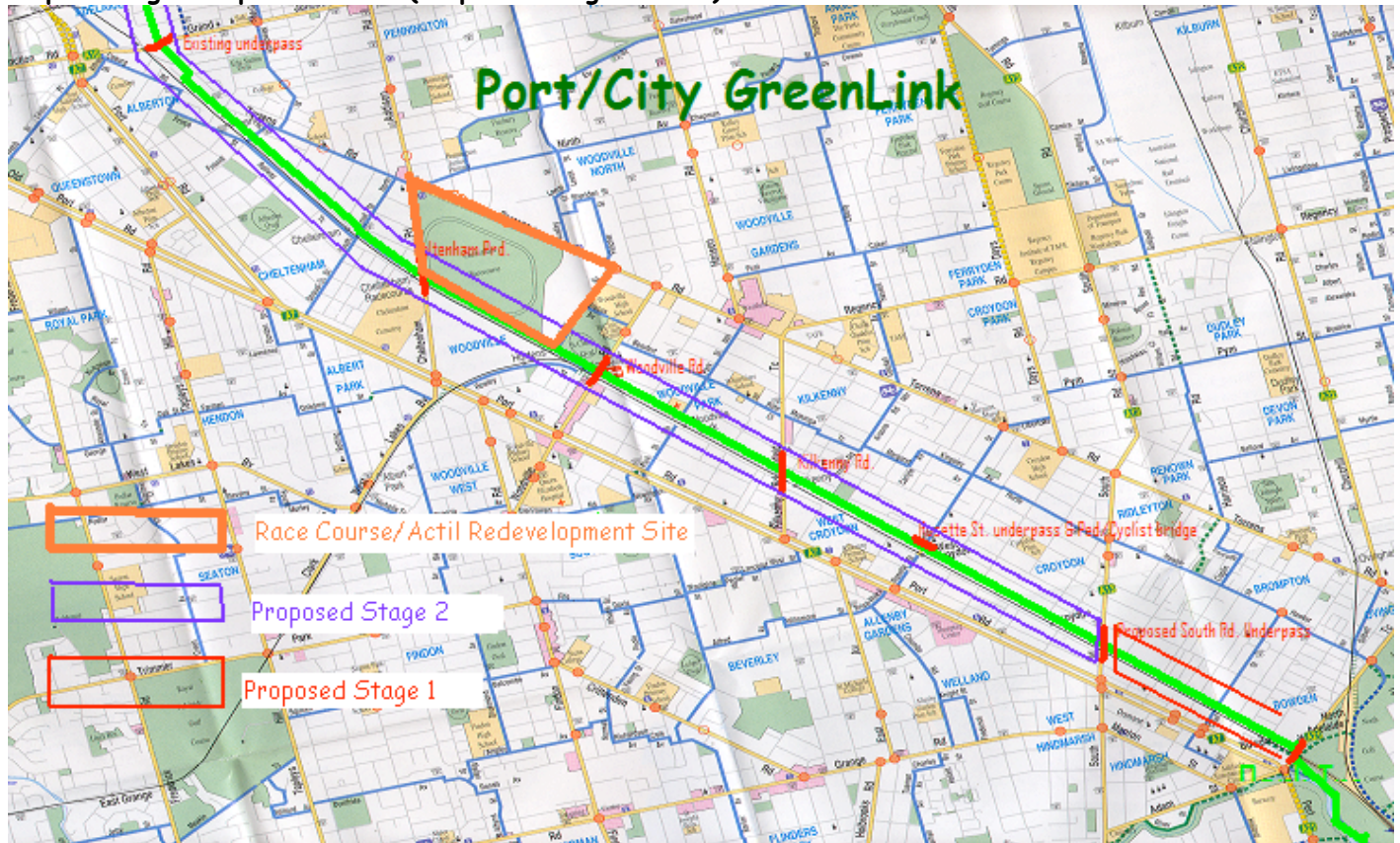
Actil/SAJC Sites - We understand that the adjacent Actil industrial and SAJC race course precincts at Cheltenham are likely to be redeveloped as either open space or residential areas (or a mix thereof). This will also make available a major section of this GreenLink route from the Woodville recreation oval (adjacent to Woodville Road and railway station) through to Cheltenham Parade (linking Belmore and Buller Trcs). Both BISA and the Port Adelaide BUG have provided separate submissions to the Actil/Cheltenham Race Course Redevelopment Project identifying this opportunity.

If the redevelopment of this precinct includes housing, we would strongly encourage consideration of a '*sustainable mobility levy*' or premium of some sort, payable by the developers, to create a 'GreenLink fund', for the initial financing of the section of the GreenLink route directly servicing the Woodville Road to Cheltenham Parade section. We also see an ideal opportunity to include a 'sustainable transport component' in any application for Commonwealth funding to finance the redevelopment of this site.

We would be *very reluctant* to see funding for the Port/City GreenLink to come from the existing State Bicycle Fund. The SBF is set up for the development and maintenance of BikeDirect as it currently exists. GreenLink should be seen as a new and additional component of BikeDirect, requiring new and additional funding!

Staged Implementation - We acknowledge that the construction of this Port Adelaide GreenLink may present significant property acquisition and engineering challenges, particularly in the innermost sections between Park Trc and South Road. We would strongly suggest therefore that the major sections of the route to the West that are *more directly associated* with the Actil/Cheltenham Race Course redevelopment be considered first.

Map 4: Staged Implementation (Proposed Stages 1 & 2).



Informal discussions with Charles Sturt Council officers indicate that this approach would be likely to engender strong Council support (reflecting Council's funding submissions toward a similar route in previous years).

We would suggest that there is also a strong rationale for the initial development of these sections of the GreenLink route, given that it would best facilitate connection of the new Cheltenham residential precincts (presuming this is how these areas are to be redeveloped) with the service centres of Port Adelaide, Woodville and Cheltenham.

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