
Walking Strategy in Sydney

Implementing a Walking Strategy



Author's photo

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Contents

Executive Summary	3
1. A Walking Audit Tool for Sydney	4
2. Assessment of sample areas in Sydney	9
3. Good practice in achieving high levels of walkability	16
4. Potential improvements to walkability	21
5. Mechanisms of change	30
6. Is walking part of the City of Sydney culture?	31
7. Conclusions.....	32

List of Annexes (not included in this version)

Annex A	Review of walking audit tools
Annex B	Sample areas audit (spreadsheet)
Annex C	Guide to the Sydney walking audit
Annex D	“5Cs” example
Annex E	The PERS walking audit tool
Annex F	Criteria for the Sydney assessment
Annex G	Photo Book a pictorial account of problems a possibilities

Executive Summary

The project was commissioned by the City of Sydney from Robert Stüssi and Tim Pharoah, who undertook the work February-April 2015. The aim was primarily to provide advice on monitoring the quality of the walking environment, as a means of measuring progress towards the implementation of the *Walking Strategy and Action Plan 2015-2030*, adopted by Council on 27th April 2015. Deskwork identified a range of existing auditing methods, and a synthesis of these was used to develop an audit tool that met a number of requirements. Various aspects were tested “on the ground” in two sample test areas in Sydney, one in Surry Hills, the other near Circular Quay/George Street. Also there was a permanent interface with the client, a stakeholder workshop, some bilateral meetings, as well as a City of Sydney department head’s concluding meeting.

Three alternative choices are proposed:

- Purchase of “off the shelf” Pedestrian Environment Review System(PERS) audit tool
- which has been widely used in London, and other cities,
- . Commissioning a rewrite or update of PERS software to better meet local monitoring needs, or
- Adopt the tool developed within the scope of this project, and to commit to developing it further in-house.

A principal reason for choosing either option 2 or 3 would be that the current PERS assessment tool does not allow adequate consideration of the non-transport aspects of the street environment, often referred to as opportunities for sojourn, or the “place” aspect of the public realm.

In addition to the work on auditing tools, the project included advice and discussion on the governmental arrangements for delivering the Walking Strategy, and on the culture of walking in City of Sydney. In addition, comparisons were drawn with New York City and London, in order to highlight different aspects of good practice in bringing about improvements to the walking environment. This concluded that Sydney could follow both the “rapid reaction” philosophy of New York City, and the “quality public spaces” approach in London.

The project included a number of meetings and consultations in Sydney, including a stakeholder workshop in Sydney attended by over 20 representatives from advocacy, business and government and meetings with specialists from the University of New South Wales and officers from New South Wales state government.

1. A Walking Audit Tool for Sydney

The City of Sydney plans to increase walking in the city, and to improve the walking environment. In order to measure progress, consistent audits must be undertaken. A key aspect of this project is therefore to provide advice on the appropriate instruments for the job.

Walking targets in the Walking Strategy

Ten targets are included in the Walking Strategy and Action Plan 2015-2030. Walking audit tools can be used to judge progress in three of these targets, namely:

- Reduce **walking times** by 10% across key walking routes (Target 3)
- Increase **footpath capacity** by 20% on average on main activity streets through planned upgrades (Target 4)
- Improve **walking amenity** by 10% on main activity streets through planned upgrades (Target 5)

Monitoring the other seven targets will require a mix of household travel survey data (Targets 1, 2, 3 and 10), accessibility measurement (Targets 6 and 7), road collision data (Target 8), and special surveys of late night precincts (Targets 9 and 10).

Defining appropriate audit tools for Sydney

A review was undertaken of walking audit methods to be found in the literature (worldwide). This is shown at Annex A.

Auditing needs to be geared to specific objectives and also often to specific urban typologies/areas. This is necessary in order to limit the number of factors (parameters) to be audited. There is a limit to how many features can be observed and measured at one time, and it is important that auditors do not become overwhelmed by complexity. The training requirement also needs to be borne in mind.

Another important reason for keeping a simple focus is that if factors are being scored or ranked, the more factors there are, the harder it will be to differentiate between the scores for different streets, and to make conclusions about potential improvements.

In the City of Sydney, the street audit process will in general not be used to identify new walking routes, but to indicate the improvement of existing routes and areas.

At the area-wide level, a distinction can be drawn between auditing the walkability context (land uses, transport configuration, environmental quality) and the walkability of the street network. The work presented here focuses on the network auditing task.

Implementing a Walking Strategy in Sydney

From the various auditing methods available, the consultants have distilled a method that is appropriate for Sydney in the following ways:

1. Designed to allow monitoring of the walkability targets and policies in the Walking Strategy and Action Plan 2015-2030
2. Simple enough to be easily replicated throughout the City, and repeated at 3-6 year intervals
3. Detailed enough to indicate specific qualities at the local level
4. Understandable enough that it can be undertaken with brief training
5. Appropriate for an inner metropolitan context where the general level of walkability is already high (compared to low density suburbs)
6. Includes sojourn and activities on foot as well as walking as transport
7. Considering walking as a connector and part of public transport seamless travelling

The audit tool spreadsheet devised by Pharoah and Stüssi for testing in the Sydney sample areas is at Annex B. For those undertaking the audit surveys and analysis, a number of practical issues are discussed at Annex C.

Walking audit tool recommendations

This section discusses potential tools that can be used to assess progress towards the Sydney Walking Strategy and Action Plan targets, and also to help with identifying priority areas or streets for improvements.

No single tool can meet all the possible requirements, and a balance must be struck between the following considerations:

- Simplicity and usability
- Comprehensiveness
- Graphic and presentation capability
- Survey and analysis and training costs

As can be seen, these are not mutually exclusive. For example, a comprehensive survey that incorporates many different factors and criteria may be neither cheap nor easy to use. On the other hand a simple survey may not provide enough information on which to base decisions, or to judge changes in quality over time.

It is therefore suggested that auditing is carried out at two levels.

- Level 1 - A broad assessment of the walkability of an area network, which could help to pinpoint locations where improvement is needed.
- Level 2 - Detailed walking audits on identified walking routes that can include multiple criteria and indicators.

Implementing a Walking Strategy in Sydney

Tool for area-wide assessment (Level 1)

For the Level 1 assessment, it is suggested that the 5Cs criteria are used to rate areas (see example at Annex D). Areas need to be small enough to allow variations between areas to show in the analysis. The sample areas included in the Sydney project are considered to be of a suitable size. The 5Cs, as originally devised by Tim Pharoah (London Planning Advisory Committee, 1996) are as follows:

C onected	Comprehensive pedestrian network, short street blocks (permeable), absence of dead ends or long barriers to movement
C onvenient	Direct paths and routes without detours or diversions from desire lines, and without restrictions (e.g. no staggered crossings or bellmouth junctions, ability to cross mid block)
C omfortable	Smooth surfaces, more than adequate width, absence of obstructions, no steep gradients or steps, good micro climate, good lighting, separation from moving vehicle traffic, or traffic calmed environment
C onvivial	Diversity of streetscape, landscape, buildings and activities. Landscaping and furnishing, frequent passers by, space for relaxation, play and enjoyment, interesting ground floor or outside activities, views into and out of buildings, perceived safe
C onspicuous	Legibility of routes, through design and signing of streets, destinations, public transport stops, and building occupants, including street names and property numbering

In the Sydney context, more emphasis could, and in our view should, be given to public transport routes and stops, since the amount of walking will be significantly determined by the quality - and hence use - of the bus, rail and tram services. This can be picked up in the Convenient, Comfortable and Conspicuous categories.

Tool for measuring network quality (Level 2)

For the Level 2 (main) assessment, three potential options are provided.

Option 1 – PERS (TRL software from UK)

Option 1 is to adopt the PERS tool available commercially from the UK (Transport Research Laboratory) and widely used in London, as well as other cities including Melbourne.

Option 2 – PERS modified by TRL

Option 2 would be to adopt PERS having requested from the software developer some updating and alteration to suit the Sydney Walking Strategy requirements.

