A Real Access Plan for Real People: the University of WA and QEII Medical Centre Precinct Access Plan

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Affiliation

Abstract

The University of Western Australia and Queen Elizabeth II Medical Centre precinct is a major activity centre, generating many thousand of trips each day. A draft access plan has been developed as one of a family of area access plans supporting the Perth Metropolitan Transport Strategy (MITS) objectives for a more sustainable and balanced transport system.

The plan represents a potential approach to travel demand management, through a multi-modal plan seeking to balance the planning needs and limitations of the precinct, the nature and volume of demand for access, and the trip-making requirements and decision processes of those who visit the precinct. The plan aims to be a 'real plan, for real people' embracing:

- an innovative "travel pass scheme" which would provide participants with 'free' access to public transport, cycling facilities, and other access plan components;
- realistic responses to people's needs and perceptions in using alternatives to the car;
- transport infrastructure and service level improvements for public transport, walking, cycling, and river ferry access, including the enhancement of safety for commuters;
- ride-sharing initiatives and parking system management plans for car access;
- travel reduction and trip substitution components;
- a proposal to coordinate fares, fees and penalties to promote non-car access modes;
- cost-sharing between government and precinct stakeholder organisations;
- access management structure identifying leadership roles and individual responsibilities;
- access plan promotion, marketing, monitoring and information proposals to maximise commuter acceptance and involvement in the scheme.

The precinct access plan provides a comprehensive, integrated, and innovative package of commuting options for staff, students and visitors. It could be applied to access planning for any area of concentrated trip-making activity, including central business districts.

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Transport policy context

With the release of the Perth Metropolitan Transport Strategy (MTS) in 1995, the State Government of Western Australia recognised the need for, and promoted, a more integrated approach to planning for the transport needs of Western Australia's capital city. The principal tenets of the MTS focus on transport "efficiency, sustainability and social and environmental benefits", by encouraging the use of public transport, walking, and cycling as viable alternatives to the car for many trip-making activities.

A primary focus for implementation of the MTS has been the major urban centres that generate significant demand for travel. Among the major centres for which area access plans have been, or are being, developed are the Perth Central Business District itself, Curtin University and Technology Park, and the Murdoch University and St John of God Medical Centre precinct.

The University of Western Australia (UWA) & Queen Elizabeth II (QE II) Medical Centre Precinct Access Plan\(^1\) is another such planning exercise. The proposed access plan has been formulated with a focus on the integration of all modes of transport in a manner that will provide an equitable and sustainable transport system that fulfills the objectives of the MTS while addressing the real needs of the travelling public.

The planning philosophy

In pursuit of sustainable, efficient, and effective transport systems, professional transport planners should not lose sight of the real transport needs of real people. Transport plans typically embrace objectives for environmental integrity, transport system diversity, safety (often with respect to road crashes), economic efficiency, sound asset management, and social equity. As a result, transport planners often advocate that more people should use public transport, walking, and cycling as alternatives to the car.

On the other hand, it may be argued that the general community makes its mode choice decisions on the basis of trip convenience, trip-making flexibility, personal safety (rather than road safety), the capability of adapting to unforeseen circumstances, multi-trip chaining, comfort and, of course, costs (time and money).

The proposed UWA & QE II Medical Centre Precinct Access Plan has been developed to bridge this conceptual and decision-making gap between transport planners, and their objectives, and the trip-making community, and its primary objectives. That is, the access plan attempts to be a "real plan, for real people".

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\(^1\) This study was undertaken by BSD Consultants for Transport and Peter Johnstone was employed by Transport at that time.
Precinct characteristics

The University of Western Australia and Queen Elizabeth II Medical Centre Precinct is one of metropolitan Perth's major concentrations of commuter travel. Employees, students, medical personnel, medical centre patients, visitors, and others, journey to and from the precinct every day. The precinct is located on the shores of the Swan River, approximately 5 kilometres from the Perth CBD and is served by the Transperth public transport (bus) system. However, there is no direct rail system access to the precinct. The precinct covers residential and commercial areas that are part of the Local Government Authorities of the City of Nedlands and the City of Subiaco (Figure 1 illustrates the location and configuration of the precinct).

The University currently has approximately 2,400 full-time (equivalent) staff members encompassing academic and general staff. Some 14,115 students are enrolled at the University of Western Australia, including both full time and part time students. For university planning purposes, this is equivalent to 12,155 full-time student enrolments.

