URBAN PUBLIC TRANSPORT PLANNING FOR SPECIAL EVENTS

Dan L. Higgins,
Special Adviser (Construction Programmes),
Department of Transport,
Queensland.

Stephen L. Hooper,
Principal Transport Planning Officer,
Department of Transport,
Queensland.

Peter M. Turner,
Senior Transport Analyst,
Department of Transport,
Queensland.

ABSTRACT: *The holding of special events, which has become a more common occurrence in many cities, places considerable strain on public transport systems. This paper attempts to define the nature and characteristics of special events together with associated organisational and transport arrangements implemented for these events.*

The transport plans developed for the Commonwealth Games, the Papal Visit and Expo '88 in Brisbane are detailed. For each of these events a transport plan was determined and agreed among the relevant agencies and then refined and developed into a detailed operations plan. These plans have catered for all modes of transport and have included an essential marketing component.

The costs associated with the two events which have already taken place and the types of costs to be incurred for Expo '88 are outlined.

The paper concludes by outlining a general approach to development of transport plans and systems as well as addressing the issue of who pays for transport arrangements for special events associated therewith.

URBAN PUBLIC TRANSPORT PLANNING FOR SPECIAL EVENTS

INTRODUCTION

Special Events consist of once-off events for which new special transport services, timetables and user information and additional infrastructure are required. Experience in Brisbane is based on involvement with the 1982 Commonwealth Games, the 1986 Papal Visit and the planned Bicentennial function in Brisbane - Expo '88.

Transport arrangements for one night shows such as the Bruce Springsteen concert at QEII, Torville and Dean shows at Boondall, football finals at Lang Park and Ballymore and the ten day Brisbane Exhibition are not included. These events tend to involve pre-existing transport plans and little inter-modal co-ordination is involved and therefore special plans are not required. Recognising the existing or temporary provisions made for car parking, the private car access mode dominated the one night events. Similarly, despite a reasonable marketing effort in all media, urban public transport accounted for less than 1/3 of all arrivals for the Exhibition.

Special Event Definition

Special events are way beyond the norm, insofar as a major concentration of people are planned to participate and focus on a once-off event. The timing and location of the event is mostly set by "others", who may not have access to local information at the time of the decision on the date of the event.

Special events have usually never occurred before in the area, but in the case of Expo there are interesting Japanese, Canadian and United States records to analyse.

Special events have fixed target dates - there is no flexibility to vary the date if plans are not in place.

The transport services, facilities and support required for special events are well beyond those normally available or provided to the affected area and special arrangements must be made to accommodate them. The demands of participants, visitor and spectator traffic, police security etc. far exceed the norm. The public transport operations must be "tailor made" and special arrangements must be made for all modes.

Because there is this uniqueness with special events the construction of permanent facilities usually is not justified. Thus extended station platforms, queueing areas, railway pedestrian overpass bridges, and bus facilities must therefore be of a temporary nature, i.e. quickly erected and dismantled unless there is some permanent demand for improved facilities.

Committees

Transport is but one of several issues that are taken up by the group responsible for the conducting of the special event. Thus, transport strictly speaking is but one of several groups established to provide and control several features of the special event. These committees are normally manned by Government, Local Authority and other interested parties who assist with the event on an honorary basis.

State and Local Governments have always been at the forefront of recognising that special events are important and have been keen to ensure they are successful. It is recognised that following previous studies, promotion of tourism in the State has been aided by the policy of supporting these major special events.

Special events induce problems and involve special tasks due to their complexity and size and these are discussed in the following sections.

The Tasks

The tasks that arise with special events in developing a transport plan are:

(a) Defining the size and scale of the event;

(b) Determining numbers by mode;

(c) Determining the scope of infrastructure works;

(d) Determining the most cost effective solutions for infrastructure recognising possible "permanent" needs in the area in question;

(e) Developing plans within time constraints - the target date is known so planning and construction time is tight;

(f) Monitoring conflict with other functions e.g. the annual Exhibition occurs during Expo '88;

(g) Recognition of the real and potential disruption the special event brings with it and making a concerted effort to reduce and minimise all such disruptive impacts;

(h) Having some contingency plan available to cover any problems;

(i) Designing infrastructure and public transport services that meet the demands and expectations of both participants and spectators. It should be realised that both groups have increasing higher expectations for transport services and accommodation at any transfer points than a decade ago;

(j) Not having vast past experience, the transport co-ordinator only knows if his system works once the event is under way. He has limitations as to corrective measures and any mistakes or oversights can become very obvious to the large mass of people participating in or viewing the special event.

Background Material

An interesting paper (Bochner and Exnicios, 1984) reviewed the attendance patterns and planning for seven (7) world fairs, namely Seattle, Montreal, San Antonio, Osaka, Spokane, Knoxville and New Orleans. They found that similar mistakes had been made at most of these North American fairs, namely, the provision of excess parking, reliance on shuttle bus transportation from outlying parking lots; use of improperly estimated design day attendance estimates and over-estimation of total traffic volumes during the events. The factors they describe are attendance projections; mode split; site capabilities and constraints; existing transportation systems and potential for modification and institutional considerations. The other interesting factors mentioned are (a) auto occupancies which varied between 3.5 and 4 persons; and (b) non-coincidence of regular and fair peaks in the morning, but coincidence did occur at New Orleans in the afternoon peak.

Co-ordination

A successful and efficient transport system for special events can only be achieved through co-operation between the management of the event and all transport authorities. Early planning identified the need to secure participation by all operators to ensure a co-operative effort emerged. Thus relatively large "working groups" became the norm to which all could bring their suggestions, proposals and observations. A smaller professional working group generally produced the bulk of the working papers and the draft reports. By comparison it appears the Australian Formula One Grand Prix in Adelaide dispensed wth all committees and a special Project Manager was appointed to ensure all necessary works were executed on time.

A notable feature of many such events is that the sponsoring organisation in concentrating on major elements of the "main event" tended to adopt a semi-disinterested attitude towards transport arrangements. Certainly, these organisations are seldom inclined to accept any financial responsibility towards transport provision to their special event. They mostly, however, recognised that transport represents a vital underpinning of the success of their special event.

General Planning Process

The main steps in the planning process can be summarised as follows:

1. Determine attendance levels and decide on realistic design day figures.

2. Determine the origins of potential patrons, noting how these relate to existing rail, bus, coach and ferry services.

3. Make a mode split assessment.

4. Check any unused capacities on existing services and determine new services and support facilities that are required.

5. Prepare a report to outline the proposed transport plan and have it revised at both policy and operations levels.

Ultimately, the plan must estimate a demand and thence accommodate this demand with new and additional services if required. Recognising the short term nature of the special event, every effort must be made to minimise disruptions to well established patrons and services. More details concerning this process are given in the following sections of this paper.

Transport Planning Process - Development Model

The process shown is an interactive one with reruns going on through the process as better information becomes available. In general, the process has followed the steps shown in Figure 1.

