

6. PUBLIC TRANSPORT – CHRISTCHURCH HOSPITAL

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The purpose of this report is to provide information regarding access to Christchurch Public Hospital for people using public transport. This includes both able bodied and disabled users of public transport and the focus is on buses only.

PASSENGERS

There are three groups of passengers that need to be considered. These are the staff at the hospital, patients (particularly outpatients with minor ailments) and visitors, many of who are likely to be elderly. Patients with more serious ailments are likely not to want or be able to travel on buses.

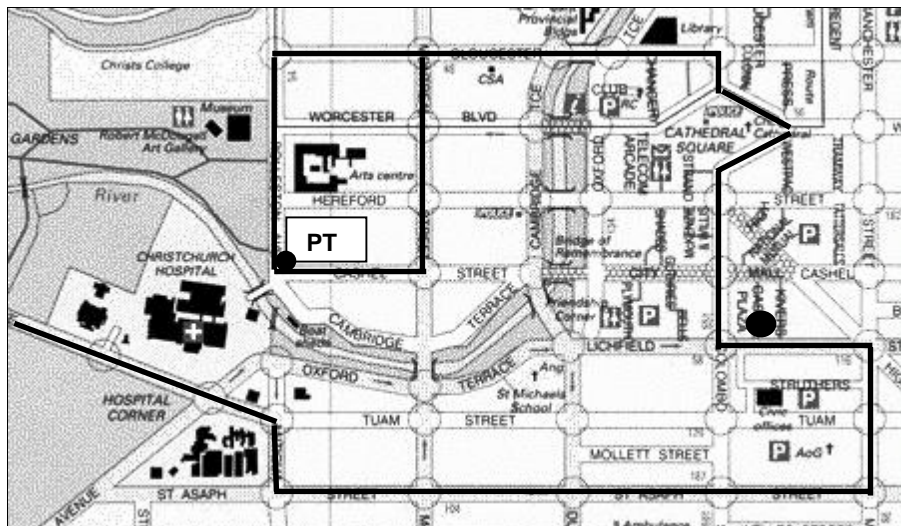
As well as the hospital users, there are many other potential users of buses in the vicinity including a number of schools and businesses. Any proposals should not have a significant negative impact on these users.

PRESENT BUS ROUTES AND ACCESS TO THE HOSPITAL

The three bus stops for the area are shown on Figure 1 (tabled). There are many bus routes between the western suburbs and the bus exchange that travel along Riccarton Avenue and past the hospital. From the west, they travel along Riccarton Avenue and turn left into Oxford Terrace. Their only bus stop in the area has recently been moved from the Riccarton Avenue hospital frontage to the Oxford Terrace hospital frontage. Except for the No 5 service, all services go to the peripheral terminal on the Rolleston Avenue/ Cashel Street corner (Rolleston Avenue PT) via the bus exchange.

The new Oxford Terrace stop is some 150 metres from the main entrance to the hospital (see Figures 1 & 2 - tabled).

From the bus exchange, westbound buses travel along St Asaph Street, turn right into Antigua Street, left into Tuam Street then straight through into Riccarton Avenue. The stops for these buses are on Tuam Street between Antigua Street and Hagley Avenue and on Riccarton Avenue west of the traffic signals for access to the hospital site. Except for the No 5 service, all buses on the outbound routes have originated at the hospital peripheral terminal on the Rolleston Avenue/Cashel Street corner via the bus exchange.



Both stops require passengers who have alighted from or intend to board buses to cross at least one major road using traffic signal controlled pedestrian phases when accessing the hospital. There is a pedestrian underpass between the car parking building and the hospital but to use it, bus passengers would have to move into the car parking building. If the underpass was more widely advertised, people may find it convenient to use, particularly in winter or adverse weather conditions.

The stop on Riccarton Avenue is some 350 metres from the main hospital entrance and the stop on Tuam Street is some 180 metres from the main hospital entrance.

The new peripheral terminal is located on the Rolleston Avenue/ Cashel Street corner between Hereford Street and Cashel Street. This is where buses lay over after having set down passengers at the bus exchange. Passengers from other services are able to use a transfer ticket to board at the bus exchange and alight at the peripheral terminal near the hospital if their service does not directly access the hospital peripheral terminal. Alternatively, passengers can use their transfer to join one of the buses that travel west along Riccarton Avenue at the bus exchange.

Fourteen of the 34 bus routes that lay over at the peripheral terminals use the hospital peripheral terminal.