The QE II Medical Centre is located to the north of the university. It embraces a number of separate medical facilities, including, Sir Charles Gairdner Hospital (SCGH), LIONS Eye Institute, PathCentre and Western Australian Centre for Oral Health (WACOH) – proposed.

Figure 1. University of Western Australia & QE II Medical Centre Precinct
Existing demand for access to the precinct

Estimates indicate that approximately 40,000 person-trips are made to and from the university on a daily basis. The QE II Medical Centre generates in the order of 14,000 person-trips to and from the precinct each day. The car mode is the most dominant form of transport with about two-thirds of commuters travelling to and from the area by car.

Existing modes of travel

Figures 2.1 – 2.5 summarise the existing mode splits for access to the precinct for employees, students, medical centre patients, and visitors. The dominance of car access is apparent, in particular, single occupant vehicle (SOV) commuting.
Figure 2.2  University of WA Student Commuting (Mode Split)

Figure 2.3  QE II Medical Centre commuting by patients (mode split)

Figure 2.4  QE II Medical Centre Commuting by Visitors (Mode Split)
Figure 2.5  QE II Medical Centre Staff Commuting (Mode Split)

Organisation of the existing transport (access) system

The existing transport system for access to the University & Medical Centre precinct, whilst car-dominated, nevertheless includes rail (indirectly, via connections to the bus system), bus services, cycling, walking and car pooling.

In recent years, the regular (bus) public transport system has been significantly augmented by a dedicated bus service between the Perth CBD's Wellington Street Bus Station and Mounts Bay Road Busport, and the university campus at Nedlands. The cost of this dedicated (Route No. 78) bus service is shared by the University of Western Australia and the government, through the Department of Transport.

However, to dramatically alter existing trip patterns, and to manage expected increases in demand for access to the precinct, significant innovations will be required, involving improvements to a range of public transport, cycling, walking, and car ride-share infrastructure. Infrastructure improvements will need to be supported by service frequency and quality improvements, improved safety for "after-hours" travel, and continued sharing of resourcing responsibilities among a range of major stakeholders.

With respect to cycling and walking access to the precinct, the connectivity of walk/cycle networks should be enhanced and end-of-trip facilities improved to encourage these modes of travel.

In summary, whilst quite comprehensive, the existing system for access to the university & medical centre precinct is fragmented and lacks a shared, cross-agency...
commitment to an integrated and mutually supportive range of travel options under the umbrella of a single access strategy.

The proposed University of Western Australia & Queen Elizabeth II Medical Centre Access Plan seeks to depart from existing access arrangements, which have been largely adequate until recent years when pressures of increasing travel demand have become evident, and to replace the current fragmentation of precinct access options with an integrated, comprehensive range of travel choices that addresses the real travel needs and desires of staff, students, visitors and others.

The precinct vehicle parking system

Due to the dominance of car access, parking supply and management is one of the critical aspects of the existing transport system. The University has approximately 3,300 parking bays on-campus with another 1,200 on- and off-street bays available in the surrounding suburban area. Demand for parking, at peak periods, is at a premium with a significant problem of over-spill parking occurring into the nearby streets of the municipalities of Subiaco and Nedlands. This acts to the detriment of local businesses and restricts public access to recreation areas along the Swan River foreshore.

The University of Western Australia's parking system operates under the control of Unipark, a management group within the university's administration system. On-street parking in the vicinity of the university is under the control of the Local Government Authorities of Subiaco and Nedlands.

The QE II Medical Centre sub-precinct has approximately 3,500 parking bays, including about 800 parking bays at the Hollywood Private Hospital. The existing parking system at the QE II Medical Centre is approaching its practical capacity during peak periods.

The price of parking

The price of parking within the university and medical centre campuses, and in suburban streets adjacent to the campuses, displays considerable variation, and management responsibility and policies are equally fragmented between a range of controlling authorities, including the campus authorities and the local government councils. Consistency in parking charges and enforcement of time restrictions is lacking, although efforts are being made to improve this aspect of management.

Approximately 600 bays in off-street parking stations in the surrounding area are available at a charge of 50 cents per hour, and another 600 on-street parking bays are largely free of charge, but are time-restricted.

On-campus parking at the university is dominated by university staff. No first year students are eligible for parking permits and further restrictions apply to students who
reside in postcode districts closest to the university campus or adjacent to major public transport routes. Exceptions are granted for students who may have particular justification for a parking permit, for example, students with disabilities. Table 1 summarises the annual parking fees and casual parking charges at the university for both staff and students, and long-stay and short-stay users.