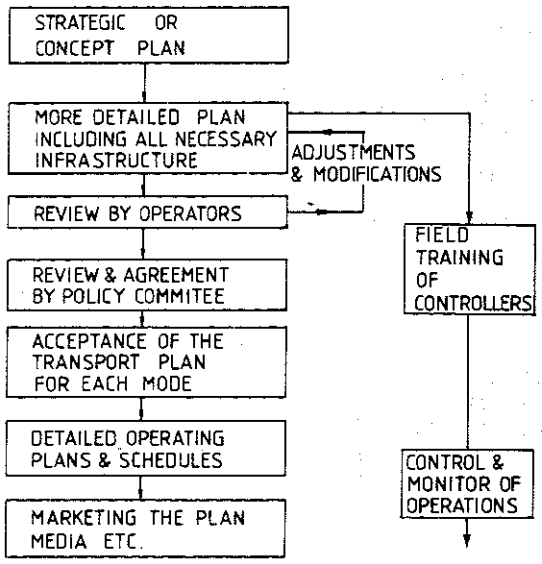


FIGURE 1

COMMONWEALTH GAMES

The Event

The Commonwealth Games was a 10 day event held in Brisbane from September 30 to 9 October, 1982. Sporting events were held at seven different locations throughout Brisbane.

Preliminary Planning

In December, 1978 consultants (Voorhees, 1978) completed a report on transport for the Games. The report dealt with spectator transport requirements and prepared transport strategies for the Queen Elizabeth Jubilee Sports Centre at Nathan (where the opening, closing and athletic events would be held) and the Chandler Sporting Complex (for swimming and cycling).

The Transport strategy was based on the following elements -

(a) A series of peripheral car parks located to intercept motorists approaching the main venue (QEII) from all directions (providing approximately 15,000 car parking spaces);

(b) Shuttle bus services operating between the car parks and the main stadium at QEII;

(c) Special rail services operated to Banoon and Sunnybank stations with shuttle bus services to QEII;

(d) The closure of major roads in the vicinity of QEII to give bus movements priority and protect the surrounding areas from a massive influx of vehicles parking on street;

(e) The provision of bus priority treatments on major approach routes;

(f) The control of traffic at major intersections surrounding the site to allow only accredited vehicles to pass.

This strategy required that the rail system should be used to its maximum capacity and the encouragement of high levels of car occupancy.

Within the Commonwealth Games Foundation, a Transport Division was formed to examine Games transport generally. Public transport aspects eventually became the responsibility of a Transport Technical Working Group (TTWG) formed by representatives of the Metropolitan Transit Authority; Brisbane City Council; Main Roads Department; Queensland Railways; Police Department and the Commonwealth Games Foundation.

A Public Transport Co-ordinator was appointed on 1 August, 1981.

The TTWG reviewed the public transport strategy as detailed in the consultants Report and, accepting the concepts outlined above, in November, 1980, produced a more detailed strategy and recommendations in a report entitled "Transport Management Scheme for the XII Commonwealth Games".

The Transport Management Scheme

The recommended transport management scheme for QEII consisted of the following elements:

(a) A series of peripheral car parks with a capacity of 10,800 vehicles within walking distance of the QEII Centre located to intercept spectators on their journey to the QEII Centre;

(b) Special rail services to Banoon and Sunnybank stations at a headway of four minutes giving a one way capacity of about 12,000 persons/hour;

(c) Shuttle bus services to Banoon and Sunnybank stations involving the use of 100 Council buses on the major days;

(d) Combined rail-bus tickets to be sold at the boarding station on the journey to the QEII Centre;

(e) An overflow car park with a capacity of over 2,300 vehicles served by a shuttle bus service involving the use of 50 buses on major days;

(f) A combined cost of the parking and bus service not to be significantly different from the cost of parking at the car parks within walking distance of the QEII Centre;

(g) A bus priority system for the shuttle bus services between the QEII Centre and Banoon and Sunnybank stations;

(h) Sufficient parking space at the QEII Centre for coaches;

(i) The establishment of a Limited Access Zone in the vicinity of the QEII Centre which would:

    (i) ensure preservation of residential amenity and ensure access for local residents to major arteries as far as possible;

    (ii) provide controlled on-street parking;

    (iii) ensure access to official off-street car parks without entering the zone;

    (iv) provide access to non residential land use activities; and

(v) ensure effective operation of the bus priority system for the shuttle bus services.

A Traffic Operations Team under the control of the Commissioner of Police or his delegate was recommended in order to cater for variations from the plan and to ensure co-ordinated operation of the various elements.

A pre-Games publicity campaign was considered necessary to ensure that the public was fully aware of the transport arrangements made for the Games period and to ensure:

- public transport was used to its capacity;
- high occupancy of cars;
- spectators using cars had a pre-determined destination;
- groups were encouraged to charter coaches;
- non-Games traffic was suitably diverted away from the QEII Centre;
- that the public was informed of any variations from the expected and any necessary corrective action; and
- spectators were encouraged to arrive early and stay late.

The recommended transport management scheme in the TTWG Report remained the basis for planning public transport throughout the lead-up period and the Games. The TTWG met regularly to examine planning proposals and progress, keeping the Transport Division informed. Members of the TTWG were only committed to Games transport planning on a part-time basis, having other responsbilities within their respective organisations.

Developing the Operational Plans

The transport operating agencies prepared their detailed plans with co-ordinating matters being determined through the TTWG at regular meetings or directly with the relevant agencies.

Detailed operational plans were prepared for:

- bus/rail co-ordination at Banoon and Sunnybank Stations;
- bus/bus co-ordination at Garden City;
- the QEII bus terminal;
- bus services to other venues;
- transport from outside Brisbane;

- the limited access zone around QEII;
- car parking around QEII.

Throughout the process of development of these plans a close watch was maintained on Games ticket sales and forecasts.

Planning was also closely aligned to the development of the marketing strategy. The marketing strategy was based on:

- a market research study (a detailed transport intentions survey of 2,500 Games ticket purchasers);
- media advertising;
- a model displayed at strategic centres;
- other promotional material.

A marketing agency controlled media advertising and reported to a special marketing working group.

The Transport Operation

Planned arrangements were implemented with only prior modifications being necessary at times due to flucuations in the flow of passengers on public transport and to significant numbers travelling earlier than expected.

Attendances and mode of travel for QEII are shown in Table 1.

TABLE 1
QEII - ATTENDANCE AND MODE

	Attend.	Bus/ Train Average	Bus from Garden City & Salisbury (Estimates)	Private Bus	Minimum % Used Public Transport
Thurs. 30 Sept. (Opening Day)	61075	31000	4000	4280	64.3
Sun. 3 Oct.	29786	8140	1500	1440	37.2
Mon. 4 Oct.	40165	10500	2000	3280	39.3
Tue. 5 Oct.	19153	4500	1000	2480	41.6
Thurs. 7 Oct.	62262	18050	3360	4320	41.3
Fri. 8 Oct.	24805	6700	1000	1920	42.8
Sat. 9 Oct. (Closing Day)	62271	17000	3000	4320	39.1
				Average %	43.7

A Transport Operations Centre (TOC) was established adjacent to QEII during the Games. The TOC provided overall monitoring and co-ordination of the plan. Effective control required reliable communication with all elements of the system. The communication system worked well throughout the Games and was vital for keeping the staff at the TOC fully informed.

The heavy demand for public transport on opening day was considered to be the result of the marketing campaign. As a result only 22% of spaces in the special Games car parks were occupied. Following good press about the easy road traffic situation on opening day, more people turned to car transport on subsequent days.

The bus/train system worked well on all days. On major days, additional special trains were run to clear passenger build-up on the city platforms. The bus shuttle also performed well. Departures on the opening day took some time to clear especially when special trains for school children who took part in the opening ceremony were also superimposed onto the relatively tight schedules.

Although significant numbers travelled by car to QEII, the car parks especially established for the Games were poorly used. Of the 13,000 parking spaces provided, usage ranged from a minimum 12% to a maximum of 47%.