The peripheral terminal is 350 metres from the main entrance to the hospital but 150 metres from the back entrance. The route for pedestrians to walk from the peripheral terminal to the main hospital entrance is not well defined on the hospital site and pedestrians may need to walk around the hospital on the road reserve. Access to the back entrance is also not well defined.

Bus routes that originate in the north, east and south of Christchurch do not generally have direct access to the hospital bus stops. The only bus that travels through the bus exchange from the east to the west is the No 5. This service runs at a 15 minute interval between 6:30 am and 7:30 pm, Monday to Friday. Some (but not all) of the eastern services travel to the hospital peripheral terminal.

Five of the 14 routes that use the Rolleston Avenue PT enter the central business district from the east (services 31, 32, 33, 40 and 49). The number 20 service arrives at the Rolleston Avenue PT from Princess Margaret Hospital via Hagley Avenue. The other eight services have arrived via the bus exchange using a route along Riccarton Avenue.

There are some 500 bus movements (250 movements each way) along Riccarton Avenue each weekday.

BUS PASSENGER SURVEYS

Surveys were carried out by the Red Bus company to assess the present use of the three bus stops in the vicinity of the hospital. The bus stops are on Tuam Street, Oxford Terrace and Riccarton Avenue near the hospital. The surveys were carried out on three separate days for the whole day and included passengers both boarding and alighting. The number of passengers using the Rolleston Avenue PT and the route north of Cathedral Square were counted by Environment Canterbury separately over three weekdays from Monday 28 May to Wednesday 30 May 2001. The survey results are shown in the tables below:

<i>Date</i>	<i>Oxford Inbound</i>		<i>Riccarton Outbound</i>		<i>Tuam Outbound</i>	
	<i>On</i>	<i>Off</i>	<i>On</i>	<i>Off</i>	<i>On</i>	<i>Off</i>
Wednesday 9/5	115	200	42	17	106	103
Saturday 12/5	46	58	29	36	22	29
Tuesday 15/5	186	229	51	61	111	126

Table 1: Current bus stop usage near the hospital.

	<i>Rolleston/ Cashel peripheral terminal</i>		<i>Gloucester/ Montreal Art Gallery</i>		<i>Gloucester/ Colombo Farmers</i>	
	<i>On</i>	<i>Off</i>	<i>On</i>	<i>Off</i>	<i>On</i>	<i>Off</i>
3 day total	497	126	52	51	1158	928
Daily average	166	42	17	17	386	310

Table 2: Current bus stop usage on Riverside peripheral terminal route north of Cathedral Square

It should be noted that the surveys are daily totals and are not able to be disaggregated into the destinations of specific passengers or by time of arrival. The typical usage numbers at each bus stop from table 1 are shown on Figure 1.

From table 1, it is seen that the buses from the west (inbound) along Riccarton Avenue drop about 215 passengers per weekday at the Oxford Terrace bus stop. The buses in the outbound direction, east along Riccarton Avenue board a total of about 155 passengers per weekday.

From all other parts of the City that are not serviced by the Riccarton Avenue buses, about 155 passengers alight near the hospital on a weekday from the outbound buses having come from the bus exchange or the No 5 service. A similar passenger total boards the inbound buses towards the bus exchange and presumably towards other bus routes throughout the City.

The average number of passengers boarding at the Rolleston Avenue PT averaged over the three survey days was 166 per day and the number of passengers alighting was 42 per day.

The Environment Canterbury surveys in table 2 also showed that there were about 386 passengers per day boarding and 310 passengers alighting the buses at the Gloucester Street (Farmers) stop. This is part of the route for buses travelling between the bus exchange and the Rolleston Avenue PT.

There are about 500 bus movements past the hospital per weekday (250 inbound and 250 outbound) and there are about 370 people alighting the buses. This is an average of less than 1 person per bus getting off the buses at the hospital bus stops. The Environment Canterbury surveys showed that there were about 367 bus movements each way to the peripheral terminal. This equates to almost 1 person boarding or alighting each bus at the Gloucester Street bus stop.

The buses on Riccarton Avenue link about 20 percent of the residential area of Christchurch City with the hospital and bus exchange yet they transport more than half of the passengers to the hospital bus stops. The likely reason for this is that the service is direct from the west whereas many passengers from the rest of the City need to change buses at the bus exchange but the hypothesis has not been tested.