Table 1  Parking Fees at the University of Western Australia

<table>
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<tr>
<th>Permit Type</th>
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<tr>
<td>Staff permit</td>
<td>$130 per annum</td>
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<tr>
<td>Reserved parking bay (staff)</td>
<td>$251 per annum</td>
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<tr>
<td>Car pool permit (staff)</td>
<td>$26 to $78 per person, per annum</td>
</tr>
<tr>
<td>Car pool permit (student)</td>
<td>$120 (fixed fee)</td>
</tr>
<tr>
<td>Student permit</td>
<td>$45 to $60 per annum</td>
</tr>
<tr>
<td>Casual short-stay parking</td>
<td>$1 per hour</td>
</tr>
<tr>
<td>Casual long-stay parking</td>
<td>50 cents per hour</td>
</tr>
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Unipark operates a carpooling scheme and ride-match registry. There are currently about 90 carpooling groups operating at the university with an average membership of 3.3 persons per group. However, given the low costs of individual commuter parking permits – equivalent to about 30 cents per day – and the relative inconvenience of car pooling, the car pool scheme is not a significant contributor to the reduction of single-occupant car travel. Table 2 summarises the parking fee system at the QE II Medical Centre campus.

Table 2  Parking Fees at the Queen Elizabeth II Medical Centre

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Sir Charles Gairdner Hospital staff</td>
<td>$5.00 per week</td>
</tr>
<tr>
<td>Non Sir Charles Gairdner staff &amp; students</td>
<td>$55.25 per quarter</td>
</tr>
<tr>
<td>Visitors</td>
<td>30c per hour</td>
</tr>
<tr>
<td>Hollywood Hospital</td>
<td>Free to staff and visitors</td>
</tr>
</tbody>
</table>

Future demand for precinct access

Both the University of Western Australia and the QEII Medical Centre are anticipating moderate growth in the size of their existing facilities. The university anticipates an increase to approximately 20,000 students and approximately 3,600 staff. This would result in an increase in trip making to about 56,000 trips to and from the campus each day. The anticipated growth of the QEII Medical Centre would result in an estimated demand of approximately 19,000 trips to and from the campus each day.

In the absence of strategic changes in the transport system relating to the precinct, the implications of increased demand for access, largely by motor vehicle, would be significant. An increase in vehicle access to the university would result in more vehicle...
infiltration into the neighbourhood streets of Subiaco and Nedlands. Alternatively, the cost of providing an estimated additional 1,700 parking bays to address growing demand would be in the order of $25 million, based on the lack of available space for new parking facilities and, therefore, a requirement to construct multi-level carparks on existing parking sites. The QE II Medical Centre Trust has already investigated the potential for a 1,000 bay multi-level car park to cater for increased demand. Such a facility is expected to cost in the order of $15 million.

"Best-Practice" for Precinct Access Management

To develop the best possible precinct access plan for the UWA and QE II Medical Centre Precinct, a review of international “best practice” was undertaken to determine success factors for the provision of a balanced precinct access scheme which would effectively manage motor vehicle access, especially single-occupant access, whilst promoting public transport, ride-sharing, walking, cycling and other supportive transport modes, where practical.

![Figure 4: Existing and Projected Demand for Access to the Precinct](image)

A number of case studies indicated a high degree of success in producing a significant shift in travel behaviour in favour of public transport and non-single-occupant vehicle (SOV) access. The success factors identified were subsequently adapted in the formulation of an integrated, multi-modal access plan for the UWA & QE II Medical Centre Precinct.

Case studies examined included campus and/or area access plans for the:

- University of Washington, Seattle
- Cornell University, Ithaca, New York
- University of British Columbia, Vancouver
Whilst each of the area access schemes embodied elements adapted to their own circumstances, as a group, they provided compelling evidence of the nature, comprehensiveness, and coordination of transport system components which would be required to produce a successful precinct access plan for the University of Western Australia & QE II Medical Centre Precinct. The precinct access plan success factors that were identified, included:

- A "membership" plan through which people "join" a precinct access scheme
- Subsidies for the non-car modes of transport
- Incentives for people to use modes of transport other than the car.
- Comprehensive marketing and promotion of the precinct access scheme.
- Parking price policies which favoured public transport and multi-occupant vehicles
- Comprehensive enforcement of the precinct access scheme and its policies.
- Improved public transport infrastructure and service levels.
- After hours shuttle bus service for increased security.
- Extensive car pooling / van pooling programmes, including ride-matching services.