Option 3 – Method developed by Pharoah/Stüssi 2015

Option 3 would be to use a bespoke audit (survey) tool, as included in this project, and relying on manual analysis and simplified graphic presentation of results. The

Implementing a Walking Strategy in Sydney

criteria and indicators included take into account the various audit tools included in the literature review, and as such may be regarded as a synthesis of different methods used around the world. It is suggested that for technical purposes, the **Red, Amber Green** (RAG) rating can be helpful in identifying the positive and negative aspects of walking at the detailed (small area) level, being very easily distinguished on the scoring spreadsheet (see Annex B). For presentation to assist in policymaking, the overall scoring results for street links and junctions can be shown graphically from Excel or mapped using the existing City of Sydney GIS facility.

The table below shows the pros and cons of the different audit tool options.

Table 1 Comparison of the three options

	Option 1 PERS “off the shelf”	Option 2 PERS, with modifications	Option 3 Bespoke audit tool (basic) (Pharoah/Stüssi)
Available immediately?	Yes	No	Yes
Modifications possible by user?	Limited	By user request and payment to the developer	Yes
Graphic capability built in?	Yes	Yes	Could be developed in house
Training recommended at additional cost?	Yes	Yes	In house
Includes sojourn/place aspects?	Limited	Potentially	Yes
Suitable for monitoring changes in quality over time?	Yes	Yes	Yes
Cost?	Yes	Yes (additional)	No
Compatible suite of other review systems?	Yes	Yes	No

* Note: PERS is part of a suite of software programmes that includes also pedestrian review systems for Cycling and for Freight.

Further discussion and detail of the PERS tool is given at Annex E.

This main audit tool, whichever option is chosen, will provide a means of monitoring the adequacy of footway capacity and level of amenity (Targets 4 and 5 respectively in the Walking Strategy and Action Plan).

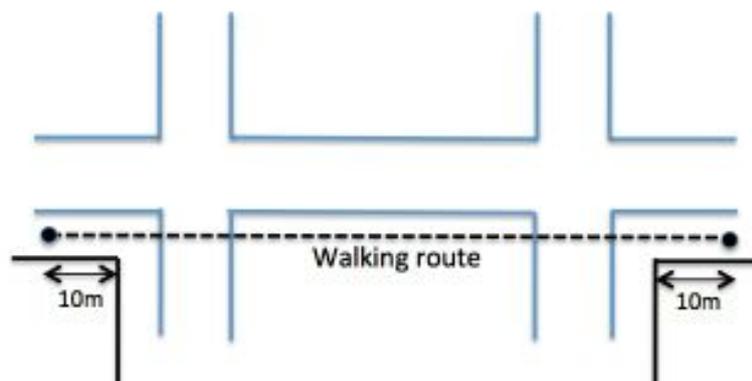
Tool for monitoring walk journey times

Target 3 of the Walking Strategy and Action Plan 2015-2030 is to reduce walking journey times by 10% on key routes. A separate (Level 2) tool is required to monitor walk journey times (walking times are included in the PERS tool). This can be undertaken using the following steps:

1. Define the key route(s) to be audited
2. Walk the routes at peak and off peak periods, making a minimum of three “passes” of each route
3. Record the time taken and establish the average time taken
4. Include a breakdown of time spent walking and time spent waiting (the locations where delays occur can be noted).

While this is relatively straightforward, the method needs to be precisely defined to ensure consistency of “before and after” surveys. For the journey time audit undertaken in the sample areas, the following method was followed:

- One surveyor undertook all the journeys (to minimise differences in survey walking speed)
- No stopping was allowed except where required at crossings
- No hurrying was allowed (for example to get to a crossing before the expiration of the green man period)
- All red man signals had to be respected
- Each route was defined starting 10 metres before the built corner in advance of the first street junction, and ending 10 metres after the built corner beyond the final street junction (see diagram below)



2. Assessment of sample areas in Sydney

The project included surveys of two agreed sample areas, one in Surry Hills, and the other in the George Street/Circular Quay area. The purpose of the sample areas was to test auditing methods rather than to produce detailed plans for their improvement. Nevertheless, suggested improvements are included in Figures 1 and 2 below.

Using information gathered from a number of existing audit tools, a set of parameters for testing was decided to create a bespoke audit tool. This was prepared on an Excel spreadsheet (Annex B). The different components of the spreadsheet (each with its own “worksheet”, or “tab”) are described below.

The walking networks in the sample areas were then described and mapped in terms of links (footways) and crossings (street junctions). Two surveyors working in tandem assessed each link and crossing against each of the criteria. The resulting assessment scores were then included in a spreadsheet. The links assessment included criteria relating to the traffic situation, the physical quality of the footway itself, and other aspects of the walking environment. The criteria are set out in Annex F, together with summary scores from the two sample areas.

Observations were made in the sample areas in peak and off-peak periods on a typical weekday to capture multiple uses and walking demand. Items incorporated in the surveys included safety, priority, capacity, and amenity. Non-standard and innovative data were collected in two locations (Crown Street, Surry Hills, and George Street), namely a survey of people “presence” and “flows” compared to vehicle presence and flows, using time lapse video.

The two survey areas represent two different types of urban environment although both may be described as having “traditional” streetscape with relatively high-density development and active street frontages. The sample area surveys provided an opportunity to “road-test” audit tool techniques, and thus helped to shape the recommendations as to how progress on the Walking Strategy targets and objectives can be monitored (see Section 1). Generally the audit was successful in demonstrating differences in quality between the two sample areas, as well as pinpointing qualitative aspects of the various streets and crossings.

Crossing surveys

The current absence of tactile information for people with visual impairment, and the generally poor quality of accessibility ramps throughout the Surry Hills sample area dragged down the overall rating scores. When these two parameters are excluded from the “Red Amber Green” (RAG) rating, the Surry Hills sample area survey produced six crossings judged to be good or satisfactory, and 5 of average quality that could be improved. Only one, the Crown Street / Foveaux Street junction was assessed as poor, resulting from long red man delays (1 minute 45 seconds) and inadequate peak time capacity. When the legibility and ramp parameters were included, the overall

Implementing a Walking Strategy in Sydney

rating produced only one satisfactory crossing (Collins / Crown, which has been closed to vehicles), with nine “average” and two “poor”.

The George Street sample area surveys (with the legibility and accessibility ramp parameters excluded) revealed 6 satisfactory crossings, 12 average and one poor, although the poor one is within laneways at Dalley and Underwood and is relatively unimportant for overall walkability. When all the parameters were included, there was only one satisfactory crossing (Pitt Street across the minor side lane Rugby Place), 15 average crossings, and 3 rated poor. For the crossing signal delay individual parameter, 6 out of 7 significant crossings in the area were rated poor (Red). These are not very positive results, but the area will be subject to major change as a result of the light rail scheme, and improvements should show up in a repeat audit after those changes have been made.

Link surveys

The assessment of links (stretches of footway) involves more parameters than the assessment of crossings. There is some advantage in grouping these into categories in order to avoid the rating being dominantly “amber” (average). In Table 2 the ratings in three categories are shown (traffic, footway quality and environment). If all the parameter scores are combined, there is a strong tendency for the “extreme” scores (Red and Green) to be lost. This is clear from the final column in Table 2, where the Amber rating applies to 17 out of 24 links. In the three individual categories, by contrast, there are 13 Red links, and 19 Green links identified.

In monitoring the impact of walking schemes, therefore, the identification of positive improvements will be much clearer if the separate categories are retained in the audit analysis.

Alternatively, of course, the analysis can present the rating for just one, or any group of individual parameters. For example, if there were to be a programme of providing footway lighting, that single parameter could be audited, to demonstrate the conversion of the 11 links currently rated Red to Green.