A number of factors led to low use:-

- convenient bus services from the boundaries of the limited access zone;
- inability to completely control the limited access zone;
- abuse of visitor pass system by occupants of limited access zone;
- free parking on many commercial properties and shopping centres;
- the car park charge of between $2 to $4.

The limited access zone was effective in limiting traffic on residential streets.

Taxi usage to the Games was very low.

Major Lessons from the Games

There were a number of lessons from the Games relevant to other special events:

- The benefits of an early conceptual plan and then refinement of the plan into operations reality;

- Inter-modal co-ordination could be provided successfully and be accepted by the travelling public;
- Planning for other events at QEII could adapt a similar plan and and when required;
- The need for a specific marketing campaign and monitoring of the transport operations plan to help with the marketing strategy;
- The inability in almost any plan to control all visitors to major events;
- The need to avoid the tendency towards "over-planning" of some details of arrangements;
- The need to ensure that overall control is placed within a "working" group and to vest day to day co-ordination responsibility with an overall "co-ordinator".

Costs of the Transport Operation

Costs of transport arrangements were borne by the participating agencies. Most agencies were prepared to meet these costs because the event was supported by all levels of Government.

Costs of the transport operation included:

- marketing of transport arrangements (about $130,000);
- salary of public transport co-ordinator;
- provision of special transport services;
- volunteer staffing of the exercise by many agencies;
- significant contributions by the police and army.

THE PAPAL VISIT

Introduction

The Papal Visit project was characterised by a number of unique aspects. These included, firstly, a short time frame between the commitment for involvement (April, 1986) and the event occurrence (15th November, 1986). Secondly, the benefit of a known attendance figure (given at 75,000 by the Papal Visit Office). Thirdly, the benefit of the experience of the transport plan for the Commonwealth Games in 1982. Fourthly, an intense transport task where due to the scheduling of the events, resources (both man and machine) would be at a premium and because of the short duration of the event, limited scope for a change of plan in mid stream exists.

The Papal Visit consisted of a 6½ hour visit to Brisbane on 25th November, 1986 and where for 3½ hours from midday a Papal Mass was conducted at the QEII Stadium at Nathan attended by some 60,000 people.

The stadium had previously been the venue for the 1982 Commonwealth Games track and field competition as well as the opening and closing ceremonies. Following the success of the games transport plan, a similar transport plan was adopted for the Papal Mass at QEII.

The transport task was to develop and operate a transport and traffic plan for the safe and efficient movement of 60,000 persons to a suburban site approximately 7 kilometres south of the city centre and apart from beng adjacent to a limited number of metropolitan bus routes, is located some distance from an established soutside public transport interchange.

The essential target of the plan therefore was to create a public transport system focussing on the QEII Stadium.

The Planning Process

At the outset, a Papal Visit Planning Committee (PVPC) was established to oversee and co-ordinate at the broad level, all aspects of the total planning exercise associated with the visit. The Transport Working Group (TWG) comprising senior operations staff from the various transport agencies and the Police and Papal Visit Office was formed in early April, 1986 and although reported to the PVPC, was in fact virtually an autonomous unit.

By the end of April, a plan had been established which took account of the roles train, bus, taxi, private coach and private car would play in the overall transport task. By mid May, preliminary timetables and fleet estimates were prepared.

The speed with which the plan was developed and accepted by the TWG reflected firstly the benefit of the Commonwealth Games transport plans and secondly the autonomy granted to the TWG to "get the job done". It also reflected an appreciation of the limited time available in which to perform the task.

There was a feeling of urgency to establish the ground rules of the plan as soon as possible since planning effort will often expand into the time available.

Preliminary Transport Planning

This involved the following phases:-

- Determining the optimum location (venue) having regard to seating capacity and public transport availability.

- Determining the impact of a coincidence of the completion of the event and the peak period of a normal working and school day and the determination of whether an adequate bus fleet and train capacity existed to cope with the added demand.

- Determining the overall structural elements of the plan.

To determine the optimum location for such an event, major sporting fields, the exhibition grounds and racecourses (both in Brisbane and in nearby areas) were considered for spectator capacity and availability of transport.

The report, on this was submitted to the Papal Visit Planning Committee.

On the basis of the anticipated attendance, the venue suitability and the availability of public transport to the site, the QEII Stadium was confirmed as the preferred site.

The second phase was to determine at the broad level, the impact of the event's additional demands on the existing public transport given a normal working and school day.

To ensure a sufficient public transport fleet for the day, a school holiday was granted to all State metropolitan schools. This released some 250 vehicles from the metropolitan and private bus system and expanded the capacity of the train system to approximately 30,000 passenger spaces for the critical hour after the completion of the event.

It was considered neither appropriate nor necessary to grant a full public holiday on the day.

The third phase, that of determining the overall plan structure for the event, was assisted by the experiences and results of the Commonwealth Games transport plan and by a known attendance figure to work with.

The venue attendance figure, a nightmare issue for most special events planning exercises, was not a problem this time as the event was ticketed through the Papal Visit Office and hence a known attendance was set at 75,000.

A plan based on that used for the Commonwealth Games (but with modification) was developed.

It included the following elements:-

- bus/rail interchanges at Banoon and Sunnybank Stations;

- bus shuttle services from nearby Garden City and Salisbury bus terminii and both Banoon and Sunnybank Stations;

- bus shuttles from numerous off street car parking areas;
- additional bus and rail services on established urban routes;
- a limited access zone including road closures, policed intersections etc. within a radius of 2-3 kilometres of the venue;
- special taxi ranks;
- coach parking and coach terminal facilities within and adjacent to the site.

Figures 2, 3, 4 and 5 show the various elements of the plan developed for the event.

Detailed Transport Planning

Upon agreement to the overall plan and the roles the train, metropolitan bus, taxi, private bus and coach and the private car would play, each member of the TWG became responsible for their respective mode. That is the traffic sections of Queensland Railways and Brisbane City Council were ultimately responsible for the provision of all additional and special train and bus services on the day.

The reservation of some 7,500 car parking bays in the 9 car parking sites near QEII was carried out by the Department in conjunction with local school and sporting bodies and associations. The choice of sites was influenced by their ability to intercept traffic from major arterial roads accessing the site.

The Bus and Coach Association of Queensland was then approached to provide the 34 vehicles required for the shuttles to these parks.

With the granting of the school holiday, the private bus operators, as expected, secured many charters that were organised and encouraged at the local parish level throughout Queensland and Northern New South Wales.

To assist with the detailed planning, the Department developed a bus pass system to enable:-

- the organisers to make arrangements to physically accommodate the expected large number of coaches in the coach terminal;
- to assist with the efficient movement of coach traffic through the venue environs;
- to assist with a rapid loading and departure of coaches on completion of the event.

Entry to the venue terminal was by pass only and each pass was issued free of charge by the Department of Transport.

