

Mr Jim Betts
Secretary
NSW Department of Planning , Industry and Environment
320 Pitt Street
Sydney NSW 2000

Re: The new Sydney Fish Market - Stage 2

Dear Mr Betts

I write to communicate our concerns for the proposal for the redevelopment of the Sydney Fish Markets and the shortcomings of the EIS as submitted for your and your department's consideration.

The existing Sydney Fish Market is an iconic tourist attraction for Australia, at times for some tourists equal to that of the Harbour Bridge and Opera House. This is surprising given the haphazard organisation of the site and its poorly connected location. The site is on the edge of one of the world's best harbours, yet the dominant land use of this edge is a car park with most visitors spending their time fighting amongst the crowd and cars oblivious of the site's commanding vista into Blackwattle Bay.

All of this is going to change. Of course, that was the promise of the Fahey Government when the operation of the wholesale market was transferred to the tenants and merchants of the fish market in 1994. It was the hope when the Masterplan was developed in 2003, it was quite close when the Sydney Fish Market's promoted Part 3A development application obtained consent in 2010 and it was a core effort of the recently dissolved Urban Growth NSW while it existed.

In late 2019 we have the latest proposal to redevelop the Sydney Fish Market. This time is different. So we are informed and so we as Sydneysiders will generally hope to be the case. This time the market is being relocated, the reasoning is not transparently available, but that is definitely a new approach. This time it is a grand vision. The plan in early 2000s was also grand, but this is more grand. The question to address is whether or not the reasons why earlier proposals failed have been addressed and whether the proposed plan addresses the requirements of the Environmental Planning and Assessment Act 1979 (NSW).

The following is a discussion on these questions that on balance highlight that considerably more work is needed to understand the impact and establish the justification for an approval. A few of the points discussed present fundamental challenges that it is not clear how the proponent can respond so as to ensure a mitigation of the risk or impact.

It is hoped that solutions can be found and Sydney can finally get a fish market to be proud of.

Yours faithfully

Connor Crown
Partner
13 November 2019

Previous failed efforts

The reasons for prior efforts to stall are obscured by time and a lack of transparency from various stakeholders then and now. The news coverage has provided a window into the challenges that have befallen those who wished to see change.

Certainly, one factor that has been brought to light is the in-fighting between the stakeholders as to who will share in the profits any development would create. This remains an issue, but the relocation has disassociated the wholesale and retail market operations and their cost from the residential and/or commercial development profit centres. A change that kicks the in-fighting issue down-the-road. This approach has not previously been practical as no party would seek to underwrite the unknown cost of the new Sydney Fish Market. Step in UrbanGrowth NSW (now replaced by Infrastructure NSW) and supported by the NSW Government more broadly, and the potential un-commerciality of the proposal is no longer an issue.

It was also reported that the self-proposed development in 2010 that gained planning consent didn't proceed as the SFM Tenants & Merchants exercised their power within the Sydney Fish Market to veto the project. It may never be clear why the costs of the planning process were spent while the company's own board was in the end against the proposal, but nevertheless the Board blocked the plan. This issue also appears to be resolved with the announcement in the last year that the SFM Board was committed to the latest proposal.

The current proposal is still not as advanced as previous efforts, so It remains to be seen the changes that will occur as the development process continues cause these or other obscured causes for the previous proposals to stall to rear their ugly head.

Compliance with the Environmental Planning and Assessment Act 1979

It is obvious that in the context of 2011, the proposal as it was presented was compliant – it obtained consent under the Act (noting that the application was made under a section of the Act that has been subsequently repealed). It is possibly less clear this is the case for the Sydney Fish Market Masterplan process in 2003 as what references that have been found in preparing this submission do not clarify the ultimate status achieved by that effort. Nevertheless, each of these processes represent helpful references to the current proposal.

Planning Context

Fundamentally, the proposal is a dramatic change in land use. Today the proposed site is a concrete batching plant and a disused commercial marina, both mostly over water and the scale of the proposed development resumes over a hectare of Sydney Harbour. Notwithstanding the positioning of the Government by The Hon. Barry O'Farrell in 2011 to effectively prohibit resumption of the Harbour, albeit in respect of the proposed hotel at Barangaroo, this is an unprecedented impact.

A curious anomaly of the proposed site is that it is without a local planning control. An unintended consequence of the historic control of the site by NSW Maritime and its predecessors meant that the site was excluded from either the former Leichardt Council Local Environment Plans and the City of Sydney's Local Environmental Plans. This could potentially have been addressed in the 2012 update of the City of Sydney's controls, but perhaps this pathway wasn't taken in the interest of not seeking to explore the extent of its authority with the NSW Roads and Maritime, UrbanGrowth NSW and the Sydney Harbour Foreshore Authority that did at times claim a role in Blackwattle Bay.

That said, the site is subject to a Masterplan – the Rozelle and Blackwattle Bays Maritime Precincts Masterplan developed by the then Waterways Authority. This Masterplan is the current planning for the site and was approved in September 2002. This plan defines clear parameters for the use of the land and moreover a justification for this intent. In response, the current planning application appears to ignore this context and does not seek to consider the impact the loss of commercial waterfront lands has on the future of Sydney Harbour. Moreover, the published statements of intent for the reuse of the existing Sydney Fish Market site further impacts the capacity of this use; essentially removing it from Blackwattle Bay altogether. What is the impact of that change of land use? This is a pattern that has been part of the harbour's character for over one hundred years. It might be like the passing of the blacksmith from the street corners across the city or it might be something that we regret. In the absence of any analysis for this impact, how can we tell?

It should be material to consider how a non-government proponent for such a grand vision would need to approach it. The proposed use is nothing like the current planning control. Typically a proponent of a project would have to progress a proposed change of use and accompanying built form through the Gateway Process. The process would establish the controls for the site which then inform and typically constrain the potential development of the site. The absence of having undergone this process means there is far less established clarity for the intended land use.

The whole of the Bays Precinct is an identified State Significant Development site under the State and Regional Development State Environmental Planning Policy. The proposed site and the existing site are both within this area. This identification provides a far broader capacity on the proponent to consider non-compliant proposals (the compliance being in relation to existing planning controls such as the Masterplan of 2002). Materially, the capacity to use an alternative planning approval pathway does not remove the need to address the same requirements for a proposed land use and built form that the typical, but staged Gateway and Complying Development pathway imposes.

The SEARs (Secretary's Environmental Assessment Requirements)

In response to the notice by UrbanGrowth NSW that it intended to develop the Sydney Fish Market at the proposed Bridge Road site, the Department of Planning, Industry and environment's Secretary ('Secretary') provided the requirement for the Environment Impact Statement ('EIS'). The SEARs issued on 22 December 2017 are appropriately unremarkable and cover the typical detail expected. In the context of considering the response by UrbanGrowth NSW, the following points bear some focus:

- i. Key issues as identified in the SEARs must be assessed with reference to:
 - a. adequate baseline data; and
 - b. the consideration of potential cumulative impacts due to other developments in the vicinity.
- i. The key issue of scenic quality and visual impacts should:
 - a. Provide a detailed justification for the proposed building location in Sydney Harbour;
 - b. Provide an outline of what alternative location options were investigated; and
 - c. Provide a detailed Visual Impact Assessment.
- ii. The key issue of transport, traffic, parking and access should:
 - a. Define a study area for the study of the impact in consultation with Transport NSW and Road and Maritime Services;
 - b. Incorporate the current daily and peak hour traffic generation;
 - c. Estimate traffic generation by heavy vehicles during operation, including forecast movement of heavy vehicles across a 24-hour period and details of proposed vehicle types;
 - d. The estimated daily and peak hour traffic generation, public transport, walking and cycling trip generation during operation;
 - e. Undertake a trip generation survey of the Fish Markets;
 - f. Develop a traffic model to determine improvements to the road network required to support the proposal (scope, parameters and methodology to be agreed with the Roads and Maritime Services and to be carried out in accordance with the Traffic Modelling Guidelines 2013);
 - g. Estimated seasonal peak trip generation, including Christmas, Easter and any other potential events. Outline how these seasonal peaks and potential events will be managed from the transport perspective, including parking management; and
 - h. Access to and from the site from the road network including intersection locations, design and sight distance.

Lack of clarity for the balance of the Bays Market District land use

Before diving into the specifics of the response to the SEARs and the implications of any issues raised, it is worth highlighting that the absence of the Gateway Process having occurred for the Bays Precinct means that consideration of the site may become overly site specific. The broad strategic plan for the Bays Precinct and more locally the Bays Market District as it labels the lands adjacent to the Bay on Banks Street and Bridge Road has replaced the Masterplans and superseded what controls the City of Sydney does apply to these lands. It has done so without defining what will actually be developed and without proposing an actual Masterplan. The impact of these future developments is therefore vague and difficult to consider in the context of the Secretary's requirement for the EIS to consider the "potential cumulative impacts".

The proposed relocation of the Sydney Fish Market is not occurring in isolation. The proposed future use of the existing site is not the relocation of the concrete batching plant and disused commercial vessel marina it is displacing. Not only is the new Sydney Fish Market materially different to the existing operation and obviously bringing about a change of behaviour in Sydneysiders and tourists in their use of the site, but the old site is planned to have its own significantly different and material change in land use (nominally foreshore activated mixed-use high density residential development).

The planning process outside of the State Significant Development pathway would require resolution of the new and old site and an assessment of the cumulative impacts. It is difficult to see how it is appropriate for this not to be addressed simply because the planning assessment pathway is different.

Analysis of feasible alternatives and Justification of location

On reviewing the EIS and its supporting reports, the approach to consider alternatives appears to have been to ask for ideas from the public and then undertake a desktop review of those options incorporating some feedback from the Sydney Fish Market itself. If the market is 'an important part of Sydney's economy' as it represents, then surely the analysis of its future should be more structured and more robust than this.

The first option considered is only a part option as it does indicate what was proposed for the retail operations of the market. The Findings of this option are only negative factors and as such exclude the positive benefit of a reduced local and regional traffic, particularly of heavy vehicles and a reduced scale of any development remaining in the Bays Precinct.

The negative factors listed also incomplete and open to challenge. The cost of the suitable land is material, but the site proposed for new Fish Market is not without its opportunity cost (if not actually requiring a financial transaction by UrbanGrowth NSW to facilitate acquisition from the RMS). It is also far from clear how the tourist attraction of the fish market is materially impact given that the wholesale market is not generally open to the public and most tourism at the site occurs when the wholesale market is not operating. Finally, without a clear definition for an 'authentic fish market' it is not certain the strategy to split the operation would itself have a bearing. A visit to the 'old site' arcade does not present to a visitor anything other than a retail area with a dominance of fish and crustacean retailers (although entry from the southern end will present first a fruiterer, a deli, a bakery, and the entrance to a Chinese restaurant before finding a fish monger).

What is perhaps concerning in the argument that the wholesale market operations are key to the 'authentic fish market' is that if this is in respect of the typical experiential customer experience which actually doesn't interact with the wholesale market at all, then a shiny new modern built form with wide spaces and modern colour palette might actually be destroying the 'authenticity'. The absence of any study as to what makes the market the attraction it is means there isn't a guide as to what should be preserved (it might not be the function of a wholesale market).

The second option is a specific relocation and approach to the scale and form. Why not consider other relocation options even if it is for both the wholesale and retail operations? Any such move would provide this first positive finding. The second finding is a requirement of the current Masterplan and as such something any proposed development of that location must provide. It shouldn't be considered as a benefit of an options analysis for the Sydney Fish Market.

There are numerous other options for relocation. The text above this part of the EIS mentions the option to locate the new Sydney Fish Market on the land where Bridge Road is relocated further away from the foreshore. Why is this option not considered? The concrete batching plant on Bank Street is also scheduled to be moved, what about at this location using a pier into the water? What about at Glebe Island where the concrete batching plants are scheduled to relocate?

The third option is not a site analysis but a development approach of the existing site. Once again, a specific development approach where more than one option would exist. Regardless of the option for staging, what analysis was done to be certain that staging a redevelopment of the site would be slower and more costly than building over the water? Is it not the general rule of thumb that building on water is always more expensive and very, very slow? What options were looked at for urban design of this option to conclude it would be sub-optimal? Surely the existing location has benefits, but the analysis process found none?

The last option is similar to the others in that it is only found to have negative outcomes and each of these findings is lacking context. It is quite possible that the temporary facility would have a high cost, although it worked for the development of Sydney International Convention Centre and there wasn't any business interruption due to the approach. The cost may still have been less than the alternative to build over the water and is it more or less than the staged approach?

Notwithstanding the critique above as to what the EIS is representing, the EIS is missing the point altogether. The justification for the location in respect of an EIS must be in the context of the factors relevant to the environmental impact. The analysis and selection process represented in the EIS is that relevant to the proponent of a project, mostly constraints of stakeholders and cost with the section concluding with a list of advantages that even if accepted at face value would be true for numerous alternative options.

The location should be justified in the context of the differences of the impacts each bring about. That is, how does one location vis-à-vis another for relocation lessen or worsen the risks for contamination, or to the marine ecology or navigation, or traffic and transport, or waste management or visual impact and so on. The EIS doesn't consider this at all.

If the option was to relocate to Glebe Island for example, this would locate the market close to the proposed future Metro station in the Bay Precinct, it would shorten the ferry service trip length and remove the need to pass the old Glebe Island Bridge that has shown to be a dangerous section of water. It would relocate the dominant originating traffic arriving from the western side of Anzac Bridge into the traffic and transport capacity only intermittently used by the White Bay Cruise Terminal. It would lower the contamination risk and so on. However, this option wasn't considered let alone analysed.

Pre-empting the discussion below regarding the traffic impact, a key negative factor for the chosen location is the car parking capacity. Argued in more detail later, if the site selection analysis had focused on the transport, traffic, parking and access constraints and opportunities, the proposed site would have been excluded.

Visual Impact

In general, the visual impact study purely improves the understanding of what the development will look like from various vantage points as most proposed development is working within or close to the envelope of the planning controls. This is not the case for the new Sydney Fish Market. The proposed development and the EIS makes no reference to the prevailing control.

It should be a non-trivial matter to propose a building on the foreshore of Sydney Harbour that changes the sightlines to the water from a public park. It should be non-trivial to propose a development that breaks the guidelines established in the consultation of the prevailing Masterplan (such as not building above the height of the fig trees). It should be non-trivial to propose that a building will obstruct the sightline to a regional place marker that has been dedicated to our fallen soldiers. Yet, the EIS resolves that these impacts are acceptable and essentially concluding that concerns for these types of impacts are trivial.

Traffic and Parking

An initial review of the Traffic Impact Assessment report would suggest that it responds to the SEARs. However, a closer look incorporating a compare and contrast with the traffic impact assessments for previous proposals of the Sydney Fish Market suggests considerable shortcomings in the approach and the validity of its conclusions.

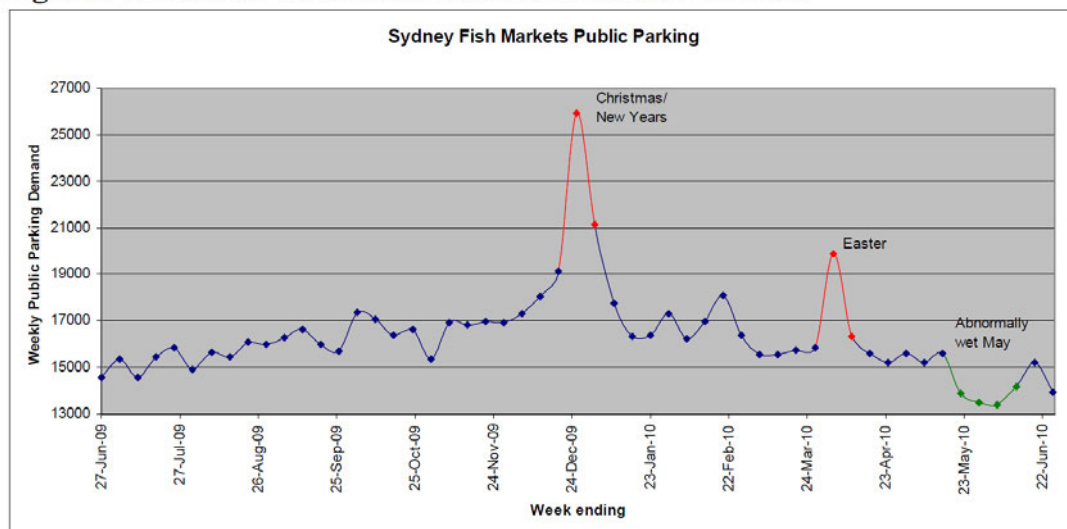
Data Collection

The core data collected for considering the existing traffic conditions was in July 2017 while also referencing historic data from November 2015. Even before reviewing previous studies, it is commonly understood that July is the slowest time of year for the fish market. The use of this data as a reference to develop charts labelled 'typical' is misleading.

The chart below is from Halcrow's study that accompanied the 2010 Part 3A Application by the Sydney Fish Market. It represents that July is in fact one of the lowest traffic generating months, it suggests that traffic volumes are typically 10-15% higher through most of the year and also that bad weather can have a significant impact.

Compounding this issue is the use of the data being inconsistent. The data referenced for the charts in 4.10.3 of the EIS's Traffic Impact Assessment report are generated from the November 2015 data and compared with the chart below appears to suggest the Fish Market has had negligible growth since 2010. This is in contrast to the prevailing economic factors over the period and may suggest capacity issues for the existing car park.

Figure 3-2 Seasonal variation in Fish Market traffic volumes.



The data referenced for the SIDRA intersection analysis is that of July 2017. Performance of an intersection is highly sensitive to volumes reaching the threshold capacity of the intersection and notwithstanding the limitations of the approach, the use of data from mid-winter may materially impact the analysis (the reporting shows that the existing practical space capacity of the Bridge Road/Wattle Street intersection is noted as being 0.3% with C and D Levels of Service for the peak direction flows).

Approach

The previous traffic studies¹ share a common approach, an approach typical of such studies. It establishes the baseline activity and considers the expanded land use as a traffic generator. In contrast the approach taken by ARUP for this EIS does not. A glaring omission from the report is that it doesn't refer to the existing and future scale.

The usual rule for retail land use is that without parking, it won't survive. In this respect traffic impact assessments for retail-centric projects typically seek to justify as much parking as possible. That is, the analysis establishes what parking it should have given the retail space being proposed, models the trip generation of that parking and then seeks to argue the impact on the road network is manageable. This approach is exactly how the study for the Master Plan resolved a requirement for 993 car parking spaces.

The development proposed by the Sydney Fish Market justified 857 car parking spaces as the consumed demand where the development only targeted 8,620 sqm of retail and restaurant. The reference rates from the Roads and Maritime Services suggested 804 spaces. However, the Sydney Fish Market's design couldn't accommodate such a scale of increased car parking and argued that the approach to take was to treat the existing supply (of 451 not 417) as a reference for the existing scale of use and use the Ultimo Pyrmont Urban Development Plans' reference for car parking controls for the change in scale. This approach limited the demand to 516 spaces. The proposal offered 510 spaces and sought to justify this *shortfall*; a justification that evidently was accepted given the eventual consent for the proposal.

The UrbanGrowth NSW proposal doesn't explore these approaches at all. The Traffic Impact Assessment simply starts in informing the reader that the Travel Plan has been designed to reduce the reliance on private vehicles and not increase the supply of car parking at all. The study admits that this will be less than the demand every weekend and promotes that the following are reasonable and appropriate:

- i. increasing the cost of parking;
- ii. removing the exclusion to charging fish market staff for parking on site; and
- iii. the use of off-street car parks in close proximity.

This assumes that the patrons of the fish market are price sensitive, that the journey-to-work options for staff working a 04:00-15:00 shift include not using a private car, and that car parking 800m to 1.2km away represents a practical overflow.

Notwithstanding the specific concern above and the more discussion below, the report seeks to tick the boxes of the SEARs using an approach that avoids the analysis of what the car parking demand will actually be and then uses this to constrain the reference data for the traffic impact. If this approach is acceptable, then it will represent a useful precedent for promoters of high demand land uses in the future.

¹ The 2003 Masson Wilson Twiney, Transport Management and Accessibility Plan prepared for the Sydney Harbour Foreshore Authority in respect of the 2005 approved Sydney Fish Market Master Plan and the 2010 Halcrow, Transport & Accessibility Impact Assessment prepared for the Sydney Fish Markets in respect of the Part 3A application for the redevelopment of the Sydney Fish Markets.

Existing conditions

The Sydney Fish Market hasn't changed in over thirty years and is not fit for purpose if it will double its tourist visitor numbers as expected. The daily planned informal drop-off by tourist buses on Bridge Road is illegal and dangerous, the pedestrian access on Bank Street is unsafe. These and other existing conditions have been reported in the press, and been part of previous development applications or Masterplan reports but this isn't noted in the Urbangrowth NSW EIS. The new development must address these factors, but they are neither noted as existing conditions nor is the accessibility planning at a detailed enough level to assess the response.

The ARUP report does represent existing conditions for demand and for the performance of traffic intersections. What is odd is that despite an annual increase on traffic in the roads of Glebe, Ultimo and Pyrmont, the ARUP report suggest that car parking demand has lowered and the traffic conditions have significantly improved over the past decade.

The report of 2003 identifies an accumulation of vehicles on site for a Friday being above 400 from 7am until 1:30 pm (with a drop to 350 around 11 am), and above 450 between 9:15 am and 10:30 am. The 2010 study identifies that the site consists of 417 formally marked spaces, 40 informal spaces, 1.2 kilometres of circulation and 28 cars can queue on site but ahead of the entry boom gates. That is, the 2010 identifies that the site's capacity for vehicles is over 500. The study also identifies that the peak demand was 551 vehicles at 2 pm in mid-November.

In contrast the ARUP report promotes that seven years later parking demand is rarely more than 350 and peaks at near 470 vehicles around midday on the weekends. Curiously, the figure 41 on page 48 of the report shows that this peak is above the capacity of the site, but does not explore how the occupancy profile as generated from a count of vehicles actually results in more vehicles on-site that the capacity identified can accommodate. Moreover, unlike the older studies which considered methods to adjust the collected data to represent a typical day, the report suggests the analysis uses the data of July 2017 directly. That said, the data collected occurred for a period of 6am to 6pm, while the figure represents data across a 24 hours period and for at least two different days. It is therefore unclear what data is being represented.

The reports of 2003 and 2010 identified the existing conditions for the Level-of-Service ('LoS') for key intersections including the access intersection to the existing site on Bank Street and the intersection of Pyrmont Bridge Road and Bank Street (which incorporates the complex network serving the Western Distributor). In 2003, the LoS was D and C respectively for both morning and evening peaks. In 2010, the LoS was C for Thursday evening and D for Sunday midday and F for Thursday evening and E for Sunday midday respectively. The ARUP report doesn't look at either intersection – this would seem an oversight as the access intersection is a guide for the new proposal access point and the intersection incorporating the Western Distributor is clearly of concern.

A commonly analysed intersection is the intersection at Bridge Road and Wattle. The 2003 report notes a LoS of C for morning and evening peaks, the 2010 report an LoS of F and E (Thursday evening and Sunday midday), while the ARUP report suggests an LoS of C. The older reports used the data collected from the site at the times, the ARUP report has used the SIDRA intersection assessment from an undisclosed data set. It would seem unlikely that the observed 60s to 82s average delays observed in 2010 have dropped to the 34s to 38s argued today.

Irrespective of any concerns and issues for the methodological approach to considering the forecasted impact, if the representations of the existing conditions are in error or otherwise in question, then the conclusions of the report are flawed.

Effect of change in use

The new Sydney Fish Market is intended to transform it as a destination. It is to support the expected growth in tourism visitors and make it a place for Sydneysiders to enjoy Sydney Harbour and the great Australian lifestyle and love of seafood. The existing Sydney Fish Market has shown this is possible and it tries to deliver on this potential. If the new development is successful, then one of its successes is the change in use by those visiting.

Not only does the new market incorporate close to double the scale of the existing retail and restaurant use, it purposely transforms the way many will approach their attendance at the site. The impact that is omitted from the study is the a change in the parking duration of stay. The report identifies existing use has 75% of the cars arriving at the site are onsite for less than an hour and only 10% are on-site for more than two hours. The delivery of the goals for the new Sydney Fish Market will mean this profile will change dramatically.

Even if the seafood trade businesses, staff, public, tourists and tourism operators actually follow the travel plan and don't create considerably more journeys by vehicle to site, the new businesses on site will fail if the majority of visits are little more than half an hour. This desired and necessary change of pattern from the change in land use significantly increases the car parking demand (from the same number of private vehicle mode trips).

The report lacks the transparency of the reference data to enumerate a potential alternative duration of stay behaviour. Conceptually, if the behaviour shifts such that 30% of visitors remain onsite for less than 15 minutes, but instead of 45% staying less than an hour and more than 15 minutes, this is only 15% and the other 30% of this group stay for twice as long as they do now, then the same cars conservatively need over 100 more car spaces. The real behaviour is likely to have a significantly greater impact on car parking demand.

Scope of analysis

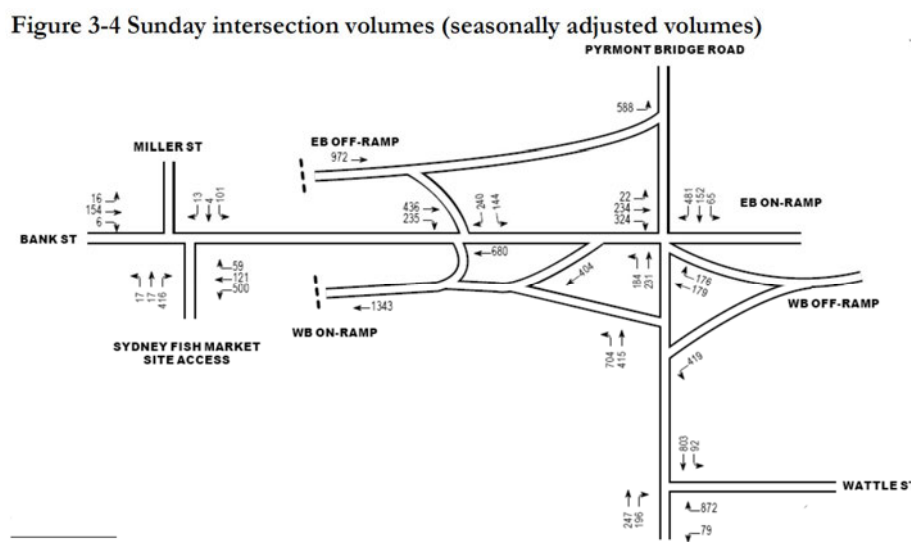
The older reports identified that the way the intersection of Pyrmont Bridge Road and the Banks Street with the ramping on and off the Western Distributor needed close attention. Except for the colouring of the location in figures 75, 76 and 77 in the EIS's traffic study the location is ignored. The intersection is not directly related to the new entry and exit point for the site, but the traffic that currently uses it will be relocating their path through it and may have an unacceptable impact.

Moreover, while this impact is given no consideration, the impact on journey-to-work for the increased staff numbers (likely to double at current times and be perhaps 10 times the current scale for hours after 4pm) is not considered either.

Focusing on the Western Distributor, the redistribution of the traffic is non-trivial. This occurs as the intersection is not a simple four-way two-cycle set of lights. Materially, the ramp network is specifically designed to accommodate heavy vehicle movement into and out of Bank Street that it is not designed to support for entry into Pyrmont Bridge Road and also the lane system supports separation of traffic volumes. It is not clear if this is purposeful or not, but the existence of the Sydney Fish Market before the construction of the Western Distributor suggests it may have been part of the design. The relocation destroys the benefit of these design attributes and comingles traffic not otherwise currently conflicting with each other.

The first feature of the road network servicing the Sydney Fish Market is the entrance to the market on Bank Street. The lack of practical origin and destination to the north of the site means that while right-hand turns are available for entry to the site from Bank Street, they represent less than 1% of the traffic. The reverse is not quite the case with the 2010 study showing that 7% head either straight into Miller or left on Bank (possibly to rat-run congestion for the right-hand turn onto Bank). This means that 99% percent of the traffic enters on a non-conflicted left-hand turn (with little pedestrian conflict due to the lack of active land use to the north). Taking the forecast traffic distribution as shown in figures 71 and 72 at face value and considering them in reverse, some 65-75% of the arriving traffic at the new site will be seeking to enter via a conflicting right-hand turn (from a single c.80m turning bay) on a reasonably high-volume registered road. The intersection at the entrance of the existing site with its design efficiency achieved a 'D' LoS in the 2010 report – what then is expected to occur when 340 cars are seeking to turn right into the site between 11:00 am and midday on the weekend as the report indicates will occur?

The second feature of the road network servicing the Sydney Fish Market is the on and off ramps to the Western Distributor in advance of the at-grade intersection with Pyrmont Bridge Road and the lane on the westbound off-ramp that solely serves Bank Street. The figure below from the 2010 report shows the road network and recorded traffic counts.



In order to interpret the diagram a few assumptions need to be considered:

- i. the 404 cars accessing the west-bound on-ramp from Bank Street have exclusively come from turning right from Pymont Bridge Road (eastbound Pymont Bridge Road traffic have the dedicated ramp carrying 704 vehicles, there is no northbound traffic at grade and vehicles coming from the west-bound off-ramp have just chosen to leave the Western Distributor and won't be using the on-ramp);
- ii. the 184 cars turning right into Bank from Pymont Bridge Road are equally sourced from Wattle and further west on Pymont Bridge Road (as 16% of the traffic flow);
- iii. the cars exiting the existing site and joining the east-bound on-ramp will once relocated for their origin at the new site will use Wattle Street and Fig Street to reach their destination (given that there is no right-turn into the on-ramp from Pymont Bridge Road);
- iv. None of the traffic turning left into Wattle Street from Pymont Bridge Road originated at the Sydney Fish Market nor from the west-bound off-ramp as better routes exist (and as such allocating the source as 50% Pymont Bridge Road from the east and 50% Bank Street not from the Sydney Fish Market); and
- v. None of the traffic is journey to work as the figures are from Sunday.

The first point to note is that 72% of the traffic northbound on Bank Street is Sydney Fish Markets related (62% of the southbound). Taking this as applying to each of the traffic flows across the displayed road network, the relocation has the following effects:

1. The volume of traffic westbound on Pymont Bridge Road at Wattle Street increases from 895 vehicles to 1,028 (a 40% increase as destination but a 25% decrease as an origin making for an effective 15% overall increase); with
2. The volume of traffic eastbound increases after Wattle from 1,119 vehicles to 1,290 (a 41% increase as an origin but a 26% decrease as a destination for a not unsurprisingly similar effective 15% overall increase); however
3. in advance of Wattle, the eastbound increases from 443 vehicles to 670 (a 51% increase), the majority of which uses the right-hand turn into Wattle Street which increases from 196 to 365 (an 86% increase); and
4. the west-bound on-ramp from Pymont Bridge Road increases from 704 vehicles to 873 (a 24% increase), the off-ramp turning into Pymont Bridge Road increases from 419 vehicles to 548 (a 31% increase); and
5. the left-hand turn from the east-bound off ramp into Bank Street increases from 144 to 317 (making for a 120% increase);

It is obvious that these types of impacts would have a significant and material effect on the road network and may well represent an unacceptable outcome. Materially the effects above are due solely to relocating the traffic volumes of 2010 that utilised the existing car parking capacity from Bank Street to Bridge Road. This analysis does not consider the change in use or the change in scale of the new Sydney Fish Market (or the behaviour that may arise from prospective visitors arriving at site to find the car park full and then head to the proposed overflow parking mostly back across this intersection in Pymont).

There are more detailed points regarding the scope of the analysis, but these two above represent clear shortfalls. It is unclear how the Secretary and the Department are expected to consider the impact without the scope of the analysis to address what was required for the previous development proposals.

Travel Plan

The EIS represents that multiple measures will be taken to reduce private car travel as a mode for the journey to site. This goal is admirable, but the approach assumes that the existing staff, new staff, wholesale customers, tourists, tourist operators and Sydneysiders collectively change their behaviour in response.

The parking is already expensive, but it is just as likely the short stays are a function of the lack of attraction of the current retail and restaurant offering than it is a function of cost. The staff may obtain free parking, but many will have no alternative for their journey-to-work given the hours they work (and by all reports the location of their origins). The new staff maybe able to make new choices, but this does not mean there will be an offsetting of existing demand behaviour.

The current site informally accommodates heavy vehicles and buses at all times of day and night, an option unavailable in the more organised design of the parking and circulation of the new Sydney Fish Market. The approach to provide drop-off and pick-off lane of perhaps 120m in length, while potentially creating an airport-like traffic impact, also requires all the buses to be heading eastbound on Pyrmont Bridge Road, a route not currently used and one with limited options to access (the only access point being a conflicting right turn from Wentworth Park Road or a left-turn from Ross Street approach from The Crescent or a rat-run through Glebe turning right at Taylor just after the site, making their way through the narrow streets to Glebe Point Road and turning left back onto Bridge Road). Even if they do make it to the site eastbound on Bridge Road, what then? The plan is apparently to have the full size buses park in the vicinity. Where is there such capacity, how does the bus circulate to and from that location and what impact does that cause on the traffic?

The proposed use of offsite car parks is questionable. The school's oval is not a practical overflow option for every weekend (and possibly every day), the Hymix facility is part of the redevelopment of the Bay Precinct and will no longer have such parking, the balance are car parks close or over a kilometre away where the journey as a pedestrian means crossing the Pyrmont Bridge Road and Bank Street intersection or alternatively the Wattle Street and Bridge Road intersection. The potential numbers of pedestrians would far exceed the capacity of those intersections and result in dangerous conflicts and traffic impacts over above the new circulation of traffic redirected from the new site to the parking in Pyrmont.

The Travel Plan seeks to manage the containment of the car parking at less than 50% of the requirement of the Sydney Fish Markets Master Plan, if this is to be achieved the solutions and their impact should be fully resolved before accepting the design approach the Travel Plan argues to justify.

Access and Operations

In the event that the impact on the intersections noted above is acceptable and the entrance of the relocated Sydney Fish Market can be located off Bridge Road, there remains the detail as to this access point. The discussion above notes the shift to a dominate right-hand turn conflict for entry. The diagram as extracted from the 2010 study also highlights the dominance of the overall traffic on Bank Street by the Sydney Fish Market.

A causal observation of the traffic congestion at the Sydney Fish Market away from peak periods still shows queuing that trails up the eastbound off-ramp of the Western Distributor and back along Bank Street until the intersection with Pyrmont Bridge Road. This queuing applied to the existing two-lane flow of Bridge Road at Wentworth Park Road and the new demand on Wentworth Park Road as an alternative access and egress pathway has not been analysed. It is reasonable to assume that the right-turn bay will be far from sufficient given that their own modelled peak hour volume suggests over 12 cars per light-cycle seeking to enter the site.

The internal circulation also appears to be contrary to the standards to support sufficient capacity at the exit of the site after the boom-gates to maximise the efficiency of the green-cycle for the egress from the site. Again, a peak demand of near 500 cars per hour exiting with one lane servicing 65-75% of the volume and the other the balance, means that a single lane must seek to process 375 cars an hour which assuming a 2 minute cycle means that 12-13 cars need to exit each green aspect. Even at a generous 45 second allocation, this is only 3.6 second per vehicle. Given the co-mingling of heavy vehicles using both exit lanes and both lanes of Bridge Road, this performance will not be possible.

An inspection of the proposed design provides perhaps 60m of lane length from the car park circulation and no obvious boom gate location. The lanes are at first upward to a grade higher than the street level and then down to the intersection. This design limits the capacity for the site traffic to use the lane and lowers the efficiency to the point where it should be expected that at most times when demand is above 200 cars per hour in exits the car park will be in grid lock. The EIS's own forecast would suggest this is 1-2 hours every weekday and 10 hours each day of the weekend. Naturally if the cars can't exit, they can't enter with the obvious flow on impacts through the road network. In this respect, the market becomes a victim of its own success.

In addition to this un-explored risk, while the EIS shows the sweep paths of the articulated vehicles for the access point, it does not show the heavy rigid vehicle path nor any of the internal sweep paths. On a superficial inspection of the Basement Level plans it is far from obvious how the articulated vehicles enter as shown in the traffic study and then turn around and reverse into the loading dock, or how the larger rigid vehicles pass across this activity and reach and access the extended raised loading dock area. Moreover, the sweep path represented in the traffic study for the exit of an articulated vehicle has it starting from a point within the site that such a vehicle can never get to as it represents a location on the up-ramp from the lower car parking levels where such a vehicle can never circulate.

The access for waste management vehicles through this and how they load the waste is also difficult to interpret along with how emergency vehicles, particularly those addressing a fire emergency are expected to access the site and address the emergency at hand. The Glebe Fire Station maybe very close, but if the car park is grid locked and the roads impacted, even after the emergency vehicle arrives, where does it park and how do the emergency service personnel respond to a fire in the Cooking School?

Lastly, even with nominating that 417 spaces is enough for staff and retail customer parking. The previous studies show that trade vehicle demand as articulated vehicles, large rigid and smaller trucks and vans exceed the 5, 16 and 138 vehicle capacity provided. The doubling of the retail and restaurant space will clearly increase trade related traffic and while loading dock management to shift non-core fish market trade traffic to hours away from the wholesale market's peak will help, it would seem unlikely to be suffice. In the absence of any data, analysis and forecast, how can it be clear what the impact is?

Conclusion

Everyone wants a new Sydney Fish Market and few care where it is beyond it being on the harbour and probably with a north-westerly aspect if possible. We all want the new market to be accessible and a place we wish to visit more often and for longer. We can live with crazy impacts for Christmas and Easter and a few other times of the year – it's almost part of the identity of Sydney given the international press it gains.

What isn't going to be acceptable is causing a crazy impact every week. What isn't acceptable is progressing the assessment of the proposal without the data, the analysis and the forecasts of what it will do, good and bad. What isn't acceptable is not incorporating the impact of the redevelopment of the existing site and the rest of Bank Street where those impacts are cumulative.

It would also be nice if it could retain the character that makes it not a Westfield or Mirvac or other operator's shopping centre. This isn't just about not having a Woolworths or Coles on site and the absence of a clothing store or bank branch. The target back in 2012 or 2013 when the journey to the current proposal began was to emulate the best markets, specifically Borough Market in London and the Boqueria Market in Barcelona. Unfortunately, the design doesn't appear to target this anymore. If that is all that is missed in the transformation, perhaps that will be OK.

Attachments

Transport Management and Accessibility Plan prepared for the Sydney Harbour Foreshore Authority in respect of the 2005 approved Sydney Fish Market Master Plan (Masson Wilson Twiney, 2003)

Transport & Accessibility Impact Assessment prepared for the Sydney Fish Markets in respect of the Part 3A application for the redevelopment of the Sydney Fish Markets (Halcrow 2010)

TRANSPORT MANAGEMENT AND ACCESSIBILITY PLAN

Sydney Fish Market Master Plan

**March 2003
FINAL DRAFT**

**Prepared for
Sydney Harbour Foreshore Authority**

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Executive Summary

Introduction

This Transport Management and Accessibility Plan (TMAP) for the proposed redevelopment of Sydney Fish Market was commissioned by Sydney Harbour Foreshore Authority (SHFA) and prepared by Masson Wilson Twiney (MWT). It forms part of the master plan documentation that covers traffic and transport, along with the Traffic and Transport Analysis Report prepared by Maunsell Australia.

Context

The Sydney Fish Market is located within Pyrmont at the south eastern corner of Blackwattle Bay, approximately 1.2km west of Sydney's Town Hall.

Strategic planning policies and instruments that relate to the transport aspects of the master plan are: the current transport strategy for Sydney, *Action for Transport 2010*; SEPP No 66 – *Integration of Land Use and Transport*; SREP No 26 – *City West*.

At a local level, the UDP for the Ultimo-Pyrmont Precinct provides more detailed requirements for development, including the preparation of a master plan for the Sydney Fish Market site, movement networks, parking requirements and the retail strategy for the precinct. Sydney Fish Market is identified as one of three Retail and Leisure Nodes within the plan.

Around the site there is a process of major urban regeneration underway. The area's proximity to the city, the amenity of the public realm and available facilities are major advantages of the Ultimo-Pyrmont area. These locational attributes are partly behind the area's very high degree of worker self-containment: 70 per cent of new residents with work in Ultimo-Pyrmont or the CBD.

Previous market research (Leyshon, 1997) found that 20 to 45 per cent of Sydney Fish Market's regular customer base is within 5km of the site.

Existing Site Conditions

Currently the site is a complex mix of complementary activities including distribution, processing, wholesale and retail; the site provides a focus for the NSW seafood industry. The site's location and nature of uses results in a relatively high mode split to non-car modes, although mechanised public transport has a small share of this travel.

Traffic generation from the site is highest in the middle of the day, out of the road system's peak periods. During the evening peak hour, site generated traffic accounts for just over 3 per cent of the traffic using the Pyrmont Bridge Road, Bank Street and Western Distributor Ramp intersection.

Public transport supporting the site provides a good degree of accessibility and this increases during the day as site usage increases.

Residential, business and leisure landuses around the site all contribute to the low car mode share. For residents of Ultimo-Pymont, the site provides a neighbourhood node retail function; given the high income demographic of the residential area, this role spills over into the ready to eat food market. For employees of surrounding sites a similar function is provided for the ready to eat market. Proximity to leisure attractions of Darling Harbour and Pymont encourage chained trips by visitors from overseas and interstate, as well as Sydney-siders on a day out.

This large walk-in market is supported by the high quality pedestrian facilities provided in the general area, except for the immediate environs of the site. Once east of Bank Street, walking through Pymont is easy and a pleasure.

Existing car parking on the site is currently over-patronised. This requires better management and control, as well some additional supply. There is overspill parking on surrounding streets.

Future Conditions Around the Site

The existing site access intersection is projected to perform unsatisfactorily in the morning peak in 2007 with no change to the current level of site traffic generation.

On-street parking availability for visitors is likely to reduce as the number of residents' cars parked on-street increases.

Additional development, population and employment in the area may result in:

- A possible increase in bus service frequencies;
- More comprehensive bicycle facilities;
- An expanded pedestrian network, especially with the completion of Jacksons Landing;
- More local services and facilities, which should moderate the demand for vehicular travel by residents and workers for some journey purposes.

The effect of a more densely developed walk-in catchment for Sydney Fish Market would be to increase the importance of walk as site access mode by about 5 per cent to 21 per cent on a weekday and 18 per cent on a weekend in 2006.

There is also the potential for an extended light rail network with an enlarged catchment to the west, which would increase visitation to the Sydney Fish Market by this mode.

There is little chance of a ferry service being introduced to Blackwattle Bay without it forming part of a packaged product with local attractions.

The foreshore lands around Blackwattle Bay would probably be developed after Sydney Fish Market.

Proposed Sydney Fish Market Master Plan

Key features of the master plan are:

- Improved vehicular access arrangements that include removal of conflict between pedestrians and the bulk of vehicles accessing and egressing the site at Bank Street.
- Substantially improved pedestrian access and circulation:

- Lower average delays for pedestrians at the crossing of Bank Street.
- Enlarged and improved pedestrian entrances at all three major site access points for pedestrians. These all have wide, direct links to the main public area of the site.
- A walkway along the foreshore, with the ability to connect to an extended foreshore promenade around Blackwattle Bay, as and when adjoining sites are redeveloped.
- Fish Market Square would be a high volume pedestrian space supporting movements between various areas of site, rather than the current arrangement where much of this activity occurs across the car park.
- Grade separated access from the car park to retail units to eliminate conflicts with commercial vehicles.
- On-site vehicular circulation and car parking would be improved through segregation of commercial vehicles and cars.
- Improved bicycle parking facilities.
- Additional berths for boat access to Sydney Fish Market.

Proposed changes to floorspaces are in the following table.

Table A - Floorspace Schedule for Sydney Fish Market by Use (GFA)

| Use | Existing Floorspace by use Sq m | Proposed Floorspace by use Sq m | Change in Floorspace by use Sq m | % |
|---|--|--|---|-----|
| Office | 2,169 | 13,300 | 11,131 | 513 |
| Retail | 7,133 | 12,440 | 5,307 | 74 |
| Wholesale | 3,231 | 3,335 | 104 | 3 |
| SFM Area | 2,701 | 2,020 | -681 | -25 |
| Selling floor including audit, seating, crateryard, weighing sorting and data entry | 3,916 | 4,285 | 369 | 9 |
| Total floor space | 19,149 | 35,380 | 16,230 | 85 |

*Note Aggregations of the areas may not equal total due to rounding; GFA – gross floor area.
Source SHFA 5 February 2003.*

The overall efficiency of the site's movement networks would be greatly improved by the proposed master plan.

A review of the site's transport features and requirements against locational choice suggest that the current location is favourable in terms of compliance with transport policy for Sydney Fish Market.

Future Transport Demand

Estimates of traffic generation for the site are based on:

- Proposed floorspaces;
- Stringent parking provision for the proposed commercial space;
- Progressive scale of parking charges to discourage long term parking on the site;
- Reduced off-site parking;
- Existing peak retail parking rate reduced by 10 per cent;

-
- Improved access to public transport;
 - Improvements to bicycle and pedestrian networks and facilities.

Modest increases in site traffic generation are forecast during the critical morning and evening peak periods.

Peak parking supply for passenger vehicles of 993 spaces is proposed on weekends. This is based on parking rates outlined in the report.

Bicycle parking would meet the UDP for commercial spaces. For retail use three locations each with capacity for 10 bicycles; are recommended. These should be able to be expanded to accommodate 20 bicycles each and a further two locations capable of parking 15 bicycles each should be identified.

TMAP

The TMAP identifies six objectives and associated actions to reduce reliance on the private motor car as a means of access to the site. These proposals seek to achieve a set of targets covering both transport inputs and outputs.

Input Targets

- Reduce walk times between closest public transport nodes and main retail area on-site by 10 per cent.
- Reduce walk times through the site between Wattle Street and Miller Street by 15 per cent.
- Extend bus 25-minute isochrone to the intersection of Pyrmont Bridge Road and Parramatta Road.
- Average bus crowdedness in the peak periods, in the peak direction, should not increase over existing levels.
- All public transport nodes within 10-minute walk of site to have up-to-date information about services that call – including a statement that the node is disused and the location of nearest bus nodes, if that is the case.
- Parking compliance on-site to meet general levels at similar retail facilities.
- Reduce off-site, on-street parking to less than 5 per cent of site visitors who are only visiting the Sydney Fish Market site by car over the course of the day.
- Free on-street parking within a ten-minute walk of the site to be reduced by 90 per cent.
- Significantly improved bicycle parking facilities to be provided.

Output Targets

New Commercial Space - Workers

Mode share for journey to work by occupiers of the non-Sydney Fish Market office space (13,300 sq m) to have a 10 per cent lower car use (car driver and car passenger combined) than the 2001 Census journey to work data for the Pyrmont. This is a proportional decrease (i.e., if census shows 50 per cent car journey to work, target for the site would be 45 per cent). This target could then be updated with 2006 census data: as the level of car use falls over time to Pyrmont for commuters, this would increase the stringency of the target for Sydney Fish Market.

Site Visitors

Mode share for site visitors, based on site boundary counts over the course of a day (for survey period used in this report):

12 months post opening

| Mode | Weekday | Weekend |
|-------------|---------|---------|
| Bicycle | 2% | 1.5% |
| Pedestrians | 22% | 18% |
| Car | 46% | 67% |

36 months post opening

| Mode | Weekday | Weekend |
|-------------|---------|---------|
| Bicycle | 3% | 2% |
| Pedestrians | 24% | 20% |
| Car | 44% | 64% |

Peak Hour Traffic Generation

Peak hour traffic generation to be lower than forecast:

- 5 per cent lower during weekday morning and evening peak hours;
- 10 per cent lower than forecast during the middle of the day on the weekend.

Bicycle Parking

Monitor bicycle parking to ensure that vandalism and /or theft is not discouraging use of bicycle to the site. This will require site security to maintain a log of reported incidents and may require signage in the vicinity of the parking to ensure that if an incident occurs, it is reported to security.

Consultation with local bicycle users would also be a useful input to deciding if fear of theft/vandalism is a deterrent to people using bicycles to access the site.

TMAP Objectives and Actions

The objectives and supporting actions of the TMAP are summarised in the following table.

