Jan Gehl and new visions for walkable Australian cities

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Introduction

Globally there is a growing cultural shift to more sustainable urban lifestyles (Newman and Kenworthy, 2011). The negative effects of sprawl and automobile dependence are now widely accepted, with current trends illustrating that limits, both environmentally and socially, are being reached in cities around the world and that citizens and planners are seeking alternatives to problems of urban form and transport. Vehicle use is decreasing in developed cities (Brookings Institution Metropolitan Program, 2008; Newman and Kenworthy, 2011). Citizens are seeking other alternatives to transport, including a cultural shift to more urban locations, particularly creative, vibrant cities, and locations that enable less car-dependent lifestyles (Newman & Newman, 2006). These shifts have profound impacts on how cities and transportation infrastructure has to be planned and designed. To be economically, socially and environmentally viable, cities have ultimately to reduce their inefficiencies and consumption of finite resources. This means increasing the use of non-motorised travel modes and emphasises the need to examine and envisage what we want our current cities to be, working within context-specific solutions.

Australian cities are part of this transition. Danish academic, architect and urban designer Jan Gehl and his firm Gehl Architects have been working in many Australian cities to help create more sustainable and vibrant city centres. Gehl is one of the most internationally recognised urban designers with substantial contributions in over 40 cities around the world. He has continued and expanded on the humanistic, organic urban design

developed, researched and practiced during the 1960s, 1970s and early 1980s in Copenhagen (Gehl and Gemzøe, 1996). Beginning in Australia he has been discovered globally and is now working in the world's main cities including London, New York, San Francisco and increasingly in Chinese and Indian cities. His work is a reaction to Modernism and its expression in car-based planning. His approach is to use a technique, *Public Spaces Public Life* (PSPL) survey, focused on bringing people's use of streets and city spaces to the forefront of urban concerns. The PSPL surveys provide the support for a city centred on ideas of pedestrian-based transport planning and urban design (Gehl, 2010).

Gehl's urban design theory is a reaction to how cities have been designed for vehicular movement and function, rather than for people who are inherently pedestrians, especially in city centres. The economic potency and vibrancy of walkable city centres is now well recognised (Glaeser, 2011). Yet, the ideas of car-based planning are still prevalent in most city planning and design departments today through the manuals used by traffic engineers and are embedded in town planning schemes. Gehl attempts to replace the ideas and the practices with explicitly humanist rather than car-based design, and to provide a quantitative base that can allow cities to compare themselves in how well they perform on this set of walkability criteria. Jan Gehl and his firm, Gehl Architects, work to create not only positive assistance to pedestrians and cyclists in the form of better infrastructure for them, but to make city spaces walkable and inviting for people to

want to stay and enjoy the life of the city that they help to create.

Gehl has developed an urban design practice, the PSPL surveys, that provide a quick, efficient, universal and effective evaluation technique for assessing pedestrian needs and use in city centres based on observations and follow-up surveys. Their work has a clear policy-relevant analysis, in reports that highlight the imbalance caused by automobile-oriented city design and how to move towards a more walkable city. Gehl and Gehl Architects have worked in many major Australian cities, including Melbourne (1994, 2004) and Melbourne Docklands (2011), Perth (2004 and 2009a), Adelaide (2002, 2011),[1] Sydney (2007), Brisbane (2009b), Hobart (2010) and Launceston (2011).[2] This paper will focus on Melbourne and Perth, and then briefly report on the surveys in Sydney, Brisbane, Hobart and Adelaide.

PSPL Surveys

Jan Gehl is widely acknowledged for his use of social science research methods to study human-built environment interactions that provide statistical analysis (the 'numbers'), while also explaining in detail how spaces are being used—and by whom. In his urban design practice, he is one of very few designers who rely heavily on empirical research. At the heart of Gehl's method is continuous and systematic observation of how people use public space. In effect, the method revolves around examining existing issues, implementing improvements and then re-examining the area as an iterative process. A core component of his research is a grouping of surveys collectively referred to as *Public Spaces Public Life* (PSPL) surveys.

The PSPL surveys are part data-logs about cities, part examinations, part commentaries on public life and part urban design

recommendations. Gehl pioneered the PSPL method in Copenhagen in the 1960s (with his first major survey in 1968) and has since conducted these surveys in cities internationally. The PSPL surveys enable cities to collect data and information on public life, to see how people currently use city spaces, to track the results of design changes, to modify these as necessary, and to envisage solutions to enable better functioning of cities and spaces.