Table 2 Sample area links in each rating category

No. of links	Traffic rating	Footway rating	Environment (amenity) rating	Combined rating
Surry Hills				
Red	2	0	0	0
Amber	2	6	9	8
Green	6	4	1	2
George Street				
Red	5	4	4	2
Amber	5	4	7	9
Green	4	6	3	3

Figure 1 Footway audit results in the Surry Hills sample area

Surry Hills sample area



KEY: Red = Poor, needs improvement. Amber = Average, improve if possible. Green = Good or satisfactory

Figure 2 Footway audit results in the George St/Circular Quay sample area



KEY: Red = Poor, needs improvement. Amber = Average, improve if possible. Green = Good or satisfactory

Traffic survey data

In addition to the walkability audit with RAG rating analysis, data were collected in the sample areas on vehicle traffic and walking. These data are shown in a separate spreadsheet tab. From the counts undertaken, two general conclusions can be drawn. First, in the Surry Hills sample area, vehicle traffic flow exceeded that of walkers during the morning peak hour due to Foveaux Street as major traffic route into the city centre. Second, in the George Street sample area, the number of walkers exceeded vehicle volumes in the morning peak period.

“Presence” surveys

Traffic flow data alone do not convey the full picture of experiencing the street from a walker’s point of view. A further measure that can be undertaken, although involving more work, is to measure the “presence” of vehicles and people, as opposed to the “flow” of them. This involves taking pictures of a defined portion of street (or space) from a fixed position, at intervals of say one minute, using time lapse video or similar. In each picture the number pedestrians and vehicle are counted. The average presence of each is then calculated from the collection of pictures taken. Two such example surveys were undertaken for this project to demonstrate the effect.

In the Surry Hills area, a peak time “presence” survey was undertaken outside Surry Hills library in Crown Street. Compared to the traffic flow data already mentioned above, this produced a reversal of the dominant mode from vehicles to people on foot. The results are shown in terms of the split between pedestrians and vehicles in Table 3 below.

Table 3 Presence survey results in two locations

	“Flow” ratio Pedestrians/Vehicles	“Presence” ratio Pedestrians/Vehicles
George St. between Margaret Street and Hunter Street Saturday midday	68% / 32%	89% / 11%
Crown St. outside public library Tuesday morning peak	35% / 65%	58% / 42%

In George Street, a Saturday midday survey revealed that the “presence” of people on foot greatly outnumbered the presence of vehicles.

“Presence” surveys are a useful complement to traffic flow surveys, especially to facilitate deliberations about the amount of space and priority to be accorded to people as compared to vehicles.

Implementing a Walking Strategy in Sydney

Example photos from the set of photos analysed at each of the two selected locations in Crown Street and George Street are shown below.

George Street “presence” survey location. Sample video screen grab showing 39 people “present” compared to 2 vehicles



Crown Street “presence” survey location. Sample video screen grab showing 7 people “present” compared to 2 (moving) vehicles,



Area (Level 1) surveys using the “5Cs” classification

It is recommended that two levels of walking audits be undertaken. The level 1 survey is designed for areas, such as the sample areas identified for the present project. An assessment of the two sample areas using the 5Cs classification was undertaken. The 5Cs are: Connected, Convenient, Comfortable, Convivial and Conspicuous. This analysis resulted in The Surry Hills sample area being rated Green (good/satisfactory) and the George Street sample area being rated Amber. In order to provide a contrast, a further area was analysed bounded by Harbour, Sussex, and Bathurst streets. This was rated Red (poor walkability).

The different ratings on this more generic analysis might provide a strong case for prioritising the Bathurst Street area for improvement. However, when existing footfall (demand) and land use attractions are taken into consideration, the case might be stronger for the George Street area. In either case, both those areas would appear to be in greater need of improvement than the Surry Hills area.

Assessment of footway widths

In addition to the footway quality assessment reported above, a further desk-based assessment was undertaken specifically of footway widths in the sample areas compared to the standards set out in the “*Sydney Streets Design Code: Street design coordination Part E*” page 89, adopted in 2013. Footway widths for each of the links identified in the sample areas were taken from the Sydney GIS records. These were then compared to the “Preferred” and “Minimum” total footway widths given for each type of street in the design code. Of the 20 links assessed in this way, 5 met the “preferred” standard and

Implementing a Walking Strategy in Sydney

10 met the minimum standard. Five of the links not meet even the minimum standard, and four of these were judged suitable for conversion to shared (single) surface streets.

Route walking time surveys

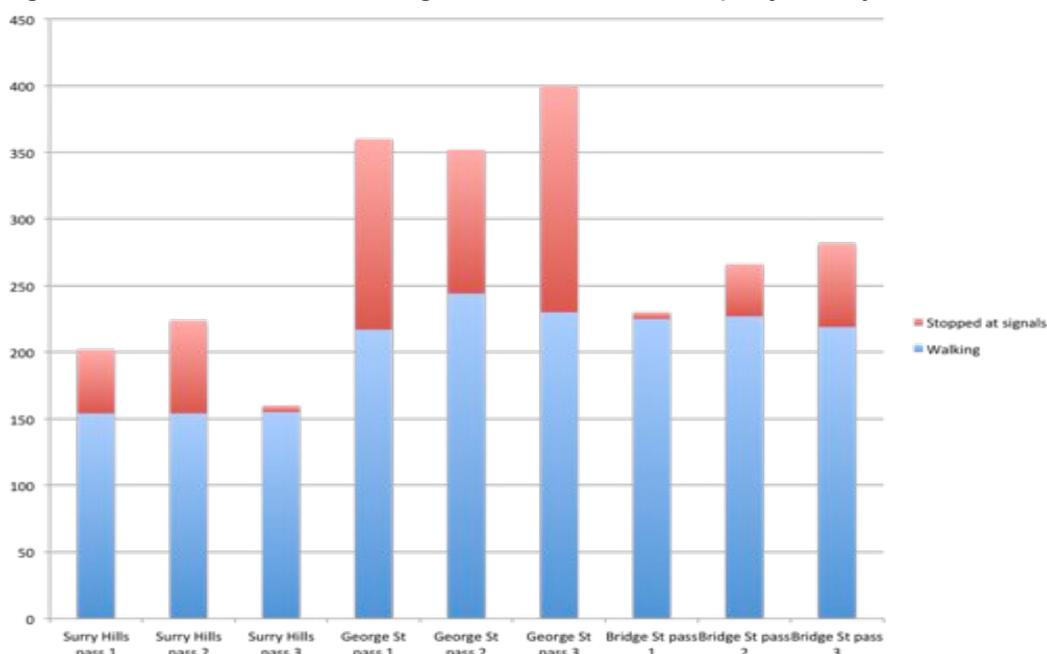
A key target in the Walking Strategy is to reduce walking times on key routes by 10%. However, establishing walking times, and measuring the impact of improvements must take account of the following:

1. Surveyors should try to walk at a constant speed (Walking speeds vary not only between people, but between different trips by the same person);
2. Walking times can vary greatly according to the opportunity for mid-block crossing, which can vary according to the traffic flow (the sample walks therefore excluded the need for mid block crossing);
3. Route walking times vary according to the point in the signal cycle at which the walker arrives at the crossing (hence the need for several passes).

Sample measurements in the two case study areas (Surry Hills and George Street/Circular Quay) were undertaken at a constant pace, avoiding distractions, and respecting red signals. Under these conditions (which are needed to produce consistent audit results) factor 3 above accounted for a large part of trip time variation, especially in the city centre. As can be seen from the chart showing the results from three sample walks (Figure 3), stopped time at signals accounts for the great majority of trip time variation.

It should be noted that measuring the maximum or average wait times at *individual* junctions is a poor indicator of the delays experienced during a whole route involving several signal controlled crossings.

Figure 3 Variations in walking times for three sample journeys



Note: Walking times were recorded for 3 separate journeys along each of 3 specified routes. The distances were: Surry Hills route – 193m; George St route – 325m; Bridge Street route – 330m.

Route amenity surveys

A final audit was undertaken of the level of amenity along some routes in the sample areas (including those audited for walking speed). This survey took into account both crossings and links forming the route. This found a generally high level of amenity, especially in the Surry Hills area. Exceptions identified were the route along the south side of Foveaux Street (Surry Hills), and the route along the north side of Bridge Street in the city centre, which is dominated by heavy traffic.