Sydney Fish Market – Draft Transport Management and Accessibility Plan

| Objective | Action | Agency | Comment |
|-------------------------------------|--|---------------|--|
| Improved Access to Public Transport | <ul style="list-style-type: none"> Examine the possibility of providing far-side termination facility for bus service from Railway Square | SFM/STA | <ul style="list-style-type: none"> Liaise with STA to identify appropriate service that might far-side terminate near Sydney Fish Market. Identify location where bus stand might be accommodated. Consider implications for overall public transport access at the site. |
| | <ul style="list-style-type: none"> Light rail extension to west | SHFA/SFM/ DOT | <ul style="list-style-type: none"> Indicate support for extension. Facilitate, where appropriate, extension. |
| | <ul style="list-style-type: none"> Bus service via Pyrmont Bridge Road | SHFA/STA | <ul style="list-style-type: none"> A bus service that covers a gap in the catchment of the site (through Glebe and Forest Lodge) would provide better service to Sydney Fish Market and other uses on Pyrmont Peninsula. |
| | <ul style="list-style-type: none"> Examine opportunity to bring bus service within site | SFM/STA/ RTA | <ul style="list-style-type: none"> Measures to allow Sydney Explorer to pass through (or closer to) site without unduly impacting existing schedule. Provision of SCATS-linked hurri call facility (esp off-peak). |
| | <ul style="list-style-type: none"> Accurate information regarding public transport services | SFM/STA | <ul style="list-style-type: none"> Ensure adequate signage in both directions between the site and transport nodes. Ensure all bus stops close to site have up-to-date information about services available and their timetables – in general, most already meet this. |
| | <ul style="list-style-type: none"> Provide taxi rank | SFM/SHFA | <ul style="list-style-type: none"> Taxi rank already on-site with complimentary phone. Provide additional taxi spaces in Master Plan. |
| | <ul style="list-style-type: none"> Examine re-establishment of ferry service to site | SFM/STA | <ul style="list-style-type: none"> SFM to consider feasibility of visitor package that could be tied-in with ferry access. Master Plan to address issues of access to ferry facilities and potential conflicts with private craft. Canvass commercial vessel operators' interest in provision of service. |

| Objective | Action | Agency | Comment |
|---|--|---|--|
| | <ul style="list-style-type: none"> Blackwattle Bay sites – ferry maintenance facility Review public transport capacity | SHFA MWT/STA/ MLR | <ul style="list-style-type: none"> A working waterfront use for one of the Blackwattle Bay sites might be as a base for ferry/charter boat operator. This may provide an opportunity for a ferry service between Sydney Fish Market and Circular Quay. Peak period ball park estimates suggests more capacity for outbound 501 in the morning peak may be required. Comments from operators required. See monitoring. |
| Encourage Cycle, Pedestrian and Boat Access | <ul style="list-style-type: none"> Provide bicycle parking Improve site permeability and connection with surrounding pedestrian and cycle networks Link to, and extend area bike network Improve directional signage in area around site | SFM SFM Council/SFM/ RTA Council/SHFA | <ul style="list-style-type: none"> Some bicycle parking already provided. Additional parking to be provided under the Master Plan, distributed around the site in close proximity to public areas. Commercial space to have UDP provision. Shower facilities to be provided as part of UDP requirement. <p>Master Plan improves site access by:</p> <ul style="list-style-type: none"> Separating vehicle and pedestrian access at Bank Street/Miller Street intersection. Improving pedestrian movement along Gipps Street alignment. Provision of foreshore promenade, which will connect adjoining sites and extend around Pyrmont Peninsula and to the west along Pyrmont Bridge Road. The site would become a more integrated part of the non-vehicle network in the area. Encourage council and RTA to address gaps in surrounding cycle network. Targeted improvements to be addressed in conjunction with RTA and Council(s). (see text for list) Enhance the existing City Map scheme, with directional signage provided to selected landmarks (that are also prominently identified by City Map). Integrate on-site signage with enhanced City Map scheme. |

| Objective | Action | Agency | Comment |
|--|--|---|---|
| | <ul style="list-style-type: none"> Tackle barrier effect of Western Distributor viaduct Address pigeon exposure issue at main site access Provide additional casual berths Parking restraint | SFM/Council/ RTA SFM/SHFA SHFA | <ul style="list-style-type: none"> Initially through the provision of better lighting and urban design along Bank Street (RTA). Bird proofing of underside of Western Distributor viaduct to reduce incidence of birds fouling pedestrians (e.g., at northwest corner of site access). Boat access expanded through the provision of additional berths, possibly through a reduction in the number of permanent berths or provision of addition facilities or shorter time limits. Need to address conflicts with potential ferry service of additional private craft traffic. Master Plan to address use of loading/unloading wharf by ferries/charter boats. Additional commercial space to have UDP parking rate. Existing retail parking rate reduced by 10 per cent. Requires support from changes to on-street parking controls and charge arrangements for off-street car parking (see below). |
| Encourage Diversity of Arrival/Departure Times | <ul style="list-style-type: none"> Possible extension of retail hours Manage arrival of product Consider other uses on the site with evening traffic generation profiles | SFM/SHFA SFM/Suppliers SHFA | <ul style="list-style-type: none"> This requires improved lighting, design and security on the site. Provide better retail range for local residents and possibly spread site access demands. Potential that additional traffic generated would conflict with road system peak during the week. Weekend nights would have lower risk of conflicts. Product to be delivered to SFM after 5.00pm on a Sunday to avoid conflicts with retail users of site. This will require consultation with suppliers. Master Plan design provides for better management of commercial vehicles and, segregation of light vehicles and heavy vehicle loading activities. Master Plan to examine possible use(s) onsite that generate traffic in the evenings, when surrounding network is lightly loaded and car park is largely empty. For example, restaurants. Integration with adjoining site(s) e.g., coal loader. |

| Objective | Action | Agency | Comment |
|--------------------------|---|---|---|
| Address Security Issues | <ul style="list-style-type: none"> Night time lighting on pedestrian routes | SFM/SHFA/ RTA/Councils | <ul style="list-style-type: none"> Better site lighting and layout as part of Master Plan. Council and RTA to improve lighting on surrounding roads and pedestrian routes, especially Bank Street. |
| Travel Demand Management | <ul style="list-style-type: none"> Provision of a broader retail offer Use of information technology Publicity and co-ordination with transport providers and surrounding attractions Management of ultra-peak travel demand Integration of site with redevelopment of adjoining sites | SHFA/SFM SFM SFM/ Transport Providers/ Pymont & Darling Harbour Attractions SFM/Council/ Transport Providers and Adjoining Site Occupiers/ Police SHFA | <ul style="list-style-type: none"> This would reduce travel by existing and future residents of the walk-in catchment who currently travel to more distant shopping facilities. SFMLive currently provides web-based marketing of seafood. SFM have a slick website that provides information about the site and the activities on offer, as well as promoting access by all transport modes. The light rail currently carries brochures for various attractions in its corridor. A comprehensive, easy-to-use attraction and transport guide for the Darling Harbour and Pymont areas to better promote multi-attraction visitation and a range of transport uses. Work with transport providers to extend hours of their service coverage – light rail currently does this. Extend hours of site's trading to spread demand – an extended period operates at Christmas and Easter. Examine remote parking – currently Hymix site used, need to consider a park and ride service, potentially at Wentworth Park, with shuttle bus provided when Hymix site is re-developed. <p>Opportunities include:</p> <ul style="list-style-type: none"> Extended non-car networks connecting sites (e.g., Foreshore Promenade). Shared use of SFM car parking to activate sites with through footfall. Create economies of scale for provision of potential public transport services. |

| Objective | Action | Agency | Comment |
|--|--|-------------------|---|
| | <ul style="list-style-type: none"> Make provision for tourist coach parking and access | SHFA/SFM | The Master Plan proposes three coach spaces. |
| Improved Parking Management and Reduced Off-site Parking Impacts | <ul style="list-style-type: none"> Introduce 24-hour parking fee collection system | SFM | SFM currently propose to introduce pay-on-foot machines for use by patrons. Boomgates to operate 24-hours per day. |
| | <ul style="list-style-type: none"> Separation of different site users | SHFA | <p>The Master Plan currently proposes to:</p> <ul style="list-style-type: none"> Separate pedestrians and vehicles at the access and provide a separate pedestrian network. Largely separate private and commercial vehicle movements within the site. |
| | <ul style="list-style-type: none"> Reduce free/cheap long term on-street parking near site | SHFA/SFM/Councils | <ul style="list-style-type: none"> The largest supply of free on-street parking is on Wentworth Park Road – approach Leichhardt Council to introduce a pay and display parking scheme (with residents excepted) in that area. Other areas in proximity to the site with free on-street parking should also have pay and display parking introduced. Convert long term parking on Bank Street (\$1.10 per hour) to maximum time limit of 2 hours and increase charge to \$2.20 per hour). |
| | <ul style="list-style-type: none"> Adjust scale of parking charges | SFM/SHFA/Councils | <ul style="list-style-type: none"> Introduce a flag-fall for pay and display parking in close proximity to site (say \$1.00) Reduce the cost of the first hour's parking on-site (to, say, \$2.00). |
| | <ul style="list-style-type: none"> Restrict the use of parking by visitors to surrounding sites | SFM/Councils | <ul style="list-style-type: none"> Monitor short stay parking on-site by non-site users. If an issue is identified, introduce a system of higher parking charges for users who do not make a specific level of purchase on-site. |
| | <ul style="list-style-type: none"> Parking compliance | SFM | <ul style="list-style-type: none"> The proposed car park arrangements in the master plan are expected to result in improved compliance with parking regulations. If non-compliance emerges as an issue after site has been redeveloped then SFM should gain accreditation to issue enforceable parking infringement notices. |

| Objective | Action | Agency | Comment |
|-------------------|--|------------------------------|--|
| Monitor Situation | • Review mode shares and parking situation one and three years after completion of the Master Plan | SFM/Council/ Planning NSW | • Transport conditions to be monitored to allow assessment against targets. Corrective actions may be required. |
| | • Monitor bicycle parking on an ongoing basis | SFM | • Should bicycle theft/vandalism become a deterrent to use of bicycle as a mode of access to the site, then introduction of active security measures, such as CCTV, may be required. |

1. Introduction

This draft Transport Management and Accessibility Plan (TMAP) for the Sydney Fish Market Master Plan was commissioned by Sydney Harbour Foreshore Authority (SHFA) and prepared by Masson Wilson Twiney (MWT). It forms part of the transport analysis for the proposed redevelopment of the existing Sydney Fish Market site. A separate design report was prepared by Maunsell Australia¹, covering proposed site access and circulation arrangements under the master plan.

This report provides a summary of the analysis undertaken by MWT to establish the site within its context in Chapter 2. It describes the existing use of the site and transport conditions in Chapter 3. Proposed and likely changes to land use and transport in the area surrounding Sydney Fish Market are discussed in Chapter 4 in order to estimate likely future transport conditions. Alterations to the configuration of the existing site under the proposed master plan are discussed in Chapter 5, which identifies the transport implications of access arrangements and site layout. These relate especially to their influence on non-car modes. Chapter 6 provides an estimate of likely future traffic and parking demands for the site, under the Master Plan. The TMAP's objectives and actions are described in Chapter 7; this identifies a series of objectives and related actions that are aimed at reducing the private vehicle mode share of the site. Two sets of transport related targets are developed: one set relates to transport system inputs; and the other relates to transport outcomes.

The figures referenced in the report are located at the end of the text.

A series of appendices contain more detailed information that is referred to in the text.

¹ Traffic and Transport Analysis – Updated Report, Maunsell Australia (February 2003)

2. Site Context

2.1 Location

Sydney Fish Market site is located within Pyrmont at the south eastern corner of Blackwattle Bay. It is approximately 1.2 kilometres west of Sydney Town Hall. Figure 1 shows the location of the site.

2.2 Strategic Planning Policy/Plans

2.2.1 Action for Transport 2010

The State Government's current transport strategy for Sydney is set out in *Action for Transport 2010 – an Integrated Transport Plan for Sydney*. This plan identifies improvements to the transport infrastructure over a ten year period including the construction of new rail and road links and the introduction of new trains, buses and ferries. It targets a number of challenges faced in Sydney by seeking in broad terms to:

- Reduce traffic congestion;
- Improve air quality;
- Reduce greenhouse emissions;
- Increase public transport use;
- Expand CityRail capacity;
- Make freight more competitive; and
- Improve road safety.

A ten point action plan for meeting these challenges is presented in the document as follows:

1. Getting the best out of the Sydney system;
2. Improving Sydney's air quality;
3. Reducing car dependency;
4. Meeting the needs of our growing suburbs;
5. Getting more people on public transport;
6. Safeguarding our environment;
7. Making space for cyclists and walkers;
8. Preventing accidents and saving lives;
9. Making freight more competitive; and
10. Giving the community value for money.

The plan sets specific targets for limitation on the growth of private vehicle travel as follows:

- Halting the growth in per capita vehicle kilometres of travel (VKT) by 2011; and
- Halting growth in total VKT by 2021.

These VKT targets are the same as those articulated in the government's *Action For Air: The NSW Government's 25 Year Air Quality Plan* (Environment Protection Authority 1998).

Action for Transport 2010 makes specific provision for CBD traffic congestion relief plus improvements to bus and pedestrian movements in the Sydney CBD through the construction of a Cross City Tunnel.

2.2.2 State Environmental Planning Policy No 66 – Integration of Land Use and Transport

The aim of the policy is to:

- Improve access to housing employment and services by walking, cycling, and public transport,
- Improve the choice of transport and reducing dependence solely on cars for travel purposes,
- Moderate growth in demand for travel and the distances travelled, especially by car,
- Support the efficient and viable operation of public transport services,
- Provide for the efficient movement of freight.

The policy applies to various LGAs in the state, including Sydney and Leichhardt, i.e., it applies to land occupied by Sydney Fish Market. The planning objectives of SEPP 66 applies to developments of more than 1,000 square metres. As the development proposed in the master plan exceeds this threshold, the provisions of this policy apply.

2.2.3 Sydney Regional Environmental Plan No 26 – City West

Ultimo-Pyrmont Precinct is one of four precincts covered by SREP 26.

The aims of the SREP are to:

- Establish planning principles of regional significance for City West as a whole with which development should be consistent; and
- Establish planning principles and development controls of regional significance for development in each Precinct created within City West and by subsequent amendment of the plan; and
- Promote the orderly and economic use and development of land within City West.

The plan sets out the regional role of City West and the various land use activities. It specifically addresses Movement and Parking:

- Travel to be minimised through provision of a range of activities;
- High degree of accessibility to be provided and encouragement of walking, cycling and public transport;
- It is to facilitate the provision and operation of a regional public transport network;
- Developments (specific mention of employment uses) are to be within capacities of existing and proposed public transport and arterial road systems.
- Impacts of vehicular movement are to be consistent with development of a high-quality pedestrian environment within the street system.
- Parking controls are to support public transport strategies of Government and to reflect road network capacities.

Planning Principles for Ultimo-Pyrmont Precinct:

It is proposed to significantly increase residential population in a mixed use development pattern. The area will have a range of demographics, partly through the provision of a range of dwelling types, including affordable housing. The regenerative nature of the development is outlined: making use of existing under-utilised buildings and land that is either vacant or has outdated facilities is identified.

The public domain is to provide for a range of recreational opportunities for residents and workers. This is to be supported with coordinated pedestrian and cycling networks, with access to major natural features.

The role of urban development plans that make more detailed provisions relating to development is outlined. The Urban Development Plan for Ultimo-Pyrmont Precinct is discussed in the next section.

2.3 Local Planning Policy/Plans

2.3.1 Urban Development Plan for Ultimo-Pyrmont Precinct 1999 Update

The UDP sets out the details of how development in Ultimo-Pyrmont will support and implement the objectives of SREP26. Of specific interest to the current study is:

- The urban framework for the Precinct – the Sydney Fish Market site is identified as residential-business. It also identifies a possible future ramp to the Western Distributor from Wattle Street. Amendment No.9 has removed residential from the strip of land along Bank Street, including the Sydney Fish Market site.
- Land requiring the preparation of master plans is identified – this includes the Sydney Fish Market site.
- The Gipps Street (existing) and Miller Street (to be re-instated) view corridors are shown (Map 10)².
- The retail, business and neighbourhood strategy is in Chapter 6 of the UDP. This is discussed in more detail in Section 2.6 of this report.
- Sites are nominated where reduced car parking provision applies (Map 13). These are generally along the light rail alignment. The parking rates applying to business development in the various areas of the Precinct are presented (Map 14). The rate applying to the area that contains Sydney Fish Market has a nominated rate of 1 parking space to 150 square metres of gross floor area for commercial use.
- Access, parking and circulation is outlined for pedestrians (Map 16), for people with disabilities (Map 17) and cyclists (Map 18). These are discussed in further detail below.
- The public domain network (Map 15) shows three areas within or in close proximity to Sydney Fish Market. These are also discussed further below.

Circulation Networks

In the vicinity of Sydney Fish Market the pedestrian network comprises:

² Note that the Map numbers here refer to maps in the UDP – these have not been reproduced in this report.

-
- Pyrmont Bridge Road along the southern boundary of the site, linking Glebe to Pyrmont Bridge as a major through route with the CBD to the east. It is the main east-west link: north of it Pyrmont is a peninsular, with Blackwattle Bay preventing access from/to the west; and south, the topography and physical barriers (e.g., the Western Distributor) prevent effective east-west movement until the alignment of Quarry and William Henry Streets.
 - The proposed foreshore promenade along the western shore of Blackwattle Bay, which passes along the western edge of the site, as a northerly continuation of Wattle Street. This is also designated as a major through route. The foreshore promenade is shown as connecting with the footway across the ANZAC Bridge.
 - Site accesses are shown as continuations along the alignment of Gipps Street at the south eastern corner of Sydney Fish Market and from Miller Street at the north eastern corner. These are designated as major routes.
 - Bank Street, along the edge of the site is nominated as a local route, whilst Miller Street and Bank Street north of the site are designated as a major route.
 - Harris Street is the main north-south through route.

Access routes for people with disabilities near Sydney Fish Market are: the proposed foreshore promenade, Pyrmont Bridge Road and Bank Street. Miller Street is also nominated as a major route with access to Pyrmont Bridge.

Cycle routes are designated as either commuter or recreational routes. The proposed foreshore promenade would provide a recreational route along the western side of Sydney Fish Market, connecting commuter route along Pyrmont Bridge Road.

Public Domain Network

Primary public domain areas identified in the Ultimo Pyrmont UPD in close proximity to Sydney Fish Market are:

- Fish Market Square, which is to be integrated with the foreshore promenade along the western edge of Sydney Fish Market (P5);
- Waterfront Park on Miller Street alignment (L15) a local park on the northern boundary of the Sydney Fish Market site; and
- Corner of Bulwarra Road and Gipps Street – a redeveloped pocket park that will provide connections for pedestrians on the eastern side of the light rail alignment near Sydney Fish Market.

2.3.2 Jacksons Landing Master Plan

The recently amended master plan provides details of the proposed redevelopment of the large site at the northern end of the Pyrmont Peninsula.

Landuse

1,400 dwellings, including some existing. These will comprise, terraces, town houses and apartments with a mix of sizes from 1 to 4 bedrooms. The projected population is for the development is between 2,800 and 3,300 people. There is approval for 38,000 square metres of business space, which would support from 1,000 to 1,500 jobs. Public open space of 37,570 square metres is to be provided. There is also the proposed widening of

Bowman Street from 2 to 3 lanes. This would facilitate access by larger vehicles, such as buses.

In terms of retail development, the master plan states that “Jacksons Landing retail should not compete with the facilities in John Street Square and are complementary to surrounding neighbourhood facilities”.

The master plan anticipates that the development will attract a different demographic to the existing population: more home owners; an older age profile; and higher proportion of families with children. Some of these trends are already evident within the broader Ultimo-Pyrmont Precinct as described in the Post Occupancy Survey (refer to Section 2.5).

Transport

The master plan notes that the plan would:

“...contribute to the implementation of other services, such as the introduction of ferry services...” (page 17, Section 2.4, para 2)

The regional road hierarchy, based on UPTTAPS is shown on Figure 3.1 of the master plan. This identifies Bank Street, Bowman Street, Harris Street as providing the local distributor function for the western half of the peninsula; Pyrmont Bridge Road providing a sub-arterial road function; and the Western Distributor providing the arterial function. Figure 3.2 of the Master Plan presents the Jacksons Landing road hierarchy: Bowman Street is the main spine road connecting Bank Street and Harris Street. The other roads within the development connect to Bowman Street.

Projections of morning and evening peak traffic generation by Jacksons Landing, at completion of development are included in the master plan. For Bank Street this shows that during the morning peak hour the site would be a generator of traffic (240 vehicles southbound and 100 vehicles per hour northbound). The evening peak hour is the reverse of this.

Site pedestrian links connect to Bank Street and the proposed foreshore promenade (which continues through Jacksons Landing to the east). The bicycle network uses Bowman Street as a commuter route; the proposed foreshore promenade is nominated as a recreational route; and connection to the ANZAC Bridge cycleway is proposed via the Quarrymaster Drive ramp and a link to the corner of John Street and Jones Street within Jacksons Landing.

Public transport provision for the site identifies a proposed ferry stop at Elizabeth Bay; a possible future bus route along Bowman Street, connecting Bank Street to Harris Street and the light rail stop at John Street Square.

The proposed parking provision for the residential element of the site are maximums as per the UDP. For business uses a rate of 1 space to 150 square metres of gross floorspace is nominated.

2.3.3 Ultimo-Pyrmont Traffic, Transport and Parking Study Stage II (April 1997)

This study investigates arterial transport issues in Ultimo-Pyrmont; as such it considers physical and management options for handling arterial movement needs whilst improving local amenity and minimising negative impacts of the options. It follows on from an earlier Stage I study.

Issues identified were:

- Traffic dominates the environment in certain locations, with heavy vehicles a major contributor to this issue. However the study notes that a proportion of the heavy vehicles are currently generated locally, and this proportion and number will decline in the future as construction activity subsides and local industry re-locates. The topology of the road network results in Wattle and Harris Streets operating as a one-way pair between Parramatta Road (and the west)/Central Industrial Area (CIA) and the Western Distributor to either the Victoria Road alignment or the Harbour Bridge or CBD. The Wattle Street route connects to the Western Distributor (for westward movement) via Pyrmont Bridge Road and the westbound on-ramp adjoining Sydney Fish Market.
- The inadequacy of local bus services (at the time) is identified and improvement of public transport is identified as critical. The study was undertaken pre-light rail service introduction.
- Barriers to walking and cycling needed to be addressed. Physical barriers, such as Darling Drive lead to severance as well as
‘...any sense of overall spatial community cohesion is severely limited by the traffic levels and associated “engineering” (structures, ramps, etc;)’ and access to bridges (cycling is now permitted on Pyrmont Bridge).
- Rat runs, facilitated by ramps on and off the Western Distributor were seen as an issue, which acts as a negative trade-off for the access to the peninsula that they do provide.

The study investigated 25 different options to address transport issues. A number of the options would involve changes to traffic arrangements near Sydney Fish Market, including Wattle Street ramps and the closure of Pyrmont Bridge Road at Wentworth Park. Also Option 23 examined the greater use of Foreshore Road (Bank Street, Bowman Street and Pirrama Road) to provide the main traffic distributor function for the peninsula, taking traffic out of the middle of the area (i.e., off Harris Street and Pyrmont Bridge Road).

2.4 Surrounding Landuses

The Ultimo Pyrmont area is in the process of a major urban regeneration “campaign”. The emerging transformation of this area is staggering in its speed and scale.

From a rather down-at-heal area with some industry, partially derelict land and port facilities, rundown warehouses and a sense of isolation twenty years ago; the area has re-appeared as a desirable residential address with new apartment buildings and conversions of large and historic warehouses (such as Goldsbrough Mort’s old wool store). In addition, there has been an increase in employment and commercial activity in the area.

Its proximity to the city is a major advantage of the Ultimo/ Pyrmont area. Another attraction is the amenity of the public realm and facilities available/about to become available.

- Darling Harbour is an integral part of the neighbourhood, with its Harbourside development, open space and the National Maritime Museum;
- The Power House Museum, Star City Casino are also part of the neighbourhood;
- Pyrmont Point Park, Community Park, Pyrmont Bay Park, Wentworth Park, along with additional open space as part of Jacksons Landing, provide large amount of open space with ready access to the waterfront.

A brief description of major existing surrounding landuses is provided below³.

- ***Australian National Maritime Museum*** – located at 2 Murray Street Darling Harbour, the museum has an extensive collection relating to Australia’s maritime heritage and a collection of vessels, including decommissioned destroyer and submarine. Each year the museum stages an extensive series of temporary exhibitions and hosts visiting ships of interest. The program has an extensive educational element with numerous school groups touring the museum. In 2000/2001 the Museum attracted 464,188 visitors, including 45,956 people undertaking a visitor program (educational tours). An adult entry ticket costs between \$10 and \$20 depending on the extent of the intended visit. It is open 7 days a week between 9.30am and 5.00pm. The Museum’s website lists available access modes – light rail to Pyrmont Bay Station, Sydney Explorer Bus to stop 19, Sydney Buses 888 Circular Quay-Star City, CityRail train to Town Hall and walk across Pyrmont Bridge, Monorail to Harbourside, Sydney Ferries to Pyrmont Bay/Darling Harbour, Matilda Rocket boat to Darling Harbour. Discounted parking at Harbourside Carpark is also available through the museum.
- ***Sydney Convention & Exhibition Centre*** – these are managed as an integrated exhibition and meeting venue with 6 exhibition halls provide 27,200 square metres of display space and the Convention Centre can be configured to run 30 meetings simultaneously. These have on-site parking for more than 900 cars. There are currently 30 events scheduled for September, October and November 2002 and 22 events scheduled for 2003. Approximately 700 staff are employed at the Centre.
- ***Harbourside Shopping Centre*** – open 10.00am to 9.00pm 7 days a week providing specialty shops and cafes, bars and restaurants. The website for this attraction promotes use of light rail and monorail for access, as well as bus 443 and 888. There are temporary berths available for people visiting by boat. The car park for shopping centre is under the nearby Novotel with entry from Murray Street, with charges up to \$18 for a day.
- ***Novotel Darling Harbour*** – located on Murray Street, with 525 rooms and a large public car park are located underneath.

³ The information presented here was drawn largely from relevant websites for the attractions in August 2002.

-
- **Star City Casino** – this is located east of Pyrmont Street and south of Jones Bay Road. The site includes a Casino, hotel, bars, restaurants and two theatres. There is on-site car park and reference to Harbourside Car Park and Harris Street Car Park. The Casino is a major employer in the local area. The Casino has an enclosed, high standard transport interchange for light rail and buses.
 - **Powerhouse Museum** is located on Harris Street between Macarthur and William Henry Streets. This institution houses a large collection of technology based exhibits. It offers discounted car parking for visitors in the Entertainment Carpark (\$9). The museum's website describes transport options including rail and walk from Central; bus, monorail and light rail are also referred to. In 1998 624,333 people visited the museum. The busiest day on record was Australia Day 1994 when 16,631 people visited the museum. In 2000/2001 469,135 people visited the museum; visitation levels have been relatively flat over the past five years, at least. An adult ticket costs \$10. The museum employs approximately 450 staff.
 - **Wentworth Park** – open space, playing fields and greyhound race track with grandstand and associated facilities (3000 seat grandstand, and substantial area of parking available – at a race meeting on Saturday evening on 31 August 2002 there were about 300 people in attendance and some 130 cars parked on Wentworth Park plus some on-street parking⁴. Two 10-race meetings are held per week: Saturday and Monday evenings
 - **Sydney Secondary College, Blackwattle Bay Campus** – on the site of the former Glebe High School, which is being reconfigured as a co-educational (selective and comprehensive) campus for years 11 and 12. The college will draw from Balmain and Leichhardt High Schools, which will become 'junior' high schools (Years 7 to 10). The college will focus on the media and arts and is seeking to establish links with local firms, Sydney University and local TAFE colleges. Although currently in operation, the reconfiguration of the site is expected to be completed in January 2004. There are about 300 students currently attending the College. This is expected to increase to 700 to 800 students after the re-configuration of the site is completed.
 - **University of Technology Sydney** – Broadway and Haymarket Campus, relatively close to site, with associated student population in the surrounding neighbourhoods. Other educational institutions include Sydney Institute of Technology and Sydney University, a little more distant to the south and south west.
 - **Broadway Shopping Centre** – located to the south of Sydney Fish Market on the corner of Broadway and Bay Street at Glebe, it comprises two supermarkets (open till midnight), 12 screen cinema, food court, 120 specialty stores, banks and post office, kindergarten, discount and sports stores, 3 hours free parking ("4 if you catch a movie"). This shopping centre is the nominated sub-regional retail node (along with Paddy's Market) for the Ultimo Pyrmont Precinct as nominated in the UDP (refer to Section 2.6). Market research with residents of the area (refer to next section) indicates that over 60 per cent shop at this centre.

⁴ Based on site visit by MWT for the period 7.00pm to 8.30pm.

Of note is that the area has a large number of attractions, especially for leisure, as well as educational institutions. Information about them is largely drawn from websites of the individual attractions and a Darling Harbour website. There seems to be a need for more comprehensive visitor information about the peninsula and Darling Harbour area as a destination, including transport services available and promoting possibilities of link visitation to a number of different attractions.

2.5 Characteristics of New Residents in Ultimo-Pymont

Sydney Harbour Foreshore Authority commissioned a post-occupancy survey of residents of the Ultimo Pymont area in August 2000. This targeted buildings completed since 1996, when a previous survey was conducted. The sample for the interview was drawn from 2,100 occupied dwellings in 25 buildings or complexes. A total of 302 interviews and four focus groups were completed. A brief discussion of salient characteristics of the population is presented here and more information relating to transport is in Chapter 3.

- Age distribution of residents increased from 1996 to 2000 with those in their 20s comprising 36 per cent as opposed to 56 per cent of the population; while those over 40 comprised 29 per cent, up from 15 per cent.
- The proportion of households with children increased from 13 per cent to 20 per cent between 1996 and 2000.
- Average household size increased from 2.16 to 2.39 persons in 2000.
- The proportion of residents attending TAFE or University increased from 20 per cent to 28 per cent.
- The proportion of residents with University qualifications increased from 33 per cent to 55 per cent.
- The area has high levels of household income: 49 per cent >\$78k.
- Very high proportion of residents are employed locally: 24 per cent in Ultimo Pymont and 46 per cent in CBD – 70 per cent (compared with 64 per cent in 1996).
- 78 per cent of residents stated that they usually shopped at Broadway Shopping Centre.
- Main reason for people choosing to live in Ultimo Pymont being close to CBD, Darling Harbour, entertainment, culture and services; also close to work and liking area.
- Selected attributes residents don't like:

| Rank | Proportion |
|-------------------------|------------|
| (1) traffic noise | 28% |
| (3) shopping facilities | 19% |
| (6) transport | 10% |
| (12) lack of parking | 2% |
- 61 per cent of residents stated that they used local parks.
- Residents were asked to nominate facilities/services they felt were missing or inadequate. In the area of retail services the following responses were received:
 - supermarket 44%
 - local shops 19%
 - restaurants 15%
 - cafés 14%
 - specialty shops 11%
 - takeaway food 11%

In the focus groups, participants complained about lack of local shops and banks and ATMs in the area. Also concerns were raised over the limited opening hours of the local medical centre (business hours). Some participants wanted a public pool in the area.

2.6 Retail Strategy for Ultimo-Pyrmont

The Urban Development Plan for Ultimo-Pyrmont Precinct (1999 update) sets down a Retail, Business and Neighbourhood Strategy for the area. It defines the hierarchy on nodes as:

- Local Neighbourhood: a small number of shops with an immediate catchment of local residents and workers. Access is usually by foot.
- Retail and Leisure: serves the local community and has a metropolitan wide catchment. Includes leisure and tourist attractions.
- Sub-Regional: comprises a broad range of facilities serving residents and workers of the inner city.

The UDP identifies Sydney Fish Market, Star City and Darling Harbour as Retail and Leisure nodes; whilst sub-regional nodes are Broadway Shopping Centre and Paddy's Markets. A series of five local neighbourhood nodes are generally located along (or just off) the Harris Street spine. The closest one to Sydney Fish Market is located at the corner of Union and Harris Streets.

2.7 Previous Studies of Sydney Fish Market

Sydney Fish Market Master Plan, City West, by Property Services Group, March 1995

This master plan was adopted and has shaped the existing site. It outlines the institutional arrangements under which Sydney Fish Market operates. The land is leased from NSW Government under a 50 year lease to a consortium of merchants and tenants who sell at the market and the NSW Fishing Fleet who supply the market. This consortium is 'Sydney Fish Market Pty Ltd'. The lease requires that the operator maintains the current fish marketing activities and that any development of the site is subject to a minister-approved master plan.

A supporting study, *Fish Market Master Plan Traffic Access Study*, by GHD (January 1994) was also reviewed by MWT. Of some interest is that this study identifies the possibility (under consideration by State Transit at the time) of extending the 378 from current termination at Railway Square to Pyrmont via Harris Street (refer to page 27).

Market Research Study by Leyshon Consulting Pty Ltd (August 1997)

This study formed part of an investigation of the feasibility of retail development on the Sydney Fish Market site. Important findings were:

- The importance of the area immediately surrounding Sydney Fish Market: regular customer base of between 20 and 45 per cent customer count from within 5 kilometres of the site;
- A broader customer base of regular users from the metropolitan area – this base consistently generates new customers;
- The tourist and visitor market which is about 8 to 10 per cent of the customer base.

The study defined the primary market as Ultimo-Pyrmont and a secondary market of CBD/Chippendale/Glebe (inner) and Newtown/Leichardt/Balmain. The report states that the population in those markets was just over 110,000 people and growing rapidly.

Projections of retail turnover to 2001 identified that the primary market could contribute just under 40 per cent of total turnover.

The study concludes that:

- Sydney Fish Market has potential to expand retail services *'...must build on the SFM's strong position in the fresh food market by principally adding other food-related services.'*
- The primary market will grow rapidly.
- *'Strong demand will exist in the SFM's trade area for additional fresh food, supermarket, home meal replacement, ready-to-eat and dining services to 2007.'*

The Leyshon report draws from several previous studies, including a 1996 study by NSA, which found that:

'the most customer dissatisfaction is focused on the car park itself rather than parking charges per se'.

The walkable catchment for the Broadway Shopping Centre is identified as extending only as far north as William Henry Street. Residents living beyond this would *'...need to use vehicles to access the centre.'*

Estimates of annual visitation to Sydney Fish Market were 1.6 million, which was seen as: *'...relatively low level of visitation compared with standard suburban shopping centres.'* Medium sized suburban shopping centres might attract from 3 to 6 million visitors per annum and larger centres might draw more than 10 million. The site was therefore closer to *'...a neighbourhood-scale, supermarket-dominated shopping centre.'*

Sydney Fish Market Research Study, Assessment of the Redevelopment Potential by Jebb Holland Dimasi, November 2000

This study was prepared to provide an assessment of the redevelopment potential and the "highest and best retail use" of the Sydney Fish Market site.

It notes that car park tariffs increased in August 1999 from \$2.00 for the first two hours to \$3.00.

Only about a quarter of the general public that use the car park stay for more than one hour.

The retail component has peak trading times at lunchtimes and weekends.

The rapid projected growth in the population of the primary trade area (within 3 kilometres of the site) was seen as particularly positive for retailing on the site.

The study identified that fresh seafood is a distinct advantage for the site that distinguishes it from surrounding competition, it also stated that there is potential to increase the non-seafood fresh food offer and potential for a small supermarket of some form.

The study assesses the feasibility of various options for the site. This information has been used by the Master Plan team for Sydney Fish Market to develop plans that are discussed further in Chapter 5 of this report.

3. Review of Existing Conditions

3.1 Existing Use of Site

3.1.1 Activities Onsite

The Sydney Fish Market site currently supports the following activities:

- Seafood auction;
- Seafood wholesaling, processing and distribution and associated activities, such as ice manufacturing;
- Seafood and ancillary retail activities (including bakery, wine shop, delicatessen and fruit and vegetable shop);
- Restaurant/cafés;
- Working fishing fleet;
- Seafood school;
- Commercial office space;
- Marina space for commercial cruise boats.

The retail offer is one of high quality, fresh produce.

The existing site layout is shown in Figure 2.

The floorspace occupied by each of the site activities is summarised in the following table.

Table 3.1- Existing Floorspace for Sydney Fish Market by Use

| Use | Existing Floorspace by use | |
|---|----------------------------|-------------|
| | NLA sq m | GFA sq m |
| Commercial | 1,736 | 2,169 |
| Retail | 5,706 | 7,133 |
| Wholesale | 2,908 | 3,321 |
| SFM Area | 2,161 | 2,701 |
| Selling floor including audit, seating, crateryard, weighing sorting and data entry | 3,524 | 3,916 |
| Total floor space | 16,034 | 19,149 |

Note NLA – net lettable area; GFA – gross floor area.

Source SHFA 5 February 2003

Seafood Auction System

The seafood auction forms the core of Sydney Fish Market; because of its uniqueness within Sydney, its range and volume of product and its efficiency (throughput, auction and payment system), it is a commercially attractive market. This reinforces its scale by drawing in a large number of buyers and suppliers. The auction system used varies by product:

- Most seafood is sold by dutch auction using two simultaneous auction clocks. This system starts with a high price and as the price falls, the lot is sold to the first, and hence, highest bidder. This maximises throughput, with approximately 1,000 lots sold per hour.
- Crayfish and tuna (for sashimi) are sold in separate areas on the trading floor by outcry auction.

The auction operates from 5.30am every weekday, with more than one hundred species on offer. Roughly 2,700 crates are sold at each auction, the equivalent of 65 tonnes of seafood. The auctions on Monday and Friday are generally busier than other days. Product is sold by order of receipt at Sydney Fish Market loading dock.

Buyers at the auction can inspect the lots prior to bidding, and take seats in a gallery to await the lots of interest. They submit bids via an electronic (concealed) button. All buyers are registered and have access codes to the auction system.

Handling of the produce entails:

- Product arrives at the loading dock by truck (or some arrives by boat) and is either hand trolleyed or forklifted to the selling floor. Receipt commences the afternoon prior to auction. Ice is placed on the crates to keep the product fresh.
- The produce is auctioned.
- The buyer is responsible for removing the product from the selling floor. This is usually done with a hand trolley (crates weigh, on average, 23 kilograms), although forklifts are sometimes used. As they leave the selling floor the lot identification barcode from the crate is scanned, as is the trolley handler's identification along with a computer generated docket recording the sale. A check of identifications and paperwork is conducted as product leaves the floor. This results in occasional queues at the exit.
- The buyer (or agent) then wheels product to the loading dock. Here it might be loaded onto buyer's truck or van; but more likely, due to congestion in the loading area, it will be wheeled down the central ramp to the car park and then to the buyer's vehicle, located somewhere in the car park. If buyers have substantial purchases on a day, they may consolidate their lots within the auction building, but outside the selling floor. A forklift would then be used to move the palletised product to the dock and into a waiting truck, or down the ramp into the car park.
- Buyers might make various purchases over the course of the auction period, generating multiple trips between the auction floor and their vehicle in the car park.

The loading dock ramp is an area of congestion as it is only wide enough to accommodate one-way movements by either hand trolley or forklift at any one time.

Seafood is a high value per unit weight product in comparison to other produce, such as fruit and vegetables. This means that a buyer may leave the market with several hundred kilograms rather than several tonnes for a fruit and vegetable market. Consequently, the typical vehicle used by buyers is a light commercial van or a small rigid pantechnicon truck. There are also larger rigid and articulated vehicles in use, although these comprise a small proportion.

The cool-chain philosophy is employed on the site and is a very important part of maintaining Sydney Fish Market's reputation for high quality product, as well as minimising wastage. Without efficient handling the amount of wastage and lost product would increase, resulting in unnecessary transport of product.

A typical buyer on-site might be a fish shop operator, who, in addition to seafood might also purchase other inputs for their shop at Sydney Fish Market. These include chips, oil, fruit, etc; The market acts as a focus for their wholesale buying, providing a one stop shop, thereby reducing vehicular trip and travel. Other buyers might be wholesalers, some of whom may also compete with the market, by buying directly from product suppliers and then selling on to end customers, such as retailers. This product may come through the Sydney Fish Market site (but not to the auction floor) or may totally by-pass the site. Other buyers include caterers, providores, etc;

Figure 3 summarises the key relationships between various elements of the seafood supply chain, identifying the notional physical boundary of the current site. It demonstrates that the site provides a vertically integrated⁵ distribution/processing/selling chain, which acts to minimise transport along the supply chain.

There are approximately 600 active registered buyers, but only 160 to 170 transacting business on any one day, although some may also be buying on behalf of others.

Seafood Wholesaling and Associated Activities

As stated above, wholesalers may be active buyers at the auction, or may bypass the auction and also the Sydney Fish Market site. Wholesale activities on the site would be attracted by the presence of the auction and proximity to suppliers and buyers (who may service/use both the auction and wholesalers).

There are a number of off-site wholesalers nearby. They are active on the site and it is assumed that their locational choice is strongly influenced by the presence of Sydney Fish Market. It means that staff are an easy walk from Sydney Fish Market.

Other wholesalers have facilities remote from the site environs. For example, a major wholesaler to the supermarkets is located at Lidcombe to maintain cost competitiveness. They also have a presence on the Sydney Fish Market site.

Recent trends suggest that wholesale activity is likely to continue to diffuse from the site due to space considerations. MWT were advised that the master plan would not provide sufficient additional floorspace to draw wholesalers back to the site.

⁵ The vertical integration refers to activities of the site and not of particular commercial enterprise(s).

Processing of seafood is also undertaken on the site, with a filleting room forming part of the main building. Tenants on the site also conduct varying degrees of seafood processing within their premises. Sydney Fish Market provides an offal collection service for the tenants. This provides a central chilled storage facility on the site and a single vehicle collection by articulated vehicle once a day.

Centralised offal management minimises costs associated with maintaining the product in a cool environment and minimises the amount of traffic generated through a single collection.

The offal is apparently turned into fertiliser off the site.

Seafood Retail Activities

There are six different seafood retailers on the site and this selection is attractive to the public seeking range, quality and price competition. Seafood retail is supported by a bakery, fruit and vegetable, bottle shop and delicatessen. These are complementary and act to enhance the attractiveness of the retail offer.

They also provide an important retail node for the local community.

Restaurants/Cafes

The restaurants and cafes are generally ancillary to the other retail activities. Sydney Fish Market is a very popular place for people wishing to eat seafood. There is a restaurant on site that provides table service (Doyles); a number of the retail outlets in the retail arcade have limited seating at which patrons can eat prepared food (order from counter); similarly there are seats available outside along the edge of Blackwattle Bay.

Outdoor seating comprises approximately 76 tables with seating for up to 8 adults at each. There is also a small strip of grass next to the service lane and the two southernmost wharves which are used for seating by diners.

Working Fishing Fleet

About twelve fishing boats use Sydney Fish Market as their home base. These supply approximately 3 per cent of the product sold through the auction system. The fleet operates in commercial fishing grounds up and down the east coast. On occasion, additional boats visit from other fleets.

The fleet uses the Sydney Fish Market site to maintain their vessels and fishing equipment. This can entail the extension of nets, lines and other gear across the site for repair.

There are two wharves used by the fleet: the central one for loading and unloading with very direct access to the selling floor; and a more northerly one where most of the boats are moored.

Sydney Seafood School

This operates from the first floor of the main building and runs a series of cooking courses that promote the use of seafood.

Commercial Office Space

In the main building, Sydney Fish Market Pty Ltd occupies office space for administration and related use. There are also sub-let areas for commercial tenants.

Marina Space

The southernmost wharf provides marina berths for commercial cruise boats (some of whom offer services from the site) and casual berths for the general public to use when they access the site.

Public Tours and Education

Public tours for individuals, groups and schools are provided to show people over the site and introduce them to seafood. A regular flow of tourist operators have scheduled visits to the site, where their patrons are shown around, some then leave directly; others may have a large seafood meal before leaving.

3.1.2 Innovation and Recent Trends

Sydney Fish Market and Innovation

The development and accreditation of a food safety and hygiene system (Hazard Analysis and Critical Control Point system) for seafood handling was developed by Sydney Fish Market and introduced in 1998. The importance of hygiene for seafood is critical for the buying public to have confidence in the quality and safety of the product on offer.

A web-based seafood marketing system (SFMLive) was introduced in 2001 to provide a greater network of suppliers and buyers; to reduce transport costs; provide access to market information; and reduce default risk on trades. It is a business to business e-commerce solution.

The plastic crates used at the market to handle seafood are designed specifically for their task. In the empty mode they are aligned one way to allow stacking inside each other, minimising transport costs. In the product carrying mode they stack on top of each other, in such a fashion so as not to damage product in crates underneath. Whilst in the product carrying mode, the crates drain in such a manner that melted ice from higher crates does not enter lower crates. This reduces the chances of product contamination and minimises the amount of weight transported. Use of the crates is subject to a deposit scheme and they are cleaned on the site for re-use.

Resource Management

Changes to resource management arrangements for fisheries in NSW have led to a reduced proportion of locally sourced product through the market. Additional product is now sourced from interstate, as well as a greater emphasis on supply from New Zealand and Indonesia.

The proximity of Sydney Fish Market to Sydney Airport is a competitive advantage as far as the export and import of product is concerned.

Increasing popularity of outdoor eating

Outdoor eating is more popular now than 10 years ago, with Sydney Fish Market providing a picturesque setting by the water, with a view of the ANZAC Bridge, and an active waterfront.

Redevelopment of Pyrmont

As discussed elsewhere in this report, the redevelopment of Pyrmont has resulted in a residential population in close proximity to Sydney Fish Market. The redevelopment has also brought more local employment and further visitor attractions (e.g., Star City Casino). As a part of this development, a high quality light rail service has been introduced to improve access to the peninsula.

3.1.3 Schedule of Hours

Hours of operation for retailers vary, but are generally between 7.00am or 7.30am to 4.00pm or 5.00pm. Retail activity is 7 days per week.

Auction commences at 5.30am Monday to Friday, and is generally completed by 8.00am. Receipt of product for auction operates 24 hours a day from Sunday afternoon to Friday morning.

Wholesale activities are mainly Monday to Friday and some work on Saturday, with commencement around the start of the auction.

3.1.4 Summary

The Sydney Fish Market site operates as a 'cluster' of associated and interconnected economic activity with many interactions. It acts as a focus for all facets of the seafood industry. Through co-location of various activities it provides a transport-efficient supply chain.

3.2 Existing Site Transport Conditions

3.2.1 Counts and Surveys

The site generates person and freight travel throughout the week. To quantify trip generation by the site two days of boundary counts were conducted, supported by limited

on-site parking beat surveys. A sample of site users were interviewed to ascertain characteristics of their travel and collect limited information about their use of the site.

Details of these survey activities are in Appendix A and Appendix B contains a summary of results.

3.2.2 Weekday Trip Generation

Perimeter counts were undertaken on a Friday between 5.30am and 5.30pm to record the number of people, vehicles, bicycles and boats accessing the site. The following table summarises vehicular traffic generation for the site, by hour.

Table 3.2 - Traffic Generation by Hour at Site Perimeter, Friday, all vehicle

| Hour Commencing | Total IN | Total OUT | Total |
|--------------------|----------|-----------|-------|
| 5 | 148 | 26 | 174 |
| 6 | 116 | 49 | 165 |
| 7 | 114 | 79 | 193 |
| 8 | 137 | 128 | 265 |
| 9 | 231 | 203 | 434 |
| 10 | 255 | 276 | 531 |
| 11 | 263 | 310 | 573 |
| 12 | 292 | 261 | 553 |
| 13 | 264 | 296 | 560 |
| 14 | 208 | 261 | 469 |
| 15 | 180 | 232 | 412 |
| 16 | 98 | 211 | 309 |
| 17 | 42 | 112 | 154 |
| Total | 2,348 | 2,444 | 4,792 |

Trip numbers crossing the site perimeter by non-vehicle modes are in the following table.

Table 3.3 - Trips by Non-Vehicle Modes at Site Perimeter, Friday, Persons

| | Bicycle | | | By Boat | | | Ped | | | Total Non- Vehicle Modes |
|-------|---------|-----|-------|---------|-----|-------|-------|-------|-------|-----------------------------------|
| Hour | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 2 | 82 | 82 |
| 6 | 5 | 2 | 7 | 0 | 0 | 0 | 59 | 27 | 86 | 93 |
| 7 | 2 | 6 | 8 | 0 | 0 | 0 | 65 | 38 | 103 | 111 |
| 8 | 0 | 2 | 2 | 0 | 0 | 0 | 150 | 90 | 240 | 242 |
| 9 | 0 | 4 | 4 | 0 | 0 | 0 | 130 | 71 | 201 | 205 |
| 10 | 4 | 2 | 6 | 2 | 0 | 2 | 152 | 130 | 282 | 290 |
| 11 | 4 | 6 | 10 | 0 | 0 | 0 | 281 | 202 | 483 | 493 |
| 12 | 0 | 6 | 6 | 4 | 0 | 4 | 345 | 299 | 644 | 654 |
| 13 | 1 | 6 | 7 | 0 | 16 | 16 | 342 | 380 | 722 | 745 |
| 14 | 2 | 7 | 9 | 4 | 6 | 10 | 217 | 383 | 600 | 619 |
| 15 | 5 | 4 | 9 | 0 | 16 | 16 | 199 | 223 | 422 | 447 |
| 16 | 4 | 3 | 7 | 0 | 10 | 10 | 102 | 226 | 328 | 345 |
| 17 | 10 | 6 | 16 | 0 | 0 | 0 | 84 | 186 | 270 | 286 |
| Total | 37 | 54 | 91 | 10 | 48 | 58 | 2,206 | 2,257 | 4,463 | 4,612 |

Note ped is for all persons who walked into/out of the Sydney Fish Market site and would include bus, light rail users and off-site parkers.

Vehicle occupancy counts at the site access were undertaken in the early morning, mid-morning, around lunchtime and at the end of the day.

Table 3.4 - Average Passenger Vehicle Occupancy at Site Access, Friday

| Period | IN | OUT |
|----------------|------|------|
| Early Morning | 1.54 | 1.24 |
| Mid-morning | 1.46 | 1.38 |
| Midday | 1.57 | 1.24 |
| Lunchtime | 1.80 | 1.35 |
| Mid-afternoon | 1.39 | 1.37 |
| Late afternoon | 1.32 | 1.23 |

All mode trip generation by the site was determined using perimeter counts and observations of vehicle occupancy to convert traffic movement to person movement across the site perimeter.

Table 3.5 - All Mode Trip Generation at Site Perimeter, Total, Friday, Persons

| Hour | Motorcycle | Car | Taxi | Light Commercial | Heavy Commercial | Bus/Coach | Bicycle | By Boat | Ped | Total |
|-------|------------|------|------|------------------|------------------|-----------|---------|---------|------|-------|
| 5 | 4 | 92 | 8 | 80 | 24 | 0 | 0 | 0 | 82 | 290 |
| 6 | 1 | 113 | 2 | 60 | 26 | 0 | 7 | 0 | 86 | 295 |
| 7 | 0 | 134 | 14 | 64 | 29 | 0 | 8 | 0 | 103 | 352 |
| 8 | 1 | 221 | 22 | 58 | 41 | 0 | 2 | 0 | 240 | 585 |
| 9 | 1 | 396 | 8 | 100 | 51 | 15 | 4 | 0 | 201 | 776 |
| 10 | 1 | 485 | 0 | 124 | 65 | 0 | 6 | 2 | 282 | 965 |
| 11 | 1 | 600 | 14 | 112 | 29 | 30 | 10 | 0 | 483 | 1279 |
| 12 | 3 | 634 | 32 | 67 | 19 | 15 | 6 | 4 | 644 | 1424 |
| 13 | 2 | 703 | 38 | 72 | 15 | 30 | 7 | 16 | 722 | 1605 |
| 14 | 1 | 458 | 32 | 80 | 10 | 45 | 9 | 10 | 600 | 1245 |
| 15 | 2 | 488 | 10 | 40 | 9 | 15 | 9 | 16 | 422 | 1011 |
| 16 | 4 | 350 | 6 | 42 | 5 | 0 | 7 | 10 | 328 | 752 |
| 17 | 0 | 139 | 16 | 28 | 6 | 0 | 16 | 0 | 270 | 475 |
| Total | 21 | 4813 | 202 | 927 | 329 | 150 | 91 | 58 | 4463 | 11054 |

Note Ped means all persons who walked into/out of the Sydney Fish Market site and would include bus, light rail users and off-site parkers; bus/coach are people on board these vehicles when they cross the site boundary.

Mode shares at the site perimeter by hour of day were calculated based on the above table.

Table 3.6 - Estimates of Mode Share at Site Perimeter, Friday

| Hour | Motorcycle | Car | Taxi | Light Commercial | Heavy Commercial | Bus/Coach | Bicycle | By Boat | Ped | Total |
|---------------|------------|-----|------|------------------|------------------|-----------|---------|---------|-----|-------|
| 5 | 1% | 32% | 3% | 28% | 8% | 0% | 0% | 0% | 28% | 100% |
| 6 | 0% | 38% | 1% | 20% | 9% | 0% | 2% | 0% | 29% | 100% |
| 7 | 0% | 38% | 4% | 18% | 8% | 0% | 2% | 0% | 29% | 100% |
| 8 | 0% | 38% | 4% | 10% | 7% | 0% | 0% | 0% | 41% | 100% |
| 9 | 0% | 51% | 1% | 13% | 7% | 2% | 1% | 0% | 26% | 100% |
| 10 | 0% | 50% | 0% | 13% | 7% | 0% | 1% | 0% | 29% | 100% |
| 11 | 0% | 47% | 1% | 9% | 2% | 2% | 1% | 0% | 38% | 100% |
| 12 | 0% | 45% | 2% | 5% | 1% | 1% | 0% | 0% | 45% | 100% |
| 13 | 0% | 44% | 2% | 4% | 1% | 2% | 0% | 1% | 45% | 100% |
| 14 | 0% | 37% | 3% | 6% | 1% | 4% | 1% | 1% | 48% | 100% |
| 15 | 0% | 48% | 1% | 4% | 1% | 1% | 1% | 2% | 42% | 100% |
| 16 | 1% | 47% | 1% | 6% | 1% | 0% | 1% | 1% | 44% | 100% |
| 17 | 0% | 29% | 3% | 6% | 1% | 0% | 3% | 0% | 57% | 100% |
| Survey period | 0% | 44% | 2% | 8% | 3% | 1% | 1% | 1% | 40% | 100% |

Note Ped means all persons who walked into/out of the Sydney Fish Market site and would include bus and light rail users; bus/coach are people on board these vehicles when they cross the site boundary.

Information collected by the interview survey about site users was used to estimate the disaggregate mode shares of the people crossing the site perimeter by foot. The following table presents these shares for weekdays.

Table 3.7 - Estimated Mode Shares of Pedestrian Movements Across Site Perimeter, Weekday

| Boundary_Mode | Mode | Weekday Trips | Share of Pedestrian Trips Across Site Perimeter | Share of Total Site Trips |
|-----------------------------|------------------------|---------------|---|---------------------------|
| Ped | Bus | 235 | 5% | 2% |
| | Car (off-site parking) | 1,741 | 39% | 16% |
| | Light Rail | 339 | 8% | 3% |
| | Train | 96 | 2% | 1% |
| | Walk | 2,052 | 46% | 19% |
| Total Ped at Site Perimeter | | 4,537 | 4463 | 100% |

Note Estimates subject to sampling error.

From the interview survey the average party size for the off-site parkers was estimated at 1.65. The number of vehicles parked off-site during the course of the Friday was estimated at 480 vehicles based on interviews. At any one time there would be only a proportion of this number of cars parked off-site.

The interview survey asked respondents what was the main reason for their visit to Sydney Fish Market, as well as a separate question about other reasons for their visit. The answers to these questions provide an indication of the element(s) of current site development that generates trips; this information is used to assist in estimating future site traffic generation for a different mix of uses on the site. A feature of the answers to this question was the number of multiple reasons given for the main reason.

3.2.3 Weekend Trip Generation

Perimeter counts were undertaken on a Sunday to estimate site trip generation. The following table presents estimates of traffic generation.

Table 3.8 - Traffic Generation by Hour at Site Perimeter, Sunday, all vehicle

| Hour Commencing | Total IN | Total OUT | Total |
|-----------------|----------|-----------|-------|
| 6 | 56 | 16 | 72 |
| 7 | 111 | 77 | 188 |
| 8 | 146 | 129 | 275 |
| 9 | 208 | 189 | 397 |
| 10 | 299 | 211 | 510 |
| 11 | 399 | 318 | 717 |
| 12 | 400 | 305 | 705 |
| 13 | 407 | 374 | 781 |
| 14 | 349 | 361 | 710 |
| 15 | 243 | 401 | 644 |
| 16 | 72 | 228 | 300 |
| 17 | 19 | 92 | 111 |
| | 2709 | 2701 | 5410 |

Access trips by non-vehicle modes is reported in the following table.