Gehl's PSPL method involves both qualitative and quantitative surveys of city centres primarily using observational techniques centred on quantitative pedestrian and activity counts. The surveys are principally concerned with levels of activity in and use of the city centre spaces, the existing quality, rhythms and characteristics of the centre's public spaces. The PSPL surveys involve three parts:

1. *Public space analysis*: focus on the quality of the public space.
2. *Public life analysis*: focus on use of public space. This provides a baseline for further studies and enables analysis of changes, along with benchmarking against other cities.
3. *Summary and strategic recommendations*: based on the analysis, including suggestions of pilot projects to increase public life.

The surveys are focused on the walkability and urban design of the pedestrian realm and are adapted to fit the distinctive requirements, conditions and needs of individual cities. The surveys provide a 'big picture', a story, of how people are treated in the city, comparing them to other cities where the PSPL surveys have been conducted. The reports establish the current conditions of the public space and public life in order to develop holistic planning and transport decisions regarding public spaces

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[1] The PSPL report for Adelaide 2011 has not yet been released.

[2] The PSPL report for Launceston 2011 has not yet been released.

and infrastructure, to implement and monitor changes and adapt responses as necessary.

Results of the PSPL surveys

Gehl's and Gehl Architects' PSPL surveys have all shown cities what they can do to help pedestrians; many cities have implemented enough of these recommendations to make them go back and evaluate their success by conducting a further PSPL survey. These reveal that planning for pedestrians can influence walkability levels, either increasing the use of public spaces (as in many of the cities) or the opposite: enabling the spreading out of use in areas that are overcrowded (Gehl, 2010; Gehl Architects, 2002; Gehl & Gemzøe, 1996). Gehl has demonstrated, particularly within the Australian context, through the changes in Melbourne and also in Perth, that with each improvement to the pedestrian environment comes an increase in the level of activity in the city spaces. These results are outlined below.

The PSPL surveys also help to facilitate positive changes in cities and in planning and design policy. Of particular notice is the cost saving to cities of increasing the mode share of walking and cycling. In Copenhagen the City determined that every kilometre conducted by bicycle in Copenhagen effectively gives the City of Copenhagen US25 cents in health and road maintenance savings, whereas every kilometre driven costs the City of Copenhagen US16 cents (American Society of Landscape Architects, 2011).

These changes have occurred in cities with governments and communities of all political persuasions and reflect what could be called a 'universality' of his approach. This is particularly evident within the Australian cities in which he worked. The surveys have been able to be reproduced by others outside of Gehl Architects and have been adaptable to varying scales and contexts, including non-western cities.

There is, however, a limit to what a survey alone can achieve. The surveys place a high demand on human resources, which can result in errors and subjective judgements, opening them up to different results, observations, and other human errors such as miscounts. Researchers can overcome some of the subjective results and possible human errors by combining different surveys to provide a broader snapshot of city life. Gehl Architects are very aware of this issue and have tried to address the shortcomings of their surveys.

The remainder of this paper provides an overview of the PSPL surveys conducted in Melbourne and Perth, concluding with a brief report of the results of the surveys in Sydney, Brisbane, Hobart and Adelaide. Melbourne and Perth were chosen because they provide a good case study of the PSPL work and changes because they have had follow-up surveys (Adelaide's 2011 survey report is not yet released).

Melbourne, 1994 and 2004

The changes within the City of Melbourne show perhaps the most dramatic results of all the Australian cities, illustrating how positive changes to the public realm can result in increases in walking and life within a city. In 1993-94, Gehl, along with the City of Melbourne, conducted a PSPL survey of Melbourne's city centre. A follow-up survey was conducted in 2004 enabling a decade of work to be evaluated (Gehl Architects, 2004). The PSPL surveys and the recommendations ensuing from them served as a guide for actions and policies, particularly providing a benchmark from which the city could judge its progress (Beatley & Newman, 2009). The combination of the two surveys enables the City of Melbourne to measure and monitor the success, or otherwise, of changes and to claim on the basis of its clear success to be one of the world's most liveable and attractive cities (Adams, 2005).