3. Good practice in achieving high levels of walkability

Many cities worldwide are now coming to realise that a successful city is a walking city, where a high proportion of trips are made wholly on foot, or with walking as a key part of trips by public transport. Sydney can benefit from the recent experience for instance of New York and London, which have pursued a strong agenda to improve walkability.

The (re) discovery of New York's streets

In Manhattan, the focus has been on reducing the dominance of motor traffic and providing more space for people on foot and cycling, and for sojourn on foot, not just walking as transport. As a City initiative, it was decided to bring about rapid change to create new and lively public spaces, without agonising too much about the consequences of reducing capacity for motor traffic. The consequences in traffic terms were modelled, but the key was to make the changes quickly and cheaply. If it didn't work out, the schemes could be taken out again.

The changes involved taking the traffic out, colouring the surface of the street (leaving kerbs and drainage in place), and preventing vehicles from encroaching on the pedestrian space by placing numerous planter boxes in appropriate locations. The pedestrianisation of Broadway and part of Times Square was the first and most iconic example of the reclamation of city street space for activity on foot and for sojourn.

Did it work? The spaces created were flooded with crowds of people overnight. The traffic was displaced with no significant adverse consequences in terms of congestion or journey time. The modelled expectation of higher traffic volumes on adjacent streets never materialised, and drivers adjusted their travel choices to accommodate the new situation.

This project (along with others) was initiated by New York City, and was led by the New York Transport Commissioner in Mayor Bloomberg's administration, Janette Sadik-Kahn. Her mission was to do bold projects that could be implemented easily, safely and cheaply. Although the city also has completed some iconic projects, notably the Hi-Line linear park.

London's conversion to multi-purpose ("complete") streets

A rather different approach has been taken in London. Although it, too, has its iconic projects, such as the Trafalgar Square pedestrianisation to unite the square with the National Gallery, there has been a concerted and ongoing effort to develop a new design protocol.

The leading initiative has been by a group of central boroughs who set up the so-called "Clear Zone Partnership", which designed a range of best practice public realm schemes to encourage walking and benefit businesses. The Partnership includes the Borough of Camden, the City of Westminster and the City of London, with a combined population of around 430,000. It is funded by these authorities together with contributions from Transport for London (the London-wide transport body) and businesses.

The focus has been on ensuring that all street users are catered for, while creating a better balance between traffic and "place" functions. There has been an emphasis on high-quality (expensive) materials and designs, which are expected to bring about more valuable places that can command higher prices and rents. To some extent these higher values have funded the street improvements.

Key walking corridors were defined, each up to 2kms long, and improved by widening footways where possible, improving crossings, and reallocating road space to provide for loading, cycle lanes as appropriate, and tree planting and street furniture. The result has been a steady increase in the number of high quality, pedestrian-friendly streets, including on the main road network administered by Transport for London. The aim is to make conditions safer and more pleasant for walking, but also to ensure that streets "work hard" to provide for all users, including deliveries/loading and public transport. In most cases general traffic is also accommodated, but not at the expense of other users, as was formerly often the case. The streets are no longer subjugated to the demands of motor traffic, and both traffic speed and traffic space have been reduced. On-street parking is included if there is both space to do so, and a benefit to businesses or residents. Over the past 5 years, there has also been more effort to provide better on-street conditions for cycling. It is worth noting that changes to the walking environment or bus priority are generally well accepted and uncontroversial. .

One of the spurs to action was the publication in 2007 of a national street design guide: *Manual for Streets*, followed by *Manual for Streets 2* in 2010, which extended the principles to all streets, including busy main streets. Many of the London boroughs (of which there are 33) have also produced their own street design guidance documents. From all of this material has emerged a recognisable "palette" of design features that have led to what is now accepted as the new "normal" street design. The results are already widespread, with streets following the new protocol emerging as part of development and regeneration projects or even as part of road maintenance.

Features that are now becoming increasingly ubiquitous on London include,:

- Narrower carriageways, reallocating the space saved to footway, cycleway, loading bay or bus lane use depending on the location;
- Provision of a median that is designed to facilitate mid-block crossing, but also for tree planting and cycle parking;
- 20 mph (30 kph) speed limits, including on main streets with high walking activity (the redesigns also encourage slower driving);
- Raised carriageways (to footway level) at pedestrian crossings, and across the mouths of side streets, so that people do not have to change level in order to cross; vehicles change level instead. This also assists with the speed reduction objective;
- Narrowed side street entrances, to slow turning vehicles, and to reduce crossing distances;
- Dual-use areas at footway level, often converted from on street parking bays, to provide for deliveries, and to give more pedestrian space outside delivery times (the peak pedestrian and delivery times generally do not coincide);
- Tree planting (the planting of 10,000 street trees);
- Green streets, including the unsealing of former parking bays to provide for trees and plants, and storm water retention areas;
- Narrowing or reducing the number of traffic lanes to provide cycle lanes;
- Conversion of parking bays for exclusive use by car share cars, and secure cycle lockers in areas where cycle parking is difficult.

In recent years, the London street design philosophy has been developed and reinforced by emphasising the economic value of high quality public realm (e.g. report to Transport for London from the Central London Partnership Tim Pharoah with Llewelyn-Davies, March 2003, available at www.livingtransport.com/library/pdf.php?id=185 - accessed 20th April 2015), and also the health benefits of higher levels of walking and the social and mental health benefits of streets that provide for easy interaction and mode choice (see “Improving the health of Londoners: Transport action plan” available at <https://tinyurl.com/q947ufj> - accessed 20th April 2015).

How does Sydney compare with other cities?

Both London and New York demonstrate, in different ways, a transformation from treating city streets solely as traffic conduits, to designing them for people and social interaction: from “city highways” to “city spaces”. Increasingly these cities are recognising the concept of “complete streets” whereby the design and management of the public realm are based on the multi-functional aspect of streets, not just the on the movement of vehicles and people.

In Sydney the layout and management of city streets are still dominated, as they used to be in New York, London and elsewhere, by maximising vehicle traffic capacity, and maintaining vehicle journey speeds regardless of the

Implementing a Walking Strategy in Sydney

other functions of a street. In forging the way ahead, London and New York provide experience of two different approaches. Other cities such as Birmingham (England), Copenhagen, Lyon, Oslo, Seoul, Vienna and Zürich also show a reformed approach to the handling of city streets and spaces. These cities have demonstrated the huge public appetite for lively and interesting spaces in which to walk, interact, and do business. They have also found that the changes they have made help to boost competitiveness, and stimulate their economy.

In Sydney there are some pedestrianised streets such as Martin Place and a small part of Pitt Street. The real progress is made when the city decides to shift the balance away from individual motorised mobility, and to give more attention, space and resources to create more civilised walking environments and public spaces, and to cater for multiple activities, including freight and deliveries. Both New York and London have demonstrated that traffic to a large extent finds its own level.

Figure 4 High capacity roads point like arrows at the heart of Sydney



A particular issue for Sydney is that it has high capacity, high speed roads pointing like arrows at the very heart of the city (see Figure 4). There is little “transition” space from these major highways into more city-oriented streets. This is in stark contrast to London, where high speed roads do not penetrate

Implementing a Walking Strategy in Sydney

as far as the city centre. Only one limited-access road reaches as far as, but does not penetrate the city centre. Like central Sydney, Manhattan is “bypassed” by limited access roads, which creates environmental problems at the boundary, but also means that there is no “deal-breaker” impact when traffic capacity in the centre is reduced.

Speed limits, and the design of streets to reflect the decided limit, are another area where Sydney could take account of the measures being taken in London and elsewhere. The speed of vehicles is one of the main determinants of the quality of the street environment and walkability, and also of the level and severity of traffic related casualties. Despite the widely accepted research which shows that speeds higher than 30 kph have an increasingly disproportionate impact on pedestrian survival rates, Sydney in moving to a lower limit in part of the city centre has adopted 40 kph (as in New York), while the design, profiles and street characteristics have in most cases not been modified to reflect or encourage this lower speed.

What can Sydney take from New York and London?