Table 3.9 - Person Trips by Non-Vehicle Modes at Site Perimeter, Sunday, Persons

| | Bicycle | | | By Boat | | | Ped | | | Total Non- Vehicle Modes |
|-------|---------|-----|-------|---------|-----|-------|------|------|-------|-----------------------------------|
| Hour | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | |
| 6 | 2 | 0 | 2 | 0 | 0 | 0 | 47 | 13 | 60 | 62 |
| 7 | 2 | 0 | 2 | 1 | 0 | 1 | 137 | 57 | 194 | 197 |
| 8 | 4 | 2 | 6 | 0 | 0 | 0 | 161 | 89 | 250 | 256 |
| 9 | 3 | 2 | 5 | 3 | 14 | 17 | 226 | 181 | 407 | 429 |
| 10 | 4 | 6 | 10 | 5 | 12 | 17 | 312 | 280 | 592 | 619 |
| 11 | 7 | 12 | 19 | 19 | 2 | 21 | 534 | 360 | 894 | 934 |
| 12 | 7 | 13 | 20 | 8 | 99 | 107 | 747 | 454 | 1201 | 1328 |
| 13 | 7 | 6 | 13 | 3 | 2 | 5 | 790 | 892 | 1682 | 1700 |
| 14 | 2 | 3 | 5 | 3 | 12 | 15 | 589 | 680 | 1269 | 1289 |
| 15 | 7 | 3 | 10 | 9 | 22 | 31 | 455 | 641 | 1096 | 1137 |
| 16 | 1 | 1 | 2 | 80 | 22 | 102 | 294 | 546 | 840 | 944 |
| 17 | 1 | 7 | 8 | 0 | 0 | 0 | 151 | 249 | 400 | 408 |
| Total | 47 | 55 | 102 | 131 | 185 | 316 | 4443 | 4442 | 8885 | 9303 |

Note Ped means all persons who walked into/out of the Sydney Fish Market site and would include bus, light rail users and off-site parkers.

Vehicle occupancy counts at the site access were undertaken throughout the day; results are presented in the following table.

Table 3.10 - Average Passenger Vehicle Occupancy at Site Perimeter, Sunday

| Time | IN | OUT |
|----------------|-------------|-------------|
| 6 | 1.49 | 1.50 |
| 7 | 1.77 | 1.39 |
| 8 | 1.67 | 1.48 |
| 9 | 1.76 | 1.77 |
| 10 | 2.18 | 1.93 |
| 11 | 2.21 | 2.21 |
| 12 | 2.43 | 2.34 |
| 13 | 2.44 | 2.47 |
| 14 | 2.36 | 2.40 |
| 15 | 2.24 | 2.44 |
| 16 | 2.13 | 2.14 |
| 17 | 2.21 | 1.79 |
| Average | 2.20 | 2.19 |

All mode trip generation by the site was determined based on observations of vehicle occupancy to convert traffic movement to person movement at the site access.

Table 3.11 - All Mode Trip Generation at the Site Perimeter, Sunday, Persons

| Hour | Motorcycle | Car | Taxi | Light Commercial | Heavy Commercial | Bus/Coach | Bicycle | By Boat | Ped | Total |
|-------|------------|-------|------|------------------|------------------|-----------|---------|---------|------|-------|
| 6 | 0 | 76 | 8 | 13 | 3 | 15 | 2 | 0 | 60 | 177 |
| 7 | 0 | 235 | 18 | 27 | 5 | 30 | 2 | 1 | 194 | 512 |
| 8 | 0 | 369 | 12 | 28 | 6 | 30 | 6 | 0 | 250 | 701 |
| 9 | 0 | 639 | 10 | 26 | 2 | 30 | 5 | 17 | 407 | 1136 |
| 10 | 0 | 969 | 20 | 32 | 1 | 0 | 10 | 17 | 592 | 1641 |
| 11 | 2 | 1433 | 48 | 38 | 1 | 45 | 19 | 21 | 894 | 2501 |
| 12 | 1 | 1582 | 30 | 23 | 3 | 30 | 20 | 107 | 1201 | 2997 |
| 13 | 1 | 1786 | 48 | 25 | 1 | 45 | 13 | 5 | 1682 | 3606 |
| 14 | 0 | 1554 | 36 | 30 | 4 | 75 | 5 | 15 | 1269 | 2988 |
| 15 | 0 | 1396 | 26 | 36 | 0 | 90 | 10 | 31 | 1096 | 2685 |
| 16 | 0 | 581 | 8 | 20 | 3 | 15 | 2 | 102 | 840 | 1571 |
| 17 | 0 | 189 | 0 | 8 | 2 | 0 | 8 | 0 | 400 | 607 |
| Total | 4 | 10810 | 264 | 306 | 31 | 405 | 102 | 316 | 8885 | 21123 |

Note Ped means all persons who walked into/out of the Sydney Fish Market site and would include bus, light rail users and off-site parkers; bus/coach are people on board these vehicles when they cross the site perimeter.

Mode shares by hour of day were calculated based on the above table.

Table 3.12 - Estimates of Mode Share at Site Perimeter, Sunday

| Hour | Motorcycle | Car | Taxi | Light Commercial | Heavy Commercial | Bus/Coach | Bicycle | By Boat | Ped | Total |
|---------------|------------|-----|------|------------------|------------------|-----------|---------|---------|-----|-------|
| 6 | 0% | 43% | 5% | 7% | 2% | 8% | 1% | 0% | 34% | 100% |
| 7 | 0% | 46% | 4% | 5% | 1% | 6% | 0% | 0% | 38% | 100% |
| 8 | 0% | 53% | 2% | 4% | 1% | 4% | 1% | 0% | 36% | 100% |
| 9 | 0% | 56% | 1% | 2% | 0% | 3% | 0% | 1% | 36% | 100% |
| 10 | 0% | 59% | 1% | 2% | 0% | 0% | 1% | 1% | 36% | 100% |
| 11 | 0% | 57% | 2% | 2% | 0% | 2% | 1% | 1% | 36% | 100% |
| 12 | 0% | 53% | 1% | 1% | 0% | 1% | 1% | 4% | 40% | 100% |
| 13 | 0% | 50% | 1% | 1% | 0% | 1% | 0% | 0% | 47% | 100% |
| 14 | 0% | 52% | 1% | 1% | 0% | 3% | 0% | 1% | 42% | 100% |
| 15 | 0% | 52% | 1% | 1% | 0% | 3% | 0% | 1% | 41% | 100% |
| 16 | 0% | 37% | 1% | 1% | 0% | 1% | 0% | 6% | 53% | 100% |
| 17 | 0% | 31% | 0% | 1% | 0% | 0% | 1% | 0% | 66% | 100% |
| Survey Period | 0% | 51% | 1% | 1% | 0% | 2% | 0% | 1% | 42% | 100% |

Note ped is for all persons who walked into/out of the Sydney Fish Market site and would include bus, light rail users and off-site parkers; bus/coach are people on board these vehicles when they cross the site boundary.

As with Friday's perimeter counts, the interview survey results were used to estimate the mode shares of people crossing the site perimeter on foot. These are presented in the following table.

Table 3.13 - Estimated Mode Shares of Pedestrian Movements Across Site Perimeter, Sunday

| Boundary_Mode | Mode | Sunday Trips | Share of Pedestrian Trips Across Site Perimeter | Share of Total Site Trips |
|-----------------------------|------------------------|--------------|---|---------------------------|
| Ped | Bus | 419 | 5% | 2% |
| | Car (off-site parking) | 4692 | 53% | 22% |
| | Light Rail | 435 | 5% | 2% |
| | Train | 0 | 0% | 0% |
| | Walk | 3339 | 38% | 16% |
| Total Ped at Site Perimeter | | 8885 | 100% | 42% |

Note Subject to sampling error.

The party size for people who parked their cars off-site was estimated, as for Friday, from the site users survey. Approximately 1,020 cars were parked off-site over the course of the Sunday. At any one time there would be only a proportion of this number of cars parked off-site.

3.2.4 Site Mode Share

The modes shares for trips to Sydney Fish Market are summarised in the following table for weekdays and weekends.

Table 3.14 – Current Daily Mode Shares at Sydney Fish Market by Weekday and Weekend

| Mode | Share of Trips to/from Site | |
|------------------------|-----------------------------|---------|
| | Weekday | Weekend |
| Motorcycle | <1% | <1% |
| Car (on-site parking) | 44% | 51% |
| Car (off-site parking) | 16% | 22% |
| Taxi | 2% | 1% |
| Light Commercial | 8% | 1% |
| Heavy Commercial | 3% | <1% |
| Bus/Coach – on-site | 1% | 2% |
| Bicycle | 1% | <1% |
| By Boat | 1% | 1% |
| Bus – off-site | 2% | 2% |
| Light Rail | 3% | 2% |
| Train | 1% | 0% |
| Walk | 19% | 16% |

*Note * daily refers to survey period.*

3.2.5 Car Parking

Onsite car parking is provided within two main areas: a large area in the middle of the site and an area along the eastern edge of the site (on part of the former alignment of Jones Street, now known as Bank Street car park). Access to the car park is via the site's sole vehicle access point from Bank Street, which leads to two boom gates at which entering vehicles must press a button in order to generate a ticket. A high level ticket machine is provided on one of the boom-gated lanes to service heavy vehicles.

Exit from the site is via one of three boomgate controlled lanes, two of which have staffed booths. The third lane has a boomgate controlled by an automatic ticket reading machine for registered regular users.

Use of the car park is subject to the following charges:

- 0 to 2 hours - \$3.00
- 2 to 3 hours - \$7.00
- 3 to 4 hours - \$17.00
- more than 4 hours - \$26.00

Goods movements to and from the site are not subject to a charge for use of the car park.

The charge regime operates seven days a week. Entry is controlled by boom gate from 6.00am through to 5.00pm. Exit is subject to boomgate control for similar hours (note – these hours tend to vary from day to day).

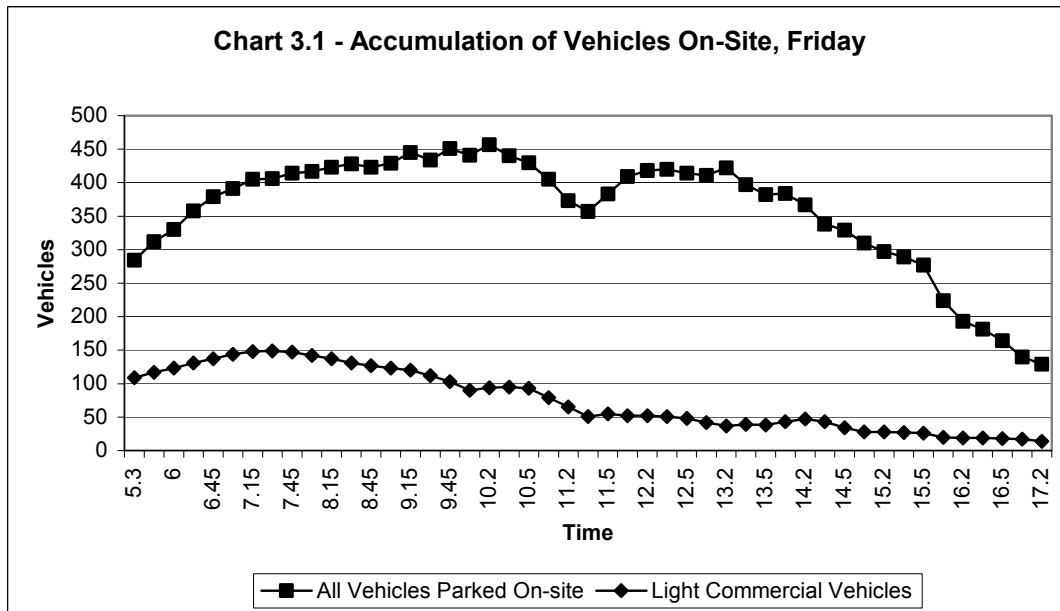
A previous scale of charges allowed people a 15-minute grace period, i.e., if they left the site within 15-minutes of entering they would not be charged. This led to an undesirable situation where vehicles would drop passengers in the site, leave, wait off-site in adjoining streets and then re-enter to collect passenger with their purchase. It also led to arguments as to why patrons should pay for a stay of 16-minutes when they had spent 1-minute waiting in the exit queue.

Enforcement of parking controls (e.g., use of disabled spaces by non-disabled drivers and parking by cars in loading bays, etc;) for the general public is only partly effective. For parking by tenants, provisions in lease arrangements allow for parking enforcement through a specified process.

There are 429 marked car spaces on-site (from existing site drawing) and approximately 40 unmarked spaces⁶. In addition, there are 19 loading docks adjoining the selling floor and 6 loading bays near the retail arcade. There are several other loading/servicing areas around the site at the various tenants' premises.

⁶ These unmarked spaces comprise a range of location where cars were found parked at peak times including on the southern side of the most northern buildings in the main car park.

The use of the existing carpark on a Friday is shown in the following chart, which is based on accumulations derived from traffic generation counts at the site's vehicular access and an initial parking beat survey.



Features of the above accumulation profile are:

- A large number of vehicles on-site at commencement of auction at 5.30am, of which about 40 per cent are light commercial vehicles;
- The number of light commercial vehicles on-site increases through the auction period, reaching a peak of approximately 150 at 7.30am, which is getting close to the start of the end of the auction (refer below for more details of all commercial vehicles);
- The peak accumulation is at/near⁷ site capacity of about 450 vehicles from about 9.00am to 10.30am, when a large drop occurs;
- The number of light commercial vehicles continues to decline through the rest of the day;
- Total vehicles on-site increases through lunchtime, before tailing off through the rest of the day.

The surveyed Friday (6 September) was subject to inclement weather (cloudy, some showers, and winds). During site visits on previous Fridays, the number of vehicles parked on-site was observed to stay high (at/close to capacity) for a greater part of the middle of day.

Commercial vehicle parking was recorded as part of the site parking beat surveys. A more disaggregate beat count was undertaken on a Friday in October. The disaggregation was into more vehicle classifications, with especial regard to vehicle clearance requirements.

⁷ The amount of unmarked spaces available on a weekday is generally less than a weekend due to the need for wholesalers to maintain access to their premises during a weekday.

This was part of consideration of commercial vehicle standing/parking requirements during the auction period. The following table summarises the findings of the count.

Table 3.15 - Commercial Vehicle Demand, Auction Period, Friday Morning

| Type | No. of Vehicles | Required Clearance |
|---------------------------------|-----------------|--------------------|
| Commercial Vans | 78 | Car |
| Small Rigid Vehicles* | 69 | 3.5m |
| Medium Rigid Vehicles | 19 | 4.5m |
| Heavy Rigid Vehicles | 12 | 4.5m |
| Articulated Vehicles** | 2 | 4.5m |
| Total in car park structure | 78 | |
| Total requiring 3.5m clearance | 69 | |
| Total requiring >3.5m clearance | 33 | |

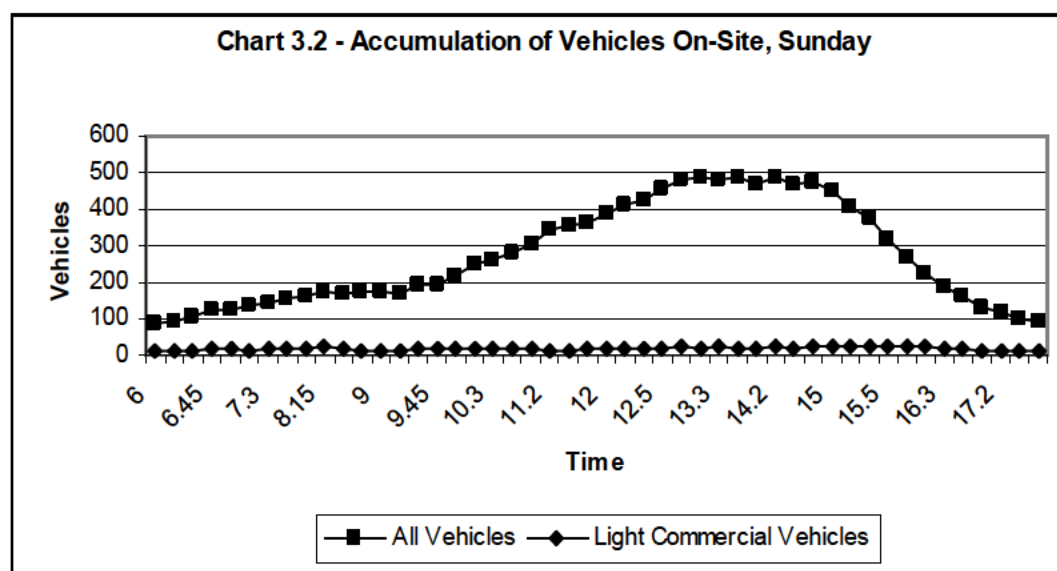
Source: Based on site accumulation counts during auction period on a Friday.

Note:

* Small rigid vehicles include three transit vans.

** The most articulated vehicles recorded on-site at one time was 7 on a Friday at 12.45pm

Use of the car park on a Sunday was measured by a similar process of initial beat survey and traffic generation count. The following chart shows the profile of accumulation through the day on the Sunday of survey.



The Sunday profile has very few light commercial vehicles on the site, which was expected as there is no auction and little wholesale activity. The peak accumulation (at just above the site's capacity) occurred from about 1.00pm to 3.00pm. This day (25 August 2002) was subject to cloudy weather and there were some showers in the morning. The survey company advised that the site access was closed for short durations to allow the number of vehicles on-site to fall to a safe level. On a fine day the car park in the middle of the day would reach capacity earlier and demand would stay closer to capacity for a longer period of time into the afternoon.

The shape of the profile is different to Friday's; there is no auction on a Sunday. The lunchtime to early afternoon increase in demand is a feature of profiles for both days.

On-site parking at peak times, which exceeds marked capacity, occurs in a variety of undesirable places, including footways, aisles, loading bays, landscaping and informal stack parking⁸. There are also a number of vehicles circulating around the site seeking parking spaces.

In addition to the above parking demands there is a substantial component of off-site parking occurring around the site, both during the week and at the weekend.

3.2.6 Peak Site Demands

The following table summarises the peak trip and traffic generation and peak parking accumulation for each of the two days of survey.

Table 3.16 - Summary of Peak Trip, Traffic Generation and Parking Accumulations, Weekday and Weekend

| Parameter | Weekday | | | Weekend | | |
|---------------------------|---------|-----|-------|---------|-------|-------|
| | IN | OUT | Total | IN | OUT | Total |
| Trip Generation (persons) | | | | | | |
| AM Peak (8 to 9) | 348 | 237 | 585 | na | na | na |
| PM Peak (5 to 6) | 147 | 328 | 475 | na | na | na |
| Site Peak (1 to 2) | 788 | 817 | 1,605 | 1,771 | 1,835 | 3,606 |
| Traffic generation (veh) | | | | | | |
| AM Peak (8 to 9) | 137 | 128 | 265 | na | na | na |
| PM Peak (5 to 6) | 39 | 96 | 135 | na | na | na |
| Site Peak | 253 | 337 | 590 | 431 | 373 | 804 |
| Parking Accumulation | | | | | | |
| Peak On-site | | | 457 | | | 490 |

Source Based on surveys.

Note Traffic generation site peak on weekday in hour commencing 10.15pm and weekend peak was in the hour commencing 12.45pm.

3.2.7 Variations in demand

Day of week variations

Day of week variations in demand result from:

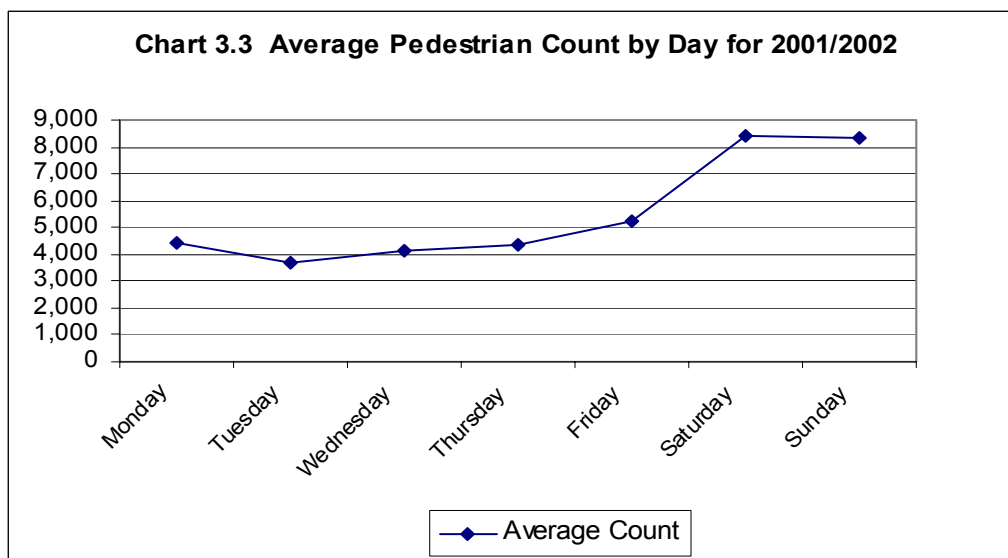
- Auctions on Mondays and Fridays are generally better attended, being the first and last for the week.
- Friday is also regarded as the popular weekday for the general public.
- Saturdays and Sundays are dominated by retail activity (the Auction does not operate).

The following chart shows the day of week variations based on pedestrian counts provided by Sydney Fish Market. The counts are undertaken by a light beam system at the

⁸ The peak parking accumulation of 490 vehicles is greater than the estimate of parking spaces of 429 marked spaces and 40 unmarked spaces due to parking in these undesirable locations.

entrances to the main retail arcade. As a result of this method, it is likely that there is under-counting during busy periods when the entrance becomes cluttered, especially with queuing for ATMs located near the main access.

They demonstrate that Friday is the busiest weekday for use of the arcade and that Saturday and Sunday are nearly twice as heavily patronised as Friday. This is roughly in-line with the findings of the all mode trip generation counts which found that Sunday site perimeter crossings were about twice that of Friday.



Week-to-Week Variations

Variations in demand from week to week results from:

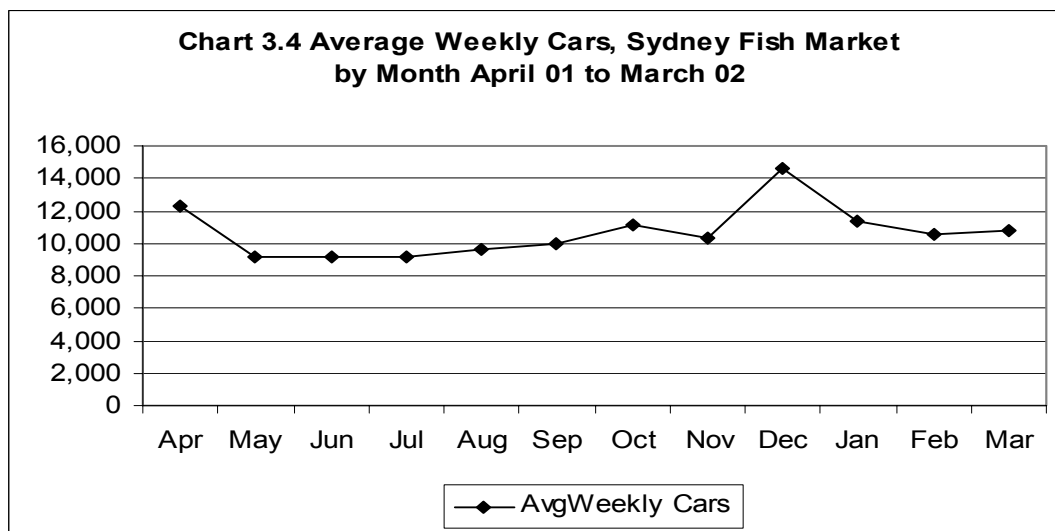
- Different weather patterns influencing the availability and price of fish.
- On weekends, weather was observed to have an impact on visitation:
 - a site visit on 4 August 2002 at 1.00pm, on a sunny Sunday afternoon found the car park full and numerous vehicles circulating seeking a parking space; the tables along Blackwattle Bay were full and people were sitting on the wharf to eat their food.
 - On Sunday 18 August, a cloudy day with morning showers, the car park at 12.30 was only partially full and only about half the tables along Blackwattle Bay were occupied.
 - On Sunday 25 August, a slightly cloudy Sunday, the survey day, the car park was closed at one stage and vehicles were turned away due to overcrowding.
 - On Sunday 8 September, a sunny afternoon, the car park was full at 2.00pm, with vehicles queuing back onto Bank Street. All the tables along Blackwattle Bay were occupied (some with multiple parties) and there were approximately 95 people sitting on the grass next to the service lane, 38 people sitting on the southern most wharf and 46 people sitting on the central wharf.

Seasonal Variations

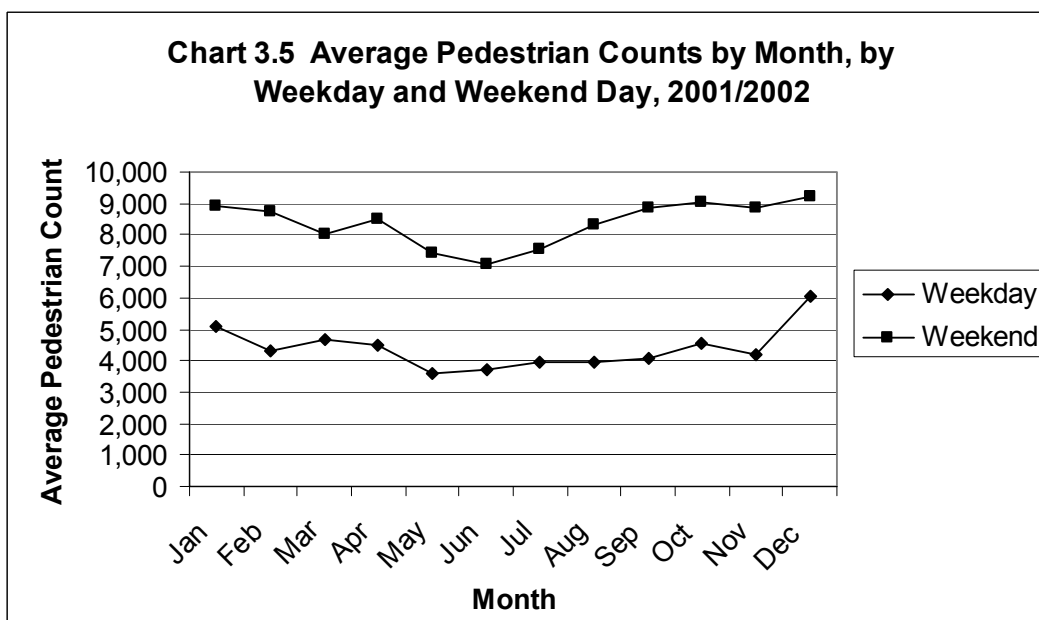
Seasonal variations in demand generally have higher trading during the warmer months with peak days of:

- The lead-up to Christmas, when the site trades continuously for thirty-six hours;
- Easter;
- Valentines Day, Mothers' Day and Fathers' Day are also busy days.

Past car park attendance records were assessed along with pedestrian counts within the retail arcade in order to identify seasonal patterns of demand. The following chart shows the average weekly number of vehicles using the car park by month (produced from data provided by Sydney Fish Market).



August and September represent about 90 and 93 per cent of average demand respectively. Further information on seasonal patterns of demand comes from the pedestrian counts discussed above. The following chart plots average pedestrian counts by month for weekdays and weekend days for the retail arcade.



Site Ultra-Peaks

During the peak time of Christmas (when visitation is primarily to purchase fresh seafood to takeaway) measures are implemented to alleviate traffic congestion problems:

- Police manage traffic on Bank Street;
- Attendants manage parking on-site;
- The light rail provides additional coverage, running 24 hours a day;
- Additional parking is provided through the use of the adjoining Hymix site during that time (200 spaces charged at \$3.00 each).

Even with these measures, the queues of vehicles attempting to access the site results in disruption to traffic flow on the ANZAC Bridge and the Western Distributor.

Summary

In the analysis of transport impacts of the site, demands were adjusted upward to reflect seasonal patterns of demand and better represent an 85th percentile month. The site ultra-peaks are discussed under management arrangements later in this report.

3.3 Existing Transport Conditions Around Site

3.3.1 Vehicles

Traffic

Sydney Fish Market has a single vehicular access, through a signalised intersection with Bank Street and Miller Street at the north eastern corner of the site. Site traffic can access the arterial road network via intersections along Bank Street to the south:

- The first signals encountered provide access to/from the Western Distributor westbound on-ramp/eastbound off-ramp. This connects across the ANZAC Bridge.
- The second signals provide access to/from Pyrmont Bridge Road (east and west) and to/from the Western Distributor to the east.

Site traffic can also directly access Miller Street, although use of this road by heavy vehicles is restricted (3T load limit).

These routes are highlighted on Figure 4.

The traffic functions provided by the major roads around the site are described below:

- Western Distributor – strategic arterial route connecting Victoria Road and City West Link, via the ANZAC Bridge, with the CBD and the Harbour Bridge.
- Pyrmont Bridge Road – arterial road.
- Wattle Street – arterial road connecting Pyrmont area with the broader Sydney road network, as well as connecting the Western Distributor with Cleveland Street and hence the north western part of the central industrial area. It operates for part of its length as one arm of a one-way pair with Harris Street.
- Bank Street – mainly an access road to adjoining properties, as well as providing a distributor function to Miller Street and Bowman Street (currently closed to public access).
- Miller Street – similar to Bank Street, although it has a more important distributor function for the local area.

Bank Street currently provides an access function and yet has direct connections to the Western Distributor, which is a strategic arterial route.

Estimates of existing peak hour traffic flows around the site were collected by manual turning movement counts and are shown on Figures 5 and 6 for morning and evening peak hours.

Analysis of intersection capacity was undertaken using Intanal for the site access intersection with Bank Street and Pyrmont Bridge Road and Wattle Street. A SCATES analysis of the Pyrmont Bridge Road, Bank Street and Western Distributor intersection was undertaken. Due to the complexity of the intersection the left turn movements from the eastbound and westbound off-ramps and to the westbound on-ramps were excluded from the SCATES model. Manual calculations of delays experienced by these movements were prepared based on manually collected signal timings for these movements. The estimates of intersection performance at this complex system are, therefore, approximate.

Intersection operation is rated according to level of service (LOS) criteria. The following table describes these criteria.

Table 3.17 – Intersection Performance: Definition of Level of Service Criteria

| Level of Service (LOS) | Average Delay per Vehicle (secs/veh) | Traffic Signals, Roundabout | Give Way & Stop Signs |
|---------------------------|---|---|--|
| A | less than 14 | Good operation | Good operation |
| B | 15 to 28 | Good with acceptable delays & spare capacity | Acceptable delays & Spare capacity |
| C | 29 to 42 | Satisfactory | Satisfactory, but accident study required |
| D | 43 to 56 | Operating near capacity | Near capacity & accident study required |
| E | 57 to 70 | At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode | At capacity, requires other control mode |
| F | greater than 70 | Extra capacity required | Extreme delay, traffic signals or other major treatment required |

Note: Adapted from RTA Guide to Traffic Generating Developments, 1993

The performance of existing intersections around the site is shown in the following table during the road system peaks.

Table 3.18 - Existing Intersection Performance, Road System Peaks

| Intersection | Morning Peak Hour | | | Evening Peak Hour | | |
|---|-------------------|---------------------------|-----|-------------------|---------------------------|-----|
| | D/S | Average Delay (sec) | LOS | D/S | Average Delay (sec) | LOS |
| Bank Street, Miller Street and Site Access | 0.62 | 45 | D | 0.50 | 44 | D |
| Pymont Bridge Road/Bank Street/ Western Distributor* | 0.77 | 37 | C | 0.56 | 30 | C |
| Pymont Bridge Road/ Wattle Street | 0.82 | 38 | C | 0.79 | 40 | C |

*Note - * D/S is from SCATES model of main part of intersection and delays are weighted average of SCATES's predicted delays and manual calculation of excluded movements (left turn movements from eastbound and westbound off-ramps and to westbound on-ramp).*

The relatively good performance of the Pymont Bridge Road, Bank Street and Western Distributor intersection indicated in the above table belies the extensive queues at this location in the evening peak hour. The queues are largely due to the restricted departure capacity from the intersection via the westbound on-ramp to the ANZAC Bridge.

The site generates a relatively small amount of traffic during the road system peaks. On a Friday evening the intersection of Pymont Bridge Road, Bank Street and Western

Distributor handles approximately 3,800 vehicles in the peak hour, of which site traffic comprises just over 3 per cent.

Traffic generation counts undertaken at Sydney Fish Market indicated that the site peak generation occurs during the day on a weekday and on a weekend day. In order to assess the performance of the site access intersection at those times, estimates of non-site turning movements were made by taking 75 per cent of the morning and afternoon weekday peaks. The results of this analysis are in the following table.

Table 3.19 - Existing Site Access Intersection Performance, Site Traffic Generation Peaks

| Intersection | Friday Site Peak Hour | | | Sunday Site Peak Hour | | |
|--|-----------------------|---------------------|-----|-----------------------|---------------------|-----|
| | D/S | Average Delay (sec) | LOS | D/S | Average Delay (sec) | LOS |
| Bank Street, Miller Street and Site Access | 0.94 | 52 | D | 1.06 | 62 | E |

These results indicate that the site access is currently providing poor levels of service during site busy periods.

The main operational features of each intersection are:

- **Site Access/Bank Street/Miller Street:** this is a signal controlled intersection with pedestrian facilities across the eastern approach (Miller Street), the southern approach and western approach (Sydney Fish Market). All movements are permitted at this intersection. The intersection's geometry is awkward: Miller Street and the site access are offset and there are several large concrete columns (supporting the Western Distributor) close to the roads, including one in the middle of the intersection. To accommodate these obstacles signal phasing is split (i.e., each approach runs individually, with conditional left turn phasing). There is a degree of pedestrian confusion about where moving vehicles might emerge from at any one time. The Sydney Fish Market access is shared with an egress driveway from Hymix and an access to Hymix is located across the Bank Street footway immediately north of this intersection. Of note is that Hymix does not currently have access from Bank Street north, necessitating vehicles wishing to make this movement crossing onto the wrong side of Bank Street and travelling southbound on the northbound carriageway.
- **Pymont Bridge Road/Bank Street/Western Distributor** – this operates as a single large intersection, although the ramp at-grades with Bank Street are physically separate. There are pedestrian facilities across all approaches at Pymont Bridge Road and Bank Street. The intersection is confusing for drivers due to its complex layout and the presence of viaduct support columns. No right turn is permitted from Pymont Bridge Road (west) to the eastbound Western Distributor ramp (this access is provided from Wattle Street via Fig Street). The westbound on-ramp to the Western Distributor has extensive queues in the evening peak, resulting in occasional blockage of the intersection. This results in queues extending along Pymont Bridge Road to the east and west, where they also extend into Wattle Street. Observations of the intersection in the morning indicate that there is a large

amount of loss time and the Bank Street approach's phase appears to receive too much green time for its level of demand. This leads to queues on other approaches.

- Pyrmont Bridge Road/Wattle Street – this is a signalised intersection at the southwest corner of the Sydney Fish Market site. It is a T-intersection with pedestrian facilities on its western approach (Bridge Road) and southern approach (Wattle Street). All movements are permitted. Its operation is adversely affected by the poor performance of the westbound on-ramp to the Western Distributor in the evening peak hour, with the queue managed such that it is on Wattle Street and the western approach is kept reasonably clear.

Operation of the westbound on-ramp to the Western Distributor is adversely affected by the operation of the weave area at the top of the ramp, immediately east of the ANZAC Bridge's main span. The weave area does not operate efficiently during the evening peak hour, with large headways frequently occurring in westbound lane 1 of the bridge and, less frequently, in lane 2 (no counts of weaving activity were undertaken for this study). The result is that the on-ramp carries around 1,800 vehicles per hour, when it is capable of carrying at least 10 to 15 percent more traffic.

The weave area is inefficient due to its restricted length and drivers' perceptions that they must weave as soon as the ramp joins the two other approach lanes already on the viaduct. Queues from the downstream signal controlled intersection of Victoria Road and The Crescent, extend back onto the western end of the bridge deck, foreshortening the actual (and perceived) weave length available.

Car parking

Car parking in the Pyrmont area is subject to restrictive development control policies. The UDP for Ultimo-Pyrmont specifies interim maximum levels of car parking for business development provision for different zones (1:200⁹ in Ultimo, 1:150 on the eastside of Pyrmont and, initially, 1:100 on the westside of Pyrmont, although now it is 1:150), with encouragement for developers to provide fewer spaces in places in close proximity to the light rail. In comparison, the RTA Guidelines nominate a figure of 1:40 for unrestrained parking demand.

Major car parks in the area are:

- Wentworth Park – used during greyhound meetings (Saturday and Monday evenings).
- Star City Casino – has a large car park with all day parking to 5.00pm for \$5.00.
- Darling Harbour – Exhibition and Convention Centre has parking for more than 900 cars.
- Darling Harbour – Entertainment Centre – Entertainment Car Park Darling Drive has over 1,900 car spaces.
- Darling Harbour – Harbourside Car Park with 1,500 spaces.
- Broadway Shopping Centre – up to 3 hours free parking for shoppers and 4 hours free for movie goers.
- Harold Park – has parking for over 1,500 cars.

⁹ 1:200 – 1 car space per 200 square metres of gross floor area.

On-street parking in the immediate environs of the site is subject to various restrictions and charges. The actual supply varies by time of day and day of week due to clearway restrictions and loading zones. Clearly, considerable effort went into the development of the on-street parking controls in the study area to meet the varied needs of different users.

An inventory of available on-street parking within about a ten minute walk of the site was taken with the following two tables presenting a summary of parking spaces available during the day and various conditions attached to their use.

Table 3.20 - Parking Spaces within Close Proximity of Site, by Day of Week, by Permit and by Time Limit

| Time Limit (hours) | No Permit Spaces | Weekday Permits* | Total Spaces | No Permit Spaces | Sunday Permits* | Total Spaces |
|-----------------------|---------------------|---------------------|-----------------|---------------------|--------------------|-----------------|
| 0.25 | 12 | 0 | 12 | 0 | 0 | 0 |
| 0.5 | 0 | 9 | 9 | 0 | 8 | 8 |
| 1 | 8 | 276 | 284 | 8 | 368 | 376 |
| 2 | 13 | 433 | 446 | 1 | 447 | 448 |
| 4 | 0 | 9 | 9 | 0 | 9 | 9 |
| 6 | 83 | 0 | 83 | 86 | 0 | 86 |
| Unrestricted | 109 | 0 | 109 | 128 | 0 | 128 |
| | 225 | 727 | 952 | 223 | 832 | 1055 |

Source Refer to Appendix C for more information.

Note

Availability during the middle of the day.

* Permits means permit holders are excepted from time limit and charges (if any).

Table 3.21 - Parking Spaces within Close Proximity of Site, by Day of Week, by Cost Per Hour

| Charge \$ per hour | Weekday Spaces | Sunday Spaces |
|-----------------------|-------------------|------------------|
| Free | 147 | 150 |
| \$1.10* | 83 | 86 |
| \$2.20 | 570 | 663 |
| \$3.30 | 152 | 156 |
| Total | 952 | 1055 |

Source Refer to Appendix C for more information.

Note * not subject to permits, bulk of the other charged-for spaces are.

The unrestricted spaces are largely on Wentworth Park Road and are in close proximity to the site, with a pleasant walk across the park. These spaces account for almost all of the free on-street parking supply in the area. Of the restricted spaces, a large proportion (3/4) are shared with permit holders. This would reduce availability for casual users.

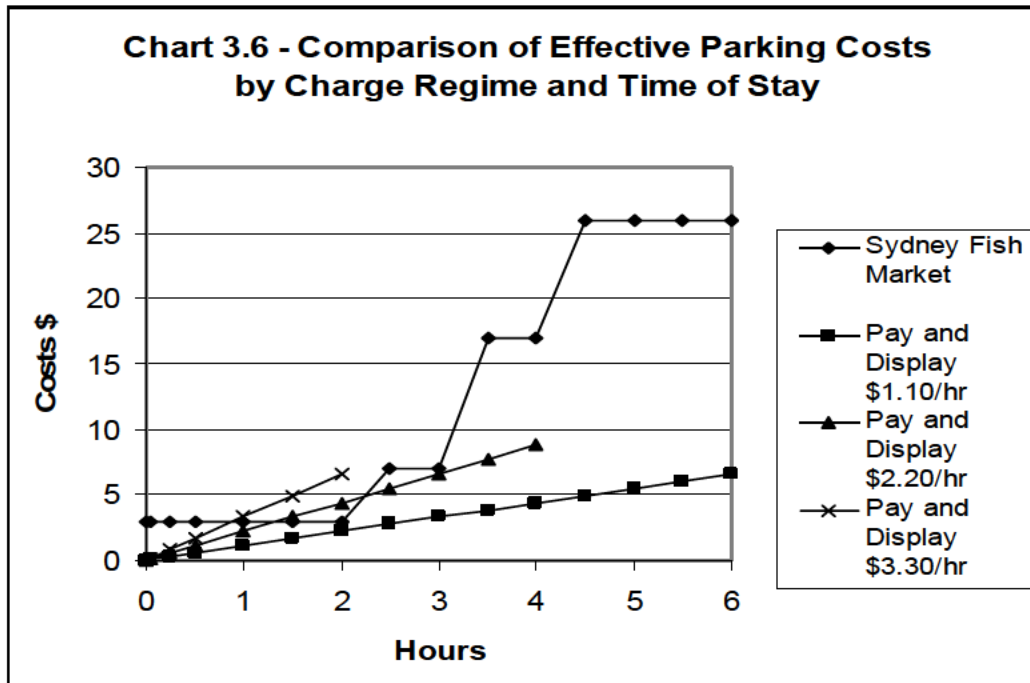
Apart from the free parking, the cheapest parking available is the long stay parking on Bank Street, north of the site.

The use of on-street parking was not surveyed although casual observations during site visits indicated that:

- During the week the long stay parking on Bank Street to the north of the site (approximately 83 spaces) is largely full by 9.00am and stays full most of the day.
- Short stay parking through the general area is well used.
- The parking supply varies by time of day, with less available during the peak hours.

- During the weekend, parking on Bank Street is only lightly used, elsewhere it is heavily used, such as along Bridge Road and Wentworth Park Road.

It is useful to compare the effective charges for the Sydney Fish Market car park and on-street pay and display charges. Chart 3.6 illustrates that for a stay of up to 45 minutes, the Sydney Fish Market car park is the most expensive option. The on-site car parking is always more expensive than the long stay on-street parking on Bank Street (\$1.10 per hour). The on-site car park only becomes cheaper than pay and display parking charged at \$2.20 per hour (the most common charge) after about 80 minutes.



This regime of charging is expected to encourage off-site parking for short stays by Sydney Fish Market visitors as well as stays for longer than two to two and half hours if one of the on-street or off-street long stay spaces can be used.

3.3.2 Pedestrians

Conditions for pedestrians in the area around the site were assessed during several walks from the site to the surrounding area. In general, pedestrian conditions in the Pyrmont area are of a high standard. The footways were recently reconstructed, with pedestrian facilities provided in most places where they are required and a high standard of urban design.

There is:

- consistent and high standard street furniture,
- kerb buildouts,
- some pedestrianisation (e.g., Union Square),
- relatively low levels of traffic intrusion in most locations, especially on the east side, by virtue of being a peninsula.

In addition, there are locality maps (City Map) scattered around the area. Whilst these are useful, the writing on them is relatively small, generally they are not directly lit at night, and some visitors have difficulty reading maps. The maps are generally oriented to the north and not to the surrounding road network.

The conditions immediately around Sydney Fish Market are not conducive for walking. Whilst there are pedestrian facilities in some places, and recently reconstructed footways with high quality street furniture (e.g., southern corner of Bank Street and Miller Street; and, north west corner of Jones/Bank Street and Pyrmont Bridge Road), the environment along the southern and, especially, the eastern edge of the site is dominated by the motor vehicle. Figure 7 identifies this zone of poor pedestrian amenity: it completely envelopes all site access points.

The main cause of this is the Western Distributor's viaduct which carries heavy volumes of traffic with localised noise and air quality impacts. Noise impacts seem to be exacerbated by the westbound on-ramp, which is a prolonged upgrade (approximately 320 metres), as well as the echo chamber effect of the Western Distributors viaduct. Traffic queued on Pyrmont Bridge Road awaiting access to the Western Distributor also detracts from the pedestrian environment.

The Western Distributor viaduct and eastbound off-ramp to Pyrmont Bridge Road and Banks Street has noise barriers on the eastern side but not on the western side.

The visual impact of the viaduct and its supporting columns contribute to an industrial feel and a sense of isolation. The super-human scale of the viaduct and its very massive supports tend to swamp the pedestrian.

These effects are relatively localised and little if any noise impacts were perceived within the part of the site near Blackwattle Bay, where most of the activity occurs.

Several deficiencies in the pedestrian network were noted:

- Mis-level at drop kerb (approximately 70 mm) at signalised crossing of Bank Street at Pyrmont Bridge Road (eastern side of northern departure).
- Stormwater pipe detail on underside of Western Distributor viaduct encourages roosting pigeons. These are located directly over the pedestrian crossing call button on the northwest corner of the site access intersection, among other places. This is a potential hazard for pedestrians.
- Physical barrier formed by Western Distributor south of Pyrmont Bridge Road.
- The lights under the Western Distributor Viaduct switch-off in the morning whilst natural light levels under the Viaduct are very low. Either the lighting is on a sensor that is placed in the open away from the shading effects of the Viaduct or it is on an inappropriate timer circuit.

Figure 8 identifies the travel time isochrones by foot for the site (refer to Appendix D for information about this analysis). Features of the analysis are:

- A large part of the catchment is lost by virtue of Blackwattle Bay forming part of the site boundary;
- There are other physical barriers that result in a crenulated surface, indicating restricted accessibility;

-
- Despite these issues, most of the attractions within Pyrmont are within a five to ten-minute walk of the site.

3.3.3 Bicycles

Existing bicycle facilities around the site are shown on Figure 9, which is drawn from the RTA's most recently available map (Sydney Cycleways, 2001). A number of gaps in the local bicycle network were identified in discussion with Bicycle NSW. These are shown on Figure 10.

Figure 11 identifies travel time isochrones by bicycle for the site, based on an assumed average speed of 15 km/hr.

3.3.4 Bus

The area around the site is supported by the following services provided by Sydney Buses:

- 111 – Sydney Explorer
- 431 – Millers Point – Glebe Point*
- 432 – Millers Point – Birchgrove*
- 433 – Millers Point – Balmain (via Wigram Road)*
- 434 – Millers Point – Balmain (via Wigram Road and Glebe Point Road)*
- 443 – Circular Quay – Pyrmont
- 449 – Star City Loop Service
- 501 – West Ryde – Circular Quay/Town Hall via Railway Square
- 888 – Star City – Circular Quay

Services marked with an asterix are relatively remote from the site, running along Glebe Point Road, which is approximately 800 metres west of Sydney Fish Market. They are not considered further in this paper.

The routes of the key services are shown on Figure 12. A feature of services 443, 888 and 111 is that they are loops; this splits bus stop pairs and reduces legibility for infrequent users.

Service frequencies during the peak, business hours, Saturdays and Sundays, as well as hours of coverage of these services are in the following table.

Table 3.22 - Summary of Bus Service Frequency and Hours of Coverage Around Site

| Attribute | 111 | 443 | Service 449 | 501 | 888 |
|--------------------------|------------------------|--------------------------|--------------------------|---|-------------------|
| Service Frequency | | | | | |
| Mon-Fri Peak | 3 /hr (18 min headway) | 6 /hr | Nil | 6 to 7/hr In 4 /hr Out | Nil |
| Mon-Fri Day | 3 /hr (18 min headway) | 3 /hr | 1.5 /hr (40 min headway) | 3 /hr | 6 /hr |
| Sat | 3 /hr (18 min headway) | 3 /hr (4 /hr in evening) | Nil | 3 /hr | 6 /hr |
| Sun | 3 /hr (18 min headway) | 3 /hr | Nil | 2 /hr | 6 /hr |
| Hours of Coverage | | | | | |
| Mon-Fri | 8.40am to 5.22pm* | 6.00am to 1.00am | 9.30am to 2.50pm | 4.38am to 12.22am* 3.50am to 11.23pm** | 9.38am to 4.08pm* |
| Sat | As above | As above | Nil | 5.23am to 3.10am* 4.32am to 2.25am** | 9.38am to 4.08pm* |
| Sun/Holidays | As above | As above | Nil | 5.57am to 11.59pm* 5.11am to 11.00pm** | 9.38am to 4.08pm* |

Note: *from Circular Quay;

**from West Ryde – 501 runs to 3.10 am on Saturday mornings

Source: Based on latest available timetables.

The Sydney Explorer Service (111) is a premium service aimed at the tourist market that provides a frequent service (approximately 3 per hour) on a circuit linking the main places of interest within and close to the city. An adult fare is \$30.00, allowing patrons to board and alight around a circuit, commentary is provided and Sydney Fish Market is a designated attraction along the route. The stop for access to Sydney Fish Market is at the corner of Harris Street and Pyrmont Bridge Road (approximately 200 metres from the nearest site entrance).

Of note is that the Western Distributor/ANZAC Bridge alignment supports a major trunk bus corridor. In the morning peak, approximately 81 inbound and 23 outbound buses per hour (services 441, 442 and 500 series services, including Ls and Xs) use this corridor. However, apart from the 501, these services do not stop within easy access of Sydney Fish Market. The 501 provides a connection from the site to Railway Square, and hence to the CityRail network.

A spot count of 501 inbound services (7:00 to 9:00am) at White Bay Hotel (last stop before Miller Street stop) in early December 2002 showed:

- 11 services ran (7.20 to 8.55am);
- 1 service was full;
- some bunching of headways (not severe);
- 176 seats were available;
- 289 passengers were carried.

Bus stops around Sydney Fish Market were assessed (refer to Figure 13) in terms of facilities provided and proximity to site. Overleaf, Insert 3.1 presents a site inventory of bus stops around Sydney Fish Market.

Figure 14 identifies the travel time isochrones for the site for bus, based on timetable information (refer to Appendix D for more information).

3.3.5 Metro Light Rail

The Metro Light Rail alignment runs close to the site with two stops within an easy walking distance: Fishmarket and Wentworth Park. Figure 15 shows the light rail's alignment and location of these stops.

Access from Sydney Fish Market to these stops is:

- Fishmarket Stop – via main site access to Bank Street, with pedestrian crossing at existing traffic signals. The stop entrance is directly adjacent to the pedestrian crossing on the east side of Bank Street. The walk distance to the stop is 100 metres from the access and 300 metres from the entrance to the retail arcade.
- Wentworth Park Stop – via site access at Pyrmont Bridge Road/Wattle Street intersection, with pedestrian crossing of Pyrmont Bridge Road then Wattle Street at signals. Access is then via Wattle Street. The walk distance is 170 metres from the access and 140 metres from the entrance to the retail arcade. An alternative access is from the site access at the corner of Bank Street and Pyrmont Bridge Road.

The hours of coverage offered by the service are:

- First service – 6.00am from Central Station and from Lilyfield, with the first service at Fishmarket Stop at 6.08am eastbound and 6.15am westbound;
- Last service – 12.10am from Central Station and 12.33am from Lilyfield, with the last service at the Fishmarket Stop at 12.41am eastbound and 12.25am westbound.

A 24 hour service operates between Star City and Central Station.

The service frequency at the Fishmarket Stop is 6 per hour between 7.30am and 9.20pm and 5 per hour at other times.

The timetabled travel time of the service is 8 minutes from Lilyfield to Fishmarket and 15 minutes from Central Station.

The fare structure is zonal, with two zones: Zone 1 - Central Station to Convention, and Zone 2 - Pyrmont Bay to Lilyfield. Fares are \$2.60 for an adult single within zone and \$3.60 for an adult single zone-to-zone.

Metro Light Rail has intermodal connections at:

- Lilyfield with Sydney Buses service 445;
- Heavy rail network at Central Station;
- Monorail at Convention and Haymarket;
- Ferry at Pyrmont Bay.