OPTIONS

A number of options have been identified as providing potential improvements for bus passengers going to and from the hospital. The options are:

- Combine the two outbound bus stops on Tuam Street and Riccarton Avenue into one bus stop west of the Hagley Street intersection,
- Provide an east/west shuttle bus,
- Moving the peripheral terminal to be nearer the hospital,
- Altering the bus routes using hospital land and the hospital internal private road network to take the buses past the main entrance to the hospital.

Each of the options is considered in various combinations and the options are compared to the existing situation.

Combine the two outbound bus stops on Tuam Street and Riccarton Avenue into one bus stop west of the Hagley Street intersection

One option to reduce the distance passengers must walk to access the hospital entrance could be to combine the two outbound bus stops on Tuam Street and Riccarton Avenue into one bus stop west of the Hagley Street intersection as shown in Figure 6 (tabled). This option would see about 20 metres to be taken from the distance walked from the Tuam Street bus stop and about 130 metres to be taken from the distance walked from the Riccarton Avenue bus stop. A setback bus stop would be needed so that the buses did not stop in the traffic lane.

People would be required to cross only one leg of the Hagley Street intersection but they would need to cross the free left turn from Hagley Avenue into Riccarton Avenue.

The disadvantage of this option is that bus passengers would be quite likely to cross the four traffic lanes of Riccarton Avenue at the bus stop rather than walk back to the Hagley Avenue intersection. This is because the bus stop would be directly opposite the pedestrian ramp on Riccarton Avenue that leads to the main hospital entrance.

For the small amount of benefit that would be achieved, it is considered that the significant risk to pedestrians in trying to cross Riccarton Avenue between the two sets of traffic signals would be too great and this option has been discounted.

Provide an East/West Shuttle Bus

This option is to create a new shuttle bus route that would travel east/west and would be complimentary to the existing north/south shuttle buses. The east/west route would be expected to follow a route that would include Tuam Street near the hospital and Oxford Terrace/Lichfield Street to link the hospital with the bus exchange. The exact route has not been determined, but based on the existing shuttle buses, to achieve a service time of ten minutes would require at least two buses to be dedicated to this route.

It would not be possible to alter the present north/ south routes to include the hospital since the success of the shuttle bus is based on its ability to service the route quickly and directly. If the hospital was added in, the route would be longer and there would be an additional time on each circuit of the buses that would discourage some of the current patrons from using the service.

In the current road layout with Oxford Terrace and Lichfield Street being one way roads, the shuttle route would need to be clockwise and would be on the present road reserve. The shuttle bus would use the existing bus stop on the Oxford Terrace hospital frontage to service the hospital. In the event that the one way system is altered with Oxford Terrace and Lichfield Street becoming two way roads, there may need to be some adjustment of the route if the section of Tuam Street between Antigua Street and Hagley Avenue becomes one way for eastbound traffic.

It would be technically feasible for the route to use the hospital internal road network by turning right onto the hospital site from Riccarton Avenue. The internal road is not designed for a bus service and there would need to be a set back bus stop constructed outside the main hospital entrance to prevent buses from stopping in the live carriageway to allow passengers to board or alight. A new exit from the internal road to Oxford Terrace would be needed to allow the buses to re-enter the public road network.

Figure 2 (tabled) shows the general layout of the hospital frontage where buses would be directed and Figure 3 (tabled) shows the minimum amount of works that would be needed to allow the buses to use the hospital frontage.

Advantages

- Dedicated system linking the hospital with the bus exchange.
- Links the parking building on the Tuam Street/Antigua Street/St Asaph Street block with the central business district. This could encourage usage of the parking building by shoppers.
- Shuttle buses can provide more stops on a route than the buses travelling to the peripheral terminal and therefore service more businesses along the route.
- Complimentary service to the existing shuttle bus service. The system is tried and proven with high rates of user satisfaction.
- The route is not dependant on the one way system being either retained or altered and can work well with any proposal.
- Links the bus services from the north, east and south from the bus exchange to the hospital well.

Disadvantages

- The system would need at least two buses to provide a regular service of ten minutes and this would be quite expensive. The costs are in the initial purchase of the buses and the on-going running costs.
- There are moderate one off costs if it is decided that the route should use the internal hospital road network to allow passengers to board and alight at the main entrance.
- If the route uses the hospital internal road network, the service would be running over private roads.
- If the peripheral terminal concept is shown to be meeting the needs of the passengers, the shuttle bus would be duplicating this.

Cost Estimates

- The current operating cost of each shuttle bus is about \$170,000 per annum. If the route can be run with two buses the annual running cost would be about \$340,000 per annum.
- A rough order of cost for the construction of the new bus stop and exit lane for buses from the hospital site is \$75,000. This is a one off cost although there may also be maintenance issues to be agreed with the hospital.