Taking the sample area around George Street as an example, there is a short-term opportunity to adopt an experimental approach in advance of the coming of Light Rail. Connecting Circular Quay with the city centre with easier walking routes would be an important objective, with appropriate wayfinding. George Street between Hunter and Alfred could be made pedestrian priority (high levels of walking were recorded in the peak time survey) with bus, taxi, cycle and walk traffic only, with limited hours provision for servicing. Deliveries (during limited hours) can be handled on shared areas of the footways (as in London). Eventually, with pedestrian priority extending from Liverpool Street to Alfred Street, this would probably be the longest pedestrian priority street in the world.

There are also a number of options for making Bridge Street more pedestrian friendly, and a consultation could be undertaken to establish an appropriate re-profiling of this wide street. Possible actions might include the relocation of bus stops; the provision of bus boarders; the removal of part-time street parking and taxi stands; and removing a traffic lane to allow the building of a median strip to facilitate mid-block crossing. A 30 kph limit could be applied. Turning lanes could be provided while narrowing the mid-block sections.

Relocated bus and taxi areas would be another candidate for experimentation, though dependent on a reworking of the bus operation. This would further reduce the actual and perceived barriers to free movement between Circular Quay and the city centre. Other suggestions are included in Figure 6 below, including improving the walking environment on Pitt Street, the other direct link route to the city centre.

There will be other areas of the City where quick wins can be achieved, but their identification would require a separate exercise, such as the Level 1 audit procedure recommended in this report.

Following the example of London, with the development of a recognised “palette” of measures and priorities that can be applied as appropriate in different street situations, the City Council could also lead the way in the provision of inclusive accessibility. This would include raising carriageways to footway level at crossings and junctions, or providing gentle ramps (dropped kerbs) the full width of crossings, to provide for users of wheelchairs and other wheeled walking aids. Tactile paving at crossings would be required to cater for those with limited vision. Two other key components would be a maximum signal cycle of 90 seconds to reduce delays at crossings, and a 30 kph speed limit on all mixed-use and residential streets. In addition the removal of one-way systems and creation of better provision for and access to public transport would reflect the radical and highly effective changes now being made in London.

4. Potential improvements to walkability

There are a number of improvements that could be made in the sample areas that would provide a powerful indication of a move towards a walking culture. Some examples include:

Surry Hills area

1. Bringing both-ways bus operation (and stops) onto Foveaux Street;
2. Widening the most heavily used footways, especially in Crown Street;
3. Grading the footway and/or carriageway at all crossings and junctions so that it is vehicles that change level, not people on foot;
4. Reducing the red man time at the Crown Street / Foveaux Street junction.
5. Creating a single (shared) surface on Richards Land and other local streets that have inadequate footways.

George Street area

1. Removing general traffic from George Street;
2. Reallocating space in Bridge Street from carriageway and parking to benefit people on foot (wider footways and/or provision of a median strip to facilitate mid-block crossing);
3. Converting Alfred Street junctions to shared space and removal of pedestrian crossing signals;
4. Converting the laneways such as Reiby Place and Dalley Street to single (shared) surface streets;
5. Reorganising bus routes and stops to be more legible to non-regular users.

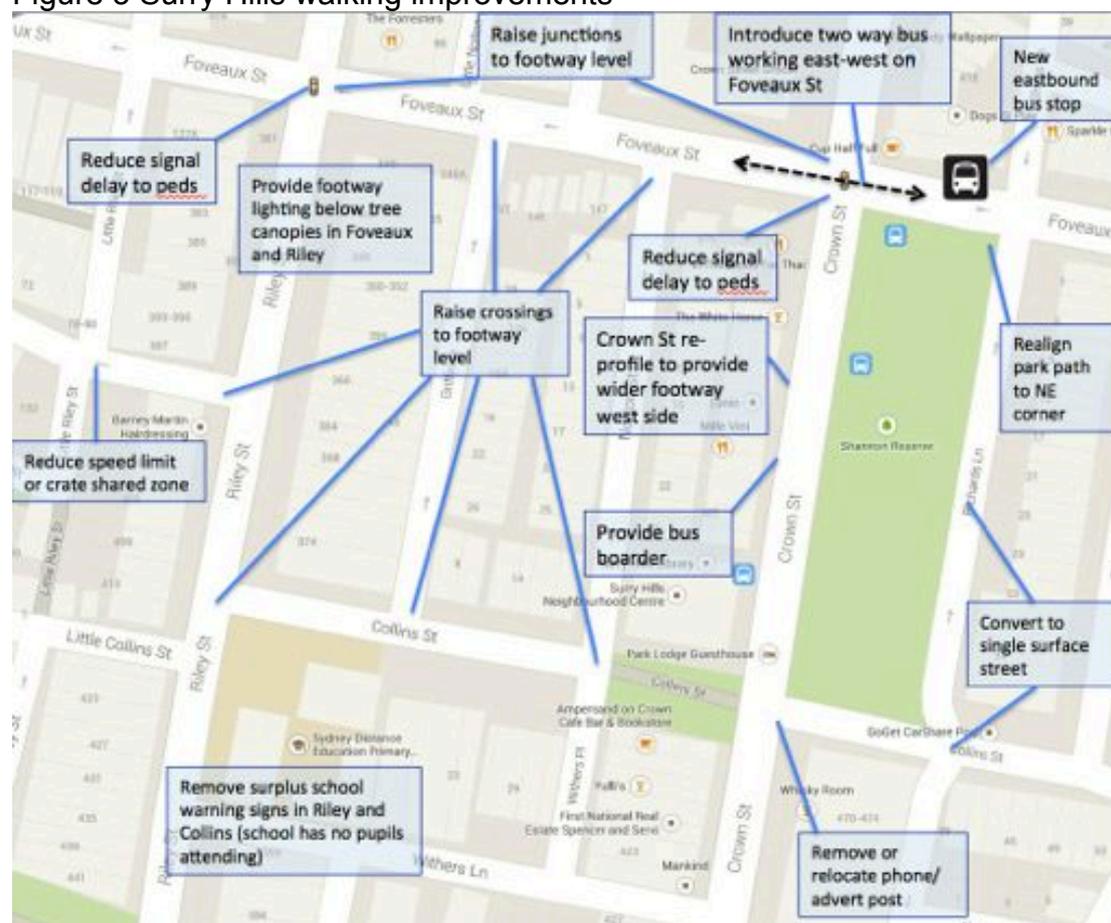
Improvements for the sample areas

In this section some improvements are suggested for the two sample areas. If these improvements were to be implemented, the problems identified in the walking audit would in most cases be resolved, and the links and crossings would show in the “after” audit with a “Green” (good) rating.

Surry Hills

The suggested improvements for the Surry Hills sample area are shown in Figure 5.

Figure 5 Surry Hills walking improvements



There do not seem to be any opportunities in the Surry Hills sample area for major transformations as “quick wins”. The improvements needed either involve construction, or impact on traffic capacity, or both. The audit has identified Foveaux Street and Crown Street, and the junction between them as the main challenge. Significant walking improvements could be gained by

1. Reducing the red man wait times at Foveaux/Crown and Foveaux/Riley; and
2. Bringing together the bus stops serving the east-west bus routes. Currently eastbound and westbound bus routes are divided between Foveaux and Albion streets, which is a discouragement to bus use, and

Implementing a Walking Strategy in Sydney

hence to walking as an access mode. They can be brought together by providing a contra-flow bus lane on Foveaux Street, or by restoring Foveaux Street as a 2-way street.

These changes, however, will have wider impacts on general traffic, bus routing, and the designated cycle routes (Albion Street), and therefore need careful planning as part of a wider area initiative.

Other improvements for walking and sojourn can be achieved without any major impact on vehicle traffic capacity, and should therefore be relatively easy to achieve in the short term (“quicker wins”). These include:

1. Raising the carriageway to footway level at all junctions, with speed reducing ramps for the local streets, and gentle grading on the busiest vehicle routes (Foveaux Street with Crown and Riley);
2. Provide a bus boarder on Crown Street for northbound buses, in order to increase footway capacity and facilitate sojourn;
3. Convert Richards Lane and Griffin Street to single surface streets (shared zone);
4. Remove phone and advertisement “post” at the corner of Collins and Crown, which currently restricts the footway;
5. Remove clutter of unnecessary signs, including the various school warning signs relating to the school in Collins Street that has no pupils attending, and superfluous one-way information signs at Griffin and Norton Streets;
6. Within the local open space (Shannon Reserve), realign the internal path to the north east corner to create more direct access;
7. Bring Sophie Street speed limit down from 50 to 30 kph (or less if converted to shared zone).