Insert 3.1 - Inventory of Bus Stops in Proximity to Sydney Fish Market

| No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|-------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|------------------------------------|--|--|--|--|---|---|
| Designation | CN | AS | AN | LW | LE | KE | KW | DN | GN | GS | BW | BE |
| Location | Pymont Bridge Road between Pymont Street and lane | Near Corner Miller and Jones Street | Near Corner Miller and Jones Street | Harris Street near Miller Street | Harris Street north of Miller Street | Harris Street north of John Street | Harris Street at corner of John Street | Miller Street between Mount and Harris Streets | Pymont Bridge Road west of site | Pymont Bridge Road west of Site | Harris Street north of Pymont Bridge Road | Harris Street north of Pymont Bridge Road |
| Services with timetables | na | 501 | 501 | na | 443, 449 | 443, 449 | 449 | na | Hours of coverage | Hours of coverage | 449, 501 | 443, 449, 501 |
| Size of Timetables | na | A1 | A1 | na | A4 | A1 | A4 | na | na | na | A4 | A4 |
| Closest Lighting | Overhead light | Street light | Street light | Street light | Street light | | | | Street light | Street light | Overhead | Overhead |
| Distance to closest lighting (m) | 0 | 10 | 3 | 0 | 3 | 0 | 0 | 10 | 10 | 15 | 2 | 3 |
| Seat Type | na | Timber | Timber | Timber | Timber | Timber | Timber | na | na | na | Timber | Timber |
| Seat Width (mm) | na | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 | na | na | na | 1500 | 1500 |
| Shelter Type | na | Advertising | Advertising | Shop awning | Shop awning | Advertising | Shop | na | na | na | None | Shop awning |
| Stop Type | Power pole | Shelter | Shelter | J-pole | J-pole | Shelter | J-pole | J-pole | U-pole | J-pole | U-pole | J-pole |
| Footway surface condition | Level | Good | Good | Good | Good | Good | Good | Slight slope, cracked | Cracked | Sloped & a little cracked | Good | Slight slope, good condition |
| Footway circulation width | No impact | Good to constrained | Good to constrained | Good | No impact | Constrained | No impact | No impact | Constrained | Good | No impact | No impact but outdoor seating affects width |
| Footway Circulation suitable for wheelchair | ok | ok | ok | ok | ok | ok | ok | ok | poor | poor | ok | ok |
| Road Surface Condition at Stop | Cracked - no puddle | Good | Good | Good | Good | Good | Good | Good | Cracked but fair | Good | Good | Good |
| Kerb Height at Stop (mm) | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 |
| Distance to nearest SFM Access (m) | 220 | 145 | 160 | 376 | 406 | 637 | 595 | 345 | 98 | 145 | 197 | 175 |
| Nearest SFM Access | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 2 | 2 |
| In Service? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No use observed or discovered for scheduled services | No use observed or discovered for scheduled services | Yes | Yes |

Note: To be read in conjunction with Figure 12
Source: Site visits

Insert 3.1 - Inventory of Bus Stops in Proximity to Sydney Fish Market

| No | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|--|---------------------------------------|---|---|---|--|---|---|--|---|--|
| Designation | HN | IE | EW | EE | LS | LN | MN | NE | NW | OW |
| Location | Union Street near Murray Street | Front of National Maritime Museum | Harris Street south of Allen Street | Harris Street north of Allen Street | Pymont Bridge Road west of Bellevue Street | Pymont Bridge Road east of Darghan Street | Pymont Bridge Road west of Bank Street | Wentworth Park Road south of St Johns Road | St Johns Road west of Colbourne Avenue | Harris Street south of Pymont Bridge Road |
| Services with timetables | 443, 888 | 111, 888 | 443, 449, 501, 888 | 443, 449, 501 | | | Hours of coverage on flag | na | na | na |
| Size of Timetables | A4 | A1 | A4 | A4 | | | na | na | na | na |
| Closest Lighting | Street light | In shelter | Street light | Street light | Street light | Shelter light | Street | Street | Street lighting | Street lighting |
| Distance to closest lighting (m) | 5 | 0 | 5 | | | | 10 | 10 | 5 | |
| Seat Type | na | Timber | Timber | Timber | na | Timber | na | na | na | na |
| Seat Width (mm) | na | 1500 | 1500 | 1500 | na | 1500 | na | na | na | na |
| Shelter Type | Shop | Advertising | na | Shop | Shop | Advertising | na | na | na | Awning |
| Stop Type | J-pole | Shelter | J-pole | J-pole | J-pole | | J-pole | Power pole | J-pole | Parking regulatory sign |
| Footway surface condition | Slight slope | Good - pavers | Level - cracked | Level - good | Fair | | Good | Fair | Fair | Good |
| Footway circulation width | No impact | Slight impact but plenty of room | Slight impact | Slight impact | | | Good | Fair | Good | Good |
| Footway Circulation suitable for wheelchair | ok | ok | ok | ok | | | ok | ok | ok | ok |
| Road Surface Condition at Stop | Cracked | Good | Good | Good | | | Good | Fair | Good | Good |
| Kerb Height at Stop (mm) | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 |
| Distance to nearest SFM Access (m) | 450 | 525 | 420 | 390 | 370 | 404 | 100 | 498 | 838 | 175 |
| Nearest SFM Access | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 |
| In Service? | Yes | Yes | Yes | Yes | Yes | No use observed or discovered for scheduled services | No use observed or discovered for scheduled services | Yes | Yes | Yes |

Note: To be read in conjunction with Figure 12
Source: Site visits

CityRail offers ‘TramLink’, which is an integrated ticketing product that allows users to obtain a single ticket to cover their journey from their boarding station on the CityRail network through to the zone of their choice on the Metro Light Rail. This product is available for single and return tickets as well as for some season tickets.

Other features of the service are:

- Bicycles carried for free.
- High quality stops: disabled access; CCTV; high standard of urban design.
- Vehicles are low floor with disabled access and large circulation areas.
- A conductor rides on each service collecting fares and checking tickets. They also provide a friendly and helpful service and, as such, act as ‘ambassadors’ for the tram service and attractions in the tram’s corridor.

Activities undertaken in the past to promote travel by light rail and use of Sydney Fish Market include:

- Eski promotion, where a complimentary branded eski was given to light rail patrons who had purchased product at Sydney Fish Market. This has been run at Christmas time.
- On-board pamphlets that describe various attractions along the light rail corridor. These attractions include Sydney Fish Market.
- Extended hours of operation to cater for 36-hour pre-Christmas trading period at Sydney Fish Market.
- Naming of stop ‘Fishmarket’.
- The Metro Light Rail’s website provides information about attractions along the corridor, including details of Sydney Fish Market.

Figure 16 identifies the travel time isochrones for the site by Metro Light Rail (refer to Appendix D for more information).

3.3.6 Coach

The site receives visits by tourists and school groups who are given a pre-arranged tour of Sydney Fish Market. In general these groups arrive by coach, although some groups use smaller mini-buses (about 15 seats) which occasionally also tow a trailer. Other groups use smaller tourist vehicles, such as Oka.

During the traffic counts there were 5 buses/coaches that entered the site on the Friday of survey and 14 buses/coaches on the Sunday. The peak accumulation of these vehicles on the site recorded was 2 on the Friday of survey and 3 on the Sunday. On Friday 9 August there were 5 buses/coaches observed on-site in the morning.

Given the nature of the surrounding developments there would be expected to be a reasonably high volume of tourist coaches dropping and collecting parties within the area, including at Sydney Fish Market. A local and central stand for the empty coaches to wait, was not identified by the study.

3.3.7 Monorail

Monorail services are peripheral to the site, with the closest stop located at Harbourside, about 565 metres walk from Sydney Fish Market. Figure 17 identifies the location of this stop.

The monorail operates between 7.00am and 10.00pm Monday to Thursday, 7.00am to midnight Friday and Saturday, and 8.00am to 10.00pm on Sunday. The service headway is 3 to 5 minutes.

The service is a one-way, anti-clockwise loop that connects the CBD with Darling Harbour.

3.3.8 Ferry

The closest actively used ferry wharf is in Pyrmont Bay, off Pirrama Road, just north of the National Maritime Museum. The wharf is approximately 715 metres walk from Sydney Fish Market (refer to Figure 17). At Pyrmont Bay the ferry connects with bus services 443 and 888. There is also a Metro Light Rail stop (Pyrmont Bay) about 150 metres from the ferry wharf.

This ferry service calls at the following wharves:

- Circular Quay;
- Milsons Point;
- Balmain East (not all services);
- Balmain (not all services);
- Darling Harbour (Aquarium on eastside of Darling Harbour);
- Pyrmont Bay.

The ferry wharf at Pyrmont Bay has disabled access at high tide only.

Hours of coverage of this service are:

- From Circular Quay – weekdays 7.00am to 10.00pm; Saturdays, Public Holidays, Sundays 8.00am to 7.15pm.
- To Circular Quay – weekdays 7.28am to 10.25pm; Saturdays, Public Holidays, Sundays 8.23am to 7.40pm.

Service headways are 50 to 55 minutes during commuter peaks, 30 minutes during the day and hourly in the evening. On Saturdays, Public Holidays and Sundays services have headways of 45 to 50 minutes to 11.15 am and then 30 minutes for the rest of the day.

The timetabled travel time from Circular Quay to Pyrmont Bay is between 27 and 33 minutes depending on calling patterns at Balmain and East Balmain. Between Darling Harbour and Pyrmont Bay (i.e., from the city side to westside of Darling Harbour), the travel time is 2 minutes.

The adult single fare from Circular Quay to Pyrmont Bay is \$4.30.

3.3.9 CityRail

Heavy rail services are relatively remote from Sydney Fish Market to provide a realistic travel opportunity without use of a bus or Metro Light Rail for access to the site. The closest City Rail stations are Town Hall (approximately 1,250 metres from the site via Pyrmont Bridge) and Central Station (approximately 1,800 metres from the site via Broadway and Wattle Street).

The light rail and bus service 501 provide connections between Central and Sydney Fish Market. These services have similar access times to the site once the interchange with CityRail services and wait times are accounted for. The light rail is considerably more expensive than the bus.

3.3.10 Boat

Sydney Fish Market has a publicly accessible wharf with marina berths available for people who wish to visit by boat. There are approximately 23 berths on the southern most-wharf, some of which are permanently occupied. On weekends there are busy periods when boats must wait for a berth to become available.

Site counts estimate that about 10 boats used the facility on the Friday of survey and 30 on the Sunday of survey. It is expected that these numbers would vary considerably with different weather conditions.

3.3.11 Taxis

A taxi rank for two vehicles is provided on-site immediately at the access to the main retail arcade. A courtesy telephone is provided for intending passengers.

The site is well used by taxis – on the Friday of survey a total of 48 taxis visited the site, with the peak accumulation of 5 at 1.30pm. On Sunday there were 66 taxis recorded accessing the site, with a peak accumulation of 11 at 11.30am.

From observations taxis are used as one would expect. They also seem to be used for delivery of seafood from the site to customers off-site. Taxis also use the site as a place for smoko; which is good for patrons seeking a taxi. It is assumed that they do not pay for parking.

3.3.12 Other Transport Services

There is a private bus service network that serves Star City Casino. Buses run from many different parts of Sydney and there is a cost for non-members of the Casino of \$11.00 of which \$10.00 is refunded for return tickets.

A typical service is from Ashfield, which picks up from the rail station and takes approximately 30 minutes to reach Star City. On a Friday evening it offers a two-hourly service until 11.30pm.

3.3.13 Combined Public Transport Accessibility

In order to gauge the combined public transport accessibility to the site, the Hammersmith and Fulham PTAL methodology was applied. This uses a combination of service frequencies and walk distances to calculate an index (PTAI) that relates to a point during a particular time period. Appendix D provides more information on the method, its advantages and disadvantages. That appendix also contains the calculation sheets for this TMAP.

The purpose of this assessment is to be able to objectively assess the effect of changes to public transport networks, services and pedestrian access to the site when the proposed master plan is considered later in this report.

The following table summarises the results for the Sydney Fish Market site for:

- The site entrance at entrance to the main retail arcade;
- The site entrance on the corner of Bank Street and Pyrmont Bridge Road;
- The site entrance on the at Bank Street.

Public transport accessibility indices were calculated for the following time periods:

- Weekday business hours;
- Weekday peak period;
- Weekday early (around 5.30am);
- Saturday during the day;
- Sunday during the day.

Table 3.23 - Public Transport Accessibility Indices by Location and Time Period, Sydney Fish Market Site, 2002

| Time Period | Public Transport Accessibility Index | | |
|------------------------|--------------------------------------|---|-----------------------------|
| | Location | | |
| | Main Retail Arcade Entrance | Site Entrance – Corner of Bank Street and Pyrmont Bridge Road | Site Entrance – Bank Street |
| Weekday Business Hours | 12.6 | 14.0 | 14.1 |
| Weekday Peak Hours | 11.1 | 12.5 | 12.8 |
| Weekday early | 2.6 | 2.8 | 2.9 |
| Saturday | 12.0 | 13.4 | 13.3 |
| Sunday | 11.8 | 13.1 | 13.2 |

Note refer to Appendix D for further information.

The index confirms that the main site access to Bank Street near Miller Street is the most accessible for public transport services, although it is only marginally better than the access at the corner of Bank Street and Pyrmont Bridge Road. The decline in PTAI scores at the Retail Arcade (i.e., as one moves into the site) is a reflection of the scale of the site: from the Bank Street access it is about 200 metres walk to the Retail Arcade; and 120 metres from the Bank Street/ Pyrmont Bridge Road access.

Of note is that the PTAI is at its highest during business hours – it is above the peak hours' level. This is unusual and reflects the greater availability of services during business hours: the 449 and 888 do not commence services till after 9.30am; and ferry services to

Darling Harbour operate at a higher frequency after the morning peak period. It also coincides with the site's peak trading hours.

PTAI scores on Saturday and Sunday, are higher than weekday morning peak hours. These scores are only slightly less than the weekday peak public transport accessibility values (i.e., during the day). This provides a high degree of public transport during the site's peak trading days.

These variations in PTAI scores are an indication that the public transport services in the area are seeking to support leisure travel as opposed to journey to work purpose trips.

The PTAI for early mornings (about the time that auctions on-site commence) was calculated to assess the relative availability of public transport services for site workers who need to be at work in the early hours. This found a much lower level of public transport access was available at that time; however, the light rail (not at the Fishmarket stop) and bus service 501 are available at this time and connect to Central Station. Some CityRail services do run prior to this time in the morning, albeit on a low frequency basis.

3.3.14 Comparison of Access Isochrones for Non-Car Modes

Under each of the non-car modes discussed above, an isochrone analysis was presented for access to the site. A feature of the method used in this analysis is the effect of walk access times and average wait times (half the service frequency) on the final shape of the isochrone.

The non-car mode with the best local access, as measured by the area covered by its isochrones, is bicycle, followed by walking. The light rail and bus only start to become attractive over longer distances and travel times, say more than 20 minutes. It is in this journey length that the car is competitive.

3.4 Travel Characteristics of Surrounding Area: Residents and Employees

3.4.1 Post-Occupation Survey Findings

This section provides a summary of travel-related characteristics of the residential area around Sydney Fish Market. It follows on from a discussion of general characteristics of the population in Section 2.7.

- Very high proportion of residents who work locally.
- Focus groups were asked about lifestyle advantages of the area. They nominated:
 - walk to restaurants/café's
 - walking along foreshore
 - going to Darling Harbour
 - shopping at Sydney Fish Market
 - going to theatre and cinema
 - play sport with friends
 - taking ferry to Circular Quay

These are all local activities, with good access by walking or public transport. In combination with the locations of work, the area has a high degree of travel self-containment for a broad range of trip purposes. That 61 per cent of residents use local parks reinforces this view.

- Mode shares for the journey to work were:

| | |
|-----------------|-----|
| - walk only | 41% |
| - bus | 18% |
| - train | 8% |
| - ferry | 0% |
| - car driver | 26% |
| - car passenger | 3% |
| - motorcycle | 1% |
| - bicycle | 2% |
| - monorail | 3% |
| - light rail | 4% |
| - taxi | 1% |

The mode share to car is only 31 per cent - this is low and suggests that newer residents to the area have lower rates of car use for their journey to work than residents of the area in 1996 (refer to Table 3.24) and the walk only mode share of 41 per cent is very high.

- Of the 58 per cent of residents who use the light rail:

- 36% use it for shopping
- 18% for journey to work
- 14% for access to parks and community facilities
- 8% use it to visit friends

This indicates that light rail is as important for non-JTW trips as for JTW trips.

- Overall 63 per cent of residents use a car for shopping.
- Focus group participants complained there was no direct bus service to Broadway Shopping Centre. There were also complaints about the cost of light rail and monorail and incompatible ticket systems.
- Relatively low car ownership: 26 per cent of households had no car and 51 per cent had only one car. Nonetheless, this was an increase over 1996 when 38 per cent of households had no car and 44 per cent had only one car.
- Focus group participants enjoyed walking/catching public transport to almost anywhere.
- Focus group participants complained about safety after dark (lack of street lighting and isolation); cyclists felt roads were too narrow to safely cycle with vehicles; concerned about peak hour traffic congestion on roads leading to Anzac Bridge, on Harris Street and on Pyrmont Bridge Road.

3.4.2 1996 Census Journey to Work Data

The following two tables identify the mode shares for journeys to work; the first table is for residents of the area around Sydney Fish Market and reports the modes they used to get to work. The second table is for workers in the area around Sydney Fish Market and shows the modes they used to get to work.

For residents, there was a relatively low car mode share, especially in the Ultimo area.

The number of jobs and people travelling to work on the census day is almost balanced for Wentworth Park, whilst Ultimo has a fewer workers than jobs and Pyrmont has far fewer workers than jobs. This situation is expected to come closer to balance as the population of the area grows. Equivalent journey to work data from the 2001 census will provide a useful measure of trends, especially as the light rail has become well established. This data is expected to be available in the near future.

The proportion of workers travelling by car to this is below the Sydney-wide average. Again, the 2001 data will be a useful comparator.

Table 3.24 - Journey to Work Mode Shares for Trips Originating in the Area Around Sydney Fish Market, 1996

| Origin Zone | Ultimo-Pyrmont | Pyrmont Peninsula | Wentworth Park | Ultimo-Pyrmont | Pyrmont Peninsula | Wentworth Park |
|--------------------------|----------------|-------------------|----------------|----------------|-------------------|----------------|
| <i>Travel Zone 96</i> | <i>28</i> | <i>29</i> | <i>174</i> | <i>28</i> | <i>29</i> | <i>174</i> |
| Train | 169 | 30 | 67 | 11% | 6% | 11% |
| Bus | 174 | 70 | 108 | 11% | 14% | 18% |
| Ferry/ Tram | 9 | 0 | 0 | 1% | 0% | 0% |
| Taxi | 39 | 17 | 18 | 3% | 3% | 3% |
| Car Driver | 416 | 172 | 238 | 27% | 35% | 41% |
| Car Passenger | 79 | 35 | 41 | 5% | 7% | 7% |
| Motorbike/ Motor Scooter | 6 | 6 | 3 | 0% | 1% | 1% |
| Bicycle | 3 | 3 | 9 | 0% | 1% | 2% |
| Other | 64 | 6 | 3 | 4% | 1% | 1% |
| Walked Only | 573 | 157 | 98 | 37% | 32% | 17% |
| <i>Total</i> | <i>1531</i> | <i>497</i> | <i>585</i> | <i>100%</i> | <i>100%</i> | <i>100%</i> |
| Car* | 540 | 230 | 301 | 35% | 46% | 51% |
| Non-Car | 991 | 267 | 285 | 65% | 54% | 49% |

* includes taxi and motorcycle

Table 3.25 - Journey to Work Mode Shares for Trips to the Area Around Sydney Fish Market, 1996

| Destination Zone | Ultimo-Pyrmont | Pyrmont Peninsula | Wentworth Park | Ultimo-Pyrmont | Pyrmont Peninsula | Wentworth Park |
|--------------------------|----------------|-------------------|----------------|----------------|-------------------|----------------|
| <i>Travel Zone 96</i> | <i>28</i> | <i>29</i> | <i>174</i> | <i>28</i> | <i>29</i> | <i>174</i> |
| Train | 531 | 971 | 78 | 23% | 21% | 15% |
| Bus | 213 | 410 | 33 | 9% | 9% | 6% |
| Ferry/ Tram | 0 | 4 | 6 | 0% | 0% | 1% |
| Taxi | 24 | 64 | 6 | 1% | 1% | 1% |
| Car Driver | 1224 | 2490 | 340 | 54% | 54% | 63% |
| Car Passenger | 115 | 314 | 45 | 5% | 7% | 8% |
| Motorbike/ Motor Scooter | 11 | 36 | 3 | 0% | 1% | 1% |
| Bicycle | 3 | 28 | 0 | 0% | 1% | 0% |
| Other | 12 | 32 | 10 | 1% | 1% | 2% |
| Walked Only | 145 | 243 | 14 | 6% | 5% | 3% |
| <i>Total</i> | <i>2278</i> | <i>4592</i> | <i>536</i> | <i>100%</i> | <i>100%</i> | <i>100%</i> |
| Car* | 1374 | 2904 | 394 | 60% | 63% | 74% |
| Non-Car | 904 | 1688 | 142 | 40% | 37% | 26% |

* includes taxi and motorcycle

3.5 Summary

The location and nature of uses at Sydney Fish Market has resulted in a high mode split to non-car modes across the day, although mechanised modes of public transport have a small share of this travel.

The existing traffic generation profile of the site minimises impacts on the road network as its peak periods of traffic generation occur during the middle of weekdays, whilst the busiest days for the site are on weekends. During the critical evening peak hour, site generated traffic accounts for just over 3 per cent of the traffic through the Pyrmont Bridge Road, Bank Street and Western Distributor intersection.

There are very large peaks in site usage that are related to holiday periods. The general level of use of the site by visitors is related to weather conditions. A fine day on the weekend will find the site crowded.

Public transport supporting the site provides a good degree of accessibility, with an increase in frequency during the middle of the day, which coincides with the site's peak trip generation period. There is also good public transport coverage (albeit of a reduced scale) in the very early morning when the site's auction starts (at 5.30am).

Residential, business and leisure landuses around the site all contribute to the low car mode share. For residents of Ultimo-Pyrmont, the site provides a neighbourhood node retail function; given the high income demographic of the residential area, this role spills over into the ready to eat food market. For employees of surrounding sites a similar function is provided for the ready to eat market. Proximity to leisure attractions of Darling Harbour and Pyrmont encourage chained trips by visitors from overseas and interstate, as well as Sydney-siders on a day out.

This large walk-in market is supported by the high quality pedestrian facilities provided in the general area, except for the immediate environs of the site. Once east of Bank Street, walking through Pyrmont is easy and a pleasure.

Existing car parking on the site is currently over-patronised. This requires better management and control, as well some additional supply. There is overspill parking on surrounding streets. Measures to address this situation as part of the TMAP are described in Chapter 7.

There are a number of actions relating to physical and management aspects of the proposed master plan to improve non-vehicle access conditions to the site. These are described in more detail in Chapter 7.

4. Future Conditions Around Site

4.1 Landuse Changes

4.1.1 Population, Employment Forecasts and Housing Supply and Employment Opportunities

Projected Population and Employment

The latest projections for population and employment in the Pyrmont area were obtained from the Transport Data Centre (within the Department of Transport). These are summarised in the following table.

| Parameter | Location | Year | | | |
|------------|----------------------------------|--------------|---------------|---------------|---------------|
| | | 1996 | 2001 | 2011 | 2021 |
| Population | Pyrmont Peninsula ⁽¹⁾ | 1,110 | 3,465 | 6,157 | 7,780 |
| | Ultimo/Pyrmont ⁽²⁾ | 3,099 | 5,229 | 7,463 | 8,769 |
| | Wentworth Park ⁽³⁾ | 1,886 | 1,981 | 2,049 | 2,123 |
| | Total | 6,096 | 10,675 | 15,668 | 18,672 |
| Employment | Pyrmont Peninsula ⁽¹⁾ | 5,977 | 6,530 | 7,541 | 8,326 |
| | Ultimo/Pyrmont ⁽²⁾ | 2,987 | 3,421 | 4,140 | 4,667 |
| | Wentworth Park ⁽³⁾ | 710 | 726 | 741 | 758 |
| | Total | 9,674 | 10,676 | 12,423 | 13,752 |
| Workforce | Pyrmont Peninsula ⁽¹⁾ | 607 | 1,887 | 3,353 | 4,293 |
| | Ultimo/Pyrmont ⁽²⁾ | 1,800 | 3,025 | 4,316 | 5,139 |
| | Wentworth Park ⁽³⁾ | 740 | 774 | 800 | 840 |
| | Total | 3,148 | 5,686 | 8,469 | 10,273 |

Source TDC Scenarios Modelling Project Landuse Forecasts (2001v1) of population and employment for travel zones (1) - 28, (2) - 29 and (3) - 174; Workforce was derived using ratio of population to workforce for the same areas from the Sydney Landuse Model (2000v1) and applying to the 2001v1 populations.

The population forecasts imply:

- Housing for an additional 2,700 residents would be required through to 2011, with housing for a further 1,600 people required over the subsequent 10 years.
- Similar increases are projected for Ultimo/Pyrmont.
- There is unlikely to be any substantial development in the travel zone that contains Wentworth Park over the next 20 years.

The forecast increases in employment are:

- Modest for Pyrmont, averaging 100 jobs a year for the next 10 years and slightly less per year for the following 10 years.
- Slightly lower in Ultimo/Pyrmont.
- Wentworth Park experiences only a minor increase over 20 years.

Supply of Housing - Pyrmont

At the initial regional consultations for housing forecasts held by Planning NSW, the representative from the City of Sydney outlined expected dwelling production for the next five years for Pyrmont area. These are summarised in the following table.

Housing Projections for Precinct 28 C Pyrmont

| Net Dwelling Stock Increase | | | | | Net Dwelling Stock Increase Estimates | | | | |
|-----------------------------|-------|-------|-------|-------|---------------------------------------|-------|-------|-------|------------|
| 98/99 | 99/00 | 00/01 | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 5 yr total |
| Major Sites | 275 | 264 | 412 | 289 | 0 | 400 | 300 | 0 | 989 |
| Infill | 288 | 261 | 168 | 274 | 81 | 100 | 100 | 200 | 755 |
| Total | 194 | 563 | 525 | 580 | 563 | 81 | 500 | 400 | 1744 |

Note All multi unit

Source Preliminary Forecast and Housing Profile, Planning NSW

The figures show a large increase in net dwelling stock in the past four years: just under 1,900 dwellings.

The five year forecast total of 1,744 units equates to a population increase of around 3,500 to 4,100 people.

Locations of future developments were identified as:

- MacCafferys Hill – 163 units
- Distillery Hill – 400 units
- Elizabeth Bay Master Plan area
- Darling Harbour 1, 2 and 3 – 111 units
- Wharves 8 and 9 – 160 units
- 2 sites of 25 to 50 units west of MacCafferys Hill

Beyond 5 years Pyrmont was regarded as being full. Rezoning of land would be required to accommodate a higher population.

Supply of Housing - Ultimo

Nominated sites and yields of dwellings:

- Her Majesty's Theatre site (Meriton) - 350 units
- 103 Key Street – 104 units
- Bullecourt Place – Master Planning with Planning NSW (burnt-out wool store (July 1992))
- Education Precinct near Broadway, nothing planned to change in terms of residential
- Possible sites:
 - Council's depot: nothing planned
 - Warehouse on Wattle Street: nothing planned
- Very few sites beyond 2006/07
- Some small sites: say 10 units x 5 to 7 sites per year – this is even dropping off now as supply of these sites is drying up

-
- Only small infill beyond 5 years
 - Further housing would need change of use

Comparison of Population Forecasts and Projected Housing Supply

The population projections suggest that there will be an over-supply of housing in Pyrmont should all the identified dwellings be constructed. The nature of the forecasts is such that they are tied to metropolitan-wide forecast totals. This implies that if the housing were to be constructed according to the above schedule, the vendors would need to draw a small number of residents away from other growth areas, which is plausible.

Employment

Jacksons Landing, as noted in Chapter 2, employment for approximately 1,000 to 1,500 people would be created in the business space at Jacksons Landing.

Longer term, the potential for redevelopment exists of sites adjoining Sydney Fish Market on the Blackwattle Bay foreshore.

Comparison of Employment Forecasts and Identified Employment Opportunities

The employment forecasts are lower than the identified likely employment opportunities.

4.1.2 Sites to be Developed

Jacksons Landing is the largest development in close proximity to Sydney Fish Market. The Master Plan for this site is discussed in Chapter 2; in summary it will provide:

- 1,400 dwellings of various sizes, including some existing - projected population is from 2,800 to 3,300 people.
- Approval for 38,000 square metres of business space – projected employment from 1,000 to 1,500 jobs.
- Public open space of 37,570 square metres to be provided.

Vacant sites and sites currently under development in the Pyrmont area (not including Jacksons Landing) are tabulated below and shown on Figure 18.

Table 4.1 - Vacant Sites and Sites Currently Under Development Around Sydney Fish Market

| No | Location | Approximate Site Area Sq M | Zoning | Status |
|----|---|-------------------------------|------------------------|--------------------|
| 1 | East of Wattle Street and south of rail line | 13,000 | Residential / Business | Vacant Land |
| 2 | South of Miller Street and east of rail line | 3,000 | Residential / Business | Vacant Land |
| 3 | East of Quarrymaster Drive and west of rail line | 3,500 | Residential | Nearing completion |
| 4 | East of Point Street and north of Jones Bay Road | 6,800 | Residential | Nearing completion |
| 5 | West of Pirrama Road (near water police) | 9,600 | Residential / Business | Vacant land |
| 6 | Adjacent to Giba Park | 8,400 | Residential | Partially Occupied |
| 7 | North of Union Street, east side of Edward Street | 9,750 | Residential / Business | Nearing completion |
| 8 | East of Harris Street and north of William Henry Street* | 11,200 | | Vacant land |
| 9 | South of Western Distributor and east of Harris Street* (Ex-Government Printer) | 10,300 | Business | At fit-out stage |

*Note – all sites covered by UDP for Ultimo-Pyrmont Precinct except**

4.1.3 Blackwattle Bay Foreshore Lands

These are the sites that front Blackwattle Bay on both sides of Sydney Fish Market. From north (near Bowman Street) to south and then to west (at Sydney College) these are:

- An area of land west of Bank Street that extends southward to the seafood processing sites. This currently appears to RTA land and is being used to store some of the red sandstone quarried from Pyrmont. This area is designated p2a in the UDP, the Blackwattle Bay Foreshore Park (precinct park). It will link with the foreshore promenade.
- Two sites under the Western Distributor viaduct, currently used for seafood distribution (Poulos Brothers and Bidvest).
- A site with a narrow access to the foreshore currently used by a charter/tour boat operator.
- Hymix readymix concrete batching plant.
- Sydney Fish Market site.
- Disused Coal Loader.
- Area used for storage of boats.
- Pioneer readymix concrete batching plant.

Some of these sites have been subject to master planning (e.g., the Coal Loader) and it is anticipated that the balance of these areas would be subject to master planning, with likely redevelopment to include some element of working waterfront usage. They would probably be developed after the Sydney Fish Market Master Plan implementation.

Each of these sites would require access and parking; their configurations are less than ideal (with water on one side and restricted width) and site agglomeration would be likely

to be beneficial. This would present an opportunity to consolidate access and parking facilities.

4.1.4 Other Developments in the Area

Sydney College – Blackwattle Bay Campus

The redevelopment of Glebe High School is currently underway as a secondary college (refer to Chapter 2). It is slated for completion in 2004, although it has been operating since 2002 with approximately 300 students, with the express design of making connections with local media firms, including Channel 10 (adjacent to existing Sydney Fish Market access to Bank Street), as part of the college's specialisation in information technology and media.

The college is expected to have a progressive increase in enrolments to 700 to 800 pupils.

This is located about 400 metres from Sydney Fish Market. The opportunities of this development will be the potential for a school hours bus service to be introduced, perhaps as part of an existing service. It is also likely to increase footfall through site, depending on the nature of the collaboration between local media firms and the college.

Retail Strategy for Pyrmont

The strategy as outlined in the UDP and discussed in Section 2.7 above is likely to result in:

- Greater availability of convenience items through the network of neighbourhood retail nodes.
- There is unlikely to be additional large scale convenience provision in the area, with Broadway Shopping Centre providing the supermarkets for the area. As noted in Section 2.5 above, a number of participants in focus groups indicated that the area was deficient in this regard. The additional population coming to the area and the relative remoteness of the Broadway Shopping Centre might present an opportunity for a small to mid-sized format foodstore closer to Pyrmont. This would have the potential to reduce the amount of car travel generated for retail purposes from the area and hence reduce car dependence.
- The focus groups also identified a perceived lack of banking facilities in the area. Again, with the large population and additional commercial activity, there may be some travel-reducing benefits of a bank(s) within Pyrmont.

Conversion of Harris Street Carpark to Residential

The large car park (approximately 1,200 spaces) on the corner of Harris and Allen Streets, backing onto to Camden Lane is currently proposed for partial redevelopment for residential use. This would result in the removal of around 600 spaces, that are currently made available to the public, thereby reducing the total parking supply in the surrounding area.

A development application was lodged for this proposal in 2002.

4.1.5 Long Term Potential Development Sites

Wentworth Park Greyhound Track

This facility is perceived as being under used. It has a large grandstand with high standard facilities for dining and meetings. From anecdotal evidence, the televising of the dog races has drastically reduced attendance at race meetings. MWT are not aware of any firm plans to relocate the facility.

City of Sydney Works Depot

This is currently located between Wattle, William Henry, Macarthur and Bay Streets in Ultimo. It occupies approximately 18,000 square metres and MWT are not aware of current plans to redevelop the site.

Were it to be redeveloped, then it is assumed that an alternative site would be required to provide the same function as the current site. Finding such a large site within the City of Sydney is likely to be difficult.

4.2 Effect of Forecast Landuse on Site's Mode Shares

The forecast changes in landuse were used to weight site user survey records to reflect the relative change in population and employment of relevant trip types. This assumes that the relative attractiveness of Sydney Fish Market and travel patterns do not alter.

The largest relative change in landuse is for site users who live and/or work locally, i.e., in the Pyrmont and Ultimo areas. As these users have a high mode share to walk the main effect on the site's mode share is to increase the proportion of people who walk to the site. The following table summarises the projected changes in walk mode shares from 2002, to 2006 and 2011 that would result from additional residential population.

Table 4.2 - Projected Daily Mode Share to Walk Based on Landuse Forecasts

| Year | Daily Walk Mode Shares | |
|------|------------------------|---------|
| | Weekday | Weekend |
| 2002 | 19% | 16% |
| 2006 | 21% | 18% |
| 2011 | 22% | 20% |

The changes to 2006 approximate a 5 per cent increase in walking as an access mode, with a similar increase to 2011.

4.3 Road Network Operation and Configuration

4.3.1 Projected Traffic Growth

The Cross City Tunnel EIS (RTA) identifies changes in traffic levels for a west cordon which cuts ANZAC Bridge and runs down the west side of Wattle Street to Broadway. Between 1998 and 2016 morning peak hour traffic (two-way) is projected to increase by

5.5 per cent. Daily traffic is projected to increase by just under 10 per cent. The peak hour increase would be expected to be less than the daily increase due to capacity constraints.

Over a period of eighteen (18) years, this level of increase is modest.

4.3.2 Network Configuration Changes

The following points summarise the road network changes around the site:

Cross City Tunnel – this proposed tolled motorway facility would be aligned east-west under the CBD connecting the Western Distributor to New South Head Road/Bayswater Road at Kings Cross. There would be an intermediate connection with the Eastern Distributor allowing movements between the west and south. An EIS for the original project configuration was determined and a preferred private sector bidder announced in 2002. The preferred scheme is currently the subject of a Supplementary Environmental Impacts Statement as it was considered to be a major departure from the scheme in the initial EIS. It is anticipated that the Cross City Tunnel would open in late 2004/2005.

The Cross City Tunnel's main effects on Sydney Fish Market are likely to be:

- Slight changes to traffic volumes on roads immediately around the site, with the use of the Western Distributor/ANZAC Bridge projected to increase during the morning and evening peak hours.
- Access to Sydney Fish Market would improve from the east, as traffic would avoid the congested streets within the CBD.
- Access between Sydney Airport and Sydney Fish Market would be improved, reducing impacts of freight movements, both imports and exports.

The project would change traffic volumes on the west cordon (described above) to increase 2016 morning peak hour traffic volumes by a further 4 per cent; daily traffic volumes for 2016 are projected to increase by 3 per cent. These are increases over 1998 volumes of 10 and 13 per cent for morning peak hour and daily volumes, respectively.

Wattle Street On-ramp – this proposal would entail the construction of a freeway ramp from Wattle Street, immediately north of the railway overbridge, up to the Western Distributor viaduct over Pyrmont Bridge Road. A connection stub was constructed when the Western Distributor viaduct was built and is located over Pyrmont Bridge Road. The status of this proposal is to be determined although it is identified on the UDP. Such a ramp would be likely to improve the traffic performance of the road network immediately around the site by increasing the capacity of the ramp's weave area where it connects with the viaduct on approach to ANZAC Bridge deck. This would reduce the level of queuing on Pyrmont Bridge Road.

Pyrmont Bridge Road – potential closure at Wentworth Park. This was an option considered in the UPTTAPS Stage II. Current peak hour traffic demands on Bridge Road west of Wattle Street range between 700 and 1,100 vehicle per hour. As such they do not justify the current width of two-lanes in each direction. Away from the Wattle Street intersection there appears to be scope to re-allocate the kerbside lane from vehicles to other road user groups, such as cyclists, pedestrians or buses. Further information is being sought from the RTA on their plans for Pyrmont Bridge Road and Bridge Road.

A growth rate for traffic volumes around the site of 0.75 per cent per annum was derived from the Cross City Tunnel EIS (with Tunnel). Over five years this equates to 3.8 per cent. A growth factor of 1.04 was, therefore, applied to 2002 traffic volumes.

4.3.3 Intersection Performance

The performance of intersections around the site was analysed after including traffic growth and the effect of additional traffic from development sites in the area immediately around Sydney Fish Market. The resulting traffic volumes are shown in Figures 19 and 20. The analysis assumes no change in traffic generation by the Sydney Fish Market site. The results are in the following table.

Table 4.3 – Do Nothing Intersection Performance, Road System Peaks, 2007

| Intersection | Morning Peak Hour | | | Evening Peak Hour | | |
|---|-------------------|---------------------|-----|-------------------|---------------------|-----|
| | D/S | Average Delay (sec) | LOS | D/S | Average Delay (sec) | LOS |
| Bank Street, Miller Street and Site Access* | 1.04 | 122 | F | 0.88 | 48 | D |
| Pymont Bridge Road/Bank Street/ Western Distributor** | 0.93 | 55 | D | 0.69 | 29 | C |
| Pymont Bridge Road/Wattle Street | 0.87 | 42 | C | 0.84 | 43 | D |

*Note – *assumes existing geometry is maintained;*

*** D/S is from SCATES model of main part of intersection and delays are weighted average of SCATES's predicted delays and manual calculation of excluded movements (left turn movements from eastbound and westbound off-ramps and to westbound on-ramp).*

The analysis indicates that the existing site access would perform unsatisfactorily in the morning peak hour, with extended delays. The intersection of Pymont Bridge Road, Bank Street and Western Distributor is projected to experience an increase in delays in the morning peak from 37 seconds to 55 seconds; whilst in the evening it is projected to experience a reduction in delays from 30 to 29 seconds. The reduction is due to additional traffic on movements that have lower than intersection-wide average delays, and hence the overall delay is reduced marginally.

4.4 Management of Sydney Fish Market Carpark

Sydney Fish Market advised MWT in August 2002 that there are plans to introduce an improved revenue collection system for the current carpark. This would entail:

- Retaining boomgate control of entry and exit, but extending hours of operation to 24 hour, 7 days a week.
- Introducing self-service pay stations within the carpark, so patrons would use these to make payments on their way back to their vehicle, rather than at the current staffed booths. This would increase the peak volume of traffic that the site can discharge, as it would eliminate some of the delay currently faced by motorists at the existing booths.

This system is expected to improve the efficiency of the existing site egress and to ensure that revenue collected from the carpark better reflects its usage.

4.5 On-Street Parking

An inventory of parking around the Sydney Fish Market site indicated that there is a substantial amount of on-street parking available within a ten minute walk of the site, although much of this is restricted with permit holders excepted. SHFA advised MWT that during consultation with the community and maritime group¹⁰ (and indeed, in the Post Occupation Survey summarised in Chapter 2, above) the lack of parking in the Ultimo Pyrmont Area is an issue for the local community.

As a consequence of on-going development of the area, the availability of on-street, short stay parking in close proximity to Sydney Fish Market is expected to reduce gradually over time as the number of permit holders using the spaces increases. The result will be that short stay parking will increasingly be occupied by residents' vehicles and, therefore, unavailable for visitors to attractions in the area, such as Sydney Fish Market. Nonetheless, there is a large amount of on-street parking within a ten minute walk of Sydney Fish Market (over 1,000 spaces).

4.6 Pedestrians

Improvements to the existing pedestrian network are outlined in the UDP and discussed in Chapter 2 above. The foreshore promenade is the most significant single pedestrian improvement that will directly benefit Sydney Fish Market. This improvement would be clear of the area of poor pedestrian amenity around the site. It forms an important component of the Master Plan for the site. Similarly, completion of Jacksons Landing and the re-opening of Bowman Street to traffic will assist in the re-activation of Bank Street north of the Miller Street. This would be expected to encourage more pedestrian use of Bank Street.

The ongoing re-development of Pyrmont will see further general improvements to pedestrian networks, both directly and indirectly. Benefits to pedestrian activity of additional development include:

- Additional residential population – this will see more active use of the pedestrian network, further improving perceptions of personal security.
- Completion of regeneration will reduce the number of empty/construction sites and reduce the number of construction-related heavy vehicles using roads that adjoin pedestrian desire lines.
- Completion of the retail strategy for the Ultimo-Pyrmont Precinct will provide more active frontages, which encourage walking through the provision of more local facilities. It will also improve perceptions of personal safety.

4.7 Bicycles

A series of gaps in the cycle networks/facilities were identified in discussion with Bicycle NSW. It is anticipated that over time some of these might be plugged either through the initiative of local councils, the RTA or as a result of developments.

This process would improve the coverage of the cycle network in the general area. In addition, the new developments in the Pyrmont area are subject to the requirements of the

¹⁰ Refer to Sydney Fish Market Master Plan Phase 2 – Community Involvement Program Findings.

UDP which stipulates the incorporation of trip-end facilities for bicycles. These include secure cycle parking in all buildings, and showers and lockers in commercial buildings. This overcomes some of the constraints on usage of bicycles.

4.8 Bus

Sydney Buses advised that they had no service improvements in planning at present. They did indicate that increases in demand for their services would most likely be met through additional frequency (if a capacity issue arose) rather than re-casting the existing route network (which provides good coverage of the Pyrmont area).

The projected increase in population within close proximity to the site suggests that bus patronage would be expected to increase over time and that some additional service frequency might be provided in response to this.

The Master Plan for Jacksons Landing indicates that Bowman Street (at the northern end of Bank Street) is to be widened from two to three-lanes as part of that development. This additional width would facilitate bus access through the site, although MWT are not aware of proposals to provide such a service.

Re-routing buses into the Sydney Fish Market site was not favoured by Sydney Buses, partly due to such changes having a likely negative effect on existing patrons.

4.9 Light Rail

Discussions with Metro Light Rail indicated that an extension from Central Station to Circular Quay was being pursued as a priority. It was at the pre-feasibility stage of consideration. A proposed extension to the west, possibly to Leichhardt, would be pursued after the resolution of the Circular Quay Extension.

On 18 August 2002, the Minister for Transport announced that the state government will investigate the extension of the light rail from Central Station to Circular Quay. The announcement notes that:

- The tram would make use of road space freed-up by the Cross City Tunnel;
- An improved bus/rail interchange would be constructed at Central Station;
- Longer distance train travellers, whose services terminate at Central, would be able to use light rail to access their destinations in the CBD without recourse to the already crowded suburban rail network.
- The light rail may also allow better deployment of the existing bus fleet.

At the end of August there were reports that an extension to Norton Street Leichhardt was also under consideration. In October 2002 the Minister for Transport announced a study into light rail on Parramatta Road. No detail is to hand.

No changes were in planning for service frequencies and hours of coverage (note comment regarding flexibility of hours of operation in Chapter 3). There are currently no capacity issues and the service frequency of 6 per hour at Sydney Fish Market is considered to be particularly useful.

The provision of park and ride facilities along the line are not in contemplation due to insufficient demand.

For planning purposes for the Sydney Fish Market site MWT have assumed that the present service would continue with the scope for co-operation in regard to busy periods at Sydney Fish Market.

4.10 Ferry

The UDP indicates the possibility of a ferry service to Jacksons Landing as discussed in Chapter 2. The Master Plan for Jacksons Landing also discusses future ferry services. STA have stated that they currently have no plans to provide a ferry service to Jacksons Landing.

A ferry service to Sydney Fish Market ran in 1998 but was discontinued in 1999 due to commercial difficulties with regard to access to one of the wharves at Sydney Fish Market. Sydney Ferries provided a copy of the intended (but not implemented) timetable for 1999. It was for a Saturday, Sunday and Public Holiday service running from:

- Circular Quay; to
- McMahons Point;
- Balmain East (Darling Street);
- Goat Island; and
- Fish Market.

The service was to have run between 9.35am and 4.35pm, with a total of seven services each way per day. The round trip would take 25 minutes for all stops and 15 minutes for a non-stop Circular Quay to Fish Market service. The National Parks and Wildlife Service runs tours of Goat Island; with the ferry, a day excursion taking in a tour of Goat Island and a visit to Sydney Fish Market would be possible.

Discussions with Sydney Ferries indicated that the service in 1998 was not a commercially viable proposition. Some suggestions were made by Sydney Ferries in relation to the possibility of developing a product that used ferry as access to Sydney Fish Market from Circular Quay. A tour of Sydney Fish Market (perhaps including the fishing fleet), along with the Sydney Seafood School and a meal by the water, might be included with a return ferry trip to Circular Quay.

This would need further consideration by the parties involved, but it suggests that a limited ferry service might be possible, depending on product development. The prime market for the product would be tourist-based, rather than a transport service for regular shoppers. Nonetheless, it may lead to a ferry service that a proportion of other, non-tourist, visitors might consider using.

In terms of other ferry services within the Blackwattle Bay/Rozelle Bay/Pymont area, there is likely to be potential demand for a service with the redevelopment of the boatshed on Glebe Point (Pavilion) and general increases in local population. Whether there would be sufficient demand to warrant the introduction of a new service, or the adjustment of existing services, is unlikely. Sydney Ferries indicated that they had no plans to introduce such services.

4.11 Summary

The effect of these proposals is likely to be:

- Traffic volumes immediately around site are shown on Figures 19 and 20, which account for traffic growth and development related traffic from the sites identified in Section 4.1.2 above.
- The site access intersection is projected to perform unsatisfactorily in the morning peak in 2007 with no change to the current level of site traffic generation.
- On-street parking availability for visitors is likely to reduce as the number of residents' cars parked on-street increases.
- Additional development, population and employment in the area may result in:
 - A possible increase in bus service frequencies;
 - More comprehensive bicycle facilities;
 - An expanded pedestrian network, especially with the completion of Jacksons Landing;
 - More local services and facilities, which should moderate the demand for vehicular travel for some journey purposes.
- The effect of a more densely developed walk-in catchment for Sydney Fish Market would be to increase the importance of walk as site access mode by about 5 per cent to 21 per cent on a weekday and 18 per cent on a weekend in 2006.
- There is also the potential for an extended light rail network with an enlarged catchment to the west, which would increase visitation to Sydney Fish Market by this mode.
- There is little chance of a ferry service being introduced to Blackwattle Bay without it forming part of a packaged product with local attractions.
- The foreshore lands around Blackwattle Bay would probably be developed after Sydney Fish Market.

5. Proposed Master Plan for Sydney Fish Market

5.1 General Description and Comments

A discussion of the main features of the Sydney Fish Market Master Plan is provided below. Figure 21 shows the proposed ground floor layout of the master plan. For further details the reader should refer to site drawings, perspectives and architectural model provided in other master plan documentation.

Vehicle Access

- Revised vehicle access to the site – this would relocate the current vehicular access along Bank Street to the south to form a new signal controlled T-intersection. This would allow separation of vehicles and pedestrians from the light rail stop, bus stops on Miller Street and the footfall that feeds the site along Miller Street.
- The existing site access at Bank Street would be reconfigured to a three-way T-intersection, with the Hymix egress forming a fourth, intermittently called approach (vehicle actuated). Signal control would be retained.
- The Bank Street site access would be supported by a restricted movements access from Pyrmont Bridge Road. The RTA have verbally indicated they will support the proposed access from Pyrmont Bridge Road. The detailed design of this access should ensure adequate footway and cycle provision is made. This will require the development application stage of site planning to ensure adequate sight distances and sufficient circulation space are provided.

Pedestrian Access and Circulation

- The Bank Street pedestrian access is to be improved through:
 - Revised pedestrian crossing arrangements of Bank Street, with the current four-way signal controlled intersection reconfigured to a more efficient three-way intersection. This should reduce average wait times for pedestrians as the proposed arrangement should allow more responsive signal control.
 - An enlarged and significantly improved pedestrian entrance at Bank Street that would connect in a legible fashion with the proposed pedestrian crossing facility of Bank Street. The legibility of the entrance would be enhanced through the proposed entry marker structure and the clear sight line directly down the proposed pedestrian access way to the waterfront and along the line of the northern wharf. The current hesitation by first time visitors as to which way to go will be eliminated.
 - This pedestrian access from Bank Street to the waterfront will be 11m wide with some plantings. It will be separate from the car park.
- At the south eastern corner of the site, the current pedestrian access is proposed to be substantially enhanced through the opening-out of the Gipps Street view corridor to provide a direct connection to the site's retailing area. The existing mis-

alignment of the pedestrian crossing facility of the Western Distributor's westbound on-ramp with the pedestrian access of approximately 40m would be virtually eliminated. This would reduce pedestrian access distances by around 45m for this access, which is a substantial improvement. It will also improve the legibility of the entrance as the Gipps Street view corridor will lead directly to the waterfront and then along the central wharf.

- Improved pedestrian access from Pymont Bridge Road would be provided through an enlarged and more inviting space opposite Wattle Street. There is provision for a connection to a westward extension of the foreshore promenade. The proposed signal controlled pedestrian crossing of Pymont Road would be maintained.
- A direct walkway along the foreshore would be provided, comprising a boardwalk and a promenade. The width of these facilities varies – at the southern end of the site the combined width of the boardwalk and promenade would be approximately 17m, adjacent to Fish Market Square the width of the promenade would be 8m. These features of the master plan will greatly facilitate pedestrian movement within and through the site. With the more extensive redevelopment of land along the Blackwattle Bay foreshore, this boardwalk and promenade system will allow the public to walk from the vicinity of Sydney Secondary College around the shoreline to Pymont Point Park with no interference by vehicles on the public road system.
- The proposed retail and wholesale units along the western side of the site would have reasonable width pedestrian circulation areas around them that will facilitate ease of pedestrian movement. An important feature of the master plan is the creation of a large volume open space adjacent to the foreshore – the Fish Market Square. A large proportion of movements by people from one group of retail units to another and then to outdoor areas to enjoy their food will take place in this area, rather than the current situation where they take place in the car park.
- Pedestrian access to the foreshore and associated retail areas from the main car park would be via an overhead covered walkway. This will remove most of the scope for conflicts between pedestrians and commercial vehicles. Access from the car park within the tower building to the foreshore will be via the enlarged Gipps Street view corridor. There will be an at-grade pedestrian crossing of the site circulation road. Detailed design should ensure that adequate sight distances are provided at this location and vehicular speed is managed appropriately.

Onsite Vehicular Circulation and Car Parking

The main features of vehicular circulation and car parking are¹¹:

- Substantial improvements to on-site vehicular circulation and car parking are proposed. Commercial vehicles and passenger cars would be largely segregated. Loading docks along the eastern edge of the main building are proposed with more than twice the existing number of bays to be provided. This additional capacity would substantially improve the efficiency of product handling. Given the nature of the auction process it is likely that this area will require ongoing management during auction periods to ensure that it operates in an orderly fashion.

¹¹ Refer to Maunsell Australia (February 2003).

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- The car parking would be in:
 - A main car park structure on the eastern side of the site;
 - Part of the proposed tower at the south east corner;
 - A single level basement connecting these two areas.

Commercial vehicles would be accommodated in:

- 5 loading dock spaces for articulated vehicles;
- 12 loading dock spaces for heavy rigid vehicles;
- 30 loading dock spaces for medium rigid vehicles;
- 35 parking spaces for medium rigid vehicles to be located at grade under the main car park;
- 43 small rigid vehicle spaces to be located at grade under the main car park.

There would also be a further 41 spaces in the remains of the Bank Street that would be suitable for cars, including light commercial vehicles.

This compares favourably with the existing level of commercial vehicle demand during auction periods which is not expected to increase (refer to Table 3.15) that requires capacity of 105 spaces for vehicles requiring a height clearance of 3.5m. The balance of the at-grade spaces would be occupied by commercial vans. These vehicles would also be able to park in the Bank Street car park and in an area shown on the western side of the proposed office tower building.

These arrangements would allow commercial vehicle activity to be restricted to the ground level of the site.

Private cars would not have access to the loading docks. They would not have access to the at-grade parking area under the main car park structure during the auction period.

Outside auction periods, during the weekend, the at-grade area under the northern car park structure would form part of the public car park and the small number of heavy vehicles using the site at that time would be restricted to the loading docks, which would have sufficient capacity to accommodate all commercial vehicle demand at that time.

This will require a management system to support the re-configuration, involving moveable (and lockable) bollards, or the like, to provide effective physical management of different vehicle classes. It would result in a more efficient use of space than a fixed segregation system.

- Three coach parking positions are indicated on the plan. These are close to the site entrance and connect directly to the on-site pedestrian circulation system. It is important that these do not interfere with the function of the access.

Additional Development

- The Master Plan proposes additional retail and office/commercial floorspace (refer to Table 5.1 for more information).

Configuration of Development

- The revised arrangement of wholesale and retail activity in a zone along the western half of the site eliminates the current situation where retail and wholesale

activity is distributed around the perimeter of the existing main car park. The present arrangements act to generate multiple movements by pedestrians, trolleys and forklifts between the various locations, mainly through the existing car park, and heavy vehicle servicing areas that results in conflicts with vehicles using the car park and loading docks. This aspect of the design will improve safety for pedestrians and facilitate the efficient circulation of pedestrians and vehicles within the site.