Relocate Rolleston Avenue Peripheral Terminal

An option to better serve the hospital could be to move the peripheral terminal to Oxford Terrace between Antigua Street and Tuam Street. Both of the hospital entrances would be within easy walking distance of this new site.

It is known from parking surveys that there is a very high demand for short term parking in Rolleston Avenue and moving the peripheral terminal would allow the present peripheral terminal on the Rolleston Avenue/Cashel Street corner to revert to short term parking.

Figure 4 (tabled) shows how the bus routes and access to the peripheral terminal could be arranged in the present one way system. Figure 5 (tabled) shows how the bus routes could work if the one way system is altered.

By using Oxford Terrace for the hospital peripheral terminal, passengers from the north, east and south could alight from the buses travelling to the peripheral terminal at the existing hospital bus stop on Oxford Terrace.

An alternative to relocating the Rolleston Avenue PT to Oxford Terrace could be to split the buses between the existing Rolleston Avenue PT and a new terminal on Oxford Terrace. Eight of the services from the west (Burnham, 21, 23, 24, 81, 82, 83, 84) that pass the hospital on Riccarton Avenue continue to the bus exchange and then go on to the Rolleston Avenue/Cashel Street corner terminal. Their hospital bound passengers have already been set down at the hospital and the buses then service the Arts Centre and the area north of Cathedral Square. It would be possible to allow these eight services and the No 20 service to continue as they currently do and re-route the other five services to a peripheral terminal on Oxford Terrace. There would then be two terminals, probably called "Hospital terminal" and "Rolleston Avenue terminal".

Passengers from the north, east and south can already transfer to the Riccarton outbound bus services at the bus exchange if they so choose and there are some 250 westbound Riccarton buses each day. By splitting or relocating the peripheral terminal, the buses from the east that travel to the peripheral terminal would provide direct access to a bus stop closer to the main hospital entrance. The distance to the rear entrance would be similar. Effectively, more services would give direct access to the hospital.

Passengers wanting to go to the north of Cathedral Square could transfer to the western inbound services at the bus exchange.

It would appear to be possible to move the peripheral terminal to Oxford Terrace with minimal difficulty. The terminal could be accessed by buses from the exchange following the same route as the outbound western route buses.

Advantages

- The hospital terminal would be close to the hospital main entrance and no further from the back entrance than at present.
- Operational difficulties are known to exist with the present peripheral terminal on the Rolleston Avenue/Cashel Street corner that could be alleviated by relocating at least part of the peripheral terminal to Oxford Terrace.
- Minimal impact on parking supply since the parking spaces on Oxford Terrace are in less demand than those on Rolleston Avenue.
- There is minimal cost to relocating the peripheral terminal.

Disadvantages

- There is a need to re-educate the bus users in the new routes.
- Relocating the whole peripheral terminal would result in new bus routes that may not include the Colombo Street/Gloucester Street bus stop that has reasonable patronage. Splitting the peripheral terminal would allow about 200 bus movements each way to continue to service the Colombo Street/Gloucester Street bus stop.

Cost Estimates

- Costs have not been estimated because a number of the costs will be subject to negotiation. These include bus route changes that would affect the bus companies contracts. Other costs include changing signage on the roads, altering bus timetables and advertising the changes. These are operational issues with budgets already provided for them.

Westbound buses on Riccarton Avenue

The bus stops for westbound buses are both on the public road network with the Tuam Street bus stop some 180 metres from the hospital door and the Riccarton Avenue bus stop some 350 metres from the hospital door.

There are two possible options to allow westbound buses to pass the hospital door. The first option is for buses to travel on the same route as that suggested for the shuttle buses, where the buses could turn right from Riccarton Avenue onto the hospital site, then exit onto Oxford Terrace, turn right into Antigua Street, right onto Tuam Street and follow the existing route westbound. This has the obvious problem that there would be a significant time added to the route for the improvement in passenger convenience. This option has been discounted.

The second option would be to alter the route to allow buses to drive west along the hospital frontage. The buses would turn right from Oxford Terrace, travel past the hospital main door and turn right from the site onto Riccarton Avenue.

There are other problems with having westbound buses passing the hospital frontage. These include the difficulty in finding a location for a bus stop on the site where the buses would not be forced to stop on the carriageway to board passengers and the queues that form from the traffic signals at the Riccarton Avenue end of the hospital road.

These items being considered, it is suggested that there are no benefits to westbound buses using the hospital frontage.