Some of the major changes in the Melbourne city centre between the two surveys (1994 and 2004) include the following:

- A dramatic growth in the number of city centre residents—from 1008 in 1992 to approximately 9,375 in 2002;
- An increase in pedestrian traffic: the number of pedestrians in the city centre on weekdays in the evening has increased 98 percent (from 45,868 in 1993 to 90,690 in 2004), and daytime traffic has increased by 39 percent (from 190,772 in 1993 to 265,428 in 2004);
- The number of people spending time in the city increased dramatically in many locations;
- An increase in public space by 71 percent via creation of new squares, promenades and parks (From 42,260 m^2 in 1994 to 72,200m^2 plus Birrarung Marr Park's 69,200m^2 in 2004);
- More places to sit and pause, with an increase in cafés and restaurants (from 95 in 1994 to 356 in 2004), a threefold increase in café seats (from in 1,940 in 1993 to 5,380 in 2004) and an integrated street furniture collection; and
- Improved streets for public life, including the revitalization of a network of lanes and arcades (Gehl Architects, 2004).

In addition, the City of Melbourne has taken a number of steps to restore and strengthen the city's traditional grid pattern, including activating mid-block alleys as pedestrian spaces. The City of Melbourne has placed a 40-metre height limit on its core, ensuring that the city's public spaces receive adequate sunlight and has established policies to encourage mixed use development, especially small business uses, outdoor cafés and restaurants, and to encourage buildings to appropriately and openly connect with public spaces. The City of Melbourne has actively encouraged residential development, including developing their own residential demonstration projects, as well as implementing greening and public art strategies. The City of Melbourne also placed considerable emphasis on redesigning footpaths, including planting 500 street trees annually.

The Melbourne example dramatically demonstrates the effects of the surveys and a city introducing a public space strategy. Beatley and Newman contend that Melbourne has emerged as "a remarkable case study in an emerging pedestrian city, having shown some dramatic, positive change in its pedestrian character and public sphere in the relatively short span of twenty years" (2009, p.134).

Not all places that have had a PSPL survey demonstrate such dramatic results. However, most illustrate an increased awareness about creating a friendly and inviting public realm. Melbourne has been successful because of its focus on intimate spaces, on street details and what people experience in the streets, rather than on 'amazing architecture', or the 'Bilbao effect'. From all the public space changes Melbourne has become a 'brand'. It is consistently named in the top great cities of the world but not many people can say why it is famous. Now it is famous for the experience of place and celebration of urban culture. Gehl, in a StreetFilm in 2008, asserts that the "overriding lesson" from Melbourne is "that even if you are a city in the new world with wide streets, with a car culture, the whole thing geared for rushing from A to B, if you are willing to give people the space they need, give the bicycles the space they need, then you can have a complete change of behaviour" (Eckerson Jr, 2008).

The next step for Melbourne is to continue to improve the city, including increasing

residential capacity (Adams, 2011). As the 2004 report points out, although Melbourne has improved dramatically in terms of street life, there is always more work to do (Gehl Architect, 2004b). Melbourne now has a formal research programme for public space and public life.

Perth, 1994 and 2009

Gehl and colleagues conducted the first PSPL survey in Perth in 1994 followed by a new survey in 2009. The primary surveys conducted in both were pedestrian counts, stationary activity counts, street frontages assessments, and test walks.

The 1994 survey determined that there was "no invitation for walking, and certainly no great invitation to walk for the pleasure of walking—to promenade through the city" particularly as "waiting times in front of traffic lights will account for 35-40 percent of the total trip time" (Gehl, 1994, p.9). At the time, they determined that "the city heart of Perth is tiny…probably the smallest for a city of its size. It has the character of an over-sized department store" (Gehl, 1994, p.v). The survey revealed that the mall system used in Perth (and other Australian cities) was "conceived not as walking routes but as isolated pedestrian places in a car traffic dominated city centre". The malls were essentially "conceived as concentrated shopping malls", rather than pedestrian networks, with the malls not really connecting important destinations (Gehl, 1994, p.9).