- The proposed co-location of retail and wholesale units will also improve the efficiency of product handling by reducing distances and potential for conflicts with other site users.
- The Master Plan's circulation arrangements have been analysed by Maunsell Australia (February 2003) and the reader is referred to their design report for details of their analysis. That report contains swept path analyses for the different loading dock and site access arrangements.
- The fishing fleet will be serviced by vehicles, along access paths from the main site circulation road. These servicing movements involve very few vehicles, however, they would need management to ensure there are few conflicts with pedestrians. A system of lockable bollards would be appropriate to physically manage this access.

Other Comments

- The proposed Master Plan indicates improved streetscape along Pyrmont Bridge Road with tree plantings along the edge of the carriageway. Trees should be planted so that they are clear of the carriageway.
- It is recommended that bicycle parking facilities for the public be provided in a series of locations within view of public areas in close proximity to the main activity areas on the west side of the site.
- The Master Plan does not directly address the poor urban design of the space under the Western Distributor Viaduct as it is outside the scope of the master plan. Whilst the proposed multi-storey carpark would act to shield part of the site from the Viaduct, the situation under the Viaduct needs attention to reduce the current discouragement of pedestrians crossing under the Viaduct. The relevant stakeholders, primarily Council and the RTA, should be approached to address this issue.
- A large increase in the number of berths at Sydney Fish Market is proposed by the master plan. This expansion of capacity is achieved through the extension of the three existing facilities. Figure 22 demonstrates these improvements, which retain the southern-most facility's capacity to handle ferries.

5.2 Proposed Floorspace Changes

The master plan would involve additional floorspace, which is in the following table, along with current floorspaces for comparison.

Table 5.1- Floorspace Schedule for Sydney Fish Market by Use (GFA)

| Use | Existing Floorspace by use Sq m | Proposed Floorspace by use Sq m | Change in Floorspace by use Sq m | % |
|--|--|--|---|-----|
| Office | 2,169 | 13,300 | 11,131 | 513 |
| Retail | 7,133 | 12,440 | 5,307 | 74 |
| Wholesale | 3,231 | 3,335 | 104 | 3 |
| SFM Area | 2,701 | 2,020 | -681 | -25 |
| Selling floor including audit, seating, crateyard, weighing sorting and data entry | 3,916 | 4,285 | 369 | 9 |
| Total floor space | 19,149 | 35,380 | 16,230 | 85 |

Source SHFA 5 February 2003.

Note Aggregations of the areas may not equal total due to rounding.

The large increase in commercial floorspace would accommodate between 350 and 665 workers, based on a range of employee density of 20 to 38 square metres per employee. The actual number of employees onsite would depend on the exact nature of the occupiers. This will provide a source of walk-in trade for Sydney Fish Market at nearly zero transport cost.

5.3 Future Development of Blackwattle Bay

The development envisaged by the Master Plan provides for future pedestrian and bicycle links to adjoining properties (Hymix to the north and coal loader to the west). These would be expected to eventually extend around to the large public open spaces at the northern end of Pyrmont, within Jacksons Landing. In the other direction, they would link up with the Sydney Secondary College, and into densely populated Glebe and Glebe Point.

5.4 Locational Choice for Sydney Fish Market

Is the site an appropriate location, in transport terms, for Sydney Fish Market?

The relevant transport features of the location are:

Freight

- It can draw direct supplies of seafood from fishing fleet based on-site (a relatively small source).
- It is well located on north-south road routes to receive product from coastal NSW (north and south) and Queensland with minimal travel within the Sydney road network.
- It is located in close proximity to Sydney Airport for receipt of product from overseas. This is an increasingly important source of supply following changes in fisheries regulations in NSW. For export, this proximity to Sydney Airport is also a benefit.
- The distribution of product within Sydney is well supported by access to higher order roads.

Retail Trade

- The walk-in catchment of the site is relatively dense and its population and employment base is projected to increase markedly over the next few years. This should increase the amount of walk-in trade, which would find the site arrangements proposed by the Master Plan more attractive than the current situation (i.e., better pedestrian links to and within the site).
- The site is located in close proximity to one of Sydney's major leisure and recreation precincts at Darling Harbour, and as such is well placed to tap this trade (on foot or by bus or light rail) from the broader area's visitor market. This should encourage linked trips and hence reduce overall travel when compared with single destination trips. It is sufficiently close to warrant its own stop on the Sydney Explorer bus service.
- The high quality of the pedestrian environment in Pyrmont facilitates and encourages walking as a mode of transport.
- The site is well served by public transport: it has light rail and bus services within close proximity, and these connect to the CityRail network at Central Station. There are other public transport services in the area, including ferry and monorail.
- A feature of public transport serving the site is that its temporal profile of accessibility roughly matches the profile of the site's trip generation (i.e., higher levels of public transport provision during the day, when the site's trip generation is at a peak).
- The area around the site, due to its good public transport and location, is subject to restrictive parking standards for on-site development and there is limited free on-street parking.
- There are proposals to consider the extension of the light rail network. A westward extension would certainly directly boost the site's light rail catchment.
- The traffic generation of the site during road system peak periods is relatively minor. The site's peak traffic generation occurs during the day on weekends, when the road system is generally less busy than weekday peak periods. The site's peak weekday traffic generation during the middle of the day occurs when the road system is relatively lightly loaded.

Combined Use of the Site

- Co-location of wholesale and retail seafood trade provides a vertically integrated supply, distribution and consumption chain all on the one site (refer to Chapter 3). The proposed additional commercial space will strengthen the walk-in catchment for retail trade, which should result in additional on-site consumption of product.

These transport features of the site and surrounding locality indicate that Sydney Fish Market's location is likely to assist in reducing the demand for travel and reducing dependence solely on cars for travel purposes¹². In fact, the Master Plan, along with broader redevelopment of adjacent sites, makes Sydney Fish Market an integral part of the non-vehicle movement network of the surrounding area – to a greater degree than it currently is.

As a hypothetical comparator of location for the development an alternative might be near the Sydney Markets at Flemington or at Lidcombe. This location would probably incur

¹² An aim of SEPP No 66 Integration of Land Use and Transport.

lower development costs. In such a location, even if Sydney Fish Market's retail component were retained, the transport implications would be:

- Far more restricted walk-in catchment of residents and workers;
- Remote from other day-out attractions, reducing trip chaining opportunities and those that do exist would probably require a car;
- No delivery of product by boat;
- No casual visitors by boat;
- Lower quality pedestrian facilities and environment when compared with most of Pyrmont;
- Greater general reliance on the car due to less public transport choice.

A more precise analysis would need to identify a specific site(s) for direct comparison.

While the above discussion is cursory, it does suggest that the Blackwattle Bay site, in transport terms, does offer considerable advantages in terms of a range of measures, including achievement of SEPP 66 objectives over a site at Flemington or Lidcombe. This is especially the case if Sydney Fish Market is to maintain an active retail focus, with on-site consumption of product.

6. Future Site Transport Demand

6.1 Projected Future Travel Demand

A disaggregate approach to estimating future traffic generation by the redeveloped site was used. The process entailed the following steps:

- Step 1 – Existing total traffic generation for the site was disaggregated into different sources of traffic.
- Step 2 – An estimate of the number of retail visitors who park off-site was used to identify total site traffic generation – by both on- and off-site parkers.
- Step 3 – Retail visitor traffic was further disaggregated into the type of activity undertaken on-site.
- Step 4 – Levels of traffic generation were adjusted to better reflect the 85th percentile levels by adjusting for seasonal influences.
- Step 5 – Future traffic generation was estimated by calculating the effect of the Master Plan’s proposals on relevant floorspace areas.

This process is described in Appendix E. The results of the process are summarised in the following table.

Table 6.1 – Projected Traffic Generation of the Redeveloped Site, all Users, all Vehicles Parked On-site (vehicle trips)

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|----------------|------------------|-----|-----|---------|-----|-----|------------------|-----|-------|--------|-------|--------|
| | Morning | | | Evening | | | In | Out | Total | In | Out | Total |
| <i>Weekday</i> | | | | | | | | | | | | |
| Total | 390 | 165 | 555 | 93 | 385 | 478 | 663 | 717 | 1,380 | 4,988 | 5,105 | 10,154 |
| <i>Weekend</i> | | | | | | | | | | | | |
| Total | na | na | na | na | na | na | 1,008 | 918 | 1,926 | 6,591 | 6,603 | 13,193 |

* Daily refers to survey period

The above traffic volumes are considered to be business as usual demands based on effective parking arrangements that restrict the amount of parking that currently takes place off-site. The site access(es) and site circulation system should be sized to accommodate these levels of demand.

The projected performance of the site access arrangements are reported in Maunsell (February 2003). The effect of the additional traffic on the intersection of Pymont Bridge Road, Bank Street and Western Distributor Ramps would be to increase average delays by a small amount in the morning as the additional traffic generated by the site would be 223 vehicles per hour (not all of which would use the Pymont Bridge Road, Bank Street and Western Distributor intersection) compared with 4,161 vehicles per hour projected to be using the intersection in the base case (refer to Chapter 4). In the evening peak hour the additional site traffic generation would be 327 vehicles per hour (again, not all would be using the Pymont Bridge Road, Bank Street and Western Distributor intersection) compared with 4,598 vehicles per hour using the intersection.

6.2 Projected Future Parking Demand

6.2.1 Car Parking

Parking demand and required provision for weekdays is summarised below.

Existing:

Peak on-site demand of 450 vehicles

| | | |
|----------|------------------------|-----------|
| Of which | Auction related | - 53 veh |
| | SFM Offices | - 25 veh |
| | Offices | - 47 veh |
| | Retail | - 325 veh |
| | Retail parked off-site | - 56 veh |

Existing weekday retail parking rate -

- 5.69 spaces / 100 sq m (NLA) parked on-site
- 0.98 spaces / 100 sq m (NLA) parked off-site
- 6.68 spaces / 100 sq m (NLA) total

Future:

| | |
|--|----------------|
| SFM Offices | - 25 spaces |
| Commercial: 13,300 sq m at 1 space to 40 sq m ¹³ | - 333 spaces |
| Retail: 10,309 sq m at 6.68 spaces / 100 sq m | - 689 spaces |
| Total spaces | - 1,047 spaces |
| Plus loading docks and at-grade area under northern car park structure available for Auction and wholesale deliveries. | |

Application of parking restraint

| | |
|---|--------------|
| SFM Offices remain unchanged | - 25 spaces |
| Commercial rate reduced to 1 space / 150 sq m ¹⁴ | - 88 spaces |
| Retail rate reduced by 10% ¹⁵ | - 620 spaces |
| Revised total with parking restraint | - 733 spaces |

Parking demand and provision for weekends is summarised below:

Existing

Peak on-site demand of 490 vehicles

| | | |
|----------|-------------------|-----------|
| Of which | Auction/wholesale | - 13 veh |
| | SFM Offices | - 10 veh |
| | Retail | - 467 veh |
| | Off-site Retail | - 140 veh |

Existing weekend retail parking rate -

- 8.18 spaces / 100 sq m (NLA) parked on-site
- 2.45 spaces / 100 sq m (NLA) parked off-site
- 10.6 spaces / 100 sq m (NLA) total

¹³ This parking rate for commercial use is an unrestrained rate from RTA Guide to Traffic Generating Developments.

¹⁴ This parking rate for commercial use is from the UDP and reflects a high degree of restraint.

¹⁵ Retail rate reduction of 10 per cent is to reflect the intention of the SREP and UDP that covers the site. It would be achievable with a series of complementary measures outlined in Chapter 7, that form the core of the TMAP, in conjunction with the proposed increased development of the surrounding areas (within the walk-in catchment). Existing parking rates do reflect a degree of restraint, including the unusual situation for a retail destination of charged-for parking from time of entry, although at present, this restraint is partially relieved by overspill on-street parking in the area around the Sydney Fish Market.

Future:

| | |
|--|----------------|
| SFM Offices | - 10 spaces |
| Retail 10,309 sq m at 10.6 spaces / 100 sq m | - 1,093 spaces |
| Total spaces | - 1,103 spaces |
| Plus loading docks available for auction deliveries and servicing activity | |

Application of parking restraint

| | |
|--|--------------|
| SFM Offices remain unchanged | - 10 spaces |
| Retail rate reduced by 10% ¹⁶ | - 983 spaces |
| Revised total | - 993 spaces |

Summary

Therefore, the peak parking demand would occur on weekends and the available supply proposed by the master plan of 993 spaces would accommodate 90 per cent of this demand. Revised parking management would be required off the site to ensure that the parking restraint does not simply manifest itself as overspill parking. In addition, improvements to public transport access and services as well pedestrian and cycle facilities as a result of the master plan, in conjunction with the proposed increase in the density of development around the site, would encourage a modal shift from private vehicle to these other modes. Further details are provided in Chapter 7 of this report.

As the planning of the site progresses, the proposed floorspace areas are likely to be adjusted. Future estimates of parking provision should be based on the rates outlined in the above calculations for the various uses to arrive at revised parking numbers.

6.2.2 Commercial Vehicle Parking

The current requirements for the loading yard during the auction period are used for design purposes. These requirements are described in Chapter 3 and the management strategy is discussed in Chapter 5.

6.2.3 Bicycle Parking

The commercial space on the site requires¹⁷ secure bicycle storage for:

- 51 spaces for employees; and
- 7 spaces for visitors.

For the retail use, the bicycle parking strategy should be to provide distributed parking around the site in locations subject to significant passive surveillance. Three locations should have parking for 10 bicycles each and these should have sufficient available space to expand this provision to 20 bicycles each. A further two locations should be identified where parking could be provided for up to 15 bicycles each, should demand warrant it.

Some form of active security (CCTV) may be required in order to minimise theft/ vandalism of parked bicycles, if this develops as an issue.

¹⁶ Refer to Footnote 15.

¹⁷ UDP bicycle parking.

7. Transport Management and Accessibility Plan

7.1 General

7.1.1 Approach

A series of objectives that seek to reduce the use of the private vehicle to access the site are identified. For each objective several relevant actions were developed and these are discussed in the following sections, with a summary provided at the end of this chapter. The measures are restricted to actions over which SHFA and Sydney Fish Market have some degree of control and influence. Broader matters, such as reducing travel times by train, or the introduction of road pricing, are excluded.

In a more general sense the TMAP acknowledges that the nature of the retail offer at Sydney Fish Market is one of fresh and highly perishable food. There is an element of this trade that uses the site for ‘bulk’ purchases of seafood, costing substantial sums of money and weighing a considerable amount. For this group the private car is probably the most realistic mode of travel. Similarly, for users who consume food on-site there is a proportion of users in relatively large party sizes. For these users, the private car is probably the most cost effective method of access to the site. Exceptions to both these cases would be people who live within the walk-in catchment of Sydney Fish Market.

The greater relative emphasis in the Master Plan given to on-site consumption of food indicates that some of the additional trade may be more amenable to non-car modes.

7.1.2 Objectives

The objectives of this TMAP are to:

- Quantify transport demands of the site – current and future (Chapters 3 and 6);
- Place the site and its proposed development within context (Chapter 4);
- Examine and recommend measures to reduce the transport impacts of the proposed development, including measures to encourage modal shift from private vehicle travel (this Chapter).

This chapter outlines measures to:

- Improve access to public transport;
- Encourage non-vehicle modes for access to the site;
- Encourage dispersion of arrival and departure times;
- Improve personal security;
- Manage travel demand;
- Improve parking management and its impacts.

Travel targets and monitoring of the site’s transport performance are also described.

7.1.3 Existing Situation

Analysis of existing conditions of the site identified the following features:

Non-Motorised Modes

- High mode share to walk for access to the site.
- Surrounding area, apart from immediate access area to site, has a high quality pedestrian environment.
- There are a range of attractions within easy walking distance of the site.
- The forecast landuse for the immediate environs of the site indicate an increase in walk as an access mode.
- Low mode share to bicycle.
- Cycle facilities in the area are patchy.
- Traffic conditions at particular times act to discourage cycle use in the general area.
- Over time bicycle facilities will extend their coverage.

Public Transport

- The site has public transport available - a range of modes, covering an extended period of the day, and connecting to the greater part of Sydney via the CityRail network and the Victoria Road bus corridor to Ryde.
- Public transport accessibility actually increases during the day, when site trip generation is at its highest.
- Despite this, there is a low mode share to public transport.

Car use

- Shortage of parking on-site.
- Use of on-street parking in surrounding area to support the site.
- Scale of charges for on- and off-site parking which encourage visitors to park off-site for particular visitation types (e.g., short stay).
- Site traffic generation is at its highest during the middle of the day when road system use is well below weekday peak.

7.2 Objective 1 – Improved Access to Public Transport

The site currently has access to public transport with light rail and bus services close to the site and additional bus services nearby, as well as ferry and monorail services. The catchments of the light rail and closest bus service (501) are relatively restricted, although they both provide a direct connection to Central Station and, hence, the CityRail network. Other bus services in the Pyrmont area provide good connections to the CBD and further interchange options with CityRail and ferries.

Possible changes that would improve public transport access:

- A higher frequency direct bus service to the rail network, most likely to Central Station.
- An extension of the light rail line to the west to expand the light rail catchment for Sydney Fish Market.

-
- A bus service between Pymont (past Sydney Fish Market) and parts of the Inner West that currently do not enjoy a direct public transport service to the site and are relatively remote from the CityRail network.

Far-side Bus Termination Facility

There is unlikely to be sufficient demand to justify another bus service from Pymont to Central Station. Extending a bus service that currently terminates at Central through to Pymont might be partially justified if it freed-up stand capacity at Central. It would be ideal if the service could be stood close to site and run the 501's route to Central, to provide a higher combined service frequency to Central. If that bus service were to currently serve a catchment that is relatively remote from the rail network (e.g., Randwick), then its extension would increase the site's direct public transport catchment. Refer to Section 2.7 regarding previous consideration of the extension of the 387 from Railway Square to Pymont.

Further consideration in detailed planning of the site may identify the feasibility of a bus termination facility on the site. However, a termination point further north along Bank Street would provide more extensive coverage of the service.

The implications of this on light rail services would need further consideration.

Light Rail Extension

It is anticipated that the light rail would eventually be extended to the west.

SHFA and Sydney Fish Market should indicate their support for this action and, where appropriate, facilitate studies that might be undertaken to consider the light rail's extension (e.g., provision of information regarding visitation).

Bus Service between Pymont and Inner West

A bus service from the Inner West along the alignment of Pymont Bridge Road to Parramatta Road to fill a small gap in public transport provision for the site should be covered. Such a service would run through to the eastern side of the Pymont Peninsula.

The object would be to provide direct public transport from an area that currently falls between the light rail and Parramatta Road bus corridors to link into Pymont, past Sydney Fish Market. This would serve Blackwattle Bay Campus of Sydney Secondary College and further developments in Pymont.

The catchment to be served is relatively local and has a high residential density. The far end of the service might connect down to Marrickville, or perhaps Dulwich Hill/Canterbury.

Given that roughly 500 or so jobs would be accommodated in the master plan's proposed commercial space, peak period patronage of the service by these workers might be from 10 to 50 persons. Further examination of 2001 Census Journey to Work data would be required, when this becomes available.

Bringing Bus Service On-site

The size of the site means that access to public transport services involves a reasonable length walk to a stop. To address this it would be helpful if a bus service could be re-routed to run through the site.

Existing services would suffer some delay and hence loss of patronage as a result of additional bus travel time. The site is currently not configured to facilitate bus access, requiring all vehicles to enter and exit via the same point. Under the master plan there is no easy “through” route for this service as the proposed access at Pymont Bridge Road would be restricted. It would most likely enter and exit via the Bank Street access.

A small extension to the Sydney Explorer service would have little impact on its patronage as it is unlikely to be as time sensitive as other bus users. However, the additional travel time may have a knock-on effect on its operational schedule which could result in the need for an additional vehicle(s) in the fleet and may interfere with rosters. The practicality of this would need to be further investigated.

It may be more feasible to extend the route of the Sydney Explorer so that it ran passed the site along Bank Street. There is currently a disused bus layby on Bank Street, immediately north of Pymont Bridge Road. Some form of SCATS-linked hurri-call facility on the intersection may facilitate bus movement through the intersection. Evening peak hour congestion around the intersection would be a discouragement to this change.

Longer term, a possible route change could be conceived along Harris Street to Miller Street, then west to Bank Street and along with to Bowman Street to introduce a stop at the foreshore parks on Pymont Point with the striking back drop of the ANZAC Bridge.

Accurate public transport information

Accurate and conspicuous signage between the site (including within the site) and key transport nodes (and other local attractions) should be introduced.

A review of transport nodes in the area around the site found that most have information about services and timetables. However, a number of bus stops appear to be dis-used and others do not have timetable information. It is important that the services running from each stop are identified at the stop and their service timetable is available at the stop. If a bus stop is currently dis-used, or used only on occasion, it would be helpful if this were stated at the bus stop (or perhaps the stop removed or the flag covered).

Provide taxi rank

The site currently has a rank for two taxis, and it is well located close to the retail arcade. A set down area is identified on the Master Plan and a rank should be provided to accommodate up to four taxis. The existing complementary phone to a taxi company should be continued and some limited signage installed to identify the location of the taxi rank.

The location of the taxi set down area on the Master Plan provides good connections to the pedestrian network, although it is more remote from the main retail area than the current arrangement. The precise arrangement will need confirmation in terms of possible traffic impacts on the access road's function.

Examine Re-establishment of Ferry Service to Site

The prospect of a commuter style ferry service operating to the site is remote. The demand from the site for a ferry service would be insufficient to justify its introduction.

If a commuter service were to be provided to Jacksons Landing or other location in Blackwattle or Rozelle Bays then an extension of that service to the site might be possible.

A ferry service as part of a tour product that included some activities on-site was discussed in Chapter 4. The commercial and marketing arrangements for a re-established ferry service would need to be re-visited by Sydney Fish Market. Sydney Ferries might be interested in the product although it is more likely that a private operator (with smaller capacity vessels) might be better able to provide such a service. The Master Plan should ensure that a wharf can be made available for such a service.

In the longer term, the Blackwattle Bay foreshore lands, which require some form of active waterfront use in their redevelopment might be considered for storage and maintenance of ferries and/ or charter boats. Indeed, the site next to the Coal Loader currently has the Lady Wakehurst tied-up and the site next to Hymix is used by a charter boat operator for storage of boats.

Were one of the sites along Blackwattle Bay to be used to support an operator of scheduled ferries, then it may be possible to use these boat's trips between Blackwattle Bay and commencement of their scheduled runs (e.g., at Circular Quay) to offer a service at Sydney Fish Market.

Review Public Transport Service Capacity

Parking restraint on the site will require a substantial number of employees and visitors to use public transport to access the site. An estimate of employee numbers of 500 with 88 car parking spaces and average vehicle occupancy of 1.15, means some 400 persons will need to use non-car modes to get to site during the morning peak two-hour period.

A ball park assessment of public transport demand during the peak follows:

- 33 per cent would use 501 from Victoria Road – 133 persons
- 10 per cent would use light rail from Central - 40
- 10 per cent would use light rail from Lilyfield - 40
- 10 per cent would walk/cycle - 40
- 37 per cent by 501 from Central - 147

A recent survey of inbound 501 bus loadings at White Bay indicates that this route would have sufficient capacity, although a greater proportion of users would need to stand. The light rail, from casual observation, has sufficient capacity. The 501 service from Central has a lower frequency (4 per hour) than the inbound direction. While loadings of this direction are not known, there will be a requirement to monitor loadings, and additional services (1 or 2 per hour) might be justified to serve this demand along with the demand from other developments in the Pyrmont area.

7.3 Objective 2 – Encourage Cycle, Pedestrian and Boat Access

Provide Bicycle Parking

The site currently has limited formal bicycle parking, and this is rarely used. It is too remote from public areas within the site for cyclists to feel secure that their cycle will be safe.

Additional cycle parking should be provided within the site in proximity to the outdoor eating areas, where a higher degree of passive surveillance will be provided. The provision should comply with the relevant code, with flexibility to expand provision, should demand warrant it. Chapter 6 outlines the level of provision and expansion capacity. The office space would also need shower facilities.

Improve Site Permeability and Connection with Surrounding Pedestrian and Cycle Networks

The site is currently used by some pedestrians as a short-cut between Glebe and Pyrmont. The Master Plan arrangements would greatly improve facilities for these pedestrians by improving pedestrian access to the site; improving pedestrian movement within the site; and providing for future connections to the foreshore promenade.

With these improvements the site would become more of an integral part of the surrounding area's pedestrian network.

It is understood that bicycles will be allowed to use the foreshore promenade, although commuter cyclists would probably be reluctant to use it due to conflicts with pedestrians and recreational cyclists. However, due to different temporal patterns of demand (e.g., commuter peak during the week at either end of the day and recreational peak in the middle of the day), the level of conflict would be reduced.

Link to, and Extend Area's Bicycle Network

Better links to the surrounding bicycle network could be provided via Bank Street to connect the site with the ANZAC Bridge ramp (at Quarrymaster Drive) and to Pyrmont Bridge Road via the enlarged entrance opposite Wattle Street.

The RTA and Councils should be encouraged to complete the cycle facilities around the site. The gaps in the network that are most directly relevant to the Sydney Fish Market site and actions that should be taken to address them, are (refer to Figure 10):

- D – Pyrmont Bridge Road curves. Parking to be further restricted close to horizontal curves either side of the rail viaduct and at Colbourne Avenue. An edgeline to be marked on carriageway to provide additional clearance for cyclists from traffic.
- E – travel eastbound past Sydney Fish Market, turning left into Bank Street. Partly resolved by Foreshore Promenade. Signage should be provided to make it clear to cyclists to take the second left turn. Longer term the Master Plan should attempt to provide a suitable path along the alignment of Jones Street (now car park).
- K – bicycle parking onsite – see action above.
- G – ANZAC Bridge Ramp to Quarrymaster Drive. The current termination of the ramp arrangements needs re-design: either cyclists need to stop or motorists travelling east along Quarrymaster Drive need to stop to avoid potential conflicts.

Improve Directional Signage

Integrate the site's directional signage for pedestrians and cyclists with the surrounding City Map signage scheme. Enhance City Map's directional signage through additional signs at street corners.

Tackle Barrier Effect of Western Distributor Viaduct

Current lighting and urban design along Bank Street is unsatisfactory and leads to an area of poor pedestrian amenity. In the short term, improved lighting and use of the proposed changes to the site's built form should be used to enhance the quality of the pedestrian environment.

Address Pigeon Exposure Issue at Main Site Access

The underside of the Western Distributor Viaduct should be bird proofed by the RTA to prevent birds fouling pedestrians.

Provide Additional Casual Berths

Additional casual berths for boats accessing the site would encourage this access mode. Options include the re-allocation of permanent berths, provision of more berths or changing the charge regime to encourage shorter stays. The Master Plan identifies arrangements to provide additional berths.

An issue that emerges is the potential for conflicts between additional pleasure craft and any future ferry service. This would need further consideration at the time that a ferry service were introduced.

Parking Restraint

The parking restraint imposed on the proposed commercial use is marked. Retail restraint reduces the existing parking rate by 10 per cent.

7.4 Objective 3 – Encourage Diversity of Arrival and Departure Times

Possible Extension of Retail Hours

Currently the site generates little traffic after 5.00pm on any day of the week. Extended hours of operation may assist to spread peak transport loads, especially on weekends, when the road system is relatively lightly loaded in the evenings. During the week, it risks adding traffic to the road system during the evening peak hour. Similarly, the commercial use component of the Master Plan would lead to additional traffic generation in the evening peak hour.

Additional retail coverage would probably have the beneficial side-effect of reducing travel by residents of Pyrmont to more distant retail outlets.

Manage Arrival of Product

Product for auction starts to arrive for Monday morning's auction on Sunday afternoon. This leads to conflicts between visitors and heavy vehicle movements. Some method of encouraging product deliveries to start as late as possible on Sunday afternoons (say, after 5.00pm) would reduce the conflicts. This management measure would require consultation with suppliers and Sydney Fish Market Pty Limited.

The proposed Master Plan identifies two access points, which would reduce the scope for conflicts between visitors and suppliers. The segregated service yard and circulation road configuration should reduce the level of conflicts between visitors and suppliers.

Similarly, the additional loading docks proposed by the master plan and their close proximity to the co-located retail and wholesale units would facilitate the orderly arrival of product at the site.

Consider Other Uses on the Site with Evening Traffic Generation Profiles

The site is lightly used at night. Uses with a traffic generation (and parking accumulation) profile that is predominantly restricted to night time, might be accommodated at 'zero transport cost'. In other words they would use facilities and services that are to be provided in any event to support day time activity. Such uses might include a theatre or perhaps evening-only restaurants.

In a similar vein Sydney Fish Market car park might be used to support evening activity at adjoining sites, such as the Coal Loader. This would need to be arranged in such a manner that it did not result in a substantial amount of traffic generated in the evening peak hour.

There are risks that the traffic generation from these uses might draw-forward and affect the road system's evening peak hour.

7.5 Objective 4 – Address Security Issues

Night time lighting on pedestrian routes

To encourage pedestrians to use the site (as a walkway) at night, improved lighting and better site layout is to be provided by the master plan.

The surrounding road system generally has reasonable levels of lighting, although lighting along Bank Street is poor (see Objective 2).

7.6 Objective 5 – Travel Demand Management

Provision of broader retail offer

This would act to draw-back local residents' trade currently leaking to more distant centres (and hence, is car-bourne). This would attract retail purchases for off- and on-site consumption.

Use of Information Technology

Sydney Fish Market currently have a web-based seafood marketing system in operation (SFMLive) which, among other objectives, aims to reduce the amount of travel of product.

Sydney Fish Market also have a website that provides web users with a range of information about the activities on the site and transport information for visitors.

Publicity and Co-ordination with Transport Providers and Surrounding Attractions

There is a broad range of visitor attractions in the Darling Harbour/Pymont area. They generally provide information (e.g., via their websites) about opening hours, charges, range of activities and transport to/ from the particular site.

The light rail currently carries brochures for various attractions in the corridor and does offer a ticketing product for Convention Centre users.

A comprehensive visitor and transport guide for the Darling Harbour and Pyrmont area would better inform potential visitors about the range of attractions available and their transport choices. This would allow visitors to maximise value they derive from their visit (i.e., visit more than one attraction) and make an informed decision about their transport arrangements.

The guide could be made available through the attractions themselves, hotels, CityRail stations, bus ticket vendors, on light rail vehicles, and similar places.

Management of Ultra-Peak Travel Demand

Most of the management measures available to deal with this are already in use: extended service hours for public transport, extended trading hours, use of marshals, provision of off-site parking (Hymix site).

The redevelopment of the foreshore lands, including the Hymix site, may result in the loss of off-site parking for ultra-peaks. Consideration should then be given to alternative sites to accommodate this parking, such as Wentworth Park and the means of linking the sites to Sydney Fish Market.

Integration of Site with Redevelopment of Adjoining Sites

The proposed foreshore promenade for Blackwattle Bay (and Pyrmont peninsula) provides an opportunity to link the non-vehicle networks of the sites to create an extensive, high standard and useful network. Other links, especially through the Hymix site (if it is redeveloped) should be considered.

Shared car parking between the sites (e.g., car parking on the Sydney Fish Market site supporting any redeveloped Hymix site) would assist to activate the sites by creating footfall between and through the various sites.

Considering the likely future uses and configurations of the various sites together would better identify and target public transport improvements. The cost of improvements would be more efficient and effective if spread across a number of sites and their developments. The scale of joint redevelopment would result in better use of the public transport services.

Make Provision for Tourist Coach Parking and Access

The master plan proposes three coach parking spaces. These would assist in the separation of coach and general traffic movements within the site. The locations of these three bays tie-in directly with the proposed pedestrian network for the site. This would remove a current source of vehicle/pedestrian conflict.

The detail of the design of these facilities should minimise conflicts with the traffic feed to the site access road.

7.7 Objective 6 – Improved Parking Management and Reduced Off-site Parking Impacts

Introduce 24-hour Parking Fee Collection System

Sydney Fish Market are proposing to introduce a pay-on-foot system that would allow parking charges to be collected 24-hours a day.

Separation of Different Site Users

The master plan currently proposes to separate pedestrians and vehicles near the site access and provide a separate pedestrian network within the site. Private vehicles would be prevented from accessing the loading docks. During the week, private vehicles would be prevented from accessing the commercial vehicle parking area at-grade under the main car park structure. This will substantially lessen the scope for conflicts.

The second site access for vehicles, from Pyrmont Bridge Road, would assist in the separation of commercial and private vehicles on the site.

Reduce Free On-street Parking Near the Site

The largest amount of free parking close to Sydney Fish Market is on Wentworth Park Road. Leichhardt Council should be approached to introduce a pay and display parking scheme (with residents excepted by permit) between Bridge Road and St Johns Road and then between St Johns Road and Cowper Street. This would remove some 60 to 70 free car parking spaces within close proximity to the site.

Other areas, more remote from site, with free parking, should also be subject to pay and display parking schemes.

Adjust Scale of Charges for On-street Parking

Currently, short stay parking is cheaper on-street than on-site. This is a direct incentive for visitors to Sydney Fish Market to park off-site, thereby creating a hazard to other road users.

Sydney Fish Market should reduce the parking charge for the first hour to a lower level, say \$2.00. At the same time the local councils should increase the minimum charge for on-street parking (i.e., introducing a flag-fall on pay and display parking) to, say \$1.00. These actions would be aimed at encouraging visitors to Sydney Fish Market to park on-site. The success of this measure would require monitoring and possibly a further adjustment to charges and parking restrictions.

The improved vehicular access to Sydney Fish Market and on-site car parking would reduce the level of existing encouragement to park off-site.

Restrict the use of parking by visitors to surrounding sites

The proposed adjusted scale of parking charges (see above) would discourage all-day commuter parking on-site. Use of the site's car park for short stay visitors to surrounding offices would need to be monitored, especially as the parking situation in the surrounding area is expected to become more restrained. If this is identified as a problem, then an adjustment to scale of charges for weekdays should be introduced. This would establish a minimum on-site purchase threshold for stays of more than one hour. Car park users who do not meet this threshold would be subject to a substantial charge.

Parking Compliance

Current over-crowding of the site's car park, including associated errant parking of vehicles (in aisles, on landscaping and in loading docks) could be partially addressed through a system of enforcement. This would require training and accreditation through the NSW Police Service (this is already in place in Darling Harbour and The Rocks).

The proposed master plan, however, provides substantial improvements to parking arrangements and many current issues related to parking management will be dealt with through the proposed design. The loading docks will be segregated from private vehicles; car parking layout will be regularised to look and work like car parks at typical retail centres in Sydney.

Nonetheless, the site will be subject to parking pressure. If this were to lead to errant parking in the future, then Sydney Fish Market should consider establishment of their right and capacity to issue enforceable parking infringement notices.

7.8 Transport Targets

7.8.1 Input Targets

- Reduce walk times between closest public transport nodes and main retail area on-site by 10 per cent.
- Reduce walk times through the site between Wattle Street and Miller Street by 15 per cent.
- Extend bus 25-minute isochrone to the intersection of Pyrmont Bridge Road and Parramatta Road.
- Average bus crowdedness in the peak periods, in the peak direction, should not increase over existing levels.
- All public transport nodes within 10-minute walk of site to have up-to-date information about services that call – including a statement that the node is disused and the location of nearest bus nodes, if that is the case.
- Parking compliance on-site to meet general levels at similar retail facilities.
- Reduce off-site, on-street parking to less than 5 per cent of site visitors who are only visiting the Sydney Fish Market site by car over the course of the day.
- Free on-street parking within a ten-minute walk of the site to be reduced by 90 per cent.
- Significantly improved bicycle parking facilities to be provided.

7.8.2 Output Targets

New Commercial Space - Workers

Mode share for journey to work by occupiers of the non-Sydney Fish Market office space (13,300 sq m) to have a 10 per cent lower car use (car driver and car passenger combined) than the 2001 Census journey to work data for the Pyrmont. This is a proportional decrease (i.e., if census shows 50 per cent car journey to work, target for the site would be 45 per cent). This target could then be updated with 2006 census data: as the level of car use falls over time to Pyrmont for commuters, this would increase the stringency of the target for Sydney Fish Market.

Site Visitors

Mode share for site visitors, based on site boundary counts over the course of a day (for survey period used in this report):

12 months post opening

| <u>Mode</u> | <u>Weekday</u> | <u>Weekend</u> |
|-------------|----------------|----------------|
| Bicycle | 2% | 1.5% |
| Pedestrians | 22% | 18% |
| Car | 46% | 67% |

36 months post opening

| <u>Mode</u> | <u>Weekday</u> | <u>Weekend</u> |
|-------------|----------------|----------------|
| Bicycle | 3% | 2% |
| Pedestrians | 24% | 20% |
| Car | 44% | 64% |

Peak Hour Traffic Generation

Peak hour traffic generation to be lower than forecast:

- 5 per cent lower during weekday morning and evening peak hours;
- 10 per cent lower than forecast during the middle of the day on the weekend.

Bicycle Parking

Monitor bicycle parking to ensure that vandalism and /or theft is not discouraging use of bicycle to the site. This will require site security to maintain a log of reported incidents and may require signage in the vicinity of the parking to ensure that if an incident occurs, it is reported to security.

Consultation with local bicycle users would also be a useful input to deciding if fear of theft/vandalism is a deterrent to people using bicycles to access the site.

Sydney Fish Market – Draft Transport Management and Accessibility Plan

| Objective | Action | Agency | Comment |
|-------------------------------------|--|---------------|--|
| Improved Access to Public Transport | <ul style="list-style-type: none"> Examine the possibility of providing far-side termination facility for bus service from Railway Square | SFM/STA | <ul style="list-style-type: none"> Liaise with STA to identify appropriate service that might far-side terminate near Sydney Fish Market. Identify location where bus stand might be accommodated. Consider implications for overall public transport access at the site. |
| | <ul style="list-style-type: none"> Light rail extension to west | SHFA/SFM/ DOT | <ul style="list-style-type: none"> Indicate support for extension. Facilitate, where appropriate, extension. |
| | <ul style="list-style-type: none"> Bus service via Pyrmont Bridge Road | SHFA/STA | <ul style="list-style-type: none"> A bus service that covers a gap in the catchment of the site (through Glebe and Forest Lodge) would provide better service to Sydney Fish Market and other uses on Pyrmont Peninsula. |
| | <ul style="list-style-type: none"> Examine opportunity to bring bus service within site | SFM/STA/ RTA | <ul style="list-style-type: none"> Measures to allow Sydney Explorer to pass through (or closer to) site without unduly impacting existing schedule. Provision of SCATS-linked hurri call facility (esp off-peak). |
| | <ul style="list-style-type: none"> Accurate information regarding public transport services | SFM/STA | <ul style="list-style-type: none"> Ensure adequate signage in both directions between the site and transport nodes. Ensure all bus stops close to site have up-to-date information about services available and their timetables – in general, most already meet this. |
| | <ul style="list-style-type: none"> Provide taxi rank | SFM/SHFA | <ul style="list-style-type: none"> Taxi rank already on-site with complimentary phone. Provide additional taxi spaces in Master Plan. |
| | <ul style="list-style-type: none"> Examine re-establishment of ferry service to site | SFM/STA | <ul style="list-style-type: none"> SFM to consider feasibility of visitor package that could be tied-in with ferry access. Master Plan to address issues of access to ferry facilities and potential conflicts with private craft. Canvass commercial vessel operators' interest in provision of service. |

| Objective | Action | Agency | Comment |
|---|--|---|--|
| | <ul style="list-style-type: none"> Blackwattle Bay sites – ferry maintenance facility Review public transport capacity | SHFA MWT/STA/MLR | <ul style="list-style-type: none"> A working waterfront use for one of the Blackwattle Bay sites might be as a base for ferry/charter boat operator. This may provide an opportunity for a ferry service between Sydney Fish Market and Circular Quay. Peak period ball park estimates suggests more capacity for outbound 501 in the morning peak may be required. Comments from operators required. See monitoring. |
| Encourage Cycle, Pedestrian and Boat Access | <ul style="list-style-type: none"> Provide bicycle parking Improve site permeability and connection with surrounding pedestrian and cycle networks Link to, and extend area bike network Improve directional signage in area around site | SFM SFM Council/SFM/RTA Council/SHFA | <ul style="list-style-type: none"> Some bicycle parking already provided. Additional parking to be provided under the Master Plan, distributed around the site in close proximity to public areas. Commercial space to have UDP provision. Shower facilities to be provided as part of UDP requirement. <p>Master Plan improves site access by:</p> <ul style="list-style-type: none"> Separating vehicle and pedestrian access at Bank Street/Miller Street intersection. Improving pedestrian movement along Gipps Street alignment. Provision of foreshore promenade, which will connect adjoining sites and extend around Pyrmont Peninsula and to the west along Pyrmont Bridge Road. The site would become a more integrated part of the non-vehicle network in the area. Encourage council and RTA to address gaps in surrounding cycle network. Targeted improvements to be addressed in conjunction with RTA and Council(s). (see text for list) Enhance the existing City Map scheme, with directional signage provided to selected landmarks (that are also prominently identified by City Map). Integrate on-site signage with enhanced City Map scheme. |

| Objective | Action | Agency | Comment |
|--|--|---|---|
| | <ul style="list-style-type: none"> Tackle barrier effect of Western Distributor viaduct Address pigeon exposure issue at main site access Provide additional casual berths Parking restraint | SFM/Council/ RTA SFM/SHFA SHFA | <ul style="list-style-type: none"> Initially through the provision of better lighting and urban design along Bank Street (RTA). Bird proofing of underside of Western Distributor viaduct to reduce incidence of birds fouling pedestrians (e.g., at northwest corner of site access). Boat access expanded through the provision of additional berths, possibly through a reduction in the number of permanent berths or provision of additional facilities or shorter time limits. Need to address conflicts with potential ferry service of additional private craft traffic. Master Plan to address use of loading/unloading wharf by ferries/charter boats. Additional commercial space to have UDP parking rate. Existing retail parking rate reduced by 10 per cent. Requires support from changes to on-street parking controls and charge arrangements for off-street car parking (see below). |
| Encourage Diversity of Arrival/Departure Times | <ul style="list-style-type: none"> Possible extension of retail hours Manage arrival of product Consider other uses on the site with evening traffic generation profiles | SFM/SHFA SFM/Suppliers SHFA | <ul style="list-style-type: none"> This requires improved lighting, design and security on the site. Provide better retail range for local residents and possibly spread site access demands. Potential that additional traffic generated would conflict with road system peak during the week. Weekend nights would have lower risk of conflicts. Product to be delivered to SFM after 5.00pm on a Sunday to avoid conflicts with retail users of site. This will require consultation with suppliers. Master Plan design provides for better management of commercial vehicles and, segregation of light vehicles and heavy vehicle loading activities. Master Plan to examine possible use(s) onsite that generate traffic in the evenings, when surrounding network is lightly loaded and car park is largely empty. For example, restaurants. Integration with adjoining site(s) e.g., coal loader. |

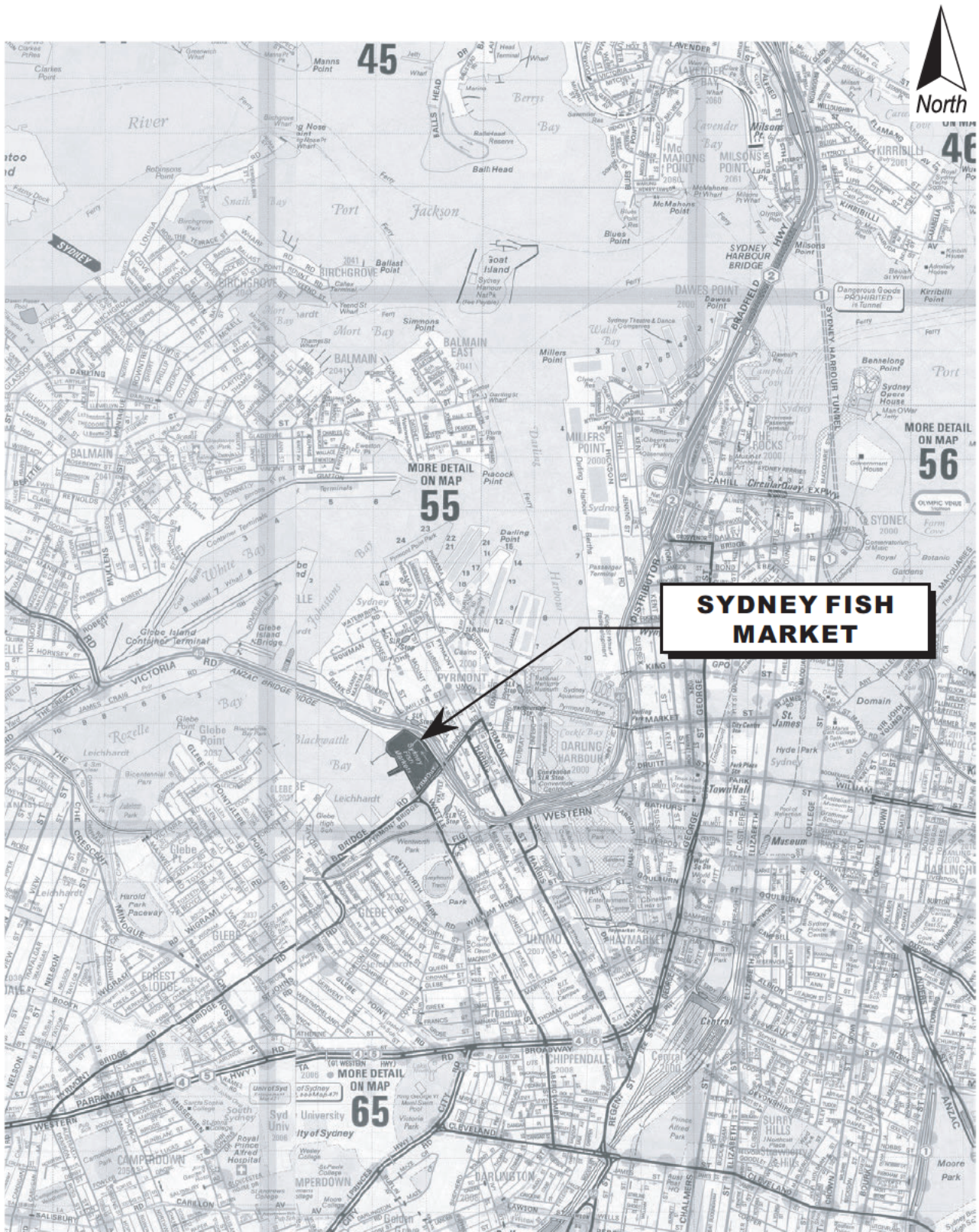
| Objective | Action | Agency | Comment |
|--------------------------|---|---|---|
| Address Security Issues | <ul style="list-style-type: none"> Night time lighting on pedestrian routes | SFM/SHFA/ RTA/Councils | <ul style="list-style-type: none"> Better site lighting and layout as part of Master Plan. Council and RTA to improve lighting on surrounding roads and pedestrian routes, especially Bank Street. |
| Travel Demand Management | <ul style="list-style-type: none"> Provision of a broader retail offer Use of information technology Publicity and co-ordination with transport providers and surrounding attractions Management of ultra-peak travel demand Integration of site with redevelopment of adjoining sites | SHFA/SFM SFM SFM/ Transport Providers/ Pymont & Darling Harbour Attractions SFM/Council/ Transport Providers and Adjoining Site Occupiers/ Police SHFA | <ul style="list-style-type: none"> This would reduce travel by existing and future residents of the walk-in catchment who currently travel to more distant shopping facilities. SFMLive currently provides web-based marketing of seafood. SFM have a slick website that provides information about the site and the activities on offer, as well as promoting access by all transport modes. The light rail currently carries brochures for various attractions in its corridor. A comprehensive, easy-to-use attraction and transport guide for the Darling Harbour and Pymont areas to better promote multi-attraction visitation and a range of transport uses. Work with transport providers to extend hours of their service coverage – light rail currently does this. Extend hours of site's trading to spread demand – an extended period operates at Christmas and Easter. Examine remote parking – currently Hymix site used, need to consider a park and ride service, potentially at Wentworth Park, with shuttle bus provided if Hymix site is re-developed. <p>Opportunities include:</p> <ul style="list-style-type: none"> Extended non-car networks connecting sites (e.g., Foreshore Promenade). Shared use of SFM car parking to activate sites with through footfall. Create economies of scale for provision of potential public transport services. |

| Objective | Action | Agency | Comment |
|--|--|-------------------|---|
| | <ul style="list-style-type: none"> Make provision for tourist coach parking and access | SHFA/SFM | The Master Plan proposes three coach spaces. |
| Improved Parking Management and Reduced Off-site Parking Impacts | <ul style="list-style-type: none"> Introduce 24-hour parking fee collection system | SFM | SFM currently propose to introduce pay-on-foot machines for use by patrons. Boomgates to operate 24-hours per day. |
| | <ul style="list-style-type: none"> Separation of different site users | SHFA | <p>The Master Plan currently proposes to:</p> <ul style="list-style-type: none"> Separate pedestrians and vehicles at the access and provide a separate pedestrian network. Largely separate private and commercial vehicle movements within the site. |
| | <ul style="list-style-type: none"> Reduce free/cheap long term on-street parking near site | SHFA/SFM/Councils | <ul style="list-style-type: none"> The largest supply of free on-street parking is on Wentworth Park Road – approach Leichhardt Council to introduce a pay and display parking scheme (with residents excepted) in that area. Other areas in proximity to the site with free on-street parking should also have pay and display parking introduced. Convert long term parking on Bank Street (\$1.10 per hour) to maximum time limit of 2 hours and increase charge to \$2.20 per hour). |
| | <ul style="list-style-type: none"> Adjust scale of parking charges | SFM/SHFA/Councils | <ul style="list-style-type: none"> Introduce a flag-fall for pay and display parking in close proximity to site (say \$1.00) Reduce the cost of the first hour's parking on-site (to, say, \$2.00). |
| | <ul style="list-style-type: none"> Restrict the use of parking by visitors to surrounding sites | SFM/Councils | <ul style="list-style-type: none"> Monitor short stay parking on-site by non-site users. If an issue is identified, introduce a system of higher parking charges for users who do not make a specific level of purchase on-site. |
| | <ul style="list-style-type: none"> Parking compliance | SFM | <ul style="list-style-type: none"> The proposed car park arrangements in the master plan are expected to result in improved compliance with parking regulations. If non-compliance emerges as an issue after site has been redeveloped then SFM should gain accreditation to issue enforceable parking infringement notices. |

| Objective | Action | Agency | Comment |
|-------------------|--|------------------------------|--|
| Monitor Situation | • Review mode shares and parking situation one and three years after completion of the Master Plan | SFM/Council/ Planning NSW | • Transport conditions to be monitored to allow assessment against targets. Corrective actions may be required. |
| | • Monitor bicycle parking on an ongoing basis | SFM | • Should bicycle theft/vandalism become a deterrent to use of bicycle as a mode of access to the site, then introduction of active security measures, such as CCTV, may be required. |