In the event that the Oxford Terrace/Lichfield Street link is converted to two way, many of the problems for westbound buses would be alleviated by being able to use a bus stop opposite the eastbound bus stop on Oxford Terrace outside the hospital.

ONE WAY SYSTEM

The proposal to alter the current one way system for Oxford Terrace/Lichfield Street is in its early stages with data still being gathered. The objective is to determine whether or not there are sufficient benefits to justify the change of Oxford Terrace/Lichfield Street to two way and Tuam Street to one way. It is not expected that any physical changes arising from this project could be made before the 2002/03 financial year.

Preliminary results of modelling suggest that there will be a need for at least 25 percent of the traffic eastbound on Oxford Terrace to continue to use Oxford Terrace. This traffic has a destination along Montreal Street and the left turn from Tuam Street into Montreal Street is not desirable. The short block length between Tuam Street and Oxford Terrace would be unable to accommodate this amount of traffic.

No preliminary designs have yet been prepared so any proposals to improve the bus access to the hospital or a new peripheral terminal on Oxford Terrace could be incorporated into the planning as necessary.

Consultation

Consultation has been carried out with a number of organisations that have an interest in passenger transport and road design in and around the hospital site.

Canterbury Health

Canterbury Health were consulted to determine their initial reaction to the option of using the frontage of their site for bus access.

Canterbury Health would be unlikely to support such a proposal because they are redeveloping their site to accommodate the Christchurch Women's Hospital adjacent to the existing hospital building. They are concerned that the necessary loss of car parks to provide an exit from the hospital site to Oxford Terrace could be enough to trigger the need for a resource consent application for the development. They would also be concerned about 250 eastbound buses each day driving past their front door when the traffic environment is already quite complex with pedestrians and car parking manoeuvres. The road is the access for ambulances to the emergency department and the buses using the road could delay the emergency vehicles.

The question of maintenance of the road and the damage caused by the additional heavy vehicles was raised.

Canterbury Health consider that the most significant public transport problem they have is with staff, visitors and some patients not having good access from the north, south and east of the City. They consider that they already have sufficient public transport service to the hospital from the west.

Environment Canterbury

The public transport team at Environment Canterbury would have considerable concerns about diverting eastbound buses from Oxford Terrace onto the hospital frontage road. They are concerned that the longer route would slow the service down resulting in loss of patronage. The inbound and outbound routes would be different, posing additional difficulties for passengers. They consider that the present route along Oxford Terrace is acceptable and buses should not be diverted onto the hospital frontage.

Environment Canterbury are aware of the plans to make Lichfield Street two way and have begun considering their options to move the hospital peripheral terminal to Oxford Terrace and reduce the number of services using the Rolleston Avenue PT if Lichfield Street becomes two way.

Red Bus

Red bus is the only bus operator along Riccarton Avenue at this time and they were the only operator consulted.

Red bus would not like to see the bus routes altered to include the hospital frontage. They believe that many of the people using the buses in the area are not necessarily associated with the hospital and many are school children accessing local colleges and they would be disadvantaged by the changed route. The surveys did not provide a breakdown of the information by time or destination so this cannot be confirmed.

There was concern expressed that the route would be over private property and the company may have less control over the actions of their drivers. They were concerned about mixing the buses with the already congested area with car parking manoeuvres and many pedestrians.

Summary of Consultation

The consultation generally indicated that there was no desire amongst any of the parties for the buses to use the hospital internal roads as part of their route. There was general agreement that the buses to and from the west on Riccarton Avenue service the western suburbs reasonably well.

Canterbury Health would like to see improvements to the bus access for passengers from the north, east and south of Christchurch. This could be achieved by relocating the peripheral terminal to Oxford Terrace.

Environment Canterbury are considering relocating the peripheral terminal from the Rolleston Avenue/Cashel Street corner to Oxford Terrace if Oxford Terrace and Lichfield Street become two way.

DISCUSSION

Unfortunately Canterbury Health have not been able to provide any details regarding the number of people who enter the hospital site each day. However overall the number of passengers using public transport to visit the hospital is considered to be relatively low.

Subcommittee

Recommendation:

1. That the information be received.
2. That information be provided in "City Scene" advising the various transport and access routes to the hospital.
3. That improved signage indicating the access from the car park via the underground tunnel to the hospital be provided.
4. That contact be made with the Christchurch Public Hospital seeking their support in appointing a designated manager as a contact person on transportation issues and pointing out the improved access via public transport services from the Rolleston Street entrance.