As a result of these surveys and analysis a series of recommendations were made to enable the city centre to be transformed. Fifteen years later the follow up survey findings reflected the result of many changes within the city and revealed the following changes from the 1994 survey to the 2009 survey:

- Improved conditions to walk and spend time in the city, resulting in 13

percent more daytime pedestrian traffic (from 132,650 in 1993 to 150,100 in 2009);
- 57 percent more stationary activities during the day, with 37 percent more in the evenings;
- 15 percent more bench seats (from 1,725 bench seats in 1993 to 1,988 bench seats in 2008);
- 190 percent more outdoor cafés (from 48 in 1993 to 140 in 2008) and 74 percent more café seats (from 1,940 seats in 1993 to 3,390 seats in 2008);
- 1576 more street trees; and
- 34 percent more people traveling to work by public transport than in 1994 (Gehl Architects, 2009a).

The survey also highlighted areas that needed improvement and established a baseline figure against which changes could be measured. Amongst other issues, the Perth surveys highlighted the absence of people walking and spending time in the city at night and on weekends. The Saturday pedestrian count was only 62 percent of the weekday pedestrian count and the night-time pedestrian numbers had only increased by 3 percent in the fifteen years between the surveys, even though the numbers of residents had increased. The report acknowledged that the city's streets generally perform well in terms of accessibility for people with mobility impairments. However, the city lacked appropriate spaces for children, youth and older people, particularly in regards to spaces for 'play' and in social places for older people. The surveys identified a need to invite more residents and students into the city through the provision of amenities to enable the creation of a '24-hour' city (Gehl Architects, 2009).

In addition, the surveys highlighted that the Perth city centre still retained the *shopping centre* concept that it had in 1994 and that this needed to be replaced with a *people*

centre concept. Many of the existing functions and the corresponding built form could be anywhere and many of the unique aspects of Perth (topographical, environmental and architectural) were ignored, particularly the river, the foreshore and historic buildings within the city centre. In addition, the Modernist ideology and land use patterns of separation of uses were still prevalent, with what Gehl described as "beer here, culture here, shopping here and government here" (Gehl Architects, 2009). The report concluded that the existing land use divisions within the city had altered only slightly in the prevailing fifteen years.

In addition, the reported highlighted that although the City had done much to invite pedestrians and cyclists into the city through the provision of cycle lanes and widening of many footpaths, more still needed to be done, particularly with the creation of complete pedestrian and bicycle networks that connect to the wider region.

The work of Gehl has been in the city centre but others have used his techniques and applied them to smaller, suburban centres in Perth, including Fremantle and Midland (Matan, 2007; Roberts Day Pty Ltd., 2010).

Other Australian city surveys

Sydney, 2007
The PSPL survey from the City of Sydney (2007) illustrates a city dominated by cars and congestion. The surveys highlight a lack of balance between the transport modes and disconnected public spaces (Gehl Architects, 2007). As part of turning this around, Gehl Architects continue to advise the City of Sydney to create a more people-friendly city (Gehl et al, 2011). The influence of Gehl is particularly noticeable in the refurbishment of the central city's Pitt St Mall (a pedestrian, car-free area), the creation of a pedestrian priority network connecting major areas throughout the city and the implementation of a 200 kilometre bike network by 2016, all

as part of the 'Sustainable Sydney 2030' plan (City of Sydney, 2011).

Brisbane, 2008
Gehl Architects conducted a PSPL survey of Brisbane City Centre in 2008. The survey here along with pedestrian counts had a focus on cycling. The survey determined that Brisbane had a focus on car-dependency, a lack of attractive pedestrian and bicycle facilities and a lack of diversity in age groups using the city. The surveys provided a base-line figure for numerous pilot projects focused on increasing walking and bicycling within areas of the city. Some of the recommendations provided by Gehl Architects include: increasing density and reducing car dependency, reducing driving, providing a more people-oriented, safe and inclusive city; improving connectivity; improving conditions for walking; introducing cycling on a city-wide scale; amongst others. The PSPL report informs the development of the 'River City Blueprint' aimed at increasing the sustainability, liveability and activity of the city, along with guiding the Queensland Government on other major planning initiatives (Brisbane City Council, 2011).

Hobart, 2010
The Hobart PSPL survey praises the natural setting and gentle built form of Hobart, however recommends a "broom and a steady hand" is needed to enable users of the city to be able to celebrate these unique features. The task of the PSPL survey in Hobart is to provide a vision for the city of a vibrant people-first city with a 21st Century transportation system. The PSPL provides the base-line pedestrian figures from which any future changes can be measured (Gehl Architects, 2010).