SITE LOCATION

SYDNEY FISH MARKET



SITE ACCESS POINTS

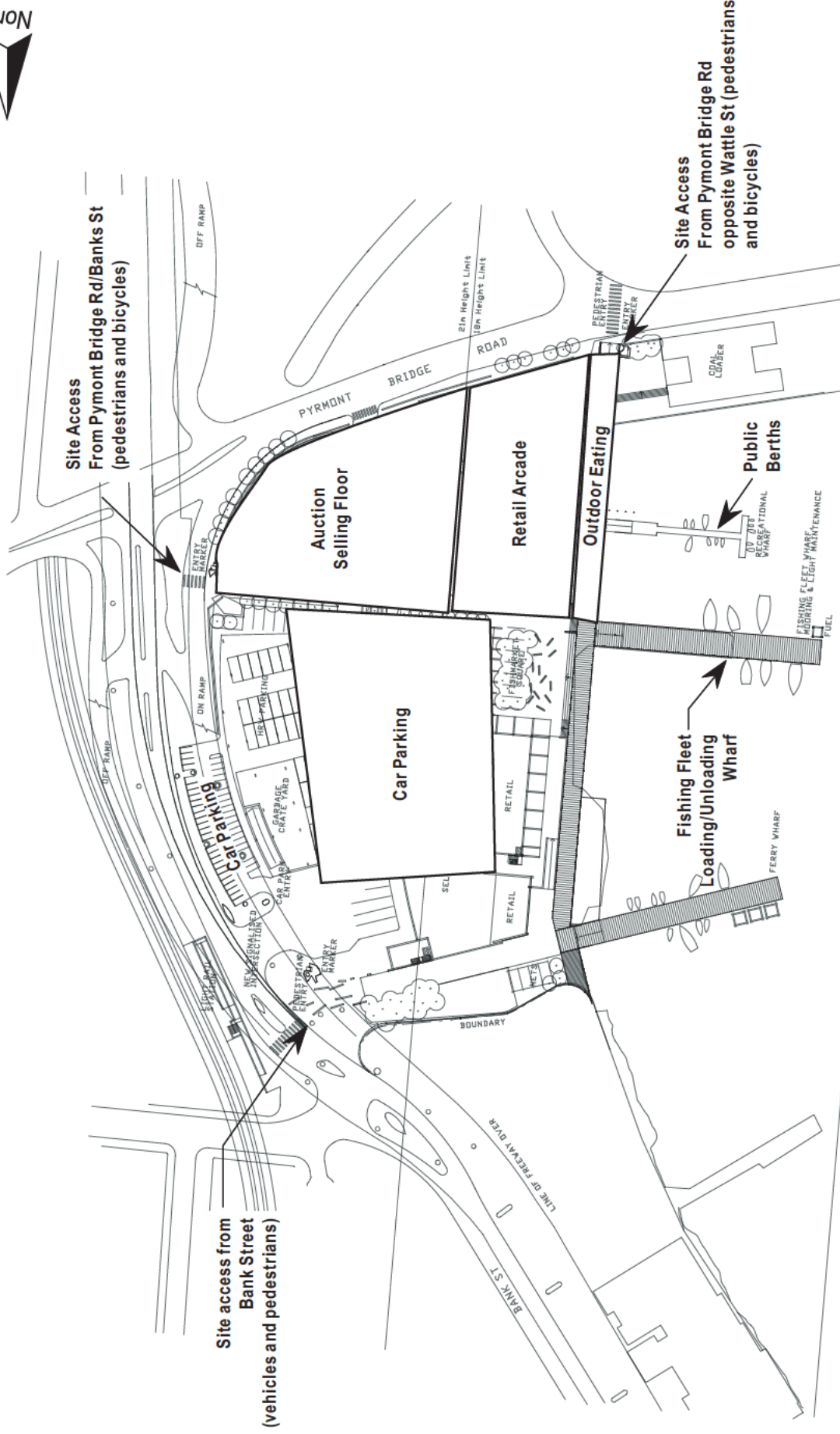
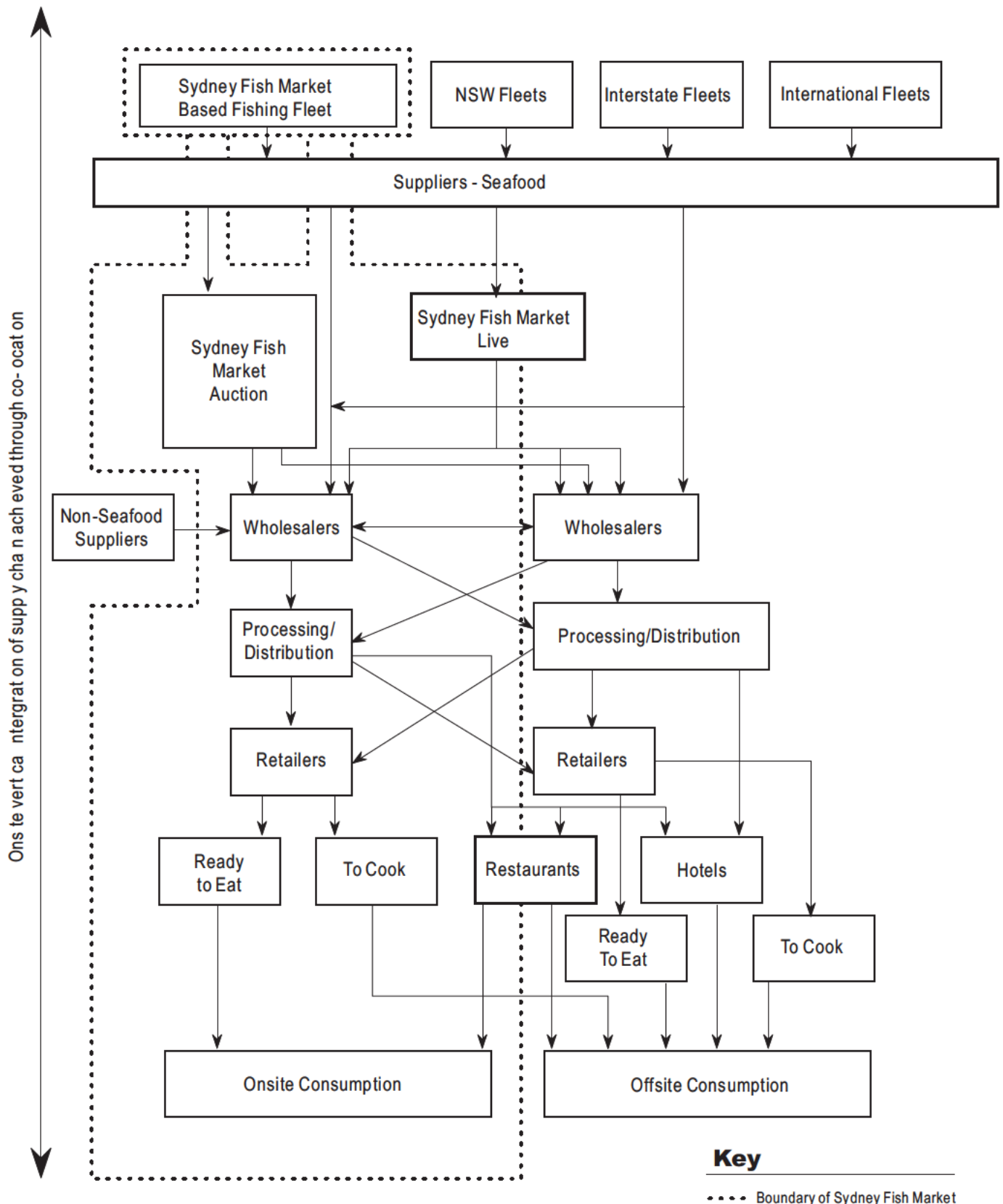


Figure 2

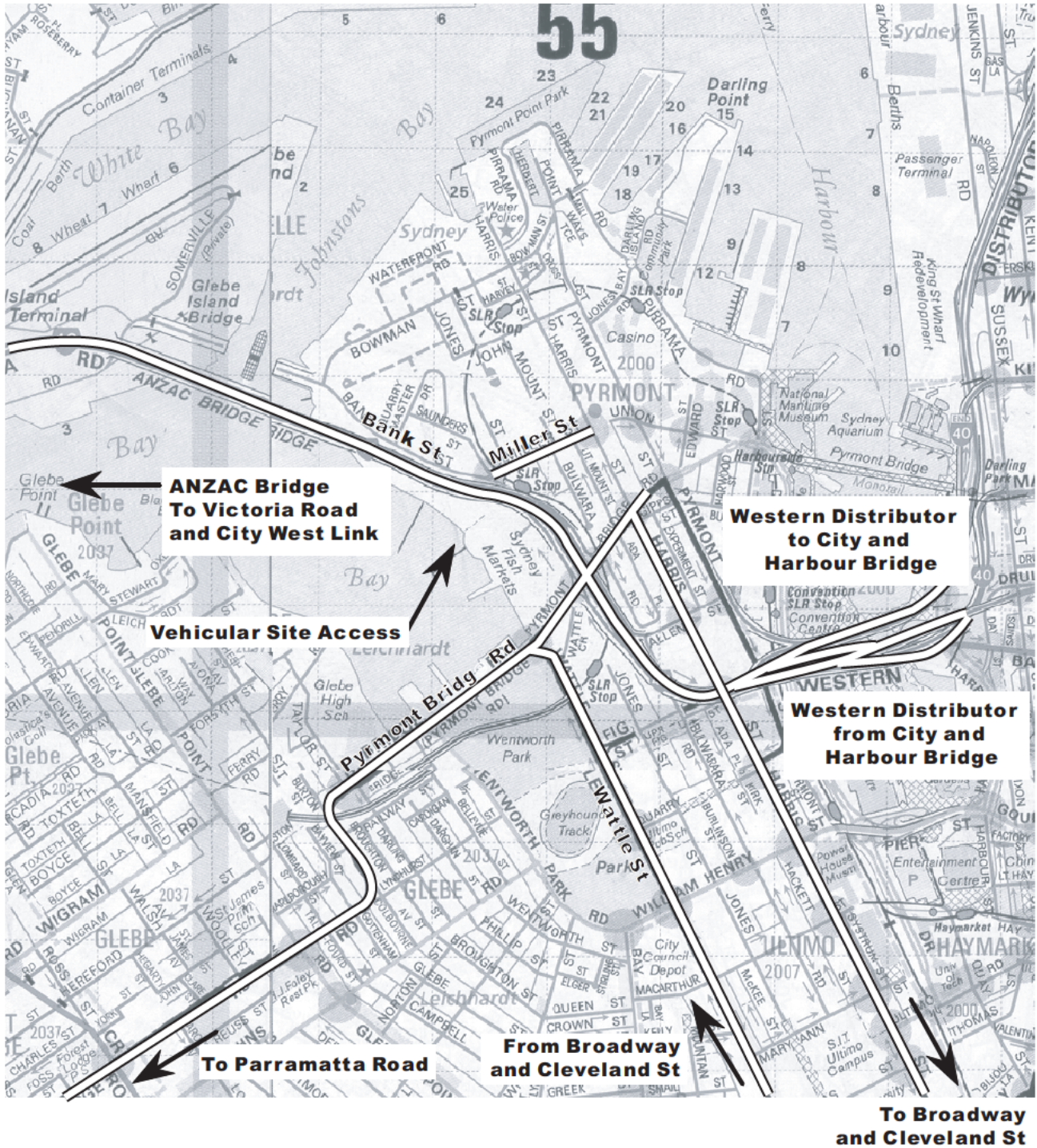
ILLUSTRATIVE SCHEMATIC OF SEAFOOD SUPPLY CHAIN

SYDNEY FISH MARKET



ROAD ACCESS ROUTES

SYDNEY FISH MARKET



MORNING PEAK HOUR TURNING MOVEMENTS

SYDNEY FISH MARKETS

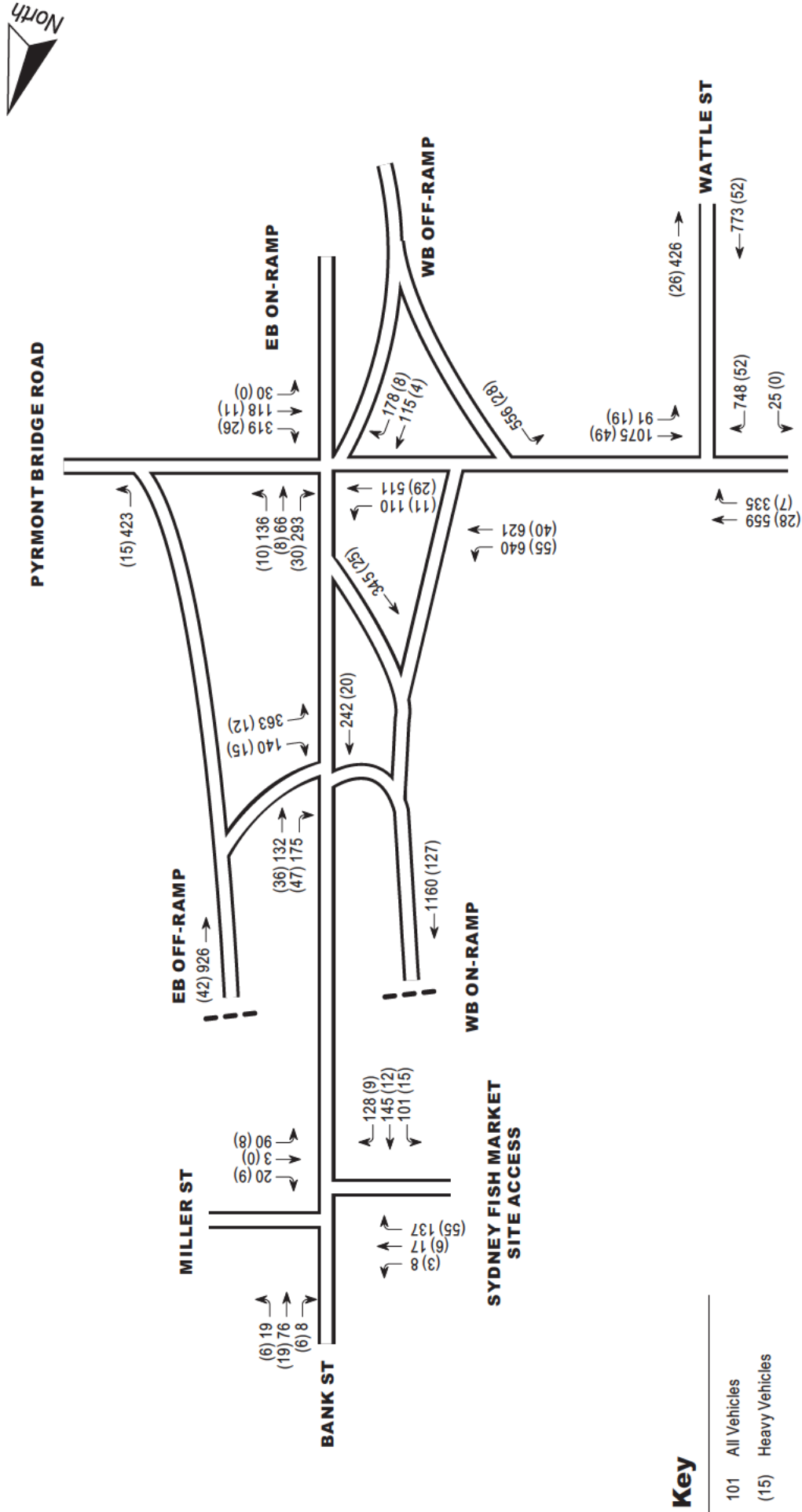


Figure 5

EVENING PEAK HOUR TURNING MOVEMENTS

SYDNEY FISH MARKETS

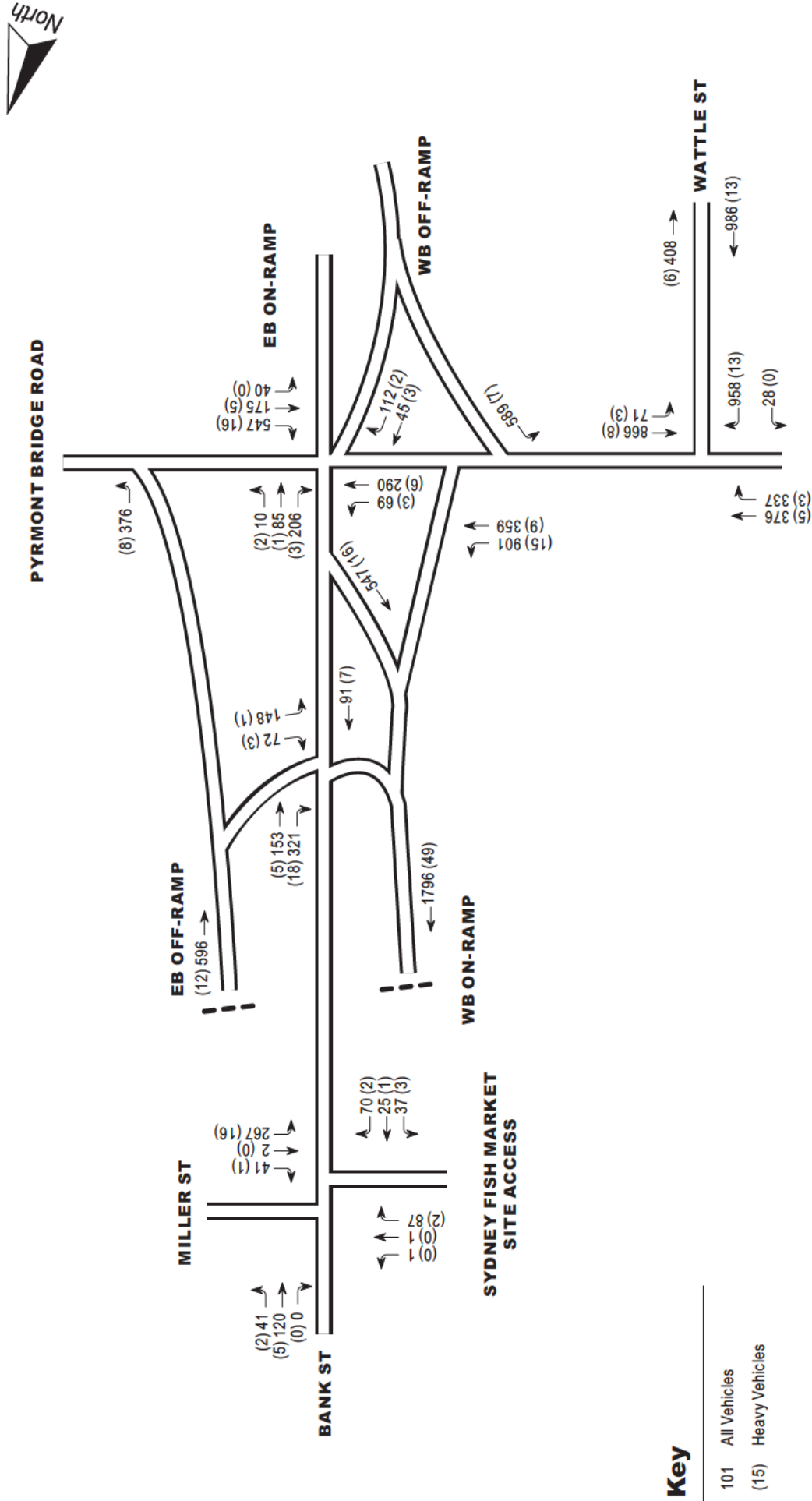
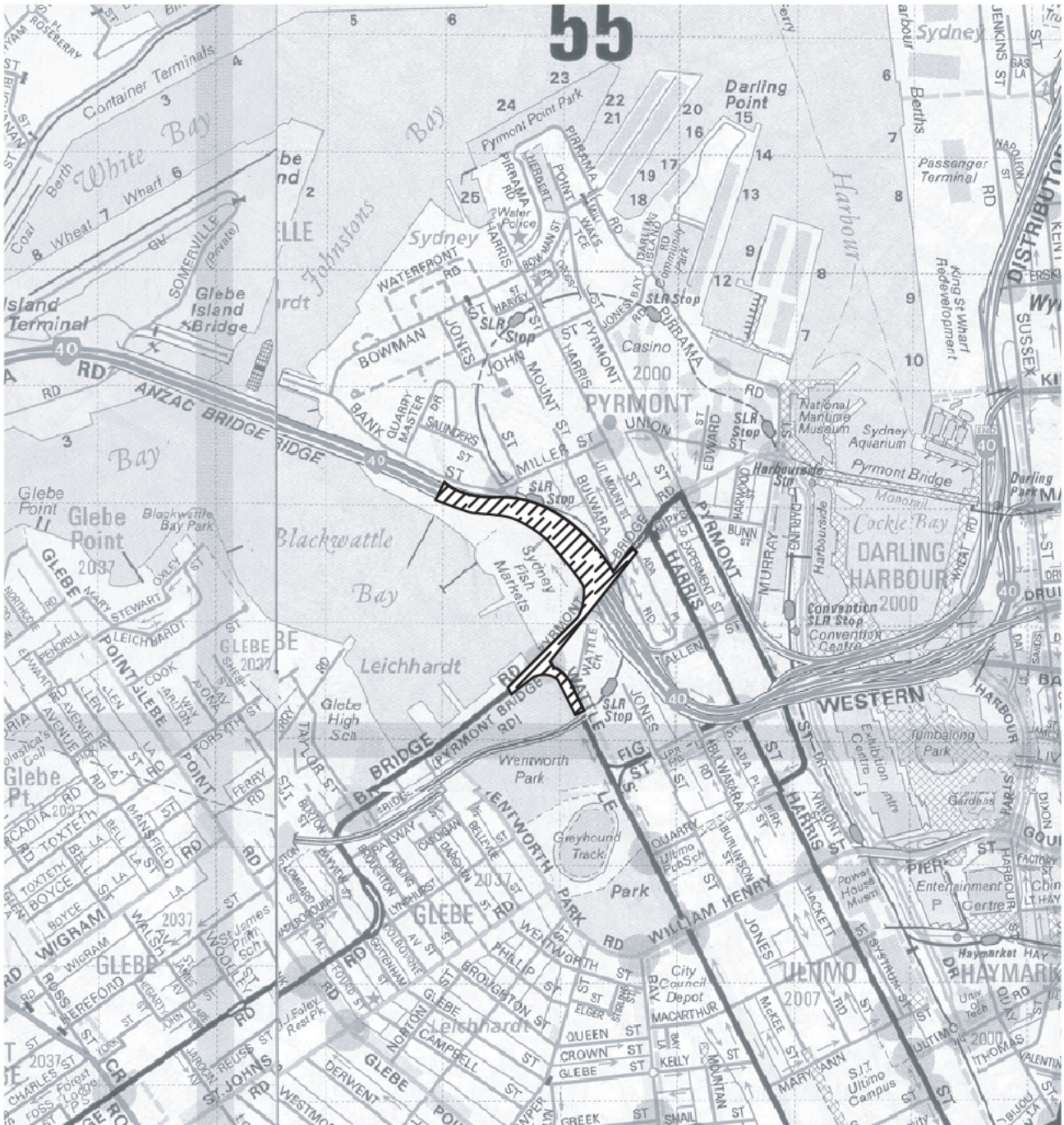


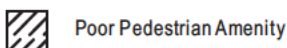
Figure 6

ZONE OF POOR PEDESTRIAN AMENITY ADJOINING SITE

SYDNEY FISH MARKET

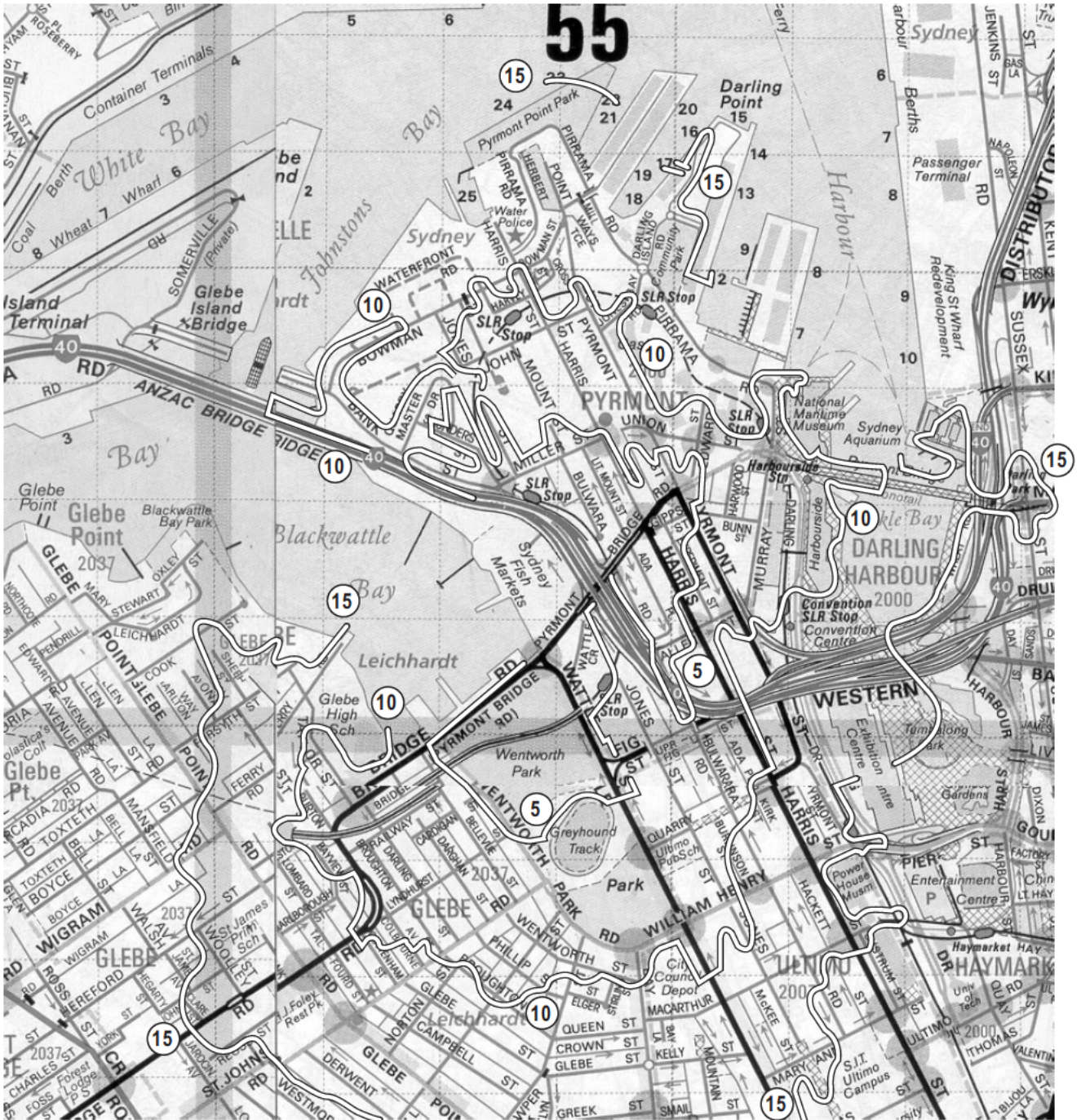


Key



PEDESTRIAN ACCESS ISOCHROME ANALYSIS

SYDNEY FISH MARKET



BICYCLE FACILITIES AROUND SYDNEY FISH MARKET

SOURCE: BASED ON RTA CYCLE SYDNEY



GAPS IN BICYCLE FACILITIES AROUND SYDNEY FISH MARKET

SOURCE: BASED ON RTA CYCLE SYDNEY

Key

- A** **Booth Street**
Poor horizontal alignment at creek
- B** **Bay Street**
Would form a good link from Pymont to Broadway Shopping Centre
- C** **Sheehy Street**
Defacto link for route from Bicentennial Park (Rozelle) to Blackwattle Bay land ownership contentions
- D** **Bridge Road**
Horizontal alignment at curves narrows effective carriageway width
- E** **Eastbound past Sydney Fish Market**
Confusing for those wishing to turn left to Bank Street car park on old Jones Street problematic
- F** **Glebe Street/Kelly Street to Mary Ann Street**
Needs Signage
- G** **ANZAC Bridge Ramp to Quarrymaster Drive**
Right-of-Way unclear
- H** **Murray Street**
Intersection at west end Pymont Bridge confusing
- I** **Ramp at east end of Pymont Bridge Rd**
Not for bicycles
- J** **Bicycle Links**
Through CBD are problematic
- K** **Site**
Lack of cycle parking in view of public eating/retail areas



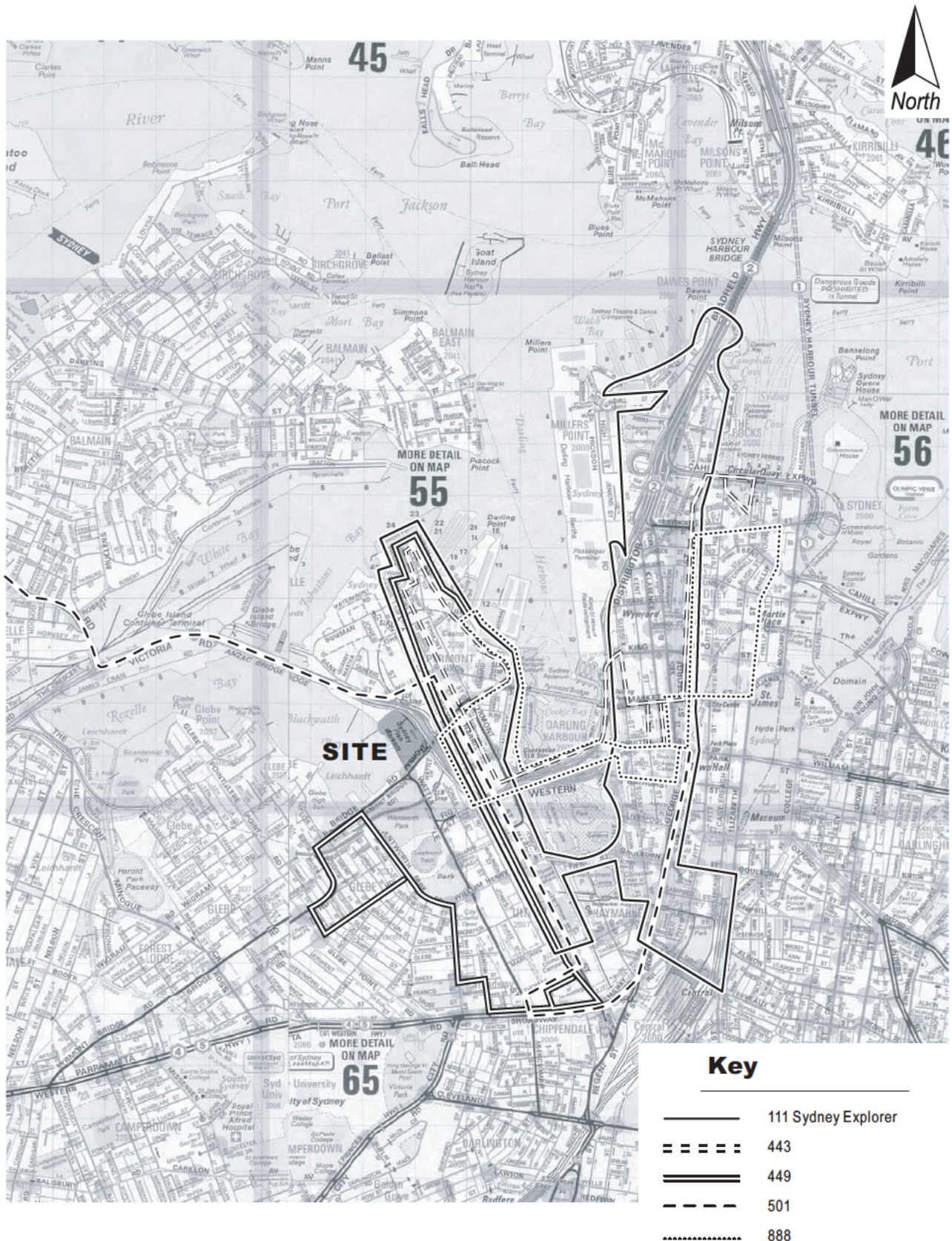
BICYCLE ISOCHRONE ANALYSIS

SYDNEY FISH MARKET



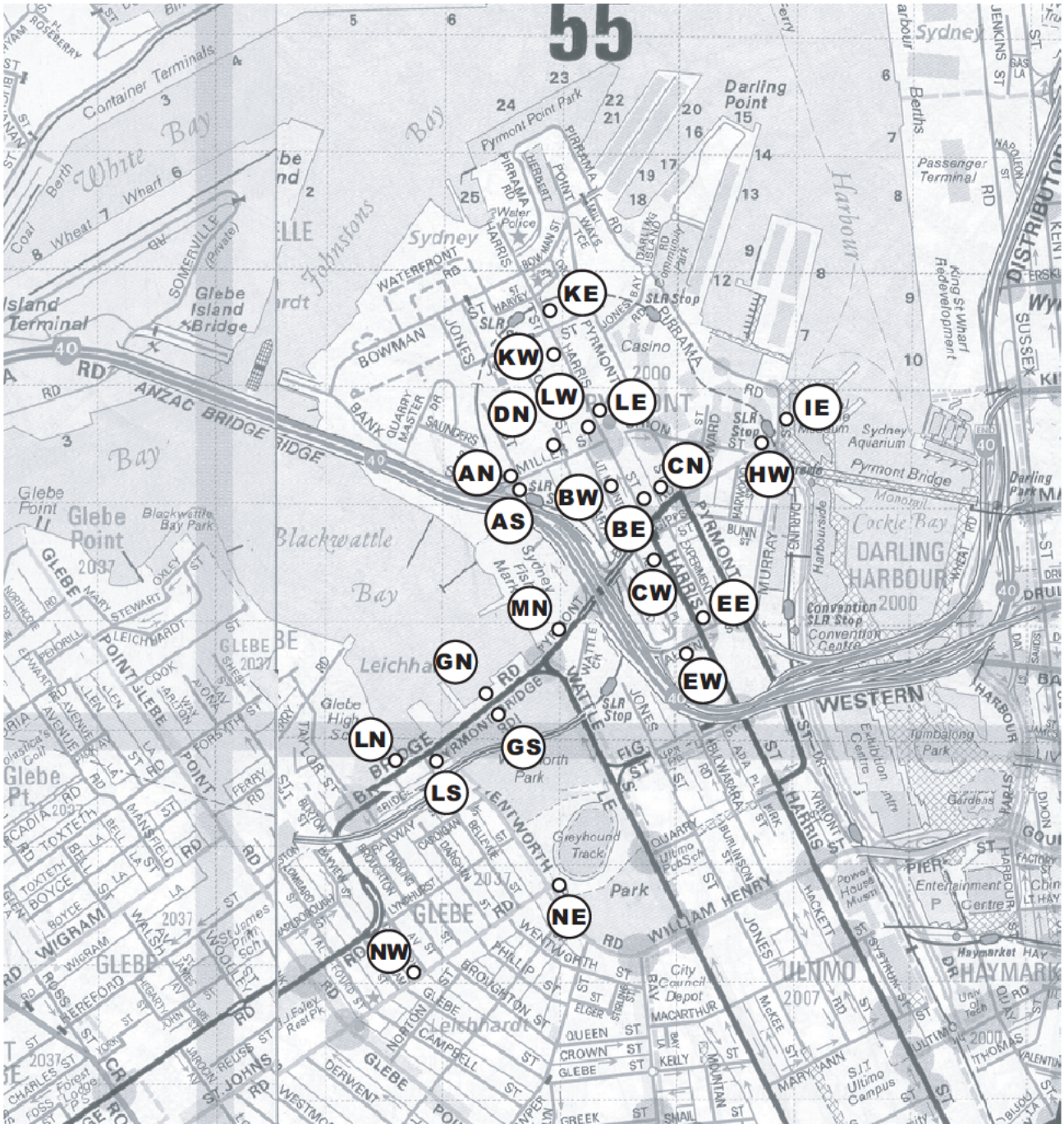
BUS ROUTES SERVING SYDNEY FISH MARKET AREA

SYDNEY FISH MARKET



BUS STOPS CLOSE TO SYDNEY FISH MARKET

CLIENT: SHFA



Key

- Bus Stop location

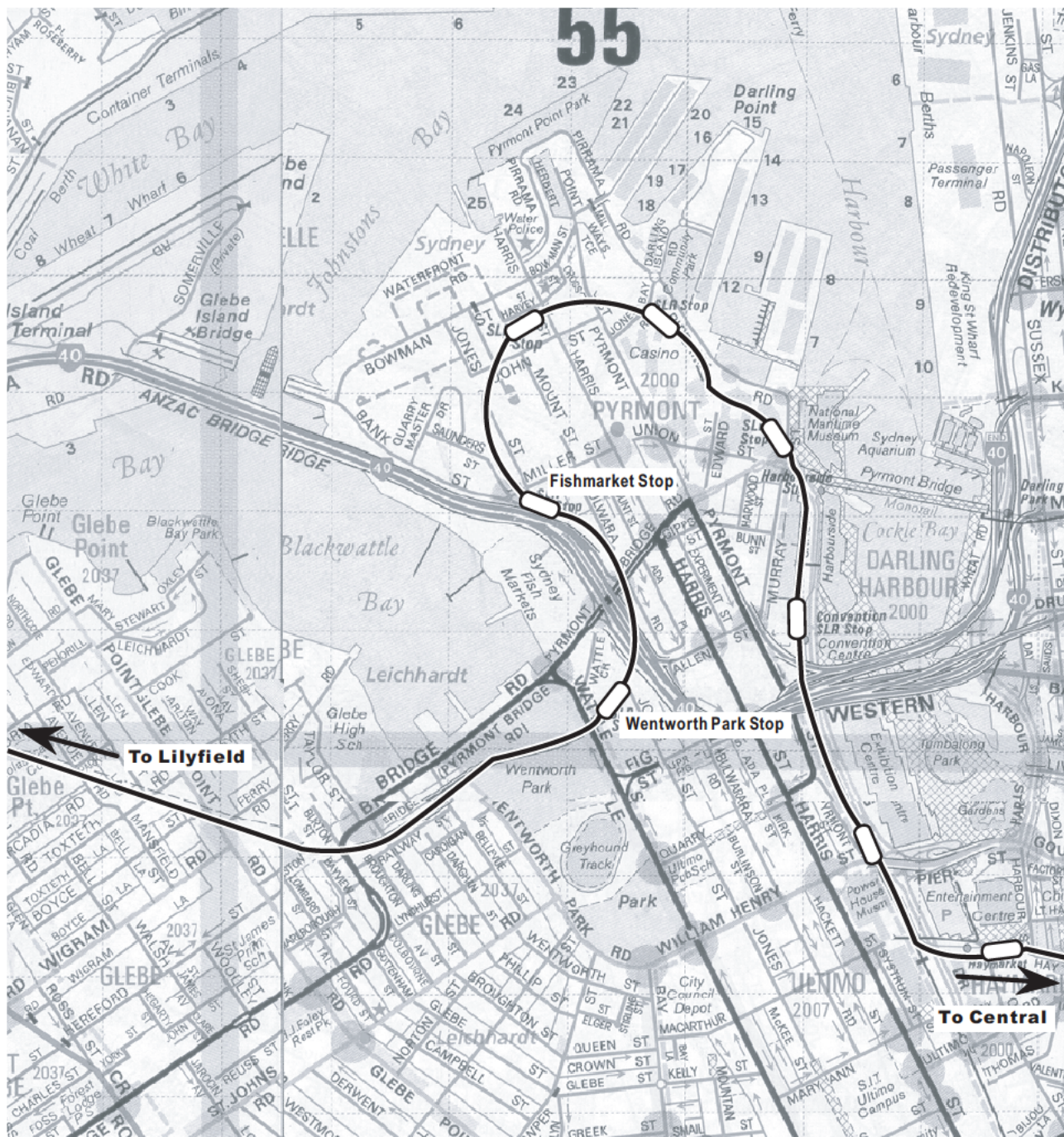
BUS ACCESS ISOCHRONE ANALYSIS

SYDNEY FISH MARKET




METRO LIGHT RAIL ALIGNMENT AND STOPS

IN VICINITY OF SYDNEY FISH MARKET



Key

 Metro Light Rail Alignment

MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

Figure 15

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Date: 9 August 2002

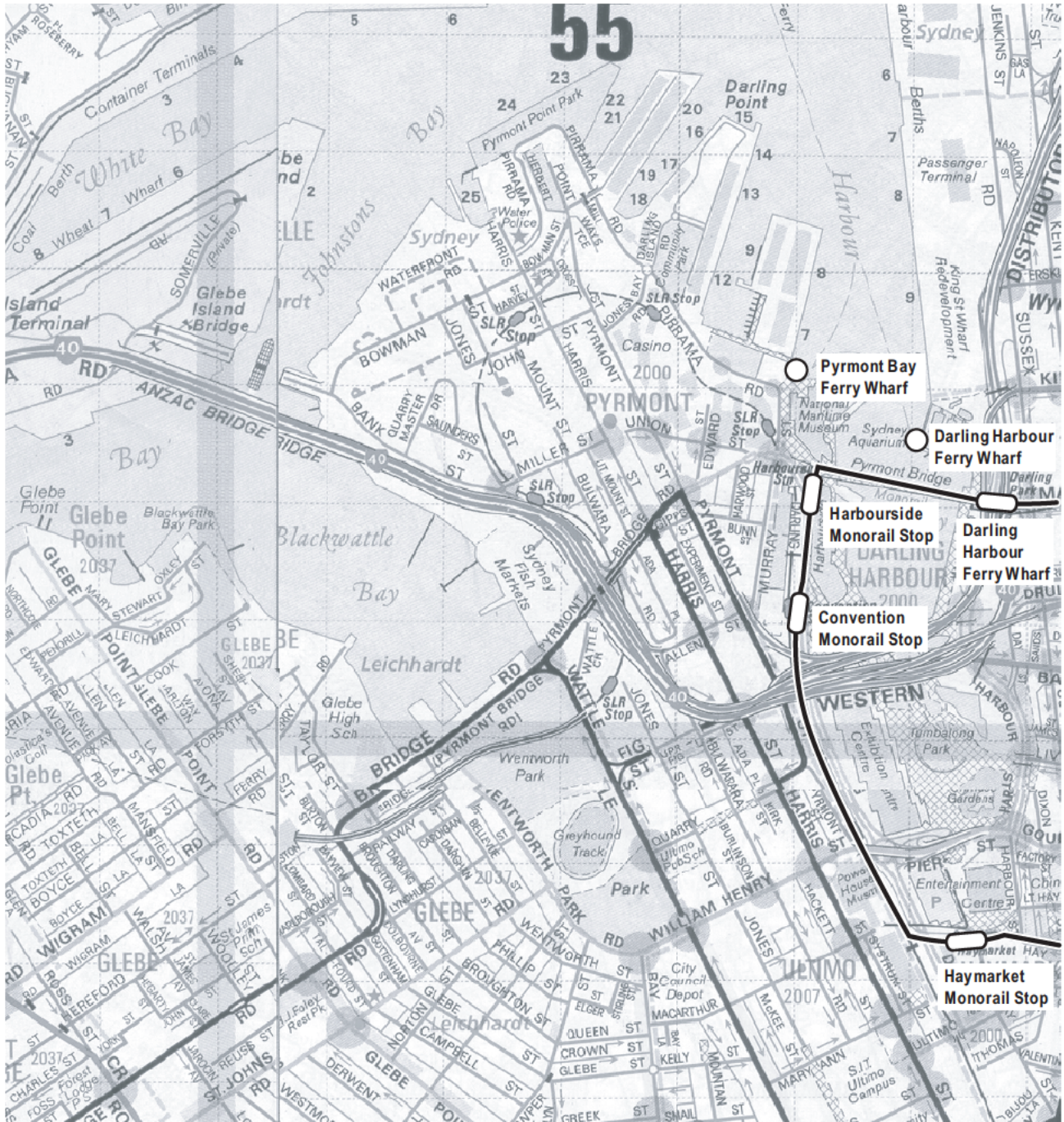
METRO LIGHT RAIL ACCESS ISOCHRONE ANALYSIS

SYDNEY FISH MARKET





MONORAIL AND FERRY FACILITIES

SYDNEY FISH MARKET

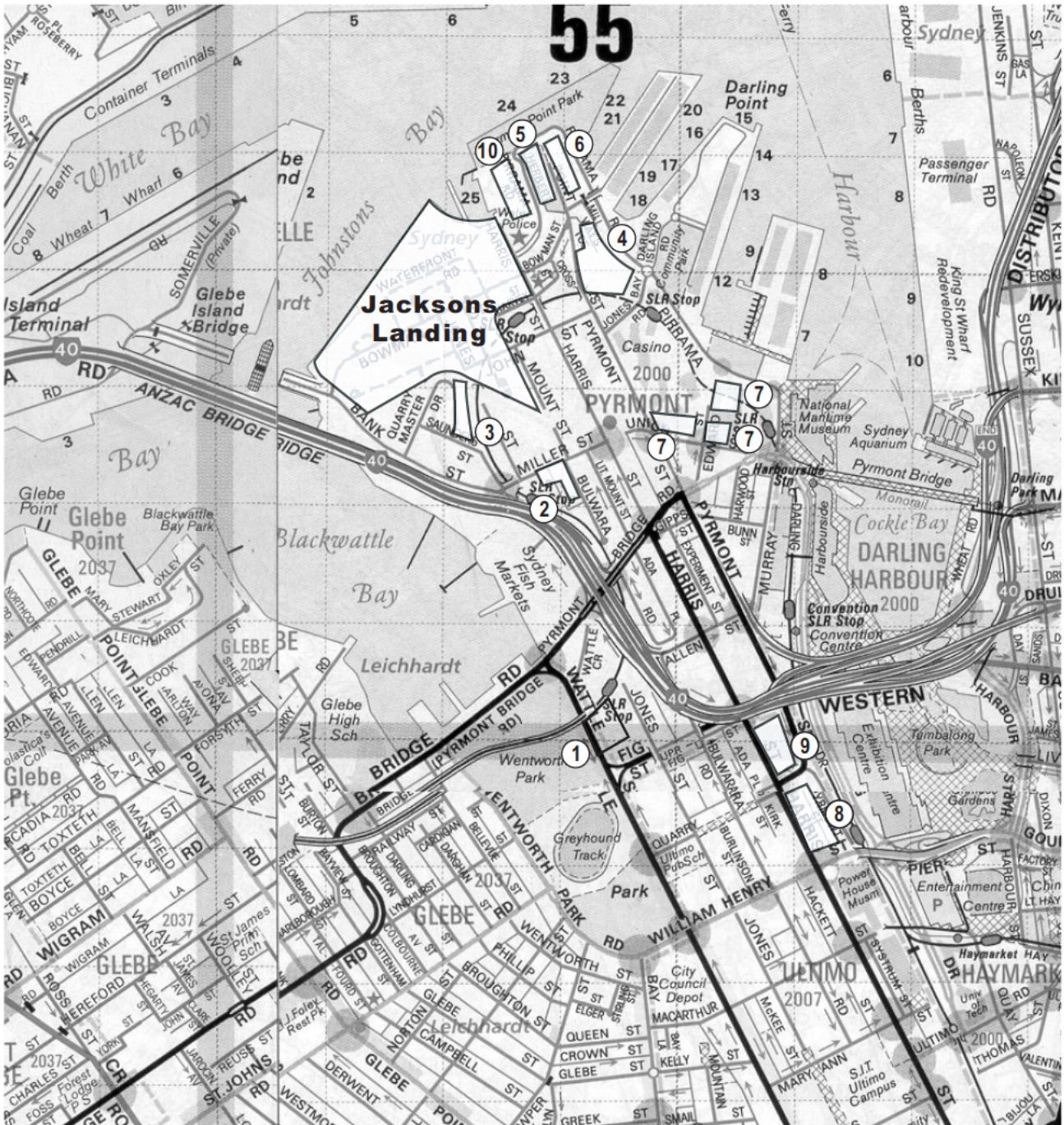


Key

-  Monorail and Ferry Facilities
-  Ferry Wharf

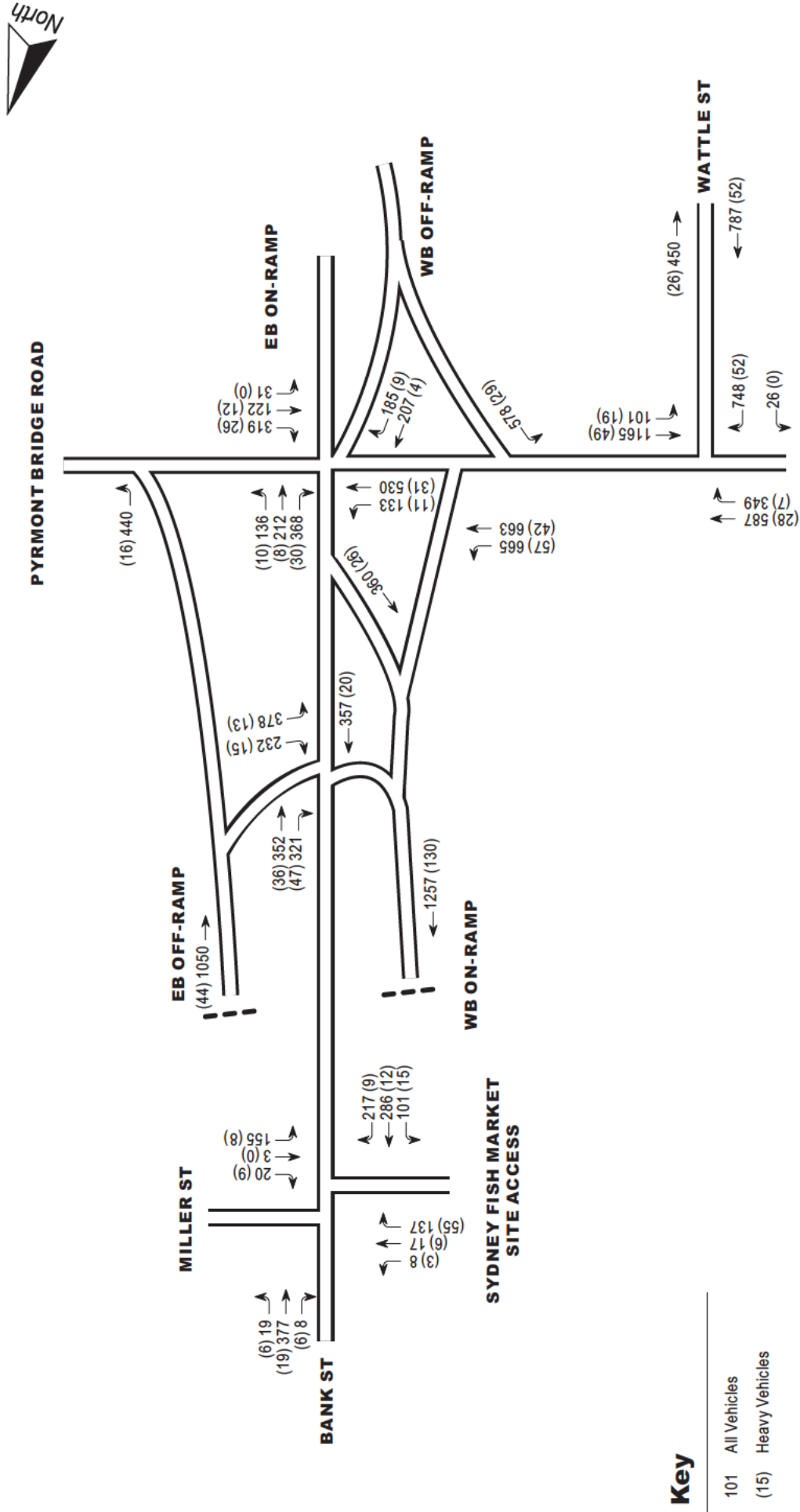
VACANT SITES OR CURRENTLY UNDER DEVELOPMENT