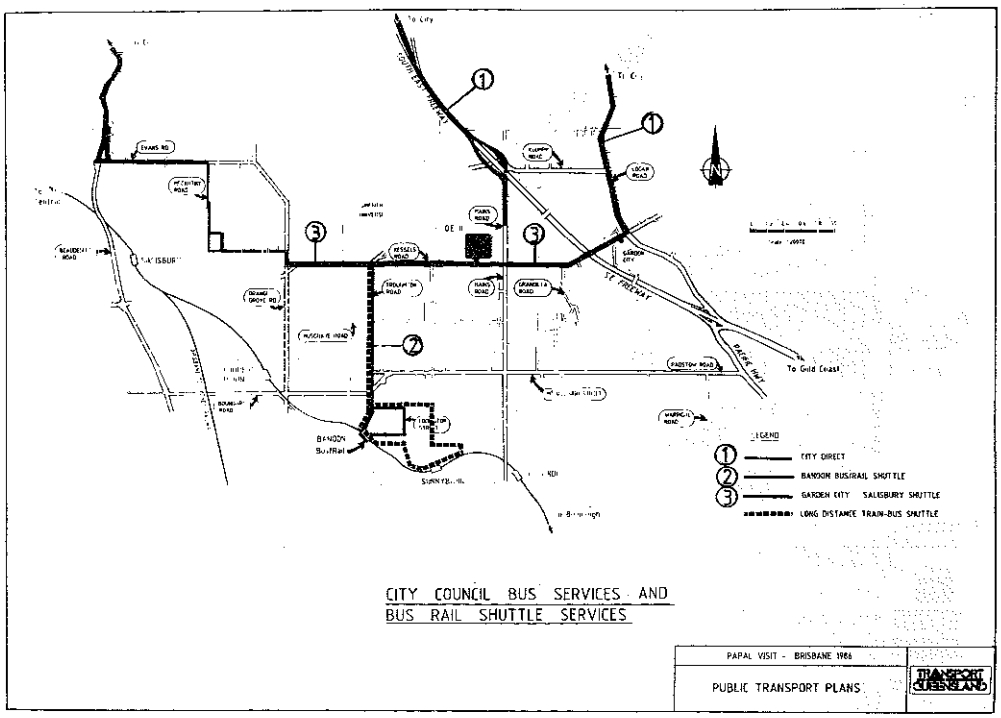


FIGURE 2

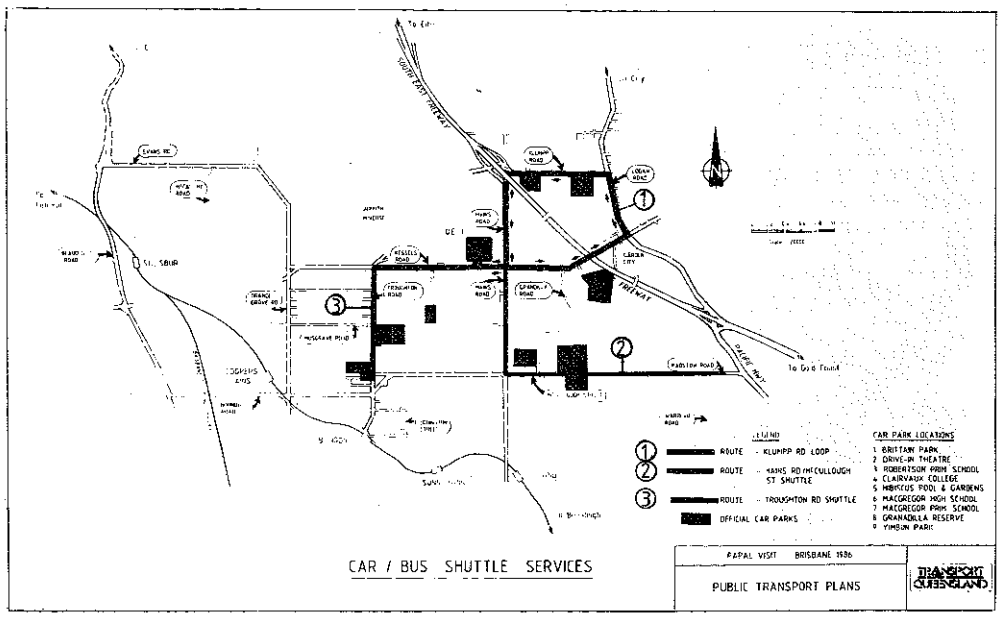


FIGURE 3

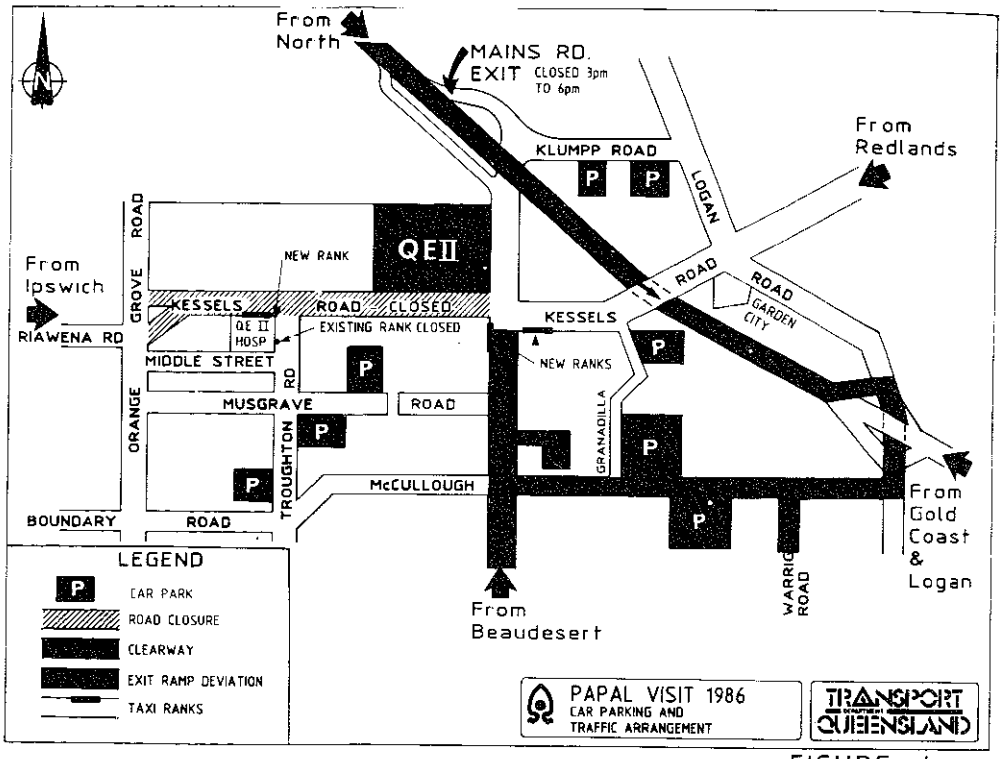


FIGURE 4

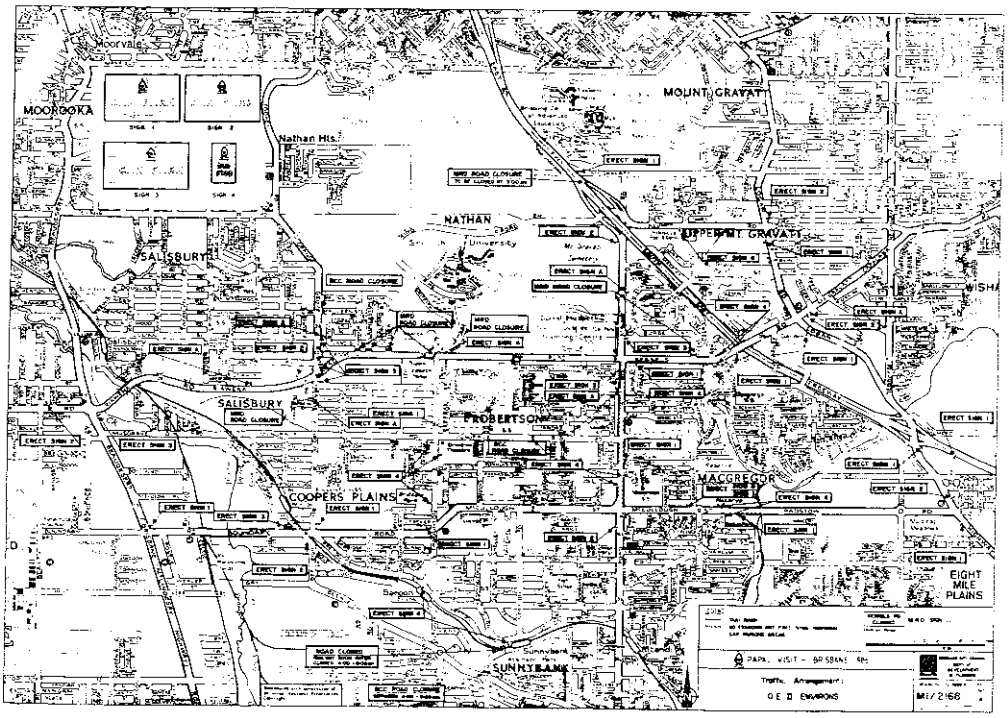


FIGURE 5

A bus pass system and Coach Captains Kit was prepared, which included the bus pass, access maps, Coach Captain and passenger instructions. The material was forwarded to each operator in the form of an individual kit for each Coach Captain scheduled to arrive at the coach terminal.

The Coach Captain guidelines consisted of instructions relating to early arrival, coach parking arrangements, exit procedures, unloading and loading procedures within the terminal and specific parking arrangements within the terminal itself and reserved parking areas nearby. It also covered instructions for avoiding the city traffic and measures to ensure all passenger groups were loaded as quickly as possible. Individual passenger instructions were also included in each kit.

The provision of this information in advance was considered crucial to the success of the functioning of the coach terminal operations.

The colour coding of each coach pass to match areas reserved within the coach terminal allowed both the Coach Captain and the Coach Ushers to work with identical instructions, thus reinforcing the link between passengers, coaches and the coach area within the terminal.

Of the 473 passes distributed in response to applications received, 370 arrived, 150 were parked in the coach terminal for the day, while the remaining 220 were, after unloading in the coach terminal, ushered to special coach parking areas in nearby streets.

On completion of the mass, these 220 coaches were then ushered into the coach terminus in planned order to collect their waiting passengers.

Operations Planning

With special events, the operation of the plan becomes the final chapter in the planning process.

In the case of the Papal Visit, the training of the 34 private bus drivers, the 370 private bus and coach drivers on charter to the site and the 36 Departmental staff, assumed a major role within the overall context of the plan. The smooth running of the plan on the day was made possible only through this training.