**Objectives for the UWA & QE II Medical Centre precinct access plan**

After developing an understanding of existing transport system attributes and the anticipated growth in demand for access to the target precinct, the formulation of specific objectives and targets for a new, integrated, multi-modal access plan was required.

Figure 5 identifies the mode split targets which were developed for the precinct access plan in recognition of the requirement to substantially alter existing travel modes and preferences in favour of a more sustainable access scheme.
The proposed, integrated precinct access plan

Based on a thorough review of requirements for the study precinct, and research into best-practice access plans for similar university / medical centre precincts, the following "package" of transport system components was developed with the ambition of weaving these components into a closely integrated combination of practical commuting alternatives for employees, students, hospital patients, visitors, service and delivery providers, and others.

**Precinct Travel Pass Scheme (TPS)**

Transport system users join the TPS for a monthly, quarterly, or annual fee which entitles them to access to transport system options, and other benefits, including:

- FREE use of improved public transport services.
- FREE inclusion in an enhanced, automated ride-share registry for car pooling and FREE use of a dedicated parking bay in a convenient and desirable location.
- DISCOUNTED parking passes (one per week) when the car is needed for travel.
- DISCOUNTED, convenient parking for casual (non-registered) car-pools. (This facility would also be available to non-members of the TPS)
- FREE cyclist locker facilities for both bicycles and cyclist equipment and clothing.
- SUBSIDISED bicycle insurance for registered cyclists.
- DISCOUNTED bicycle rental facilities for scheme members.
- GUARANTEED-RIDE-HOME in the case of an emergency or some other event that may require a TPS member to leave the precinct unexpectedly.
- NIGHT-RIDE SHUTTLE BUS service for pedestrian who are members of the TPS.
DISCOUNT VOUCHERS for use of services at UWA or QEII, for example, at the University gymnasium, on-campus bookshops, or cafeterias.

NEED-BASED ASSESSMENT for those people who need access to a vehicle every day and would be significantly disadvantaged through restriction of car access.

To support and supplement the TPS and its benefits, the Precinct Access Plan includes a number of mode-specific infrastructure and service initiatives for public transport, bicycle usage, pedestrian access, and vehicle parking. The proposed initiatives include:

### Bus Service
- Inclusion of the precinct on Transperth’s new “Circle Route” bus service.
- Improved co-ordination of services with respect to route structure and timetabling.
- Priority use of new Transperth low floor buses for service to/from the precinct.
- Increased peak-period frequency/capacity for the Route 78 university bus service.
- Priority deployment of articulated buses for the Route 78 service.
- Distinctive decals and promotion for the dedicated Route 78 university bus service.
- More service from Fremantle to the precinct (partly provided by the “Circle Route”).
- A new, dedicated bus service between the Stirling Rail Interchange and the precinct (initially provided by the “Circle Route”).
- Additional service from the Wellington Street Bus Station in the city centre.
- Development of a new Bus Terminal facility on the University campus.
- Improvement of the QE II Medical Centre bus stop facility on Hospital Avenue.
- Provide covered, well-lit, secure walkways between facilities at the medical centre.
- A potential “shuttle bus” service between the precinct and Subiaco rail station.

### Ferry Service
- Introduce a ferry service between the University and QE II Medical Centre precinct from South Perth & Como and Applecross & Point Walter. Members of Transport Pass Scheme should ride free.

### Bicycle and Pedestrian Initiatives
- Introduce a regional dual use path (DUP) along the existing Fremantle Rail Line Corridor as proposed in Perth Bicycle Network.
- Provide additional DUP's to improve the coherence of the bicycle network to/from the precinct. (The recent Western Suburbs Bike Plan proposes more DUP's and on-road bicycle lanes leading to the precinct.)
- Provide and promote dedicated change and showering facilities at the University and the Medical Centre.
- All new buildings and refurbishment of existing buildings should incorporate showers and locker facilities for bicycling.
- Introduction of on-campus bicycle shop for repairs and sale of bicycle equipment
- Establish an intra-precinct FREE bicycle loan scheme.
- Examine opportunities for bike racks on buses to promote modal complementarity

### Parking System

- Eliminate cheap annual parking passes for University and Medical Centre campuses
- Manage the supply and price of parking to favour multi-occupant vehicles rather than single-occupant vehicles.
- Locate multi-occupant parking facilities in preferred locations within the campuses
- Use parking revenues to improve services & facilities for preferred transport modes
- Introduce a residents and visitors parking permit scheme in all local streets within a 2 kilometre radius of the campuses to limit "over-spill" parking.
- Enforce a 2 hour parking restriction in defined areas adjacent to the commercial businesses within a 2 kilometre radius of the campuses.
- Introduce electronic methods for the enforcement of all parking restrictions
- Introduce uniform parking management policies and enforcement programmes in each of the study precinct's local government areas.
- Introduce more creative parking fee plans in some LGA streets (eg. first-hour-free) to encourage commercial activity whilst deterring staff/students from long-stay parking