SYDNEY FISH MARKET



MORNING PEAK HOUR 2007 NOTHING TURNING MOVEMENTS

SYDNEY FISH MARKET



EVENING PEAK HOUR TURNING MOVEMENTS

SYDNEY FISH MARKET

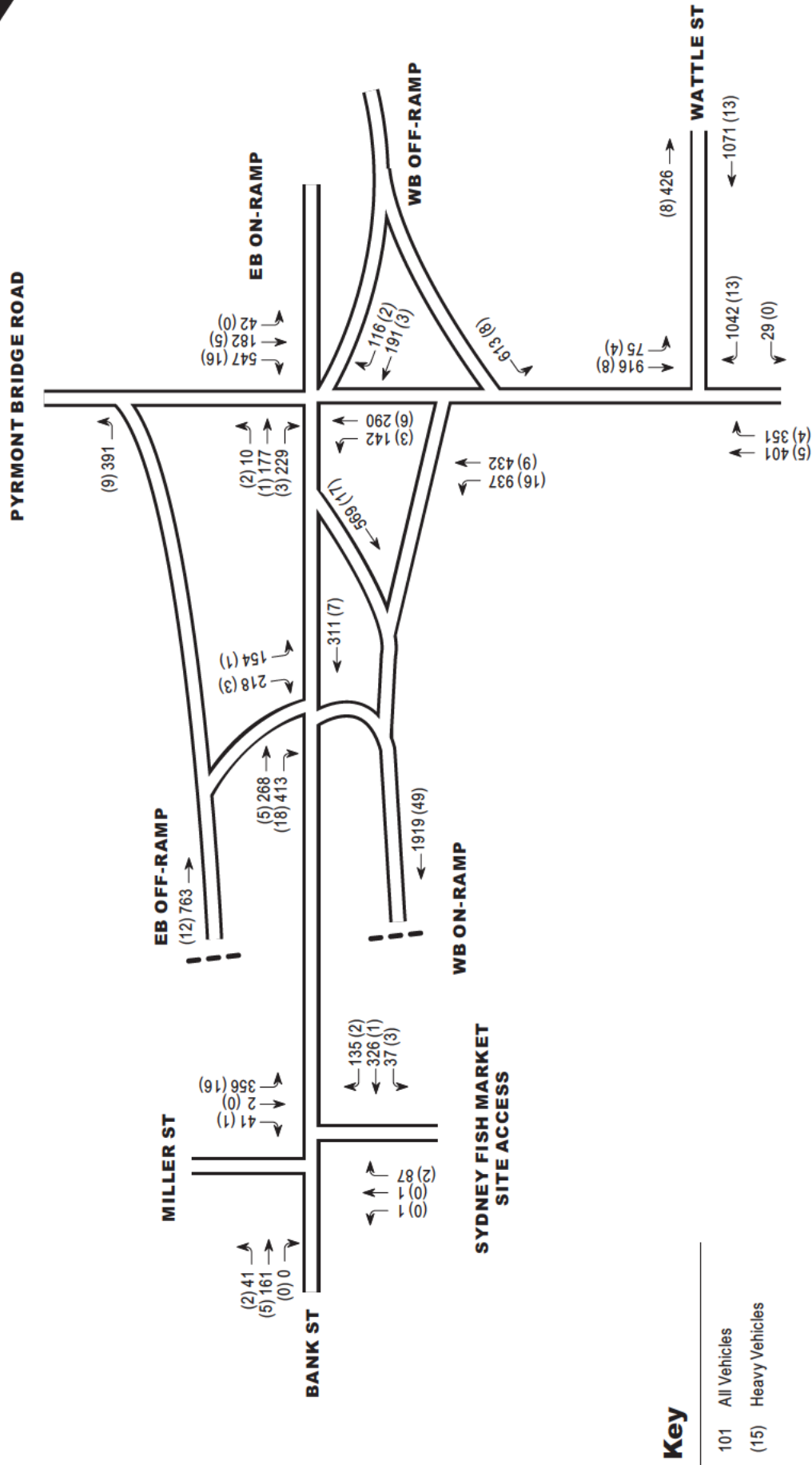
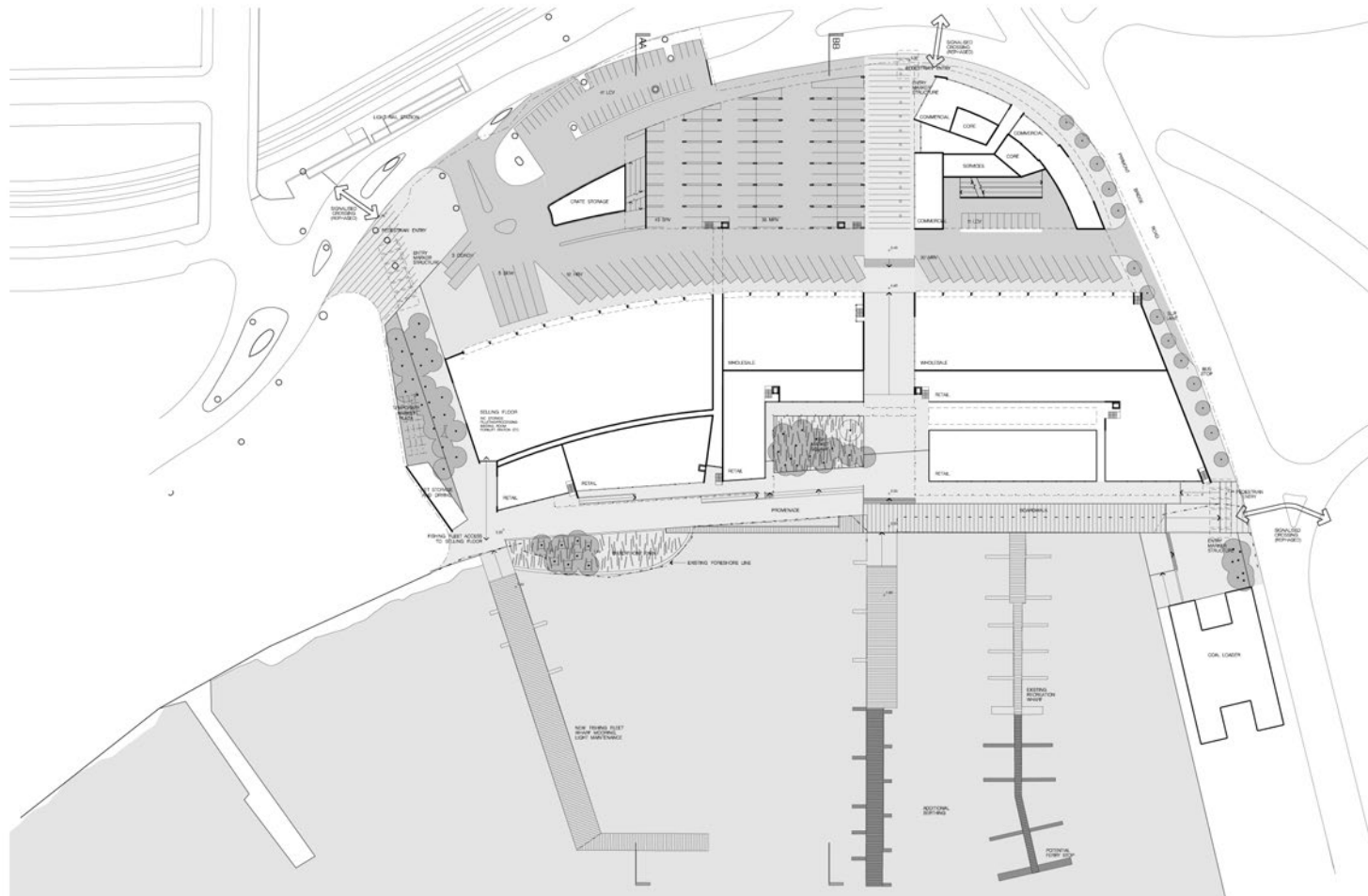


Figure 20

PROPOSED SYDNEY FISH MARKET MASTERPLAN

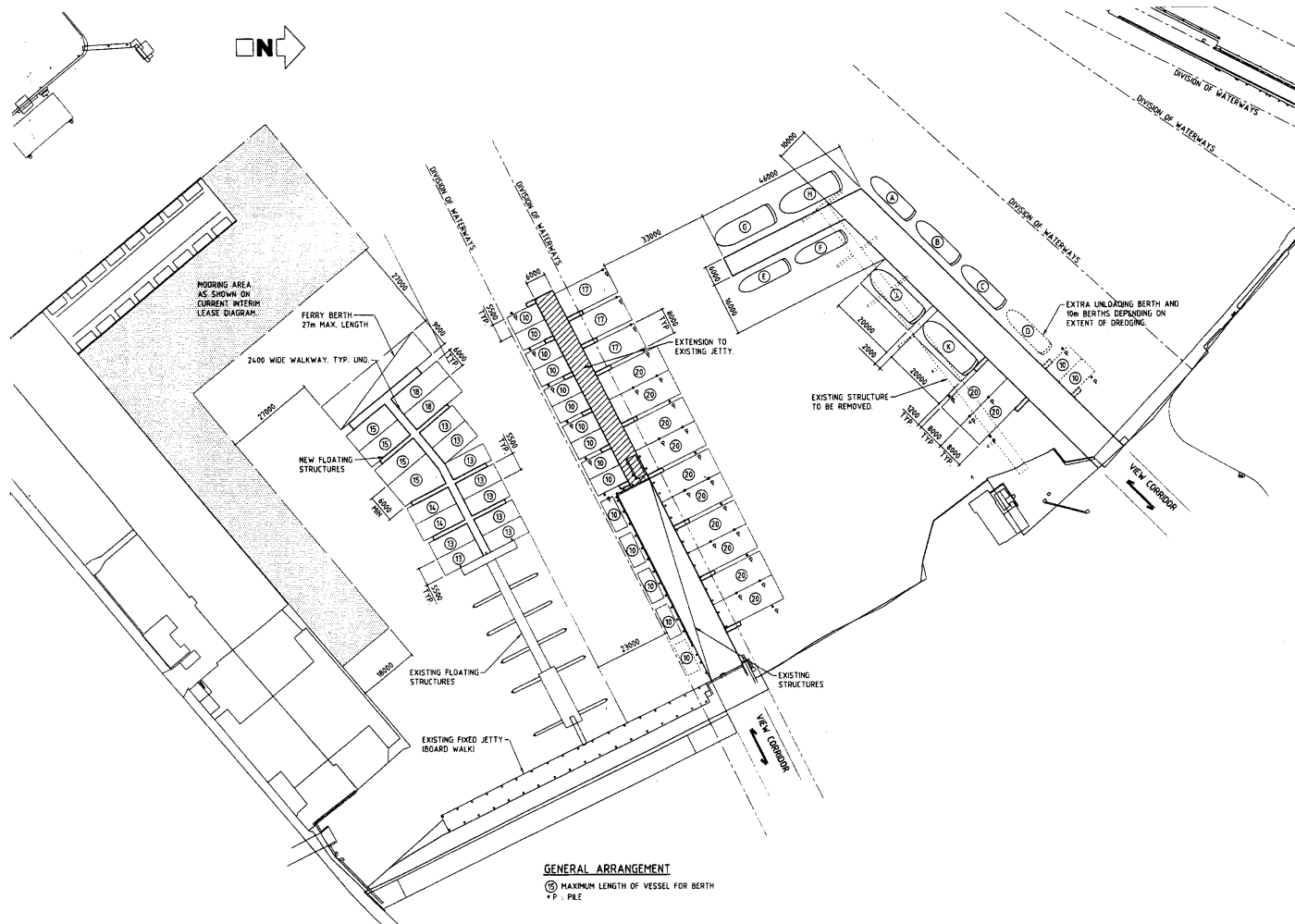
SOURCE: GOVERNMENT ARCHITECT FEBRUARY 2003



Not to Scale

PROPOSED ADDITIONAL BERTHS

SOURCE: SHFA JANUARY 2003



Not to Scale

Appendix A - Site User Survey and Perimeter Counts

Survey Specification and Fieldwork Report

Survey Specification

Section 1. Introduction

This survey comprises a combination of pedestrian and vehicle counts with sample periods of face to face interviews. In addition, it is proposed to undertake car park beat counts and vehicle occupancy survey for site-generated traffic.

This specification is structured as follows:

- Section 2: Site Access Counts by All Modes
- Section 3: Car Park Beat Survey
- Section 4: Vehicle Occupancy Survey
- Section 5: Description of Face-to-Face Survey

Sydney Fish Market is a large site with two main access points. It is located on the corner of Pyrmont Bridge Road and Bank Street at Pyrmont with direct access to Blackwattle Bay. Access is mainly by car through the sole vehicle access from Bank Street and there is an extensive car park onsite. Private and commercial vehicles use the same access point. There is also a Metro Light Rail stop ("Fish Market") on the eastern side of Bank Street with access near the vehicular access. Pedestrians can also access the site from Pyrmont Bridge Road opposite its intersection with Wattle Street and from Bank Street near the intersection of Pyrmont Bridge Road/Bank Street/Western Distributor Ramps. There is a wharf at which private boats may tie up whilst visiting the Sydney Fish Market.

Section 2: Description of Site Access Counts by All Modes

This survey is to be undertaken at four locations around the site.

Location 1: Bank Street Access

The site access road forms an intersection with Bank Street and runs along the northern edge of the site. A suitable location near this access road should be selected that does not block pedestrian access. It is intended that all vehicles entering and leaving the site would be recorded as well as pedestrian and bicycle movements to and from the site.

Data Recording:

Vehicles, bicycles and pedestrians entering and leaving the site by type (motorcycle/ passenger/taxi/light commercial/ heavy commercial/bicycle/pedestrian) by time (15 minute period) by direction.

Time and Date:

Counts are to be undertaken on:

Friday 9 August 2002 between 5.30 am and 5.30 pm (i.e. 0530 to 1730 hours); and

Sunday 11 August 2002 between 6.00 am and 6.00 pm (i.e. 0600 to 1800 hours).

Locations 2 & 3 & 4:

(2) Site Access from Pyrmont Bridge Road near Wattle Street

(3) Boat Wharf South – Public Access Wharf

(4) Site Access at Corner Pyrmont Bridge Road and Western Distributor Ramps

It is intended that these three access points (all non-car) would be covered by the one enumerator who would walk a beat between them to a timetable outlined below. Access at Location 2 is the most heavily used of the

three and due to its proximity to Location 3 (and the light use of this location) these two locations can be counted at the same time.

- Location 2 - The access to Sydney Fish Market from Pyrmont Bridge Road is located near the intersection with Wattle Street.
- Location 3 – The wharf is the southern-most wharf (i.e., closest to Pyrmont Bridge Road/ Bridge Road (Wentworth Park). The public can moor their boats here when they visit the markets.
- Location 2 and Location 3 are to be counted at the same time by standing in such a manner as to be able to see both locations.
- Location 4 – This location is lightly used and is mainly used by pedestrians arriving via Pyrmont Bridge Road. Only count the pedestrians/cyclists that actually enter the site at this location.

Beat pattern for Locations 2, 3 and 4:

The following beat is to be followed:

Record at Location 2 & 3 for 15 minutes

Walk to Location 4 - 5 minutes (3 minutes walk time 2 minutes to get ready to record)

Record at Location 4 for 15 minutes

Walk to Location 2 & 3 - 5 minutes (3 minutes walk time 2 minutes to get ready to record)

Record at Location 2 & 3 for 15 minutes

Walk to Location 4 – 5 minutes (3 minutes walk time 2 minutes to get ready to record)

And so on....

Data Recording:

A sheet recording the location, time and total number of pedestrians, boats, boat users and bicycles entering and leaving the Sydney Fish Market, by time by direction by location. Note that a bicycle and its rider is to be counted as a bicycle, whether it is being pushed or ridden. Where there is more than one person using a bicycle (i.e., tandem or child seat/trailer), then the number of people using it are to be recorded. Note also that a boat arriving is counted as a boat and that people on the boat are only counted if they actually leave the boat to enter the market site.

Time and Date:

Counts are to be undertaken on:

Friday 9 August 2002 between 5.30 am and 5.30 pm (i.e. 0530 to 1730 hours); and

Sunday 11 August 2002 between 6.00 am and 6.00 pm (i.e. 0600 to 1800 hours).

Section 3: Car Park Beat Survey

Location:

The onsite car parking on the site has been divided into four zones

Classification:

All parked vehicles onsite, classified by:

1. Motorbike
2. Car
3. Light Commercial Van
4. Light Commercial Truck
5. Heavy Rigid Truck
6. Articulated Truck
7. Mini bus up to 15 seats
8. Bus/Coach (more than 15 seats)

Data Recording:

For each of the four zones, the total number of vehicles parked in the zone by the time that the beat commenced. Include all vehicles parked whether legally or otherwise. The beat to be walked is to be undertaken three times on the Friday and four times on the Sunday. The car park becomes congested at times and it is important that the surveyor wears a safety vest and keeps out of the way of traffic (there are designated walk ways). The zones are shown on the attached sketch:

- Zone One – this is the car park alongside of Bank Street
- Zone Two – this is the area around the main loading dock
- Zone Three – this is the bulk of the car parking and is to include vehicles parked in loading bays
- Zone Four – this is a service lane along the western side of the main building

Time and Date:

Counts are to be undertaken on:

Friday 9 August 2002 at:

- 5.30 am
- 1.30 pm
- 4.30 pm

Sunday 11 August 2002 at:

- 6.00 am
- 10.00 am
- 1.30 pm
- 5.00 pm

Staffing:

One enumerator is required for this count program. The same person would also undertake the vehicle occupancy survey.

Section 4: Vehicle Occupancy Survey**Location:**

The site access at Bank Street.

Frame:

All passenger vehicles as they access / leave the site.

Data Recording:

For each passenger vehicle accessing / leaving the site, the number of persons observed in the vehicle.

Time and Date:

Counts are to be undertaken on:

Friday 9 August 2002 between 5.30 am and 5.30 pm (i.e. 0530 to 1730 hours); and

Sunday 11 August 2002 between 6.00 am and 6.00 pm (i.e. 0600 to 1800 hours).

Section 5: Description of Face-to-Face Surveys**Location:**

People leaving the site will be sampled:

- a. As they leave the retail arcade (part of the main building)
- b. Outside the De Costi retail outlet towards the eastern side of the site (see sketch)
- c. At the site access to Pyrmont Bridge Road (near Wattle Street) as people are walking out and cyclists are leaving
- d. At the wharf as people are re-boarding their boats to leave

Sample:

A sample of people would be interviewed exiting the retail arcade; exiting the De Costi retail outlet; exiting the site via Pyrmont Bridge Road (near Wattle Street); and exiting the site via the wharf. Some people who work onsite would also be intercepted (especially earlier in the day); if someone is obviously undertaking work onsite, like pushing a hand trolley, they should be omitted. Only people who appear to be leaving the site.

Data Recording:

The questionnaire is attached.

Time and Dates:

The following survey program in blocks of three hours. The surveys are to be undertaken in the same week as the counts.

| Tuesday 13 August 2002 | Friday 9 August 2002 | Sunday 11 August 2002 |
|-------------------------------|-----------------------------|------------------------------|
| 7 am to 10 am | 6 am to 9 am | 8 am to 11 am |
| 1 pm to 4 pm | 10 am to 1 pm | 1 pm to 4 pm |
| | 2 pm to 5 pm | 3 pm to 6 pm |

Staffing:

Interviewers are not to interview people within the car park for safety reasons. The locations have been chosen to capture a range of different site users.

Briefing:

A pre-survey briefing is to be held with survey company to review and clarify the questionnaire and requirements of the site.

Return of data:

A data file with records containing all data fields on the questionnaire is required. The data is required as soon after completion of the survey as possible.

The questionnaire is attached at the end of this appendix.

Fieldwork Report

Counts proceeded on Friday 9 August as per schedule and questionnaire survey also proceeded on Friday 9 August and Tuesday 13 August 2002. The Sunday counts and interviews were postponed to Sunday 25 August 2002 due to poor weather on Sundays 11 and 18 August 2002.

The weather was:

- Fine and sunny on Friday 9 August and Tuesday 13 August.
- Overcast in the morning on Sunday 25 August, but the day fined-up to sunny periods in the afternoon.

Pedestrian access counts at the Pyrmont Bridge Road/Wattle Street access were unintentionally omitted on Sunday 25 August 2002. These counts were taken on Sunday 8 September.

Vehicle access and parking beat counts for the Friday were repeated on Friday 6 September as a result of some discrepancies in the counts for the initial

The interview survey periods scheduled for the Sunday was extended to the following hours:

- 8am to 12 noon
- 12 noon to 5pm
- 1pm to 6pm

The number of interviews conducted each day is summarised in the following table.

| Day | Interviews | Refusals | Total |
|------------|-------------------|-----------------|--------------|
| Tuesday | 86 | 10 | 96 |
| Friday | 108 | 20 | 128 |
| Sunday | 83 | 16 | 99 |
| Total | 277 | 46 | 323 |

Serial No: XXXX Interviewer ID: _____ Time of interview: _____ am/pm day Tues/Fri/Sun

Location: 1. Exit from Retail Arcade 2. Pyrmont Bridge Road Exit

3. Wharf Exit

4. Outside De Costi

Gender: M / F

Good morning/afternoon. We are undertaking a survey of travel patterns at the Sydney Fish Market and would appreciate your views. Could you please spare a minute or two....

(tick if applicable) Refusal O Language barrier O

| | |
|---|---|
| <p>1. Do you work onsite at the Sydney Fish Market? a. Yes .. (Goto Q26 on SIDE 3) b. No .. (Goto Q2)</p> <p>2. How did you get to the Sydney Fish Market? (access mode – not walk or bicycle if from light rail or bus stop in vicinity or from car or motorcycle parked in vicinity) a. Car / Motorcycle b. Bus c. Light Rail d. Walk e. Bicycle f. Other _____</p> <p>3. Approximately how long did the trip here take (door-to-door)? _____ minutes</p> <p><i>(If Q2a. Car/Motorcycle Goto Q8, If Q2 b. Bus Goto Q4 If Q2 c. Light Rail Goto Q5 else, Goto Q6)</i></p> <p>4. Which bus service did you use? a. Sydney Buses, service no. _____ (Goto Q6) b. Coach Group .. (Goto Q6) c. Sydney Explorer .. (Goto Q6) d. Other .. (Goto Q6)</p> <p>5. Which light rail stop did you alight at? a. Fish Market .. (Goto Q6) b. Wentworth Park .. (Goto Q6) c. Other .. (Goto Q6)</p> <p>6. Did you also use another mode of transport as part of your trip here? a. Yes (Goto Q7) b. No (Goto Q9)</p> | <p>7. What other mode or modes of transport did you use as part of your trip here? (multiple responses accepted) a. Car / Motorcycle b. Bus c. Light Rail d. Walk e. Bicycle f. Other _____ <i>(All responses Goto Q9)</i></p> <p>8. And where is your car parked? a. Onsite .. (Goto Q9) b. Offsite .. (Goto Q9) c. Did not park, dropped by car .. (Goto Q9)</p> <p>9. Are you leaving the Sydney Fish Market by (repeat the mode identified by the respondent in Q2)? a. Yes .. (Goto Q12) b. No .. (Goto Q10)</p> <p>10. Then by which mode are you leaving? (egress mode – not walk or bicycle to light rail or bus stop or car or motorcycle parked in vicinity) a. Car / Motorcycle .. (Goto Q13) b. Bus .. (Goto Q11) c. Light Rail .. (Goto Q12) d. Walk .. (Goto Q12) e. Bicycle .. (Goto Q12) f. Other .. (Goto Q12)</p> <p>11. Which bus service will you use? a. Sydney Buses, service no. _____ b. Coach Group c. Sydney Explorer d. Other <i>(All responses Goto Q12)</i></p> <p>12. (If Q2 or Q10 a. Car/Motorcycle then Goto Q13 otherwise continue here.) Did you have a car available for your visit to the Sydney Fish Market today? a. No.. (Goto Q15) b. Yes .. (Goto Q14)</p> |
| <p>13. (Car users - from Q10 or Q12) Which reason best describes why you chose to use car for your visit to the Sydney Fish Market today? (Single response only) a. Car is quicker than other modes b. Car is cheaper than other modes c. I need the car to carry my shopping d. I don't like carrying seafood by public transport e. I don't understand the public transport services in this area f. Other _____ <i>(All responses - Goto Q15)</i></p> <p>14. (From Q12 - Non-Car users who had car available) Which reason best describes why you chose to use (repeat the mode identified by the respondent in Q2)? (Single response only) a. It is quicker than other modes b. It is cheaper than other modes c. I do not like the market's car park d. I was planning to have a drink with my meal e. It is more relaxing f. Other _____ <i>(All responses - Goto Q15)</i></p> | |

| | |
|--|---|
| <p>15. What was the main reason for visiting the Sydney Fish Market today? (Single response only)</p> <ul style="list-style-type: none"> a. To buy seafood – retail to be consumed off site b. To purchase and eat take away food on site c. To have a table service meal d. To buy seafood – wholesale e. Work here f. Tourism g. On work related business h. Attend cooking classes at Seafood School i. Other _____ | |
| <p>16. In addition to your main reason for visiting Sydney Fish Market today, what other things did you do? (Multiple responses accepted)</p> <ul style="list-style-type: none"> a. To buy seafood – retail to be consumed off site b. To purchase and eat take away food on site c. To have a table service meal d. To buy seafood – wholesale e. Work here f. Tourism g. On work related business h. Attend cooking classes at Seafood School i. Other _____ | |
| <p>17. If you purchased items at the Sydney Fish Market today to take with you when you leave, are they?</p> <ul style="list-style-type: none"> a. Light and easy to carry b. Moderately heavy c. Heavy d. Other _____ e. No items purchased to take away <p>18. What time did you arrive at the Sydney Fish Market today?</p> <p>_____ hr : _____ mins (am/pm)</p> <p>19. Before visiting the Sydney Fish Market, were you at:</p> <ul style="list-style-type: none"> a. Home b. Work c. Shopping d. Visiting friends or relatives e. Other _____ <p>20. In which suburb is that? _____</p> | <p>21. After leaving the Sydney Fish Market, are you going:</p> <ul style="list-style-type: none"> a. Home b. to Work c. Shopping d. Visiting friends or relatives e. Other _____ <p>22. In which suburb is that? _____</p> <p>23. How many people are visiting the Sydney Fish Market with you? (including respondent)</p> <p>_____ adults _____ children</p> <p>24. How frequently do you visit the Sydney Fish Market?</p> <ul style="list-style-type: none"> a. first visit b. _____ times /day c. _____ times /week d. _____ times /month e. _____ times /year f. less frequently <p>25. (If Q19 or Q21 a. Home' & Suburb complete, then skip to end, else) What is your home postcode?</p> <p>a. _____</p> <p>b. (if person does not live in Australia) In which country do you live?</p> <p>_____</p> |

Thank you for your assistance and co-operation.

(If the respondent would like further information, please hand out contact card).

Appendix B - Survey Results

Attached are tables of site perimeter counts and frequency count tables from the survey of site users.

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Table AppB 1 - Perimetre Counts by Non-Vehicle Access Modes

02-1841
Sydney Fish Market TMAP

| Sum of Count | | | Rep | Day | Direction | | | | | |
|----------------|------------------------------------|------------------------------|--------|-----|--------------|--------|-----|--------------|----|----|
| Classification | RepLoc | Hour | Friday | | Friday Total | Sunday | | Sunday Total | | |
| | | | IN | OUT | | IN | OUT | | | |
| Bicycle | Bank St & Miller St | 5 | 0 | 0 | 0 | | | | | |
| | | 6 | 3 | 2 | 5 | 0 | 0 | 0 | | |
| | | 7 | 2 | 6 | 8 | 0 | 0 | 0 | | |
| | | 8 | 0 | 2 | 2 | 0 | 0 | 0 | | |
| | | 9 | 0 | 0 | 0 | 1 | 1 | 2 | | |
| | | 10 | 2 | 0 | 2 | 4 | 6 | 10 | | |
| | | 11 | 0 | 0 | 0 | 5 | 4 | 9 | | |
| | | 12 | 0 | 0 | 0 | 4 | 2 | 6 | | |
| | | 13 | 1 | 0 | 1 | 1 | 1 | 2 | | |
| | | 14 | 0 | 1 | 1 | 0 | 2 | 2 | | |
| | | 15 | 1 | 0 | 1 | 2 | 0 | 2 | | |
| | | 16 | 0 | 1 | 1 | 0 | 0 | 0 | | |
| | | 17 | 1 | 0 | 1 | 1 | 2 | 3 | | |
| | | Bank St & Miller St Total | | | 10 | 12 | 22 | 18 | 18 | 36 |
| | | Pymont Bridge Rd & West Dist | 5 | 0 | 0 | 0 | | | | |
| | | | 6 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 7 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 8 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 9 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 10 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 11 | | 0 | 2 | 2 | 2 | 6 | 8 | | |
| | 12 | | 0 | 4 | 4 | 0 | 8 | 8 | | |
| | 13 | | 0 | 2 | 2 | 4 | 4 | 8 | | |
| | 14 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 15 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 16 | | 4 | 0 | 4 | 0 | 0 | 0 | | |
| | 17 | | 4 | 0 | 4 | 0 | 0 | 0 | | |
| | Pymont Bridge Rd & West Dist Total | | | 8 | 8 | 16 | 6 | 18 | 24 | |
| | Wattle St | | 5 | 0 | 0 | 0 | | | | |
| | | | 6 | 2 | 0 | 2 | 2 | 0 | 2 | |
| | | | 7 | 0 | 0 | 0 | 2 | 0 | 2 | |
| | | 8 | 0 | 0 | 0 | 4 | 2 | 6 | | |
| | | 9 | 0 | 4 | 4 | 2 | 1 | 3 | | |
| | | 10 | 2 | 2 | 4 | 0 | 0 | 0 | | |
| | | 11 | 4 | 4 | 8 | 0 | 2 | 2 | | |
| | | 12 | 0 | 2 | 2 | 3 | 3 | 6 | | |
| | | 13 | 0 | 4 | 4 | 2 | 1 | 3 | | |
| | | 14 | 2 | 6 | 8 | 2 | 1 | 3 | | |
| | | 15 | 4 | 4 | 8 | 5 | 3 | 8 | | |
| | | 16 | 0 | 2 | 2 | 1 | 1 | 2 | | |
| | | 17 | 0 | 3 | 3 | 0 | 5 | 5 | | |
| | | Wattle St Total | | | 14 | 31 | 45 | 23 | 19 | 42 |
| Bicycle Total | | | 32 | 51 | 83 | 47 | 55 | 102 | | |

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02-1841
Sydney Fish Market TMAP

| Sum of Count | | | Rep | Day | Direction | | | | | | |
|----------------|--------|-------------|--------|-----|--------------|--------|-----|--------------|-----|-----|----|
| Classification | RepLoc | Hour | Friday | | Friday Total | Sunday | | Sunday Total | | | |
| | | | IN | OUT | | IN | OUT | | | | |
| Boat | Wharf | 5 | | 0 | 0 | | 0 | | | | |
| | | 6 | | 0 | 0 | | 0 | 0 | 0 | | |
| | | 7 | | 0 | 0 | | 0 | 1 | 0 | | |
| | | 8 | | 0 | 0 | | 0 | 0 | 0 | | |
| | | 9 | | 0 | 0 | | 0 | 1 | 4 | | |
| | | 10 | | 2 | 0 | | 2 | 1 | 4 | | |
| | | 11 | | 0 | 0 | | 0 | 5 | 1 | | |
| | | 12 | | 2 | 0 | | 2 | 4 | 5 | | |
| | | 13 | | 0 | 4 | | 4 | 2 | 1 | | |
| | | 14 | | 2 | 2 | | 4 | 3 | 3 | | |
| | | 15 | | 0 | 8 | | 8 | 5 | 7 | | |
| | | 16 | | 0 | 2 | | 2 | 4 | 5 | | |
| | | 17 | | 0 | 0 | | 0 | 0 | 0 | | |
| | | Wharf Total | | | 6 | 16 | | 22 | 26 | 30 | |
| | | Boat Total | | | | 6 | 16 | | 22 | 26 | 30 |
| | | By Boat | Wharf | 5 | | 0 | 0 | | 0 | | |
| | 6 | | | | 0 | 0 | | 0 | 0 | 0 | |
| 7 | | | | 0 | 0 | | 0 | 1 | 0 | | |
| 8 | | | | 0 | 0 | | 0 | 0 | 0 | | |
| 9 | | | | 0 | 0 | | 0 | 3 | 14 | | |
| 10 | | | | 2 | 0 | | 2 | 5 | 12 | | |
| 11 | | | | 0 | 0 | | 0 | 19 | 2 | | |
| 12 | | | | 4 | 0 | | 4 | 8 | 99 | | |
| 13 | | | | 0 | 16 | | 16 | 3 | 2 | | |
| 14 | | | | 4 | 6 | | 10 | 3 | 12 | | |
| 15 | | | | 0 | 16 | | 16 | 9 | 22 | | |
| 16 | | | | 0 | 10 | | 10 | 80 | 22 | | |
| 17 | | | | 0 | 0 | | 0 | 0 | 0 | | |
| Wharf Total | | | | | 10 | 48 | | 58 | 131 | 185 | |
| By Boat Total | | | | | 10 | 48 | | 58 | 131 | 185 | |

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02-1841
Sydney Fish Market TMAP

| Sum of Count | | | Rep Day | | Direction | | | | |
|----------------|------------------------------------|------------------------------|---------|------|--------------|--------|------|--------------|------|
| Classification | RepLoc | Hour | Friday | | Friday Total | Sunday | | Sunday Total | |
| | | | IN | OUT | | IN | OUT | | |
| Ped | Bank St & Miller St | 5 | 4 | 1 | 5 | | | | |
| | | 6 | 9 | 7 | 16 | 10 | 2 | 12 | |
| | | 7 | 23 | 16 | 39 | 29 | 7 | 36 | |
| | | 8 | 40 | 22 | 62 | 32 | 9 | 41 | |
| | | 9 | 36 | 19 | 55 | 70 | 39 | 109 | |
| | | 10 | 16 | 24 | 40 | 76 | 62 | 138 | |
| | | 11 | 39 | 34 | 73 | 131 | 99 | 230 | |
| | | 12 | 87 | 61 | 148 | 209 | 143 | 352 | |
| | | 13 | 98 | 108 | 206 | 224 | 160 | 384 | |
| | | 14 | 59 | 107 | 166 | 139 | 222 | 361 | |
| | | 15 | 27 | 51 | 78 | 89 | 167 | 256 | |
| | | 16 | 24 | 46 | 70 | 48 | 115 | 163 | |
| | | 17 | 4 | 8 | 12 | 9 | 40 | 49 | |
| | | Bank St & Miller St Total | | 466 | 504 | 970 | 1066 | 1065 | 2131 |
| | | Pymont Bridge Rd & West Dist | 5 | 16 | 0 | 16 | | | |
| | | | 6 | 16 | 4 | 20 | 8 | 0 | 8 |
| | | | 7 | 18 | 6 | 24 | 26 | 4 | 30 |
| | 8 | | 24 | 16 | 40 | 24 | 12 | 36 | |
| | 9 | | 26 | 4 | 30 | 22 | 14 | 36 | |
| | 10 | | 32 | 28 | 60 | 56 | 68 | 124 | |
| | 11 | | 82 | 52 | 134 | 74 | 58 | 132 | |
| | 12 | | 60 | 96 | 156 | 132 | 72 | 204 | |
| | 13 | | 76 | 140 | 216 | 72 | 74 | 146 | |
| | 14 | | 72 | 116 | 188 | 68 | 16 | 84 | |
| | 15 | | 44 | 68 | 112 | 58 | 108 | 166 | |
| | 16 | | 16 | 76 | 92 | 8 | 116 | 124 | |
| | 17 | | 0 | 20 | 20 | 8 | 16 | 24 | |
| | Pymont Bridge Rd & West Dist Total | | 482 | 626 | 1108 | 556 | 558 | 1114 | |
| | Wattle St | | 5 | 20 | 0 | 20 | | | |
| | | | 6 | 34 | 16 | 50 | 29 | 11 | 40 |
| | | | 7 | 24 | 16 | 40 | 82 | 46 | 128 |
| | | 8 | 86 | 52 | 138 | 105 | 68 | 173 | |
| | | 9 | 68 | 48 | 116 | 134 | 128 | 262 | |
| | | 10 | 104 | 78 | 182 | 180 | 150 | 330 | |
| | | 11 | 160 | 116 | 276 | 329 | 203 | 532 | |
| | | 12 | 198 | 142 | 340 | 406 | 239 | 645 | |
| | | 13 | 168 | 132 | 300 | 494 | 658 | 1152 | |
| | | 14 | 86 | 160 | 246 | 382 | 442 | 824 | |
| | | 15 | 128 | 104 | 232 | 308 | 366 | 674 | |
| | | 16 | 62 | 104 | 166 | 238 | 315 | 553 | |
| | | 17 | 38 | 65 | 103 | 134 | 193 | 327 | |
| | | Wattle St Total | | 1176 | 1033 | 2209 | 2821 | 2819 | 5640 |
| Ped Total | | 2124 | 2163 | 4287 | 4443 | 4442 | 8885 | | |

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Table AppB 2 - Perimetre Counts Vehicle Modes

02-1841
Sydney Fish Market TMAP

| Sum of Count | | | Rep Day Direction | | | | | |
|------------------|---------------------|------|-------------------|------|--------------|--------|------|--------------|
| Classification | RepLoc | Hour | Friday | | Friday Total | Sunday | | Sunday Total |
| | | | IN | OUT | | IN | OUT | |
| Motorcycle | Bank St & Miller St | 5 | 1 | 1 | 2 | | | |
| | | 6 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 8 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | 9 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | 10 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | 11 | 0 | 1 | 1 | 1 | 1 | 2 |
| | | 12 | 1 | 2 | 3 | 1 | 0 | 1 |
| | | 13 | 1 | 1 | 2 | 0 | 1 | 1 |
| | | 14 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | 15 | 1 | 1 | 2 | 0 | 0 | 0 |
| | | 16 | 1 | 3 | 4 | 0 | 0 | 0 |
| | | 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycle Total | | | 10 | 9 | 19 | 2 | 2 | 4 |
| Car | Bank St & Miller St | 5 | 25 | 6 | 31 | | | |
| | | 6 | 58 | 19 | 77 | 40 | 11 | 51 |
| | | 7 | 62 | 31 | 93 | 88 | 57 | 145 |
| | | 8 | 103 | 51 | 154 | 127 | 106 | 233 |
| | | 9 | 170 | 107 | 277 | 188 | 174 | 362 |
| | | 10 | 177 | 164 | 341 | 276 | 191 | 467 |
| | | 11 | 212 | 210 | 422 | 367 | 282 | 649 |
| | | 12 | 242 | 205 | 447 | 375 | 286 | 661 |
| | | 13 | 216 | 234 | 450 | 382 | 345 | 727 |
| | | 14 | 155 | 204 | 359 | 318 | 335 | 653 |
| | | 15 | 155 | 200 | 355 | 218 | 371 | 589 |
| | | 16 | 77 | 178 | 255 | 61 | 211 | 272 |
| | | 17 | 11 | 45 | 56 | 18 | 83 | 101 |
| Car Total | | | 1663 | 1654 | 3317 | 2458 | 2452 | 4910 |
| Taxi | Bank St & Miller St | 5 | 1 | 1 | 2 | | | |
| | | 6 | 1 | 0 | 1 | 2 | 2 | 4 |
| | | 7 | 3 | 4 | 7 | 6 | 3 | 9 |
| | | 8 | 6 | 5 | 11 | 4 | 2 | 6 |
| | | 9 | 2 | 2 | 4 | 3 | 2 | 5 |
| | | 10 | 0 | 0 | 0 | 6 | 4 | 10 |
| | | 11 | 3 | 4 | 7 | 11 | 13 | 24 |
| | | 12 | 10 | 6 | 16 | 7 | 8 | 15 |
| | | 13 | 9 | 10 | 19 | 12 | 12 | 24 |
| | | 14 | 7 | 9 | 16 | 8 | 10 | 18 |
| | | 15 | 3 | 2 | 5 | 6 | 7 | 13 |
| | | 16 | 1 | 2 | 3 | 1 | 3 | 4 |
| | | 17 | 2 | 2 | 4 | 0 | 0 | 0 |
| Taxi Total | | | 48 | 47 | 95 | 66 | 66 | 132 |
| Light Commercial | Bank St & Miller St | 5 | 36 | 4 | 40 | | | |

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02-1841
Sydney Fish Market TMAP

| Sum of Count | | | Rep | Day | Direction | | | | |
|------------------------|---------------------|------|--------|-----|--------------|--------|-----|--------------|----|
| Classification | RepLoc | Hour | Friday | | Friday Total | Sunday | | Sunday Total | |
| | | | IN | OUT | | IN | OUT | | |
| Light Commercial | Bank St & Miller St | 6 | | 40 | 20 | 60 | 12 | 1 | 13 |
| | | 7 | | 37 | 27 | 64 | 12 | 15 | 27 |
| | | 8 | | 19 | 39 | 58 | 13 | 15 | 28 |
| | | 9 | | 38 | 62 | 100 | 15 | 11 | 26 |
| | | 10 | | 57 | 67 | 124 | 16 | 16 | 32 |
| | | 11 | | 37 | 75 | 112 | 18 | 20 | 38 |
| | | 12 | | 30 | 37 | 67 | 13 | 10 | 23 |
| | | 13 | | 31 | 41 | 72 | 13 | 12 | 25 |
| | | 14 | | 38 | 42 | 80 | 17 | 13 | 30 |
| | | 15 | | 16 | 24 | 40 | 17 | 19 | 36 |
| | | 16 | | 17 | 25 | 42 | 7 | 13 | 20 |
| | | 17 | | 5 | 9 | 14 | 1 | 7 | 8 |
| Light Commercial Total | | | 401 | 472 | 873 | 154 | 152 | 306 | |
| Heavy Commercial | Bank St & Miller St | 5 | | 11 | 1 | 12 | | | |
| | | 6 | | 16 | 10 | 26 | 2 | 1 | 3 |
| | | 7 | | 12 | 17 | 29 | 3 | 2 | 5 |
| | | 8 | | 8 | 33 | 41 | 2 | 4 | 6 |
| | | 9 | | 19 | 32 | 51 | 1 | 1 | 2 |
| | | 10 | | 20 | 45 | 65 | 1 | 0 | 1 |
| | | 11 | | 10 | 19 | 29 | 0 | 1 | 1 |
| | | 12 | | 8 | 11 | 19 | 2 | 1 | 3 |
| | | 13 | | 7 | 8 | 15 | 0 | 1 | 1 |
| | | 14 | | 5 | 5 | 10 | 2 | 2 | 4 |
| | | 15 | | 5 | 4 | 9 | 0 | 0 | 0 |
| | | 16 | | 2 | 3 | 5 | 3 | 0 | 3 |
| 17 | | 3 | 0 | 3 | 0 | 2 | 2 | | |
| Heavy Commercial Total | | | 126 | 188 | 314 | 16 | 15 | 31 | |
| Bus/Coach | Bank St & Miller St | 5 | | 0 | 0 | 0 | | | |
| | | 6 | | 0 | 0 | 0 | 0 | 1 | 1 |
| | | 7 | | 0 | 0 | 0 | 2 | 0 | 2 |
| | | 8 | | 0 | 0 | 0 | 0 | 2 | 2 |
| | | 9 | | 1 | 0 | 1 | 1 | 1 | 2 |
| | | 10 | | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 11 | | 1 | 1 | 2 | 2 | 1 | 3 |
| | | 12 | | 1 | 0 | 1 | 2 | 0 | 2 |
| | | 13 | | 0 | 2 | 2 | 0 | 3 | 3 |
| | | 14 | | 2 | 1 | 3 | 4 | 1 | 5 |
| | | 15 | | 0 | 1 | 1 | 2 | 4 | 6 |
| | | 16 | | 0 | 0 | 0 | 0 | 1 | 1 |
| 17 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Bus/Coach Total | | | 5 | 5 | 10 | 13 | 14 | 27 | |

Table AppB 3 - Frequency Count Time of Interview

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Int_Hour | Tuesday | Friday | Sunday | Grand Total |
| 6 | 1 | 5 | | 6 |
| 7 | 18 | 9 | | 27 |
| 8 | 9 | 13 | 19 | 41 |
| 9 | 18 | 1 | 8 | 27 |
| 10 | 1 | 14 | 6 | 21 |
| 11 | 1 | 18 | 5 | 24 |
| 12 | 1 | 19 | 13 | 33 |
| 13 | 18 | 2 | 12 | 32 |
| 14 | 11 | 12 | 5 | 28 |
| 15 | 18 | 17 | 15 | 50 |
| 16 | | 18 | 16 | 34 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 4 - Frequency Count Access Mode

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Access_Mode | Tuesday | Friday | Sunday | Grand Total |
| Bicycle | 1 | 1 | 1 | 3 |
| Boat | | | 1 | 2 |
| Bus | 2 | 2 | 3 | 7 |
| Bus Private | | | 1 | 1 |
| Car | 38 | 67 | 54 | 159 |
| Light Rail | 5 | 5 | 2 | 12 |
| Other | | | 1 | 1 |
| Taxi | | | 3 | 3 |
| Train | 3 | | | 3 |
| Truck | 1 | | | 1 |
| Van | | 1 | | 1 |
| Walk | 28 | 21 | 18 | 67 |
| na | 8 | 7 | 1 | 16 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 5 - Frequency Count Access Time

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Acc_Time | Tuesday | Friday | Sunday | Grand Total |
| 3 | 2 | 5 | 7 | 14 |
| 4 | 1 | 1 | 1 | 3 |
| 5 | 10 | 15 | 10 | 35 |
| 7 | | 1 | | 1 |
| 8 | 1 | | | 1 |
| 10 | 13 | 16 | 14 | 43 |
| 12 | 1 | | | 1 |
| 14 | 1 | | | 1 |
| 15 | 9 | 12 | 10 | 31 |
| 16 | 1 | | | 1 |
| 20 | 6 | 14 | 9 | 29 |
| 25 | 3 | 3 | 4 | 10 |
| 30 | 10 | 5 | 10 | 25 |
| 35 | 2 | 2 | | 4 |
| 40 | 1 | 1 | 3 | 5 |
| 45 | 3 | 3 | 3 | 9 |
| 50 | | 1 | | 1 |
| 60 | 8 | 8 | 3 | 19 |
| 75 | | 1 | | 1 |
| 90 | 4 | 5 | | 9 |
| 100 | | 1 | | 1 |
| 120 | | 1 | 3 | 4 |
| 150 | | 1 | | 1 |
| 240 | | 1 | | 1 |
| 300 | | | 1 | 1 |
| na | 10 | 11 | 5 | 26 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 6 - Frequency Count Access Bus Service Type

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Acc_Bus_Serv | Tuesday | Friday | Sunday | Grand Total |
| Coach Group | | | 1 | 1 |
| STA | | | 1 | 1 |
| na | 86 | 106 | 82 | 274 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 7 - Frequency Count Light Rail Stop

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| LR_Stop | Tuesday | Friday | Sunday | Grand Total |
| Pymont Bay | | | 1 | 1 |
| Fishmarkets | 3 | | 2 | 5 |
| Wentworth Park | | | 1 | 1 |
| na | 83 | 105 | 81 | 269 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 8 - Frequency Count Other Access Mode Used

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Oth_Acc_Mode_Q | Tuesday | Friday | Sunday | Grand Total |
| Yes | 5 | 6 | 2 | 13 |
| No | 28 | 30 | 26 | 84 |
| na | 53 | 72 | 55 | 180 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 9 - Frequency Count Other Access ModeType

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Oth_Modes_Used | Tuesday | Friday | Sunday | Grand Total |
| Bicycle | | | 1 | 1 |
| Boat | | | 1 | 1 |
| Bus | 6 | 3 | 2 | 11 |
| Car | 2 | 4 | 3 | 9 |
| Light Rail | 3 | 4 | | 7 |
| Train | 1 | 1 | 1 | 3 |
| Walk | 9 | 6 | 7 | 22 |
| na | 65 | 90 | 68 | 223 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 10 - Frequency Count Parking Location

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Park_Loc | Tuesday | Friday | Sunday | Grand Total |
| Offsite | 10 | 32 | 27 | 69 |
| Onsite | 29 | 34 | 25 | 88 |
| na | 47 | 42 | 31 | 120 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 11 - Frequency Count Same Mode Access and Egress

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Mode_Sym | Tuesday | Friday | Sunday | Grand Total |
| Yes | 71 | 96 | 78 | 245 |
| No | 4 | 2 | 3 | 9 |
| na | 11 | 10 | 2 | 23 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 12 - Frequency Count Different Egress Mode

| Count of S_Day | F_Day | | | |
|-----------------|---------|--------|--------|-------------|
| Dif Egress Mode | Tuesday | Friday | Sunday | Grand Total |
| Bus | 1 | 1 | 1 | 3 |
| Car | 3 | 4 | 3 | 10 |
| Other | | | 1 | 1 |
| Taxi | 1 | | | 1 |
| Walk | 2 | 2 | 2 | 6 |
| na | 79 | 101 | 76 | 256 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 13 - Frequency Count Bus Service Type for Different Egress Mode

| Count of S_Day | F_Day | | | |
|-----------------|---------|--------|--------|-------------|
| Egress_Bus_Serv | Tuesday | Friday | Sunday | Grand Total |
| STA | | | 2 | 3 |
| na | 86 | 107 | 81 | 274 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 14 - Frequency Count Car Availability

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Car Avail | Tuesday | Friday | Sunday | Grand Total |
| No | 22 | 27 | 20 | 69 |
| Yes | 36 | 37 | 46 | 119 |
| na | 28 | 44 | 17 | 89 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 15 - Frequency Count Car Reason

| Count of S_Day | F_Day | | | |
|-----------------------------|---------|--------|--------|-------------|
| V_Car_Use | Tuesday | Friday | Sunday | Grand Total |
| Car quicker | 16 | 18 | 5 | 39 |
| Car for shopping | 2 | 4 | 3 | 9 |
| Car convenient | 1 | 2 | | 3 |
| Don't understand PT in area | | | 2 | 2 |
| Other | 1 | 1 | 1 | 3 |
| na | 66 | 83 | 72 | 221 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 16 - Frequency Count Public Transport Reason

| Count of S_Day | F_Day | | | |
|------------------|---------|--------|--------|-------------|
| V_NonCar_Use | Tuesday | Friday | Sunday | Grand Total |
| Quicker | 12 | 14 | 39 | 65 |
| Cheaper | 1 | 3 | 3 | 7 |
| Dislike car park | | 2 | | 2 |
| Drinking | 2 | | | 2 |
| Relaxing | 2 | 1 | | 3 |
| Healthy | 1 | | | 1 |
| na | 68 | 88 | 41 | 197 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 17 - Frequency Count Main Reason

| Count of S_Day | F_Day | | | |
|--|---------|--------|--------|-------------|
| V_Main_Reason | Tuesday | Friday | Sunday | Grand Total |
| Buy seafood to eat | 25 | 53 | 41 | 119 |
| Buy takeaway to eat | 12 | 8 | 6 | 26 |
| Table service meal | 5 | 5 | 4 | 14 |
| Buy wholesale seafood | 1 | 3 | | 4 |
| Work here | 1 | 1 | | 2 |
| Tourism | 6 | 8 | 3 | 17 |
| Work related business | 8 | 3 | | 11 |
| Other | 3 | 1 | 2 | 6 |
| Buy seafood to eat | 2 | 2 | 3 | 7 |
| Table service meal | 1 | | | 1 |
| Table service meal and tourism | | 2 | 1 | 3 |
| Non seafood retail | | 3 | 4 | 7 |
| Exercise | | 1 | | 1 |
| Walking to work | 1 | | | 1 |
| Walking through | 1 | | | 1 |
| Buy seafood to eat offsite and take away | | 1 | 5 | 6 |
| Buy seafood to eat | 1 | | 4 | 5 |
| na | 19 | 17 | 10 | 46 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 18 - Frequency Count Secondary Reason

| Count of S_Day | F_Day | | | |
|---|---------|--------|--------|-------------|
| V_Other_Reasons | Tuesday | Friday | Sunday | Grand Total |
| Buy seafood to eat | 7 | 8 | 11 | 26 |
| Buy takeaway to eat | 2 | 6 | 3 | 11 |
| Table service meal | | 2 | 2 | 4 |
| Buy wholesale seafood | 1 | | 1 | 2 |
| Tourism | 5 | 8 | 5 | 18 |
| Work related business | 2 | 4 | | 6 |
| Attend cooking classes | | 1 | 1 | 2 |
| Other | 2 | 1 | 4 | 7 |
| Non seafood retail | 9 | 9 | 4 | 22 |
| Buy seafood to eat offsite and eat | | 1 | | 1 |
| Buy seafood to eat offsite and have table service | | | 1 | 1 |
| No other reason | 38 | 49 | 36 | 123 |
| na | 20 | 19 | 15 | 54 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 19 - Frequency Count Weight of Purchase

| Count of S_Day | F_Day | | | |
|----------------------|---------|--------|--------|-------------|
| V_Purch_Weight | Tuesday | Friday | Sunday | Grand Total |
| Light and easy to ca | 34 | 56 | 56 | 146 |
| Moderately heavy | 10 | 17 | 13 | 40 |
| Heavy | 3 | 3 | | 6 |
| Other | | 2 | | 2 |
| No items purchased | 18 | 13 | 3 | 34 |
| na | 21 | 17 | 11 | 49 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 20 - Frequency Count Arrival Time

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| S_Arr_Time | Tuesday | Friday | Sunday | Grand Total |
| 3 | | | 1 | 1 |
| 4 | 1 | | 1 | 2 |
| 5 | 2 | | 6 | 10 |
| 6 | 5 | | 4 | 12 |
| 7 | 10 | | 5 | 20 |
| 8 | 9 | | 3 | 25 |
| 9 | 9 | | 2 | 15 |
| 10 | | | 16 | 21 |
| 11 | 2 | | 13 | 23 |
| 12 | 7 | | 15 | 32 |
| 13 | 13 | | 4 | 26 |
| 14 | 8 | | 11 | 31 |
| 15 | 12 | | 11 | 29 |
| 16 | | | 8 | 12 |
| na | 8 | | 8 | 18 |
| Refusal | 10 | | 20 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 21 - Frequency Count Activity at Origin