George Street / Circular Quay area

The George Street sample area is about to undergo a major transformation associated with the new light rail scheme, including a terminus in Alfred Street. At present the Circular Quay area, despite being perhaps the most visited part of the city, is disjointed, unattractive and difficult to read. An objective of the changes should therefore be to integrate the different elements of the Circular Quay area, not just Alfred Street itself, namely:

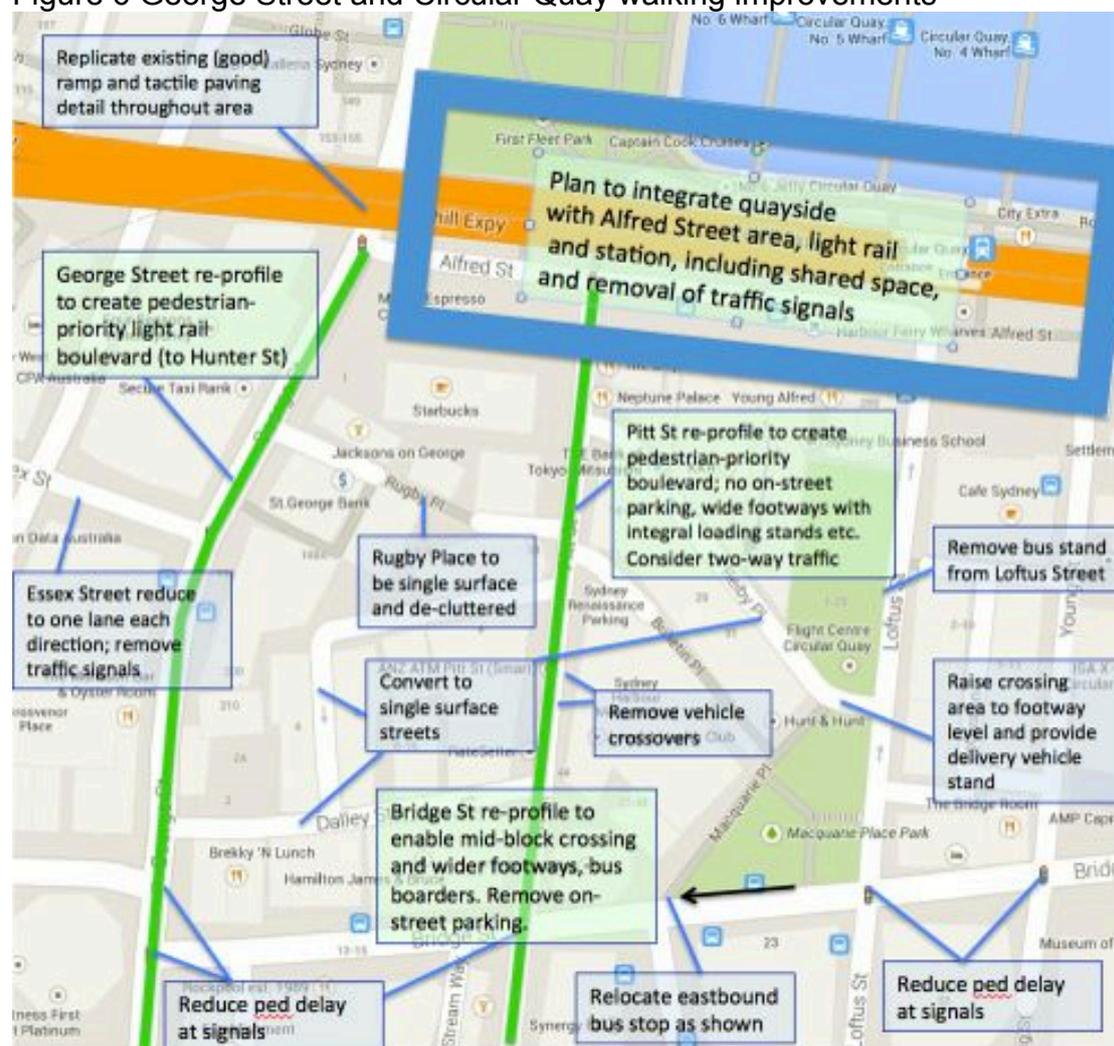
- The Quay, ferry port and First Fleet Park
- Circular Quay Station
- Bus stops and interchange with station and ferries
- Alfred Street and its associated open spaces and squares
- George Street as the major linking spine to the city centre

This is Sydney’s showcase area and it needs to be much more legible and welcoming. Much better links are needed between the Circular Quay area and the city centre. The prime modes for this link should be bus and walking. At present visitors find the routes illegible and resort to taxis, which adds to the traffic. Physically, the main direct links to the city centre are via Pitt Street and

Implementing a Walking Strategy in Sydney

George Street. Both of these currently are dominated by motor traffic and should be transformed to become attractive routes for walking and sojourn. This will involve reallocating parking and loading bays to become wide footways with integral part-time loading stands. Eventually Pitt Street should be considered for two-way traffic, although the traffic arrangements will need to be planned in conjunction with bus route reorganisation and the light rail changes.

Figure 6 George Street and Circular Quay walking improvements



The redesign of a complex area such as Circular Quay, with numerous different interest affected, cannot sensibly be undertaken quickly. Even so there may be some quick wins that can be achieved in advance of the light rail scheme. For example:

1. Removing the pedestrian signals at the Alfred Street junctions with Loftus and Young Streets, and converting these junctions to shared space (see below);
2. Relocating the taxi Queue so that it does not stand in the way of people walking between Circular Quay and Alfred Street bus stops and the square alongside;

Implementing a Walking Strategy in Sydney

3. Give prominent labels to each of the bus stops in Albert Street, and display legible bus “spider” maps at each stop showing where one can travel from that stop;
4. Remove the large plastic crowd control bollards from the passageways under Circular Quay station when not required;
5. Devise a means of conveying visually the links between either side of the railway, perhaps using colour or distinctive easily-recognised signs overhead or on the ground. (Large stations and airports often deploy such measures to assist people’s navigation.)

In relation to point 1, Alfred Street has two locations with pedestrian signalisation that is excessive and without justification, at the junctions with Loftus Street and Young Street. In fact, these are no longer traffic junctions since the closure of part of Alfred Street. Traffic volume is light, and yet walking is subject to the delays and constraints of a full directional set of crossing signals. At Young Street this results in 8 different crossing movements, requiring 16 signal heads! This probably the most complex and useless set of pedestrian signals we have come across anywhere. At Loftus Street there are 4 crossing movements and 8 signal heads, including one set covering the closed section of Alfred Street! While diagonal crossing movements are signalled, there is an incomplete series of ramps, rendering certain movements difficult for those requiring ramps.

General improvements for City of Sydney

The design and management of the Sydney street network is currently geared to the demands of motorised traffic. Motor traffic has to be accommodated, but it does not need to dominate the experience of being in the city to the extent that it does today. Many of the world’s great cities are coming to realise that a high quality environment is a key component of a successful and competitive economy, and a vibrant, attractive city. While these cities - from London to New York, and from Seoul to Seattle and Shanghai - increasingly are shifting the focus from highways for cars to streets for people. Sydney lags behind. The space allocated to cars and other vehicles greatly exceeds that devoted to people on foot. The time allocated to vehicles greatly exceeds that for people wishing to cross the street. The information provided for motorists is far more comprehensive than that provided for people on foot or cycle. The net result is a traffic-dominated environment that is unattractive, noisy, and polluted. As conduits for movement on foot, the streets are inadequate in terms of comfort and convenience. As part of the public space available for social interaction and sojourn, the streets fail to deliver. With some notable exceptions of recently created traffic-free havens, the city centre has a functional atmosphere: a place to go to for shopping or work, and then to leave, rather than to linger and enjoy.