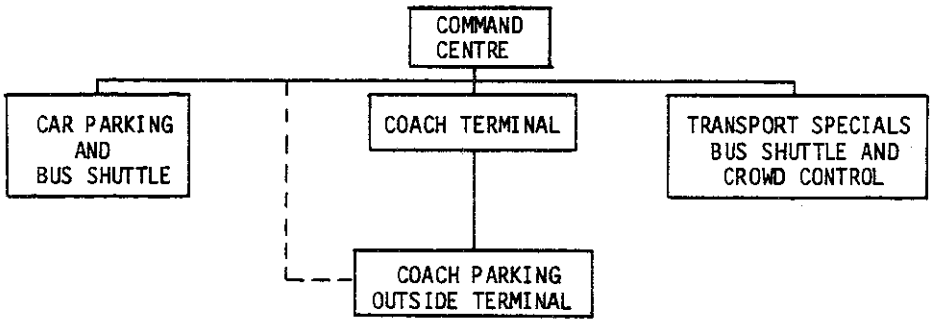
For the 34 private bus drivers operating the car park shuttles, each was taken over the route while all aspects of the plan, including the ticketing procedure, were explained on site.

Written instructions specifying times and locations were then sent to the operators for final confirmation.

The 370 Coach Captains, through the extensive printed material forwarded in their Coach Captains Kits, were well prepared by the time the coach arrived at the venue.

To assist with the operation of the coach terminal, coach parking, car parking and bus shuttles, as well as the specials (special bus transport arrangements for the 400 Priests and 1,000 volunteers on the day) organised for the day, 36 Department of Transport staff were seconded into the field for the day. These were in addition to the Railways, Brisbane City Council, Police and Main Roads staff.

On the day, a Transport Command Centre was established where a key representative of each of the participating agencies remained throughout the day. The Police, Brisbane City Council and Department of Transport each had established a radio communication network for the day with the latter being provided by the State Emergency Service. The structure of the Department of Transport network is as follows:



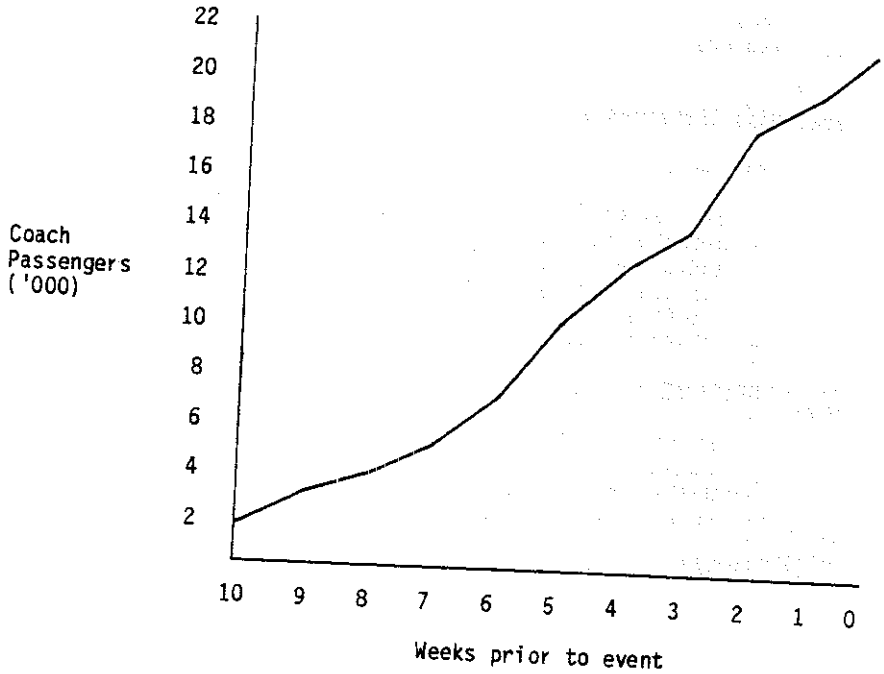
This apparent inordinate amount of effort spent on training and information, constituted the "safety factor" aspect of the planning for the event. From the outset, even with a known attendance figure, there was still little confirmed information on the final modal split.

This is best exemplified by Figure 6 which shows that as the day approached, the confirmed(1) number of passengers arriving by private coach continue to grow.

(1) Although confirmation of nearly 22,000 passengers on 470 buses was received from the operators prior to the day, surveys on the day indicated approximately 370 coach loads arrived with some 17,500 passengers.