Adelaide, 2002 (2011 yet to be released)
Gehl Architects conducted a survey in Adelaide in 2002 and are currently undertaking a follow up survey as part of the

Government of South Australia's community dialogue program. The focus in Adelaide is working on creating a better balance between the modes, especially increasing the bike riding of all inclusive users, so that it is not just men but also women, children and elderly. In addition, the follow up survey reveals that the city has disjointed footpaths and long pedestrian waits at intersections, with many minor pedestrian interruptions. Furthermore, the City has 41,000 car parking spaces, with the generosity of car-parking creating lots of traffic and much of the car parking being underutilised. The 2011 report provides a vision, aimed at freeing up the city centre from car parking, moving some of it to the extremities, and using the resulting space for other uses. In addition the report aims at supporting an inclusive transport system (Henriette Vamberg, as cited in Government of South Australia, 2011).

Conclusion

Gehl's work resonates with a sense of responsibility and optimism aimed at creating a more walkable and vibrant city centre. Local government architects and planners have a responsibility to create and enable sustainable lifestyles and this underlies each of the PSPL surveys described providing practical policy options for them to implement. The work and theories of Gehl returns to the very core of urban design and sustainable transport planning as the design of cities to maximise the diversity of exchange, while minimising travel needs, continually bringing people to the forefront. This explicitly humanist, pro-urban and pro-people emphasis in city design and transport planning has had a profound and growing impact on Australian cities.

The work of Gehl has focussed on city centres and by showing how walkability increases economic, social and environmental benefits in the heart of the city, the surrounding suburbs are challenged to reduce their car dependence. However, the challenge for creating a city beyond the car will be to build such walkable centres throughout the suburbs.

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Is my area walkable?

Some questions to help you assess the walkability of a locality and how it can be improved.

Use/Network

What is the volume of pedestrian traffic on this street? (pedestrian counts)

Who are the people using this street? Do they have special walking needs given their age or disability?

What is the pedestrian density of particular footpaths (numbers of pedestrians per metre width of footpath per minute)?

What are the main pedestrian routes in the area (day time and night time)?

What types of pedestrian facilities are in the area (dirt paths, paved footpaths/sidewalks, shared streets, pedestrian only streets, plazas, squares)?

What is the length and area of these pedestrian facilities?

What are the main arrival and exit points to the area? Are they connected via walkways?

How easy is it to walk through the area? (Do test walks to establish this.)

How adequate are footpaths/sidewalks in the area?(Some possible problems: no footpaths, discontinuous, too narrow)

What proportion of streets have footpaths/sidewalks?

Are the footpaths/sidewalks complete on both sides of streets?

Is the footpath/sidewalk provision satisfactory in both major and smaller streets?

Are footpaths wide enough to cater for the number of people who walk on them?

What are the footpaths/sidewalks made from? (asphalt, concrete, paving bricks, flagstones, dirt, gravel, etc.)

Are the footpaths/sidewalks well-maintained? (free from cracks, holes, rubbish, etc.)

Are the block lengths short? (If they are long there may need to be walkways through the block.)

Does the pedestrian network connect major areas/destinations in the city?

Does the pedestrian network connect to primary destinations such as schools, hospitals, transit stations?

Is the pedestrian network itself well-connected (with, for example, few pedestrian cul-desacs)?

Barriers

Is the area accessible to those with disabilities? Are there ramps instead of steps where possible?

Are there obstacles on the footpaths (for example, street trade, shanty dwellings, piles of rubbish, parked cars, animals, road or building construction materials, or a large number of poles and signs)?

Are there buffers between the road and the footpath, such as fences, bollards, trees, hedges, parked cars and landscaping? (Buffers have advantages and disadvantages, but they can screen walkways from traffic and prevent parking on the walkways.)

Are there many small interruptions to the pedestrian networks (e.g., minor road crossings, parking lot crossings, driveway crossings)?

Are there other major barriers to walking in the area (major roads, train tracks, rivers, hills, gated land uses, etc.)?

Does the slope of the area make it hard to walk?

Intersections

How convenient is it to cross the street? Where are the pedestrian crossings?

What type of traffic intersections are used?

Are pedestrians given priority at intersections?