All of these aspects need to be addressed. However, two improvements in particular are critical to the achievement of the objectives in the Walking Strategy. These are the reduction of delays at signal crossings, and the reallocation of space from carriageway to footway. These two improvements

Implementing a Walking Strategy in Sydney

cannot be undertaken on the scale necessary unless motor traffic capacity and/or speed are reduced. The issue of signal crossings is discussed further in the box below.

Pedestrian wait times at signalised crossings

Long waits at red signals to cross the street are currently a defining feature of the walking experience in Sydney. The waits are encountered frequently, and they are longer than most people find acceptable.

In Sydney, the “red man” time was found to extend up to 1 minute and 45 seconds (105 seconds), within a cycle time of perhaps 115 seconds or more, for example in the Surry Hills sample area at the Crown Street / Foveaux Street junction. This compares with a usual red man maximum found in London of 70-75 seconds within a maximum signal cycle of 90 seconds. Similar maximum signal cycle times are now the norm in New York City and Copenhagen, for example.

According to Roads and Maritime Services, the maximum cycle time throughout Sydney CBD is 110 seconds, with a minimum pedestrian green time of 12 seconds. Wait times can be reduced either by reducing the cycle time, or by increasing the pedestrian time within the cycle. In central Hong Kong, the cycle time can also be 110 seconds, but pedestrians get a larger share of the cycle, for example 35 seconds at Nathan Road/Gascoigne junction in Kowloon.

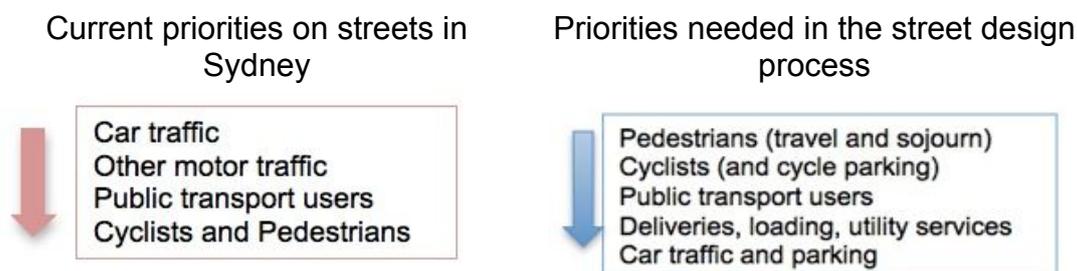
Push buttons are not compatible with walking priority, and if the need to push them is removed, the buttons themselves should be removed. Countdown timers are being trialled in Sydney. In London there is as yet no clear evidence that people favour them. They particularly are not welcomed if they are used to justify a reduction in the “green” time for pedestrians.

A particular problem in Sydney is the high frequency of intersections in the CBD. The east-west routes across the CBD encounter short street blocks, and the frequency of signal controlled intersections can be as high as every 70-80 metres. North south routes through the CBD have longer street blocks, but even so the frequency of signal intersections averages at around 100 metres (e.g. George Street). The same issue is acknowledged in downtown Manhattan, where the street blocks in some areas are even smaller than in Sydney CBD. In the centre of London, by contrast, it is not uncommon to be able to walk 200 or even 300 metres without encountering a signal controlled crossing. This should be the aim for the City of Sydney.

Jaywalking (crossing against a red signal) occurs when the wait times are considered unreasonable, and many people in Sydney do cross before the green man appears. For example, on a Saturday afternoon in George Street, video analysis shows that during 4 signal cycles observed at Margaret Street crossing, 51% of people waited for the green signal, but 49% of people crossed on red. During one signal phase, 100% of people crossed against the red man! It is worth noting that in London (where jaywalking is not enforced) it is not uncommon to find 4 out of 5 people crossing during the red man period. The suppression of such demand in Sydney must impact on people’s perception of walkability, leading to frustration and/or less walking.

Implementing a Walking Strategy in Sydney

To inform the changes that are needed, the City in partnership with the State Government should work to bring about a reversal of street design priorities.



To bring this about, there needs to be an agreed area and network of streets where the City's strategy sets the pace and style of change. All of the network of multi-purpose streets should be included. It is neither efficient nor effective for the State Government to be involved in the configuration of all aspects of the City's street network.

A complete list of measures that need to be rolled out across the City of Sydney area is set out below. It is recognised that some of these measures, especially the first three, may have an impact on general traffic capacity. The use of experimentation and monitoring will avoid lengthy technical and political discussion about impacts. In addition, measures to achieve a shift away from private motorised travel in the city should run in parallel with the rolling out of infrastructure improvements for walking and cycling.

A major revision and enhancement of the public transport system is necessary to help bring about mode shift, and to increase walking as an access mode. The City is well placed, in terms of its density and diversity of activities, to support a high quality public transport system. The City therefore needs to advocate the reconfiguration of the bus network in particular, and the light rail scheme provides an opportunity to achieve major change.

Given that people will be expected to make a shift in their travel habits, it is important at all stages to ensure that the benefits resulting from the infrastructure changes are promoted, marketed and appreciated. For this reason, it is pragmatic to start with locations where delivery is easy, and where controversy is less likely. Show the benefits in some prominent locations, and others will want to follow. This approach has worked in London and New York and other cities; it can work for Sydney too.

In addition to the measures set out below, specific locations where intervention is needed are illustrated in the **photo book** at Annex G.

Top ten measures to achieve a step change in the walking environment¹

1. Change the design of city streets to reflect their role in contributing to the life and economy of the city. This will involve reallocating space from traffic and parking to walking and sojourn, as well as loading, cycling and landscaping.
2. Shorten traffic signal cycle times and/or increase the crossing time for pedestrians within the cycle. This is essential to meet the target reduction in walking journey times set out in the Walking Strategy.
3. Reduce the number of signal controlled crossings in the city centre and elsewhere, to reduce the frequency of signal crossing delays to people on foot. This is particularly important for the city centre east-west streets such as Goulburn, Liverpool, Bathurst, Park/Druitt, Market, King, and Hunter.
4. Reduce the speed limit to 30 kph throughout the city centre, as well as in village centres and local streets.
5. Raise the carriageway to footway level at all side street junctions, to facilitate safe and convenient crossing movements for pedestrians.
6. Provide consistent tactile information in all locations where the carriageway and footway are at the same level.
7. At other junctions and crossings, kerb ramps to be rebuilt as inclusive mobility facilities, with gentle gradients (max 1 in 20) for wheelchair users, and extending to the full width of the crossing to benefit all users, and to remove trip hazards at the ramp edges. Ramps also need to align with each other across the street and to face all desire lines.
8. Redesign medians to benefit people crossing the street, and provide more medians to assist mid-block crossing movements.
9. Increase the width of footways, especially at street corners and where there are footway activities such as cafes and shops, to reduce congestion and provide adequate clear width.
10. Review and improve connections between public transport and the walking network, aimed at increasing both walking and public transport use. For example, relocating “mid block” bus stops, and providing bus boarders to reduce obstruction of footways by bus queues.

Other improvements to improve the walking experience

11. Improve footway lighting.
12. Implement a trial “shared space” solution at one or more locations, to demonstrate the benefits to all road users. A suggested location is the junction between Darlinghurst Road and Bayswater Road.

¹ It is worth noting that at the stakeholder workshop as part of this project, items 2 and 6 were considered to be the most important out of 24 possible issues of walking quality.