FIGURE 6

COACH PASSENGER CONFIRMATIONS



Based on a survey of arrival modes taken on the day, the following mode split occurred:-

MODE	NO.	%
Rail	9,400	16
Bus Shuttles	4,300	7
City Bus Services	1,000	2
Coach Charter	17,500	29
Car Park/Bus Shuttles	1,700	3
Car Parking/Walking	26,100	43

In summary, the public transport plan prepared and operated on the day was underutilised with both the rail and bus shuttles all completing their task within one hour of the completion of the event.

Who Pays

Special events transport plans and planning effort are unique for they almost universally consume an inordinate amount of planning effort and physical resources in the quest for the optimum plan for a transport task.

The Papal Mass transport plan involved the following cost elements:-

RAILWAYS

- 24 crew shifts;
- overtime for station staff;
- additional ticket sellers;
- vehicle running costs;
- advertising;
- ticket production costs.

BRISBANE CITY COUNCIL

- 61 drivers and vehicles on overtime;
- inspectors (overtime);
- media advertising;
- vehicle running costs.

PRIVATE BUS ASSOCIATION

Shuttles

- 34 drivers and vehicles;
- vehicle running costs.

Coach Charters

- 370 drivers and vehicles;
- vehicle running costs.

DEPARTMENT OF TRANSPORT

- media promotion;
- staff overtime;
- various incidentals (signage, etc.);
- printing brochures, etc;
- subsidy on bus revenue from ticket sales.

The Papal Visit transport task saw two clear attitudes towards cost recovery emerge.

The first was a level of benevolence towards the issue of payment for effort expended. On the part of the State Government Agencies and the Brisbane City Council, the notion of expecting payment for services provided generally failed to emerge.

In contrast, however, the profit motive of some private bus operators was in evidence, especially when revenue failed to meet expectations.

Part of the reason for such a benevolent attitude towards cost recovery may be attributed to the following:-

- desire for public recognition at the corporate/civic level (i.e. the improved public profile being connected with the event will generate);
- the availability of funds for such involvement;
- the perceived civic obligation of the State and Local Government agencies;
- the flow on benefits generated initially by the media as it gathered its own momentum, independent of all other aspects of the planning effort. This was particularly relevant in the case of the Papal Visit because the event, being of such a high profile, obviously generated widespread public awareness of all aspects of all arrangements associated with the visit.

The marginal additional operating costs of the metropolitan public transport system (excluding private coach charters) was approximately $35,000 for the day. Revenue for the day for these services totalled some $39,200 (including subsidies). Coach charters totalled some $102,000 for the day.

Cost recoveries are as follows:-

Queensland Railways	-	348%
Brisbane City Council	-	59%
Private Shuttle	-	70%
Charter Coaches and Buses	-	more than 100%(1)

(1) These charters, quoted at commercial rates would therefore return a profit.

EXPO '88

Description of Event

Expo '88 is a six month entertainment, international and national exhibition scheduled to be held in Brisbane on the South Bank of the Brisbane River from 30 April to 30 October, 1988. Expo will operate daily from 10.00 a.m. to 10.00 p.m. with the theme "Leisure in the Age of Technology".

The main area for the staging of the events and displays is bound by the Brisbane River and the suburban rail corridor on the eastern and western sides respectively and Vulture Street and Merivale Street on the southern and northern sides (Figure 7). To the west of the rail corridor is located the Amusement Park.

Two suburban railway stations, South Brisbane (Expo North) and Vulture Street (Expo South), lie immediately adjacent to the northern and southern extremities of the site, and will be adjacent to the two principal public entrances to the site.

A ferry terminal is to be constructed at the southern end of the river frontage and a further entrance to the site will be via the Amusement Park. On the western side of Merivale Street opposite the Amusement Park, a coach terminal will be located.

It is apparent the site is well served by rail and the major roads around the site are well catered for by bus services. The ferry terminal and coach area will cater for visitors by these modes. Taxi and private car set down/pick up areas will also be provided. Internal circulation within the site will be assisted by a monorail system.

Planning for the event began in 1982 with approval by the Bureau of International Expositions in December, 1983. The Queensland Government immediately took steps towards acquiring the site and developing site plans.

Preliminary Transport Planning

The viability and success of the event is obviously predicated on the number of visitors to the Expo.

A number of studies were undertaken by the Queensland Government and the Expo Authority set up to run Expo '88 to provide estimates of attendance. Initial estimates (Harrison Price, 198) produced a 'most likely' forecast of 7.163 million over the six month period, with corresponding 'low' and 'high' estimates of 6.5 and 8 million. These attendance estimates were broken down by regional and international visitors.