What are the crossing aides used at traffic intersections (pavement markings, different road

surface or paving, signs, traffic lights, median traffic islands, curb bulb-outs, underpasses, overpasses, etc.)?

Is crossing made easier either by curb cuts or road raising?

How safe is it to cross the street (at designated pedestrian crossings)?

Do drivers obey road laws and traffic signals?

Are pedestrian crossings clearly marked?

Do traffic signals indicate how long you need to wait before crossing, and how much remaining time you have to complete the crossing?

Do you need to press a button for a pedestrian signal to permit you to cross?

Are there any mid-block crossings? Are these adequate?

Public Transport connection

Is the area connected to public transport? Where are the public transport nodes?

Are the public transport waiting areas of high-quality (weather protection, information, signage, seating, waste receptacles, etc,)?

Land use

What are the primary land uses of the area? (This will suggest the numbers of pedestrians at different times of the day.)

What are the primary destinations (industrial, commercial, governmental, recreational, community) in the area?

What is the population of residents and workers in the area?

Enjoyment

What are the main public areas (square, parks, plazas, etc.)? Are they public (open to everyone) or private (limited access, controlled use)?

What is the quality of the public spaces (comfort, appearance, maintenance, possibilities for use)?

How many people are using these spaces? How are they using this space? (can be assessed through stationary activity counts or behavioural mapping)

Are there any spaces for children/elderly/youth within the city?

Does the area allow for physical activity, play, interaction and/or entertainment?

Are there any identifying features in the area (monuments, land marks, neighbourhood character)?

Is there any indication that one is entering a special district or area? (It's good to have the neighbourhood character indicated in some way along the walkway.)

Are the walking areas interesting?

Are there interesting views?

Are there temporary activities in the area (markets, festivals, buskers, street performers, etc.)?

Does the area allow for resting, for meeting others, for social interaction?

Is there adequate greening in the area (plants, trees, etc.)?

Is the area of a high visual quality (pavements, facades, art, etc.)?

Streetscapes

Where buildings meet the street, is it clear what is private and what is public space?

Are the dimensions of the buildings lining the footpaths at human scale?

Are the facades of the buildings lining the street transparent/active (i.e., do the buildings have many doors and windows opening onto the street, 'soft edges', with many niches, detailed facades)? (see Gehl, 2010 below)

Infrastructure

What is the amount of seating available?

Is the seating in the right place (with regard to views, comfort and protection from climatic conditions, located at the edge of spaces)? Does the seating maximise the natural

advantages of the area?
Are the seating arrangements appropriate (can you talk to friends)?
What is the quality of the seating?
Are there places to stand? To lean against? Attractive edges?
Are waiting areas adequate, providing comfort and protection to pedestrians waiting for transit or to cross the street?
Are there enough rubbish bins?
Is there any public art?
Are there water fountains?
Are there wayfinding devices?
Are there public toilets?
Comfort
Is there adequate protection from the sun, rain and wind?
Is there adequate protection from negative aspects of vehicle traffic (pollution, noise etc.)?
Are the ambient noise levels low and comfortable?
Do the sitelines allow you to see where you are going?
Is the area well maintained (footpaths, buildings lining the footpaths, etc)?
Is the area clean (free from rubbish, broken glass, inappropriate graffiti)?
Safety
Is the area lively and active?
Is there street life?
Is there passive surveillance of the area? In other words, are there people around to watch out for each other? (This is especially important when it comes to night-time usage.)
Is the area safe? (both perceived and real)
Is the lighting from street lights and buildings adequate at night time?
Are there signs of other people at night time?
Are there night time uses of the area?
Is there a mix of land uses in the area?
Are there many small land uses?
Are the facades of buildings 'closed' at night?
Is there adequate visibility between modes of transport?
Is there protection from vehicle traffic?
Vehicle traffic
What is the traffic volume of the street? Does it make it hard/unpleasant for walking?
Is there street parking (on/off street)
What is the speed limit of the street? Does this make it hard/unpleasant for walking?
Are there any traffic calming or traffic control devices in the area?
How many lanes of traffic are there?
What are the traffic control devices used (traffic lights, stop signs, roundabouts, speed bumps, etc.)?
Perception of the area
Is the area perceived as safe?
Is the area perceived as pleasant?

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