Implementing a Walking Strategy in Sydney

13. Remove vehicle footway crossovers that serve only pick-up and drop off purposes, such as at hotels and office buildings (i.e. not including access to car parks and laneways).
14. Review interchange areas as a separate exercise, especially using the light rail changes as an opportunity to improve the interchange and public realm at Circular Quay.
15. Institute a de-cluttering programme to remove unsightly and unnecessary signs, poles, walls, railings and other items, for aesthetic and practical reasons. A.
16. Include provision for deliveries and loading on-street, in places and times that do not coincide with peak walking activity.
17. Instigate a “small spaces” programme to create and animate small areas of public realm that can add to the life and character of the city.
18. Encourage the participation of private land owners in the small spaces initiative to achieve better integration of public and private realm.
19. Continue the provision and improvement of a consistent wayfinding system for walking and cycling.
20. Review the access to public gardens and squares, and provide access points and paths that better enable them to be part of the walking network.
21. Use a variety of walking promotion programmes to attract support and new funding streams.
22. Review the possibilities for improving the quality of public life, including management of eating, drinking and smoking in public places.
23. Ensure that road markings asking pedestrians to “look right” or “look left” are correct.
24. Review the audible pedestrian crossing signals – while they can be useful, it is not always easy to detect which direction is being signalled.

5. Mechanisms of change

Bringing about change that will radically improve the walking experience in Sydney, and lead to a measurable increase in walking, will not happen without a deliberate effort on the part of all those responsible for planning and operating the roads and streets and public spaces. Also, it will not happen overnight. Providing for walking is not an event, it is a process.

The current system has grown up in an era when the priority has been the accommodation of ever increasing volumes of motor traffic. Now, however, the policies of both the State (Sydney's Walking Future, 2013) and the City (Walking Strategy and Action Plan, 2015-2030) advocate priority and consideration for walking and sojourn (and to public transport and cycling) rather than motor traffic, and consequently changes to the administrative system will be needed that reflect this.

The following specific aspects need to be addressed:

1. The division of responsibilities on arterial (State) roads between lanes/carriageways and footpaths/footways and spaces for unloading, sojourning etc. is illogical. It is inconsistent with the need to address the balance between different modes and street functions, and it also creates an inbuilt source of tension and conflict between the State and the City. All aspects of roads and footways need to be **planned together by the City of Sydney**.
2. Different departments and authorities are inevitably involved with and have an interest in the planning and management of streets, roads and footpaths, but this should be accommodated in the **consultation process**, and not provide on-going opportunities for opposition or vetoing at each stage of project development;
3. Whatever the distribution of responsibilities and powers, much more could be achieved with a more relaxed approach to **experimenting and piloting** new ways of doing things. Agonising over the potential negative impacts of projects (as occurs apparently even with minor schemes) is wasteful of energies and resources, and is usually unnecessary. Traffic adapts more readily to changes in the network than traffic models predict. In any case, many traffic changes can be readily revised if the benefits don't materialise.

At present the State government is very involved in the detail of planning and delivering specific projects. While the State policy document on walking is in most respects consistent with the City's Walking Strategy, it is unclear from these documents who is responsible for what.

6. Is walking part of the City of Sydney culture?

Compared to other parts of the metropolitan region, the City of Sydney has a strong walking culture, with well maintained footways, and some form of provision for pedestrians at most junctions. The “villages” in particular support a lifestyle in which many local trips are made wholly on foot, with local shops, schools and a wide range of services and facilities provided within walking distance of homes. This was very apparent in the Surry Hills sample area. The CBD also functions with the majority of internal journeys made entirely on foot (92%), reflected in high pedestrian volumes on many streets. Flows of up to 3,000 people an hour on a single footway were recorded in parts of George Street.

There is an apparent mis-match between the needs and aspirations of people wishing to walk, and the provision of infrastructure to meet those needs and aspirations. The priority consideration is the free flow of vehicles rather than the free flow of people movement overall. In the City of Sydney people walking and cycling by and large have to take what is provided after motor traffic demands have been optimised. Changes are needed to shift this imbalance.

It is important to note, however, that there are many examples of walking provision good practice in the City of Sydney, which provide precedents for what, if extended more widely, would meet the aspirations of the Walking Strategy and would be consistent with the sentiments expressed in NSW Planning Guidelines for Walking and Cycling, 2004. (*“The Government is keen to support NSW councils, communities and the development industry to improve planning for walking and cycling.”*) These include raised crossings, zebra crossings, shared zones, footway build-outs, tactile information, audible signals, diagonal crossings, sustainable drainage street swales, high quality paving, and street closures. These elements are included in the audit procedure described in this report, and their more widespread introduction will therefore show up in before and after audits over time.

The culture of the place is reflected not just in the traffic infrastructure, but in the way people behave, and what they perceive as important. We noticed that drivers by and large respect zebra crossings, such as that outside Surry Hills library in Crown Street, and give way to people crossing on a green signal however motorists do not comply with the requirement to give-way to pedestrians when turning at an intersection and the tolerance seems to be much greater in the smaller streets than on wide streets and one-way streets, such as Bridge Street in the CBD.

There is also less tolerance for people who cross away from formal crossings or against the red signal. The enforcement of jaywalking rules also reinforces the impression of a culture in which people in vehicles are regarded as more important than people on foot. Installing unacceptably long pedestrian red

Implementing a Walking Strategy in Sydney

signal phases, and then fining thousands of people each year who do not wait for the green man, could be seen as perverse. It certainly does nothing to encourage people to visit and enjoy their city centre. A reduction in red man times at signal crossings, together with the removal of signal crossings in less busy situations will probably do more than any other measure to generate a culture of walking in the City of Sydney.

Good public transport promotes a walking culture

Cities with high levels of walking activity also have high levels of public transport use. Where public transport is poor or serves only a limited segment of travel demand, walking is confined to serving purely local trips (e.g. less than one kilometre). Public transport extends the reach of people beyond walking distance without their having to resort to using a car. The City of Sydney, despite its relatively high density and mix of activities, has a public transport system that is heavily geared to serving the journey to work in central Sydney, and is much less suited to trips outside the peak hours, at weekends, and in non-radial directions. The untapped potential for public transport trips means that the extent of walking as a link mode is also suppressed. This could impact on the ability to deliver the Walking Strategy target of *“Walking to account for 60% of local trips by City of Sydney residents by 2030”* (Target 2). However, the light rail project should be a significant boost to public transport use, and hence an increase in walking as a linking mode. This will be particularly apparent in the George Street sample area.

7. Conclusions

The Walking Strategy and Action Plan is intended to lead to encourage and support walking. The aim is to increase the proportion of travel made on foot, and improve the quality of the walking experience. These two aims of course are co-dependent.

This project has drawn attention to ways in which the current provision for walking falls short of the standard that is required, and suggests a number of opportunities for making improvements. It draws on the rather different experiences of New York and London to highlight approaches that may be appropriate. In particular, it is shown how decisions do not have to be agonised over. Most changes to the street and traffic network can easily be reversed if things do not work out as hoped. Also, it has been shown how a quality street environment is good for business as well as good for people.

In order that the City can monitor and measure its achievements over time, the report puts forward recommendations for the use of a walking audit tool, offering three alternative ways forward.

Walking is a prominent means of transport in the City of Sydney, but it is far from being embedded in the culture of transport planning. Activity on foot that

Implementing a Walking Strategy in Sydney

is not related to getting from A to B, but which is important for city life and vitality (and business) is also not well provided for. Public streets and spaces are generally dominated by motor traffic, and offer limited opportunity for sojourn, social interaction and time out.

This motor traffic culture rather than a culture of city life means that Sydney compares unfavourably with other major cities, many of which have spent most of the 21st century undoing the traffic domination that characterised the latter half of the 20th century. Whether it is the quality of the public transport system, or the amount of space devoted to walking activity, or the unwelcome presence of high-speed roads penetrating the city core, Sydney does not match up to other major cities around the world. A major shift in attitudes and planning culture is required if the city is to regain its position on the world stage.

Sydney's streets are "lazy streets". In dense urban areas, streets have to do more than simply facilitate the movement of vehicles. Streets have multiple uses and a varied set of functions related to those uses. Streets therefore have to work hard to accommodate all these different uses and interests in a way that is efficient, healthy and attractive. Streets that serve only vehicle traffic and ignore everything else are, in effect, lazy streets. It should not just be about traffic modelling, lane widths, signal cycles and traffic signs; it should be all about city life and culture – making the city a joy to be in, not a joy to drive through.

It is hoped that the inspiration of the Walking Strategy, and the follow-on programmes of improvements, will bring about a more balanced approach to the planning, design and management of Sydney's streets and public spaces.