### Travel Demand Management

- Encourage more student accommodation adjacent to the University campus.
- Support the current draft of a new Subiaco Town Planning Scheme which encourages higher housing densities which would, in turn, benefit students.
- Promote tele-commuting for student learning, where possible.
- Plan campus timetables, eg. lectures, to synchronise with access plan components

### Travel Pass Scheme Pricing Principles
Marketing and promotion of the proposed access plan

The marketing and further development of the precinct access plan and the TPS should include the following stages:

- A stakeholder and precinct community information programme.
- A stakeholder and precinct community comment period
- Refinement and enhancement of the precinct access plan through interactive planning sessions with stakeholders and the campus communities
- Involvement of the governing bodies of the two primary organisations (the University Senate and the QE II Medical Centre Trust) and staff associations and student bodies, in the implementation process
- Introduction of an annual transport fair, and special promotional events to be held on a regular basis, to inform the campus communities about the access plan, its initiatives and changes to the TPS
- Development of commercial sponsorships to contribute to funding of the access plan and to the introduction of new benefits and incentives.

Implementation of the proposed access plan

Whilst a multi-modal, multi-component precinct access plan will not be introduced in a fully developed state at one point in time, refinement of the access plan should acknowledge that the fundamental principle that its strength rests in its comprehensiveness and the thorough integration of its elements.

The plan represents a united "package" of infrastructure, services, pricing arrangements, enforcement, benefits and initiatives. Whilst there is scope for some tailoring of the package, the requirement for the plan to be implemented as a package, should be understood. Implementation should commence with:

- Establishment of a multi-stakeholder Planning and Implementation Group
- Achievement of official support for the access plan, and of permission to proceed
- Development of the final, agreed access plan
- Preparations for a trial of the access plan's Travel Pass Scheme.
Preliminary objectives for revenue sourcing

Further detailed planning of access plan components will be required to estimate the overall costs of the plan. This work should commence at the earliest opportunity to take advantage of the existing stakeholder support for the proposed access plan.

Based on experience with the “U-PASS” travel pass scheme operated at the University of Washington (Seattle, USA) the objective for continuous funding of the University of Western Australia and QE II Medical Centre access plan is to minimise subsidy requirements and to maximise the total funding contribution derived from Travel Pass Scheme membership and from significantly increased vehicle parking fees. The objective should be to achieve a funding source break-down similar to the “U-PASS”.

![Figure 6 Potential Revenue Sources](Source: “U-PASS” Scheme, University of Washington, Seattle, USA).

Conclusion

The proposed University of Western Australia and Queen Elizabeth II Medical Centre Access Plan provides a comprehensive, integrated package of commuting options for staff, students and visitors to the precinct. The Precinct Access Plan addresses the reality of people's travel needs by concentrating on:

- The integration and coordination necessary to produce consistency and synergy between the components of the access plan.
- The innovativeness, holism and comprehensiveness necessary for an effective precinct access plan for real people, and real situations.
- The behavioural bases for people's trip-making and mode choices, involving perceptions of comparative costs, safety, flexibility, convenience, and comfort.
The ownership, commitment, promotion and on-going management that will be required to ensure the continuing success of the access plan.

An innovative approach to meeting the costs of the access plan.

The University of Western Australia and Queen Elizabeth II Medical Centre Precinct Access Plan may represent the first time, in Australia, that access to a significant urban precinct has been planned in such a comprehensive and innovative manner. If successfully adopted, the Precinct Access Plan may serve as a model for precinct access for many areas of concentrated trip-making activity.

A considerable challenge exists to refine the proposed access plan, to plan and design its detailed components, to accurately estimate the resource costs required to deliver the plan, and to gain the multi-stakeholder support necessary for the success of the plan.

It should be recognised that, in developing the detail of the access plan, differences between the university and the medical centre “markets” for access should be further considered to ensure that elements which suit the university’s student/staff population are not applied inappropriately at the medical centre site with its different mix of staff, patients, visitors, and others.

Acknowledgment

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<td>Frank Roberts</td>
<td>Russell Candy</td>
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