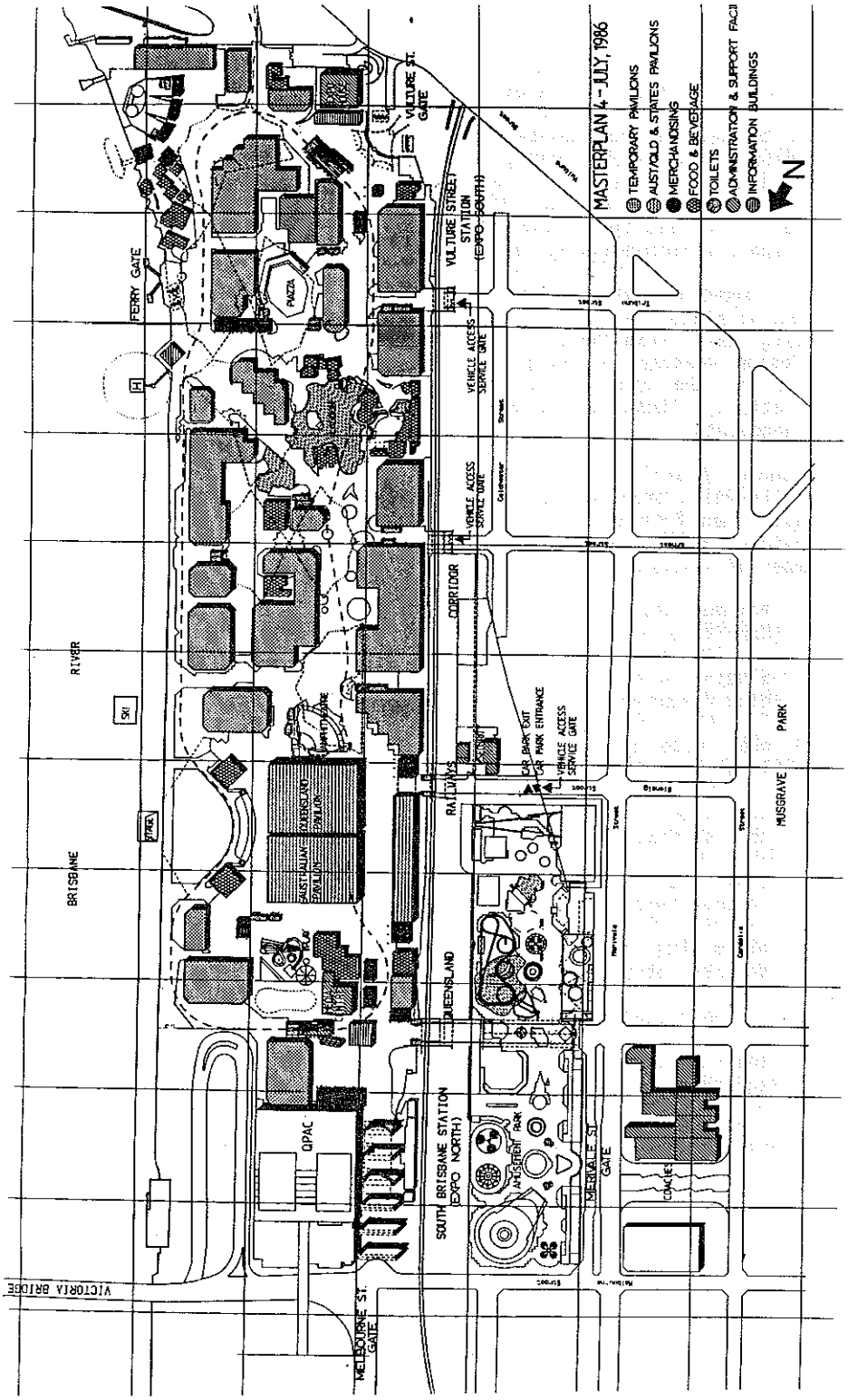

MASTERPLAN 4 - JULY, 1986
TEMPORARY PAVILIONS
AUST/QLD & STATES PAVILIONS
MERCHANDISING
FOOD & BEVERAGE
TOILETS
ADMINISTRATION & SUPPORT FACIL
INFORMATION BUILDINGS
N
FERRY GATE
PIAZZA
VULTURE ST. GATE
VULTURE STREET STATION (EXPO SOUTH)
VEHICLE ACCESS SERVICE GATE
VEHICLE ACCESS SERVICE GATE
CORRIDOR
RIVER
BRISBANE
QUEENSLAND PAVILION
AUSTRALIA PAVILION
RAILWAYS
CAR PARK EXIT
CAR PARK ENTRANCE
VEHICLE ACCESS SERVICE GATE
MUSGRAVE PARK
QPAC
QUEENSLAND
SOUTH BRISBANE STATION (EXPO NORTH)
ANZ STREET PARK
MERIVALE ST GATE
CONCRETE
VICTORIA BRIDGE
MELBOURNE ST. GATE

FIGURE 7

Early recognition of the importance of transport arrangements was reflected in the commissioning of consultants in November, 1983 to present a recommended strategy for visitor transport to and from the site as well as for movement within the site (Johnston, 1984). The transport study would provide input into the need for a people-mover on the site, the location of gates into the site and the need for and location of transport facilities to cater for visitors to and from the site. In developing the strategy, the consultant looked at the transport arrangements at various World Expos over the past 10 years.

The framework developed during the study has formed the basis for planning since that time. This was based on the derivation of various 'design days' from the overall attendance estimates. The study derived a design weekday, a design Saturday, a design Sunday and a Peak Day based on the overall attendance estimates and monthly and daily variations. These design days formed the basis for planning transport arrangements.

A number of arrival and departure patterns were examined to develop a profile which provided appropriate on-site accommodation and length of stay. Then from an analysis of the capabilities of various transport services, a modal split was derived. The modal split was based on a number of assumptions:

(a) maximum use of rail because of the two railway stations at the Expo site;

(b) a major role for buses, especially in areas not served by rail and high frequency shuttle buses from car parks;

(c) near site private car parking discouraged because of lack of legally available parking and the risk of traffic congestion;

(d) provision for other modes e.g. walk, taxi, ferry, charter and tourist coach, and private car pick up and set down;

(e) capability of modes to handle peak days without serious delay and inconvenience;

(f) minimising inconvenience to local businesses, residents and schools, etc.;

(g) a significant marketing campaign;

(h) consideration of the need for normal commuters, shoppers and school travellers.

The important aspects of the plan which formed the basis for on-going planning and inter-agency discussion were:

(a) car parks developed at a number of points in near or intermediate distance suburbs around the City serviced by special shuttle buses, normal high frequency bus services or normal rail services;

(b) a shuttle bus service from the CBD to the Expo site;

(c) additional trains and buses on days of high demand;

(d) a marketing campaign;

(e) a bus terminus near the site;

(f) four gates and transport arrangements for each;

(g) an elevated people-mover system;

(h) an at grade car park for VIP's and employees near the site;

(i) improvements to South Brisbane and Vulture Street Stations.

Review and Refinement of the Plan

Although all interested agencies had input into the study, there were a number of issues of concern which needed to be re-examined. These issues included a new overall attendance estimate by the Expo Authority (7.8 million), concern by the Brisbane City Council over the operation of special bus shuttle services from remote car parks, the proposed sites for these large remote car parks, adjustment to arrival and departure patterns, and finally the impact of all these on the modal split.

Apart from the development and refinement of the strategy for the transportation of visitors to and from the site, there was need for interested agencies to solve some immediate problems.

The imminent closure of two major roads through the Expo site required adjustment to the road network around the site. Also, some aspects of Expo planning required early input for decision making such as the number of gates, number of pontoons at the ferry terminal and number of bays at the coach terminal.

To address these issues, an Expo Transportation Working Group was established, chaired by the Department of Transport, which would review the original strategy and detail a practical operations plan for the transportation of people to and from Expo '88. By the time this Group was established the immediate road network problem had been resolved by the relevant agencies.

The Working Group has input into the development of an operations plan from a number of specific studies undertaken for the Department of Tranpsort. These included a rail, bus and ferry car parking review, a proposed work programme, a preliminary marketing concept and a transport planning overview.

The development of a detailed operations plan required agreement on a number of critical elements:

- the capacity of public transport systems to cope with Expo visitations and the determination of service level requirements;
- facility requirements i.e. car park, coach terminal;
- the number of visitors by mode by gate;
- arrival and departure rates;
- a marketing plan; and
- the method proceeding towards the event.

There are a number of aspects which will require adjustment right up until Expo commences and these aspects will be handled by the review and examination of the relevant assumptions and also close integration with Expo's own planning for the event.

Development of a Working Plan

Having established the Expo Transport Working Group in October, 1984 whose terms of reference were to detail a practical operation plan, the task was then one of analysing assumptions and developing the new model. This involved:

- new design days:

design weekday	47,000 attendance
design Saturday	55,200 attendance
design Sunday	62,100 attendance
peak day	100,000 attendance

- new arrival and departure pattern for each design day based on average lengths of stay ranging from 5.4 hours on the design weekday to 5.9 hours on a peak day. (Figure 8).
- new modal split based on changes to assumptions since the original plan was developed and the views of the relevant agencies (Table 2).

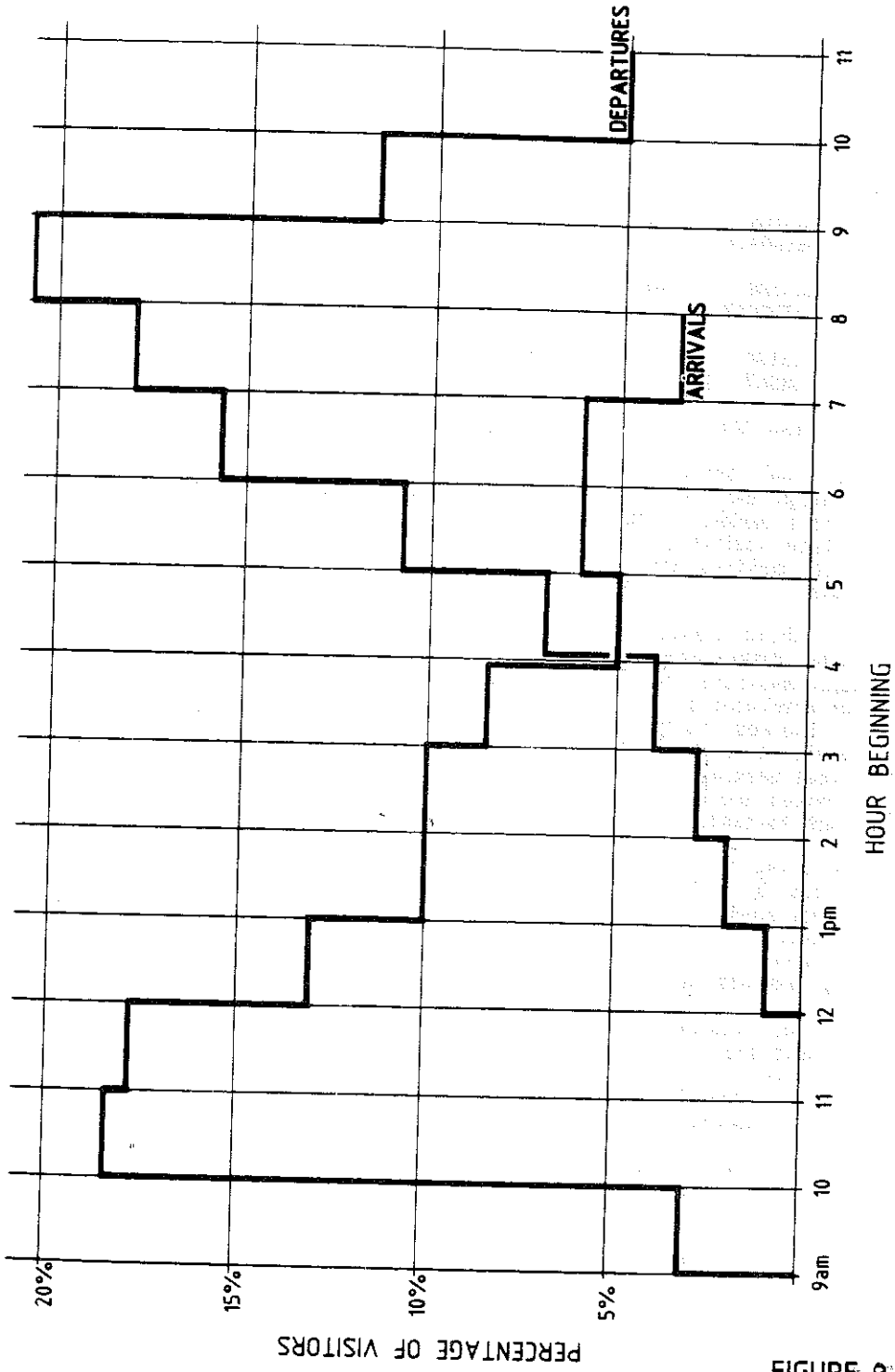

DEPARTURES
ARRIVALS
20%
15%
10%
5%
PERCENTAGE OF VISITORS
9am
10
11
12
1pm
2
3
4
5
6
7
8
9
10
11
HOUR BEGINNING

FIGURE 8

TABLE 2

EXPO '88 - MODE BY DESIGN DAYS

	WALK	TAXI	FERRY	COACH	SCHEDULED BUS	SCHEDULED RAIL	CAR	OTHER
DESIGN WEEKDAY	5%	5	5	8	12	45	17	3
DESIGN SATURDAY	4%	4	5	8	12	40	24	3
DESIGN SUNDAY	4%	4	5	7	12	40	25	3
PEAK DAY	4%	4	5	7	14	42	21	3

The modal split is necessarily dependant on a sustained marketing campaign and the provision of a number of facilities to cater for the various modes. These include a number of temporary car parks at railway stations, a coach terminal near the site (including remote coach parking) and bus, taxi and private car set down and pick up areas.

The public transport services required for Expo by buses and trains were determined by examination of existing capacities and superimposition of th Expo demand. A preliminary Expo rail timetable was developed by Queensland Raiwlays but current and Expo demands will be checked further before final scheduling is undertaken. The provision of bus services is based on the assumption that during a normal weekday no special service supplement will be required. Evening services and peak day will be considered in more detail as information comes to hand.

Following the completion of these tasks and the preparation of the report by this Working Group a new Committee structure has been established to deal with the two critical areas, operations and marketing.

Key Elements in the Transport Planning Process for Expo '88

The key elements that are now part of the Expo '88 transport planning process are:

- an organisational and reporting structure for inter agency co-operation;
- review and refinement of service requirements as more data comes to hand;
- implementation of facility requirements;

- flexibility in the plan to cope with changing and developing Expo plans and demand variations;
- implementation of a marketing strategy.

Costs of the Plan

At this stage it is not possible to be specific about the costs to Government agencies of this event. A number of costs have already been incurred:

- costs associated with road network adjustments; and
- costs associated with developing the plan this far.

Leading up to Expo a number of costs will be incurred:

- costs of refining the plan;
- costs of constructing facilities;
- costs of marketing.

When Expo commences on April 30, 1988, a new cost imposition will occur associated with:

- provision of extra public transport services (extra revenue will also be obtained);
- provision of staff to oversee operations;
- marketing the transport arrangement.

The Expo Authority has been approached to contribute towards the cost of marketing transport arrangements for this event.

CONCLUSIONS

The special events reviewed in this paper have all benefitted from the detailed planning of transport arrangements. The transport arrangements for each event have also benefitted from the planning of previous events. The planning and lessons learnt from previous events are critical elements which can be adapted for future events.

These transport plans have all included a number of essential elements:

- determining attendance levels;
- developing a modal split;

- preparing an operations plan;
- marketing of the plan.

Brisbane experience with public transport planning for special events has to date shown that public transport agencies and operators have been prepared to bear responsibility for planning and operation of the transport arrangements for the events.

The decision to hold the events, the venue and timing have often taken into account the availability of public transport or the impact on existing public transport networks. The planning, organisation and responsibility for transport arrangements have then been left to the transport agencies. In the past there has generally been a willingness by these agencies to accept this responsibility and the financial obligations involved.

The decision by Government agencies to participate in the provision and organisation of transport for special events has reflected more a civic responsibility than a desire for reasonable cost recovery. This contrasts with the involvement of private bus operators where the profit motive is more evident.

Previous planning for special events has also reflected more concern over provision of adequate system capacity rather than financial performance or demonstrated demand. With the planning for Expo '88, there would appear to be developing a closer scrutiny of transport costs and a gearing of effort to match expected demands and returns.

The planning for special events has confirmed the need for a co-ordinating group of appropriate transport agencies and the requirement for a transport co-ordinator to ensure all aspects of the transport arrangements are adequately planned for the benefit of the people attending special events.

To date it would seem that special event organisers have been able to pass on the burden of cost of transport provision and transport agencies have been willing to provide and organise services and accept the extra costs.

The time may not be too far away however, where the organisers could be expected to contribute to these transport costs, especially those costs which cannot be recovered through passenger fares.

REFERENCES

Bochner, B.S. and Exnicios, J. (1984), Critical World's Fair Access Factors presented to the Institute of Transportation Engineers, California, September, 1984.

Johnston, D.J. and Associates (1984), Study of Transport Requirements for Expo '88 prepared for the Queensland Government: Brisbane, May, 1984.

Report of the Expo '88 Transportation Working Group, Development of Transport Services for Expo '88, August, 1986.

Sherman, R.J. (1982), Report on Public Transport Co-ordination for XII Commonwealth Games, Brisbane, October, 1982.

Voorhees, A.M. and Partners (1978), Transport Study for XII Commonwealth Games, prepared for the Metropolitan Transit Authority, Brisbane, December, 1978.