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| Origin_Act | Tuesday | Friday | Sunday | Grand Total |
| Home | 54 | 64 | 64 | 182 |
| Work | 13 | 24 | 2 | 39 |
| Shopping | 4 | 7 | 2 | 13 |
| VFR | 3 | 1 | 4 | 8 |
| Other | 4 | 5 | 7 | 16 |
| Not Stated | | | 1 | 1 |
| na | 8 | 7 | 3 | 18 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 22 - Frequency Count Activity at Destination

| Count of S_Day | F_Day | | | |
|---------------------|---------|--------|--------|-------------|
| Dest_Act | Tuesday | Friday | Sunday | Grand Total |
| Home | 45 | 71 | 67 | 183 |
| Work | 19 | 16 | 1 | 36 |
| Work related busine | 2 | | | 2 |
| Shopping | 6 | 5 | 4 | 15 |
| VFR | 1 | 3 | 4 | 8 |
| Other | 4 | 5 | 4 | 13 |
| na | 9 | 8 | 3 | 20 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 23 - Frequency Count Location of Origin

| Count of S_Day | F_Day | | | |
|------------------|---------|--------|--------|-------------|
| O_Region | Tuesday | Friday | Sunday | Grand Total |
| Central Coast | | | 1 | 1 |
| Eastern Suburbs | 6 | 11 | 7 | 24 |
| Far West | 1 | 1 | 3 | 5 |
| Inner South | 3 | 11 | 6 | 20 |
| Leichhardt | 17 | 24 | 15 | 56 |
| Mid West | 5 | 11 | 10 | 26 |
| North | 10 | 9 | 11 | 30 |
| North West | 3 | 1 | 3 | 7 |
| Outer South West | 3 | 2 | | 5 |
| Overseas | | | 1 | 1 |
| Pymont | 11 | 9 | 8 | 28 |
| South NSW | | | 1 | 1 |
| South West | 2 | 4 | 5 | 11 |
| Southern Suburbs | 4 | 2 | 1 | 7 |
| Sydney | 9 | 8 | 9 | 26 |
| Ultimo | 1 | 3 | 3 | 7 |
| West NSW | 1 | | | 1 |
| Refusal | 10 | 20 | 16 | 46 |
| na | 10 | 9 | 2 | 21 |
| Grand Total | 96 | 128 | 99 | 323 |

refer to Table AppB 29 for definition of areas

Table AppB 24 - Frequency Count Location of Destination

| Count of S_Day | F_Day | | | |
|------------------|---------|--------|--------|-------------|
| D_Region | Tuesday | Friday | Sunday | Grand Total |
| Central Coast | | | 1 | 1 |
| Eastern Suburbs | 7 | 10 | 6 | 23 |
| Far West | 2 | 2 | 3 | 7 |
| Inner South | 5 | 11 | 5 | 21 |
| Leichhardt | 19 | 24 | 15 | 58 |
| Mid West | 3 | 9 | 10 | 22 |
| North | 7 | 9 | 12 | 28 |
| North NSW | | | 1 | 1 |
| North West | 3 | 2 | 3 | 8 |
| Outer South West | 3 | 2 | | 5 |
| Overseas | | | 1 | 1 |
| Pymont | 6 | 7 | 6 | 19 |
| South NSW | | | 1 | 3 |
| South West | 3 | 5 | 4 | 12 |
| Southern Suburbs | 5 | 1 | 1 | 7 |
| Sydney | 10 | 8 | 11 | 29 |
| Ultimo | 4 | 2 | 3 | 9 |
| West NSW | | | 1 | 1 |
| na | 9 | 11 | 2 | 22 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

refer to Table AppB 29 for definition of areas

Table AppB 25 - Frequency Count Location of Home

| Count of S_Day | F_Day | | | |
|------------------|---------|--------|--------|-------------|
| H_Region | Tuesday | Friday | Sunday | Grand Total |
| Central Coast | | | 1 | 1 |
| Eastern Suburbs | 8 | 11 | 7 | 26 |
| Far West | 1 | 2 | 4 | 7 |
| Inner South | 1 | 11 | 7 | 19 |
| Leichhardt | 21 | 19 | 13 | 53 |
| Mid West | 4 | 12 | 9 | 25 |
| North | 9 | 10 | 12 | 31 |
| North NSW | | | 1 | 1 |
| North West | 4 | 4 | 3 | 11 |
| Outer South West | 3 | 3 | 1 | 7 |
| Overseas | 5 | 8 | 5 | 18 |
| Pymont | 7 | 4 | 7 | 18 |
| South NSW | | 2 | 1 | 3 |
| South West | 3 | 5 | 5 | 13 |
| Southern Suburbs | 5 | 3 | 1 | 9 |
| Sydney | 2 | 1 | 2 | 5 |
| Ultimo | | 2 | 3 | 5 |
| West NSW | 1 | 1 | | 2 |
| na | 12 | 9 | 2 | 23 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

refer to Table AppB 29 for definition of areas

Table AppB 26 - Frequency Count Party Size

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| V_Party Total | Tuesday | Friday | Sunday | Grand Total |
| 1 | 40 | 57 | 26 | 123 |
| 2 | 18 | 18 | 24 | 60 |
| 3 | 2 | 6 | 7 | 15 |
| 4 | 5 | 7 | 9 | 21 |
| 5 | | 2 | 2 | 4 |
| 6 | | 1 | 1 | 2 |
| 7 | | 1 | | 1 |
| 8 | 1 | | 1 | 2 |
| 9 | | | 1 | 1 |
| 28 | | | 1 | 1 |
| na | 18 | 14 | 9 | 41 |
| Grand Total | 84 | 106 | 81 | 271 |

Table AppB 27 - Frequency Count Visits per Annum: Visitors

| Count of S_Day | F_Day | | | |
|------------------|---------|--------|--------|-------------|
| V_Frequency | Tuesday | Friday | Sunday | Grand Total |
| First Visit | 5 | 10 | 13 | 28 |
| 1 | 5 | 1 | 1 | 7 |
| 2 | 1 | 2 | 2 | 5 |
| 3 | 1 | 2 | 1 | 4 |
| 4 | 1 | 2 | 4 | 7 |
| 5 | | 1 | | 1 |
| 6 | 1 | 4 | 7 | 12 |
| 8 | | | 1 | 1 |
| 10 | | 1 | | 1 |
| 12 | 8 | 16 | 11 | 35 |
| 24 | 6 | 9 | 6 | 21 |
| 36 | 1 | 3 | 1 | 5 |
| 48 | | | 1 | 1 |
| 52 | 13 | 17 | 13 | 43 |
| 104 | 9 | 9 | 3 | 21 |
| 156 | 4 | 5 | 3 | 12 |
| 208 | 1 | 2 | | 3 |
| 260 | 4 | 4 | 1 | 9 |
| 312 | 2 | 2 | | 4 |
| 364 | 2 | | 1 | 3 |
| 365 | 1 | | | 1 |
| 624 | 1 | | | 1 |
| 780 | | | 1 | 1 |
| Less Than Annual | 1 | 3 | 3 | 7 |
| na | 18 | 14 | 9 | 41 |
| Grand Total | 85 | 107 | 82 | 274 |

Table AppB 28 - Frequency Count Days per Week Worked: Workers

| Count of S_Day | F_Day | | | |
|----------------|---------|--------|--------|-------------|
| W_Frequency | Tuesday | Friday | Sunday | Grand Total |
| 2 | 1 | 1 | 1 | 3 |
| 3 | | | 1 | 1 |
| 4 | | | 2 | 2 |
| 5 | 8 | 1 | 5 | 14 |
| 6 | 2 | 3 | | 5 |
| 7 | | | 1 | 1 |
| na | 75 | 101 | 75 | 251 |
| Refusal | 10 | 20 | 16 | 46 |
| Grand Total | 96 | 128 | 99 | 323 |

Table AppB 29 - Aggregation of Areas

| Reporting Area | Description (LGA) |
|-----------------------|--------------------------|
| Central Coast | Gosford |
| | Wyang |
| Eastern Suburbs | Botany |
| | Randwick |
| | Waverley |
| | Woollahra |
| Far West | Blue Mountains |
| | Penrith |
| Inner South | Marrickville |
| | South Sydney |
| Leichhardt | Leichhardt |
| Mid West | Ashfield |
| | Auburn |
| | Burwood |
| | Canada Bay |
| | Concord |
| | Drummoyne |
| | Holroyd |
| | Parramatta |
| | Strathfield |
| North | Hornsby |
| | Kuringgai |
| | Lane Cove |
| | Manly |
| | Mosman |
| | North Sydney |
| | Pittwater |
| | Warringah |
| | Willoughby |
| North West | Baulkham Hills |
| | Blacktown |
| | Hawkesbury |
| | Hunters Hill |
| | Ryde |
| Outer South West | Camden |
| | Campbelltown |
| | Liverpool |
| | Wollondilly |
| Pymont | Pymont |
| South West | Bankstown |
| | Canterbury |
| | Fairfield |
| Southern Suburbs | Hurstville |
| | Kogarah |
| | Rockdale |
| | Sutherland |
| Sydney | Sydney |
| Ultimo | Ultimo |
| South NSW | Rural |
| West NSW | Rural |
| North NSW | Rural |
| Overseas | Overseas |

Appendix C - Parking Inventory

Parking inventory tables are overleaf for an area within a ten minute walk of the Sydney Fish Market.

| Road | Between | And | | Side of Road | | | | | |
|---------------------|---------------------|----------------------------|--------|--------------|--------------|------------------|------------|--------|-----------------------|
| | | | | North/East | | | | | |
| | | | Length | Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Bank Street | Bowman Street | Miller Street | 260 | 6 | Ticket | 8am to 7pm | Mon to Sun | \$1.10 | |
| Bank Street | Bowman Street | Miller Street | 20 | | Loading zone | 7am to 6pm | Mon to Sat | | |
| Bank Street | Bowman Street | Miller Street | 20 | 6 | Ticket | 8am to 7pm | Sun | \$1.10 | |
| Miller Street | Bank Street | Jones Street | 0 | | | | | | |
| Miller Street | Jones Street | Bulwarra Road | 60 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Miller Street | Bulwarra Road | Little Mount Street | 0 | | | | | | |
| Miller Street | Little Mount Street | Harris Street | 12 | 2 | | 24 hour | Mon to Sun | 0 | Except permit holders |
| Miller Street | Little Mount Street | Harris Street | 8 | | Loading Zone | 8am to 6pm | Mon to Sat | | |
| Miller Street | Little Mount Street | Harris Street | 8 | 2 | | Other times | | | Except permit holders |
| Bulwarra Road | Miller Street | | 137 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Bridge Road | Wattle Street | Wentworth Park Road | 62 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Bridge Road | Wattle Street | Wentworth Park Road | | | | | | | |
| Wattle Street | Pymont Bridge Road | Fig Street | 49 | 2 | Ticket | 8am to 7pm | Mon to Sun | \$2.20 | Except permit holders |
| Wattle Street | Fig Street | Quarry Street | 46 | 1 | Ticket | 8am to 6pm | Mon to Fri | \$3.30 | |
| Wattle Street | Fig Street | Quarry Street | 46 | 1 | Ticket | 8am to 6pm | Sat to Sun | \$2.20 | |
| Wattle Street | Fig Street | Quarry Street | 29 | | Loading zone | 7.30am to 6.00pm | Mon to Fri | | |
| Wattle Crescent | | | 72 | 2 | Ticket | 8am to 7pm | Mon to Sun | \$2.20 | Except permit holders |
| Wattle Crescent | | | 10 | | Truck Zone | 7am to 6pm | Mon to Sat | | |
| Quarrymaster Drive | Bank Street | Uphill Saunders Street | 25 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Quarrymaster Drive | Bank Street | Uphill Saunders Street | 25 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Quarrymaster Drive | Saunders Street | Around Loop | 152 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Quarrymaster Drive | Saunders Street | Around Loop | 152 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 41 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 41 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 92 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 92 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Miller Street | To cds at track | 101 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Miller Street | To cds at track | 101 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Miller Street | To cds at track | | | | | | | |
| Jones Street | Miller Street | To cds at track | | | | | | | |
| Mount Street | Miller Street | To cds north Miller Street | | | | | | | |
| Mount Street | Miller Street | To cds north Miller Street | | | | | | | |
| Little Mount Street | Miller Street | Pymont Bridge Road | 122 | 2 | Ticket | 24 hour | Mon to Fri | \$2.20 | Except permit holders |
| Little Mount Street | Miller Street | Pymont Bridge Road | 20 | | Loading Zone | 7.00am to 6.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Little Mount Street | Miller Street | Pymont Bridge Road | 142 | 2 | Ticket | 24 hour | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 46 | | Loading zone | 7.00am to 6.00pm | Mon to Sat | | |
| Harris Street | John Street | Miller Street | 46 | 1 | Ticket | 6.00pm to 7.00pm | Mon to Sat | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 10 | 0.5 | | 7.00am to 6.00pm | Mon to Sat | \$0.00 | Except permit holders |
| Harris Street | John Street | Miller Street | 10 | 1 | Ticket | 7.00am to 6.00pm | Sun | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 53 | 1 | Ticket | 7.00am to 6.00pm | Mon to Sun | \$3.30 | Except permit holders |

| Road | Between | And | | Side of Road | | | | | |
|---------------|--------------------------|-----------------------|--------|--------------|--------------|-------------------|------------|--------|-----------------------|
| | | | | North/East | | | | | |
| | | | Length | Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Harris Street | John Street | Miller Street | 12 | 0.25 | | 9.00am to 5.00pm | Mon to Fri | \$0.00 | Except permit holders |
| Harris Street | John Street | Miller Street | 12 | 1 | Ticket | | Sat to Sun | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 55 | | Loading zone | 7.00am to 6.00pm | Mon to Sat | | |
| Harris Street | Miller Street | Pymont Bridge Road | 55 | 1 | Ticket | Other times | Sat to Sun | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 20 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 20 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 52 | 1 | Ticket | 24 hour | Mon to Fri | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 52 | 1 | Ticket | 24 hour | Sat to Sun | \$3.30 | Except permit holders |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 99 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 99 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 12 | | Loading zone | 7.00am to 6.00pm | Mon to Fri | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 12 | | Loading zone | 7.00am to 10.00am | Sat | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 12 | 2 | Ticket | 10.00am to 7.00pm | Sat | \$2.20 | Except permit holders |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | 12 | 2 | Ticket | 8.00am to 7.00pm | Sun | \$2.20 | Except permit holders |
| Bulwarra Road | Ada Street | Pymont Bridge Road | 83 | 2 | Ticket | 24 hour | Mon to Fri | \$2.20 | Except permit holders |
| Bulwarra Road | Ada Street | Pymont Bridge Road | 83 | 2 | Ticket | 24 hour | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | Pymont Bridge Road | Allen Street | 164 | 2 | Ticket | 24 hours | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | Pymont Bridge Road | Allen Street | 164 | 2 | Ticket | 24 hours | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | Pymont Bridge Road | Allen Street | | | | | | | |
| Harris Street | Pymont Bridge Road | Allen Street | | | | | | | |
| Harris Street | Pymont Bridge Road | Allen Street | | | | | | | |
| Harris Street | Allen Street | Fig Street | | | | | | | |
| Harris Street | Allen Street | Fig Street | | | | | | | |
| Harris Street | Allen Street | Fig Street | | | | | | | |
| Allen Street | Western Distributor Road | Harris Street | | | | | | | |
| Allen Street | Western Distributor Road | Harris Street | | | | | | | |
| Jones Street | Fig Street | North to cds at track | | | | | | | |
| Jones Street | Fig Street | North to cds at track | | | | | | | |
| Jones Street | Fig Street | Quarry Street | 84 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 84 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 32 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 32 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 85 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 85 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | | | | | | | |
| Jones Street | Quarry Street | William Henry Street | | | | | | | |
| Quarry Street | Wattle Street | Jones Street | 48 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Quarry Street | Wattle Street | Jones Street | 48 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |

| Road | Between | And | | Side of Road | | | | | |
|----------------------|------------------|----------------------|--------|--------------|---------------|-------------------|------------|--------|-----------------------|
| | | | | North/East | | | | | |
| | | | Length | Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Bulwarra Road | Upper Fig Street | Quarry Street | | | | | | | |
| Bulwarra Road | Upper Fig Street | Quarry Street | | | | | | | |
| Bulwarra Road | Quarry Street | William Henry Street | | | | | | | |
| Bulwarra Road | Quarry Street | William Henry Street | | | | | | | |
| William Henry Street | Bulwarra Road | Jones Street | 43 | 2 | Ticket | 9.30am to 3.30pm | Mon to Fri | \$2.20 | Except permit holders |
| William Henry Street | Bulwarra Road | Jones Street | 43 | 2 | Ticket | 9.30am to 3.30pm | Sat to Sun | \$2.20 | Except permit holders |
| Wentworth Park Road | Bay Street | Cowper Street | 80 | | No regulation | | Mon to Fri | \$0.00 | |
| Wentworth Park Road | Bay Street | Cowper Street | 80 | | No regulation | | Sat to Sun | \$0.00 | |
| Wattle Street | Quarry Street | Wentworth Park Road | 46 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Wattle Street | Quarry Street | Wentworth Park Road | 46 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Wattle Street | Quarry Street | Wentworth Park Road | 52 | 4 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Wattle Street | Quarry Street | Wentworth Park Road | 52 | 4 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Wentworth Park Road | Cowper Street | St Johns Road | 79 | Restricted | | Dog nights | | | |
| Wentworth Park Road | Cowper Street | St Johns Road | 79 | | No regulation | | | | |
| Wentworth Park Road | St Johns Road | Bridge Road | 242 | | No regulation | | | | |
| Wentworth Park Road | St Johns Road | Bridge Road | | | | | | | |
| Wentworth Park Road | St Johns Road | Bridge Road | | | | | | | |
| Miller Lane | Miller Street | Bulwarra Road | 50 | | Loading zone | 7.00am to 6.00pm | Mon to Fri | | |
| Miller Lane | Miller Street | Bulwarra Road | 50 | | Loading zone | 7.00am to 10.00am | Sat to Sun | | |
| Miller Lane | Miller Street | Bulwarra Road | 50 | 2 | Ticket | Other times | Sat to Sun | \$2.20 | Except permit holders |
| Miller Lane | Miller Street | Bulwarra Road | 50 | 2 | Ticket | Other times | Mon to Fri | \$2.20 | Except permit holders |
| Fig Street | Harris Street | Bulwarra Road | 33 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Fig Street | Harris Street | Bulwarra Road | 33 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Ada Street | Fig Street | Quarry Street | 89 | 1 | Ticket | 24 hours | Mon to Fri | \$2.20 | Except permit holders |
| Ada Street | Fig Street | Quarry Street | 89 | 1 | Ticket | 24 hours | Sat to Sun | \$2.20 | Except permit holders |

| Road | Between | And | | | | | | | |
|---------------------|---------------------|----------------------------|--------|--------------------------|--------------|----------------------------|------------|--------|-----------------------|
| | | | Length | South/West Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Bank Street | Bowman Street | Miller Street | 200 | 6 | Ticket | 8am to 7pm | Mon to Sun | \$1.10 | |
| Bank Street | Bowman Street | Miller Street | | | | | | | |
| Bank Street | Bowman Street | Miller Street | | | | | | | |
| Miller Street | Bank Street | Jones Street | 0 | | | | | | |
| Miller Street | Jones Street | Bulwarra Road | 60 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Miller Street | Bulwarra Road | Little Mount Street | 37 | 1 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Miller Street | Little Mount Street | Harris Street | 12 | 1 | | 24 hour | Mon to Sun | 0 | Except permit holders |
| Miller Street | Little Mount Street | Harris Street | | | | | | | |
| Miller Street | Little Mount Street | Harris Street | | | | | | | |
| Bulwarra Road | Miller Street | | 68 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Bridge Road | Wattle Street | Wentworth Park Road | 168 | 2 | Ticket | 24 hour | Mon to Sun | \$3.30 | Except permit holders |
| Bridge Road | Wattle Street | Wentworth Park Road | 168 | Clearway | | 6am to 10am and 3pm to 7pm | Mon to Fri | | |
| Wattle Street | Pymont Bridge Road | Fig Street | 0 | | | | | | |
| Wattle Street | Fig Street | Quarry Street | 73 | 2 | | 10am to 3pm | Mon to Fri | | |
| Wattle Street | Fig Street | Quarry Street | 73 | 2 | | 8.30am to 12.30pm | Sat | | |
| Wattle Street | Fig Street | Quarry Street | 73 | Clearway | | 6am to 10am and 3pm to 7pm | Mon to Fri | | |
| Wattle Crescent | | | 55 | 2 | Ticket | 9am to 9pm* | Mon to Sun | \$2.20 | Except permit holders |
| Wattle Crescent | | | 58 | 2 | Ticket | 8am to 7pm | Mon to Sun | \$2.20 | Except permit holders |
| Quarrymaster Drive | Bank Street | Uphill Saunders Street | 46 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | |
| Quarrymaster Drive | Bank Street | Uphill Saunders Street | 46 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | |
| Quarrymaster Drive | Saunders Street | Around Loop | 103 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | |
| Quarrymaster Drive | Saunders Street | Around Loop | 103 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | |
| Saunders Street | Quarrymaster Drive | Miller Street | 50 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 50 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Saunders Street | Quarrymaster Drive | Miller Street | 50 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | |
| Saunders Street | Quarrymaster Drive | Miller Street | 50 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | |
| Jones Street | Miller Street | To cds at track | 35 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | |
| Jones Street | Miller Street | To cds at track | 35 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | |
| Jones Street | Miller Street | To cds at track | 35 | 1 | Ticket | 9.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Miller Street | To cds at track | 35 | 1 | Ticket | 9.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Mount Street | Miller Street | To cds north Miller Street | 45 | 2 | Ticket | 24 hour | Mon to Fri | \$2.20 | Except permit holders |
| Mount Street | Miller Street | To cds north Miller Street | 45 | 2 | Ticket | 24 hour | Sat to Sun | \$2.20 | Except permit holders |
| Little Mount Street | Miller Street | Pymont Bridge Road | 183 | 1 | Ticket | 24 hour | Mon to Fri | \$2.20 | Except permit holders |
| Little Mount Street | Miller Street | Pymont Bridge Road | 183 | 1 | Ticket | 24 hour | Sat to Sun | \$2.20 | Except permit holders |
| Little Mount Street | Miller Street | Pymont Bridge Road | 15 | Bus zone | | 9.00am to 4.00pm | Mon to Fri | | |
| Harris Street | John Street | Miller Street | 15 | 1 | Ticket | | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 25 | | Loading zone | 7.00am to 5.00pm | Mon to Fri | | |
| Harris Street | John Street | Miller Street | 25 | 1 | Ticket | | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 60 | 0.25 | | 7.00am to 6.00pm | Mon to Fri | | |
| Harris Street | John Street | Miller Street | 60 | 1 | Ticket | | Sat to Sun | \$2.20 | Except permit holders |

| Road | Between | And | | | | | | | |
|---------------|--------------------------|-----------------------|--------|--------------------------|--------------|-------------------|------------|--------|-----------------------|
| | | | Length | South/West Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Harris Street | John Street | Miller Street | 92 | 1 | Ticket | 24 hours | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | John Street | Miller Street | 92 | 1 | Ticket | 24 hours | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 114 | 1 | Ticket | 24 hours | Mon to Fri | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | 114 | 1 | Ticket | 24 hours | Sat to Sun | \$3.30 | Except permit holders |
| Harris Street | Miller Street | Pymont Bridge Road | | | | | | | |
| Harris Street | Miller Street | Pymont Bridge Road | | | | | | | |
| Harris Street | Miller Street | Pymont Bridge Road | | | | | | | |
| Harris Street | Miller Street | Pymont Bridge Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Ada Street | Pymont Bridge Road | Loop at Bulwarra Road | | | | | | | |
| Bulwarra Road | Ada Street | Pymont Bridge Road | | | | | | | |
| Bulwarra Road | Ada Street | Pymont Bridge Road | | | | | | | |
| Harris Street | Pymont Bridge Road | Allen Street | 132 | No parking | | 3.00pm to 7.00pm | Mon to Fri | | |
| Harris Street | Pymont Bridge Road | Allen Street | 132 | 2 | Ticket | 8.00am to 3.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | Pymont Bridge Road | Allen Street | 132 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | Pymont Bridge Road | Allen Street | 22 | No parking | | 3.00pm to 7.00pm | Mon to Fri | | |
| Harris Street | Pymont Bridge Road | Allen Street | 22 | Loading zone | | | Mon to Fri | | |
| Harris Street | Pymont Bridge Road | Allen Street | 22 | 2 | Ticket | | Sat to Sun | \$2.20 | Except permit holders |
| Harris Street | Allen Street | Fig Street | 46 | Clearway | | 3.00pm to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | Allen Street | Fig Street | 46 | 0.5 | Ticket | 8.00am to 3.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Harris Street | Allen Street | Fig Street | 46 | 0.5 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Allen Street | Western Distributor Road | Harris Street | 48 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Allen Street | Western Distributor Road | Harris Street | 48 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Fig Street | North to cds at track | 90 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Fig Street | North to cds at track | 90 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 48 | 1 | | 7.30am to 6.00pm | Mon to Fri | \$0.00 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 48 | 1 | | 7.30am to 6.00pm | Sat to Sun | \$0.00 | Except permit holders |
| Jones Street | Fig Street | Quarry Street | 50 | 1 | | 7.30am to 6.00pm | Sun | \$0.00 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 45 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 45 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 45 | Bus zone in am and pm | | | | | |
| Jones Street | Quarry Street | William Henry Street | 45 | 2 | Ticket | 8.00am to 7.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Jones Street | Quarry Street | William Henry Street | 45 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Quarry Street | Wattle Street | Jones Street | 31 | | Loading zone | | | | |
| Quarry Street | Wattle Street | Jones Street | 31 | 2 | Ticket | 8.00am to 7.00pm | Sat to Sun | \$2.20 | Except permit holders |

| Road | Between | And | | | | | | | |
|----------------------|------------------|----------------------|--------|------------|---------------|-------------------|------------|--------|-----------------------|
| | | | | South/West | | | | | |
| | | | Length | Regulation | | | | | |
| | | | | Time Limit | Type | Hours | Days | Charge | Exceptions |
| Bulwarra Road | Upper Fig Street | Quarry Street | 100 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Bulwarra Road | Upper Fig Street | Quarry Street | 100 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Bulwarra Road | Quarry Street | William Henry Street | 131 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Bulwarra Road | Quarry Street | William Henry Street | 131 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| William Henry Street | Bulwarra Road | Jones Street | 42 | 2 | Ticket | 9.30am to 3.30pm | Mon to Fri | \$2.20 | Except permit holders |
| William Henry Street | Bulwarra Road | Jones Street | 42 | 2 | Ticket | 9.30am to 3.30pm | Sat to Sun | \$2.20 | Except permit holders |
| Wentworth Park Road | Bay Street | Cowper Street | 63 | 2 | Ticket | 8.00am to 6.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Wentworth Park Road | Bay Street | Cowper Street | 63 | 2 | Ticket | 8.00am to 6.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Wattle Street | Quarry Street | Wentworth Park Road | 90 | Clearway | | 6.00am to 10.00am | Mon to Fri | | |
| Wattle Street | Quarry Street | Wentworth Park Road | 90 | Clearway | | 3.00am to 7.00pm | Mon to Fri | | |
| Wattle Street | Quarry Street | Wentworth Park Road | 90 | | No regulation | 10.00am to 3.00pm | Mon to Fri | | |
| Wattle Street | Quarry Street | Wentworth Park Road | 90 | | No regulation | 24 hours | Sat to Sun | | |
| Wentworth Park Road | Cowper Street | St Johns Road | 51 | 2 | Ticket | 8.00am to 6.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Wentworth Park Road | Cowper Street | St Johns Road | 51 | 2 | Ticket | 8.00am to 6.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Wentworth Park Road | St Johns Road | Bridge Road | 118 | | No regulation | | | | |
| Wentworth Park Road | St Johns Road | Bridge Road | 77 | 2 | Ticket | 10.00am to 8.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Wentworth Park Road | St Johns Road | Bridge Road | 77 | 2 | Ticket | 10.00am to 8.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Miller Lane | Miller Street | Bulwarra Road | | | | | | | |
| Miller Lane | Miller Street | Bulwarra Road | | | | | | | |
| Miller Lane | Miller Street | Bulwarra Road | | | | | | | |
| Miller Lane | Miller Street | Bulwarra Road | | | | | | | |
| Fig Street | Harris Street | Bulwarra Road | 33 | 1 | Ticket | 10.00am to 9.00pm | Mon to Fri | \$2.20 | Except permit holders |
| Fig Street | Harris Street | Bulwarra Road | 33 | 1 | Ticket | 10.00am to 9.00pm | Sat to Sun | \$2.20 | Except permit holders |
| Ada Street | Fig Street | Quarry Street | | | | | | | |
| Ada Street | Fig Street | Quarry Street | | | | | | | |

Appendix D - Accessibility Assessment

General

This TMAP analysis report uses two methods to consider accessibility. These are:

- Isochrones
- Hammersmith and Fulham PTAL

This appendix describes both methods. These methods were chosen because of their relative simplicity and because they measure different quantities.

Isochrone Analysis

This identifies lines of equal travel time from the site for a particular transport mode. In this way drawings show the relative footprint or area within, say, ten minutes of the site by light rail.

These travel times are calculated by the following steps:

1. Walk leg from site to nearest transport node (80m/minute walk speed, with no wait time at signalised crossings).
2. If walk isochrone, then times along route marked off at 5 minute intervals. If not walk then continue at next step.
3. Once transport node is reached then wait time is calculated based on half the timetabled service headway. No interchange penalty is applied over and above the wait time.
4. The timetabled travel times are used to estimate location of isochrone along route.
5. Walk distance from alighting nodes are estimated based on walk speed of 80m/minute

This analysis was undertaken for services during the day on a weekday. No account was taken of fare levels or service reliability. It was assumed that the first service to arrive would have sufficient capacity to accommodate all intending passengers.

The analysis reflects the travel time faced by a person who leaves the Sydney Fish Market without a service timetable and arrives at the closest transport node. Their waiting time is assumed, by the method, to represent the waiting time for random arrivals at the node.

Bicycle accessibility is based on an assumed average speed of 15 km/hr and use of roads within the area, whether the roads have bicycle facilities or not.

Hammersmith and Fulham Public Transport Accessibility Level (PTAL)

This method was developed in London to provide an objective measure of public transport accessibility at different locations. In actuality it does not measure accessibility, rather it provides an index of public transport network density. This is based on calculating an equivalent doorstep frequency for all scheduled public transport services within set cut-off distances. A PTAL is then ascribed to the location for the specific analysis period.

The method has been used to set parking standards based on PTALs. It is also used to compare sustainability credentials of competing locations and alternative layouts of sites and configurations of pedestrian and public transport networks.

The formula for calculating PTAL is:

$$AI = \frac{30}{X1} + \frac{15}{X2} + \dots + \frac{15}{Xm} + \frac{30}{Y1} + \frac{15}{Y2} + \dots + \frac{15}{Yn} + \frac{30}{Z1} + \frac{15}{Z2} + \dots + \frac{15}{Zp}$$

where: X1 = access time to the most accessible bus route

Xm = access time to other accessible bus routes

M = number of accessible bus routes

Y1 = access time to the most accessible LT Underground route

Yn = access time to other accessible tube services

N = number of accessible tube routes

Z1 = access time to the most accessible rail route

Zp = access time to the other accessible rail routes

P = number of accessible rail routes.

(Source: D. Bull, LPAC Parking Advice Background Papers, 1997)

In this report a modified version of the standard PTAL methodology is used. Differences from the standard are:

- a. No levels are ascribed because it is not intended to compare PTALs with other sites.
- b. The reliability factor k is taken from London as there is insufficient information available on the relative reliability of modes.
- c. Monorail, light rail and ferry are given the lower k value of 1.2 whilst bus is given the higher k value of 1.9.
- d. A number of services in the study area are one-way loops. Where “stop pairs” both fall within the cut-off distances then an average distance is used. Where one of the stops falls outside the cut-off distance then the distance to the remaining stop is taken and the service frequency is halved.
- e. The basic method measures walk distance from site entrance to node (i.e. bus stop or station entrance). This has been followed except for Wentworth Park tram stop: its walk distances are taken to the platform area.
- f. Sydney Explorer bus services are included in the calculations because they are scheduled services, even though they are charged at a premium, and would be used by overseas visitors to the Sydney Fish Market.

Discussion of PTAL

The main advantages of the method are:

- It is relatively straight forward to calculate as it relies on timetables and walk distances.
- It provides a single measure that covers accessibility by all local public transport modes.
- The measure can be readily re-calculated for different time periods to compare different availabilities of public transport services.
- Similarly, two different locations can be compared in terms of the relative availability of public transport.

-
- Policy measures can be evaluated and compared e.g. the increase in the service frequency of a bus service can be compared with re-arranging uses on a site to see which measure would result in improved local access to public transport.

The main disadvantages of the method are:

- Does not take account of system crowdedness and the ability to board a service.
- Does not take account of the relative catchment of individual services.
- Does not take account of the relative cost of services or the quality of the service (e.g. air conditioned versus non-air conditioned).
- Uses timetabled travel times rather than actual travel times.

PTAL calculation tables are included overleaf

To Retail Entrance Weekday Business Hours

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 1.5 | 306 | 1.9 | 21.9 | 3.8 | 25.7 | 0.6 |
| 501 | 3 | 306 | 1.9 | 11.9 | 3.8 | 15.7 | 1.0 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 292 | 1.2 | 6.2 | 3.7 | 9.9 | 3.0 |
| Monorail | 10 | 685 | 1.2 | 4.2 | 8.6 | 12.8 | 2.4 |
| Ferry | 2 | 835 | 1.2 | 16.2 | 10.4 | 26.6 | 1.1 |
| PTAI | | | | | | | 12.6 |

To Retail Entrance Weekday Peak

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 5 | 306 | 1.9 | 7.9 | 3.8 | 11.7 | 1.3 |
| 888 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| Light Rail | 6 | 292 | 1.2 | 6.2 | 3.7 | 9.9 | 3.0 |
| Monorail | 10 | 685 | 1.2 | 4.2 | 8.6 | 12.8 | 2.4 |
| Ferry | 1.2 | 835 | 1.2 | 26.2 | 10.4 | 36.6 | 0.8 |
| PTAI | | | | | | | 11.1 |

To Retail Entrance Weekday 5.30am

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 0 | 481 | 1.9 | 0 | 6.0 | 0.0 | 0.0 |
| 443 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 3 | 306 | 1.9 | 11.9 | 3.8 | 15.7 | 1.9 |
| 888 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| Light Rail | 2 | 570 | 1.2 | 16.2 | 7.1 | 23.3 | 0.6 |
| Monorail | 0 | 685 | 1.2 | 0 | 8.6 | 0.0 | 0.0 |
| Ferry | 0 | 835 | 1.2 | 0 | 10.4 | 0.0 | 0.0 |
| PTAI | | | | | | | 2.6 |

To Retail Entrance Saturday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 3 | 306 | 1.9 | 11.9 | 3.8 | 15.7 | 1.0 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 292 | 1.2 | 6.2 | 3.7 | 9.9 | 3.0 |
| Monorail | 10 | 685 | 1.2 | 4.2 | 8.6 | 12.8 | 2.4 |
| Ferry | 2 | 835 | 1.2 | 16.2 | 10.4 | 26.6 | 1.1 |
| PTAI | | | | | | | 12.0 |

To Retail Entrance Sunday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 2 | 306 | 1.9 | 16.9 | 3.8 | 20.7 | 0.7 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 292 | 1.2 | 6.2 | 3.7 | 9.9 | 3.0 |
| Monorail | 10 | 685 | 1.2 | 4.2 | 8.6 | 12.8 | 2.4 |
| Ferry | 2 | 835 | 1.2 | 16.2 | 10.4 | 26.6 | 1.1 |
| PTAI | | | | | | | 11.8 |

To Site Entrance 2 Weekday Business Hours

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 361 | 1.9 | 11.9 | 4.5 | 16.4 | 0.9 |
| 443 | 3 | 198 | 1.9 | 11.9 | 2.5 | 14.4 | 1.0 |
| 449 | 1.5 | 186 | 1.9 | 21.9 | 2.3 | 24.2 | 0.6 |
| 501 | 3 | 186 | 1.9 | 11.9 | 2.3 | 14.2 | 1.1 |
| 888 | 6 | 198 | 1.9 | 6.9 | 2.5 | 9.4 | 3.2 |
| Light Rail | 6 | 220 | 1.2 | 6.2 | 2.8 | 9.0 | 3.4 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 715 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 14.0 |

To Site Entrance 2 Weekday Peak

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 361 | 1.9 | 11.9 | 4.5 | 16.4 | 0.9 |
| 443 | 6 | 198 | 1.9 | 6.9 | 2.5 | 9.4 | 3.2 |
| 449 | 0 | 186 | 1.9 | 0 | 2.3 | 0.0 | 0.0 |
| 501 | 5 | 186 | 1.9 | 7.9 | 2.3 | 10.2 | 1.5 |
| 888 | 0 | 198 | 1.9 | 0 | 2.5 | 0.0 | 0.0 |
| Light Rail | 6 | 220 | 1.2 | 6.2 | 2.8 | 9.0 | 3.4 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 1.2 | 715 | 1.2 | 26.2 | 8.9 | 35.1 | 0.9 |
| PTAI | | | | | | | 12.5 |

To Site Entrance 2 Weekday 5.30am

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 0 | 361 | 1.9 | 0 | 4.5 | 0.0 | 0.0 |
| 443 | 0 | 198 | 1.9 | 0 | 2.5 | 0.0 | 0.0 |
| 449 | 0 | 186 | 1.9 | 0 | 2.3 | 0.0 | 0.0 |
| 501 | 3 | 186 | 1.9 | 11.9 | 2.3 | 14.2 | 2.1 |
| 888 | 0 | 198 | 1.9 | 0 | 2.5 | 0.0 | 0.0 |
| Light Rail | 2 | 450 | 1.2 | 16.2 | 5.6 | 21.8 | 0.7 |
| Monorail | 0 | 565 | 1.2 | 0 | 7.1 | 0.0 | 0.0 |
| Ferry | 0 | 715 | 1.2 | 0 | 8.9 | 0.0 | 0.0 |
| PTAI | | | | | | | 2.8 |

To Site Entrance 2 Saturday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 361 | 1.9 | 11.9 | 4.5 | 16.4 | 0.9 |
| 443 | 3 | 198 | 1.9 | 11.9 | 2.5 | 14.4 | 1.0 |
| 449 | 0 | 186 | 1.9 | 0 | 2.3 | 0.0 | 0.0 |
| 501 | 3 | 186 | 1.9 | 11.9 | 2.3 | 14.2 | 1.1 |
| 888 | 6 | 198 | 1.9 | 6.9 | 2.5 | 9.4 | 3.2 |
| Light Rail | 6 | 220 | 1.2 | 6.2 | 2.8 | 9.0 | 3.4 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 715 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 13.4 |

To Site Entrance 2 Sunday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 361 | 1.9 | 11.9 | 4.5 | 16.4 | 0.9 |
| 443 | 3 | 198 | 1.9 | 11.9 | 2.5 | 14.4 | 1.0 |
| 449 | 0 | 186 | 1.9 | 0 | 2.3 | 0.0 | 0.0 |
| 501 | 2 | 186 | 1.9 | 16.9 | 2.3 | 19.2 | 0.8 |
| 888 | 6 | 198 | 1.9 | 6.9 | 2.5 | 9.4 | 3.2 |
| Light Rail | 6 | 220 | 1.2 | 6.2 | 2.8 | 9.0 | 3.4 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 715 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 13.1 |

To Site Entrance 3 Weekday Business Hours

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 1.5 | 306 | 1.9 | 21.9 | 3.8 | 25.7 | 0.6 |
| 501 | 3 | 153 | 1.9 | 11.9 | 1.9 | 13.8 | 1.1 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 100 | 1.2 | 6.2 | 1.3 | 7.5 | 4.0 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 710 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 14.1 |

To Site Entrance 3 Weekday Peak

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 1.4 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 5 | 153 | 1.9 | 7.9 | 1.9 | 9.8 | 3.1 |
| 888 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| Light Rail | 6 | 100 | 1.2 | 6.2 | 1.3 | 7.5 | 4.0 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 1.2 | 710 | 1.2 | 26.2 | 8.9 | 35.1 | 0.9 |
| PTAI | | | | | | | 12.8 |

To Site Entrance 3 Weekday 5.30am

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 0 | 481 | 1.9 | 0 | 6.0 | 0.0 | 0.0 |
| 443 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 3 | 153 | 1.9 | 11.9 | 1.9 | 13.8 | 2.2 |
| 888 | 0 | 318 | 1.9 | 0 | 4.0 | 0.0 | 0.0 |
| Light Rail | 2 | 470 | 1.2 | 16.2 | 5.9 | 22.1 | 0.7 |
| Monorail | 0 | 565 | 1.2 | 0 | 7.1 | 0.0 | 0.0 |
| Ferry | 0 | 710 | 1.2 | 0 | 8.9 | 0.0 | 0.0 |
| PTAI | | | | | | | 2.9 |

To Site Entrance 3 Saturday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 3 | 153 | 1.9 | 11.9 | 1.9 | 13.8 | 1.1 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 100 | 1.2 | 6.2 | 1.3 | 7.5 | 4.0 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 710 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 13.5 |

To Site Entrance 3 Sunday

| Service | Service Frequency (service/hr) | Walk Distance (metres) | Unreliability Factor (mins) | Average Wait Time (mins) | Walk Time (mins) | Access Time (mins) | Equivalent Doorstep Freq. (services/hour) |
|------------|--------------------------------|------------------------|-----------------------------|--------------------------|------------------|--------------------|---|
| 111 | 3 | 481 | 1.9 | 11.9 | 6.0 | 17.9 | 0.8 |
| 443 | 3 | 318 | 1.9 | 11.9 | 4.0 | 15.9 | 0.9 |
| 449 | 0 | 306 | 1.9 | 0 | 3.8 | 0.0 | 0.0 |
| 501 | 2 | 153 | 1.9 | 16.9 | 1.9 | 18.8 | 0.8 |
| 888 | 6 | 318 | 1.9 | 6.9 | 4.0 | 10.9 | 2.8 |
| Light Rail | 6 | 100 | 1.2 | 6.2 | 1.3 | 7.5 | 4.0 |
| Monorail | 10 | 565 | 1.2 | 4.2 | 7.1 | 11.3 | 2.7 |
| Ferry | 2 | 710 | 1.2 | 16.2 | 8.9 | 25.1 | 1.2 |
| PTAI | | | | | | | 13.2 |

Appendix E - Sydney Fish Market –Traffic Generation Analysis

Appendix E - 1 Process

Unlike many other sites, the Sydney Fish Market does not have a single use that is generating traffic. For mixed-use sites there is not a comparable model in Sydney. To better understand and estimate future traffic generation existing traffic generation and patterns of site user behaviour was investigated through a process of counts and interview survey.

This information is used in this study to estimate future traffic generation for potential site development. The process used is:

Step 1 – Existing total traffic generation for the site was disaggregated into different sources of traffic: Sydney Fish Market related traffic; existing office traffic; and retail visitor traffic.

Step 2 – An estimate of the number of retail visitors who park off-site was used to identify total site traffic generation – by both on- and off-site parkers.

Step 3 – Retail visitor traffic was further disaggregated into the type of activity undertaken on-site:

- Retail with on-site consumption
- Retail with off-site consumption
- Combined activities

Step 4 – Levels of traffic generation were adjusted to better reflect the 85th percentile level of traffic generation by applying a factor to adjust for seasonal influences.

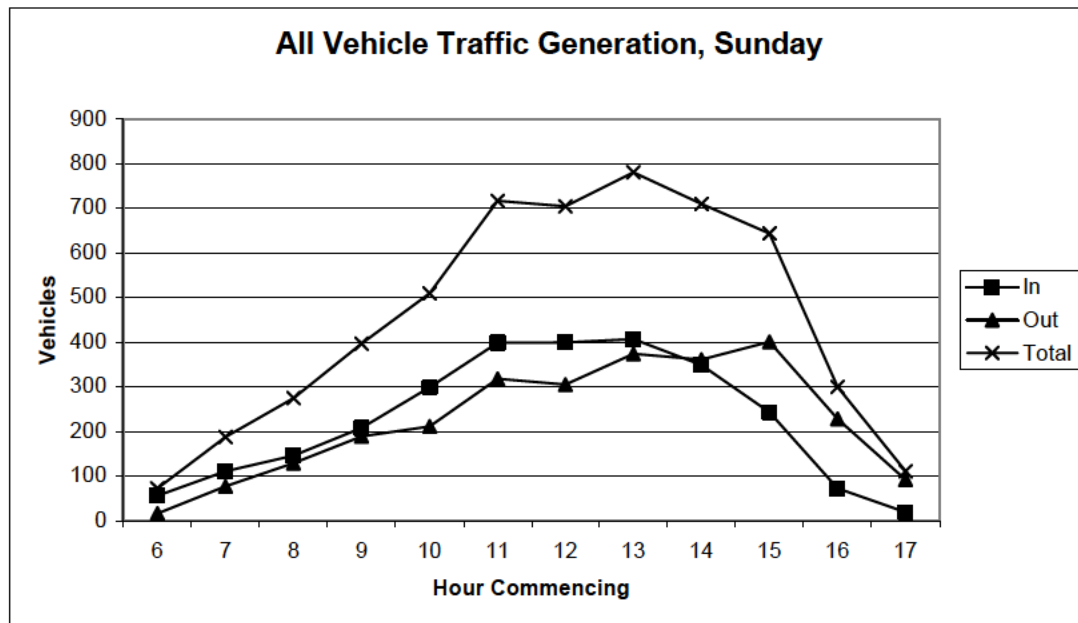
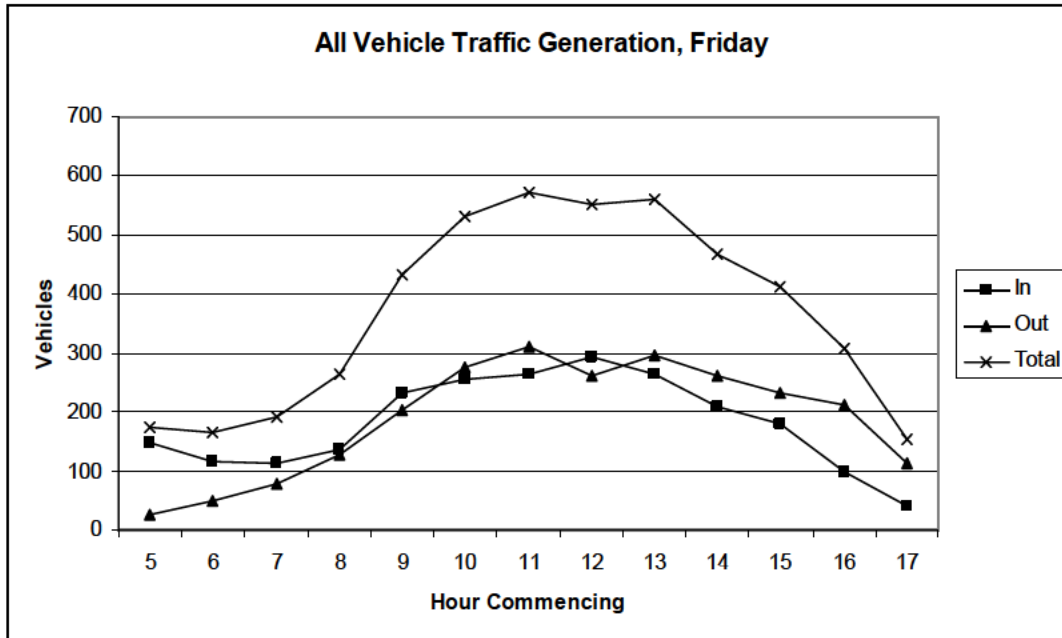
Step 5 – Future traffic generation was estimated by calculating the effect of the Master Plan's proposals on relevant floorspace areas. These factors were then applied to the components of existing retail traffic generation.

Step 6 – An aggregate approach was used to provide a check on the estimates provided by the above method.

Each of these steps is explained in more detail in subsequent sections, with more detailed tables provided at the end of the text.

Appendix E - 2 Step 1 – Disaggregation of Existing Traffic Generation

The total traffic generation of the Sydney Fish Market site (through the site access) is shown in the following two charts for a Friday and a Sunday.



These total traffic generation profiles are disaggregated to sources of generation by use, on the following basis:

1. SFM traffic – on a weekday this uses light and heavy commercial vehicle profile as a proxy for SFM generated traffic, with car traffic in prior to 7.00am and 60 per cent of car traffic in the hour commencing 7.00am. Car traffic out is 100 per cent of site car traffic out to 7.00am and then it is 70 per cent of car traffic out until accumulated cars are removed from site. On a weekend it is 50 per cent of light and 100 per cent of heavy commercial vehicle movements.

2. Office Traffic – uses the area of office space (not SFM Office) and standard traffic generation rate for a day. Then a profile is applied to the daily traffic. It is assumed that this use generates no traffic on Sunday.
3. Visitor Traffic – this comprises the balance of the traffic.

The following table summarises key traffic generation parameters for each component. More detailed tables (Tables A and B) are at the rear of the text in this appendix.

Table E.1 - Existing Components of Traffic Generation by Vehicles Parked On-site (vehicle trips)

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|----------------|------------------|-------------|-------|----|-------------|-------|------------------|-----|-------|--------|-------|-------|
| | In | Morning Out | Total | In | Evening Out | Total | In | Out | Total | In | Out | Total |
| Weekday | | | | | | | | | | | | |
| SFM Traffic | 27 | 108 | 135 | 8 | 9 | 17 | 47 | 94 | 141 | 727 | 892 | 1,681 |
| Office | 28 | 1 | 29 | 9 | 8 | 37 | 14 | 9 | 23 | 133 | 126 | 259 |
| Visitor | 109 | 20 | 129 | 13 | 47 | 60 | 216 | 215 | 431 | 1,615 | 1,548 | 3,163 |
| Weekend | | | | | | | | | | | | |
| SFM Traffic | na | na | na | na | na | na | 7 | 7 | 14 | 93 | 91 | 184 |
| Office | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 |
| Visitor | na | na | na | na | na | na | 401 | 364 | 765 | 2,616 | 2,610 | 5,226 |

* Daily refers to survey period.

Appendix E - 3 Step 2 – Traffic Generated by Visitors Parked Off-site

The total number of vehicles parked off-site during the course of a day was estimated from the site user survey and boundary counts. These daily estimates were spread through the day using the profile of demand for visitors who actually drove into the site.

On the weekday it was estimated that a total of 480 vehicles parked off-site over the course of a day. On the weekend day the estimate was 1,016 vehicles.

The following table summarises the traffic generation by those parked off-site during key periods. More comprehensive information is in Table C at the end of the text.

Table E.2 - Existing Components of Traffic Generation by Vehicles Parked Off-site (vehicle trips)

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|-------------------------|------------------|-------------|-------|----|-------------|-------|------------------|-----|-------|--------|-------|-------|
| | In | Morning Out | Total | In | Evening Out | Total | In | Out | Total | In | Out | Total |
| Weekday | | | | | | | | | | | | |
| Visitor Parked off-site | 33 | 6 | 39 | 8 | 29 | 37 | 64 | 67 | 131 | 480 | 480 | 960 |
| Weekend | | | | | | | | | | | | |
| Visitor Parked off-site | na | na | na | na | na | na | 159 | 143 | 303 | 1,016 | 1,016 | 2,032 |

* Daily refers to survey period.

Appendix E - 4 Step 4 – Disaggregation of Visitor Traffic by Type of Activity

The site user survey asked respondents to nominate their main reason for visiting the site. Most respondents provided a single response, but a reasonable number insisted on

providing two reasons as the main reason. The main reasons for visiting the site were aggregated into the following activity types:

- To purchase and consume off-site
- To purchase and consume on-site
- A combined reason

The day was divided into three periods¹⁸, morning, lunchtime and afternoon and for each of these three periods a proportion of site visitors by main reason was derived from the survey. These are summarised below.

Table E.3 - Proportion of Visitors by Type of Activity On-site

| Main Reason | Weekday | | | Weekend | | |
|-----------------|---------|-----------|-----------|---------|-----------|-----------|
| | Morning | Lunchtime | Afternoon | Morning | Lunchtime | Afternoon |
| Retail Off-site | 34% | 45% | 57% | 76% | 44% | 54% |
| Retail On-site | 8% | 32% | 13% | 4% | 15% | 15% |
| Combined | 58% | 24% | 30% | 20% | 40% | 30% |

The following table summarises estimates of traffic generation by each type of activity for critical periods, combining vehicles parked both on- and off-site.

Table E.4 – Visitor Traffic Generation Disaggregated by Activity Type, Vehicles Parked either On- or Off-site

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|-----------------|------------------|-----|-------|---------|-----|-------|------------------|-----|-------|--------|-------|-------|
| | Morning | | | Evening | | | | | | | | |
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total |
| Weekday | | | | | | | | | | | | |
| Retail Off-site | 48 | 9 | 57 | 19 | 70 | 89 | 95 | 95 | 190 | 878 | 926 | 1,804 |
| Retail On-site | 10 | 2 | 12 | 4 | 17 | 21 | 22 | 22 | 44 | 379 | 401 | 780 |
| Combined | 83 | 16 | 98 | 10 | 37 | 47 | 164 | 165 | 329 | 834 | 696 | 1,529 |
| Weekend | | | | | | | | | | | | |
| Retail Off-site | na | na | na | na | na | na | 248 | 225 | 473 | 2,154 | 2,085 | 4,239 |
| Retail On-site | na | na | na | na | na | na | 85 | 77 | 162 | 371 | 412 | 784 |
| Combined | na | na | na | na | na | na | 226 | 205 | 432 | 1,094 | 1,115 | 2,209 |

* Daily refers to survey period.

Appendix E - 5 Step 4 – Adjustment for Variations in Demand

In order that traffic generation better reflect busy periods and hence approximate the 85th percentile level of demand, adjustments were considered to account for:

- Day of week variations.
- Day to day variations.
- Seasonal variations.

¹⁸ Morning is up to noon, lunchtime is from noon to 3.00pm, afternoon is from 3.00pm onward.

Counts were undertaken on a Friday, which is the busy weekday. The weekend count was undertaken on a Sunday, which, according to information from Sydney Fish Market is about 99 1/2 per cent of the demand of Saturday. Therefore no changes are necessary for day of week variations.

Day to day variations, caused by different weather conditions were considered but rejected by MWT as the Friday of survey was fine and the Sunday was well attended, despite being overcast in the morning.

Adjustments were made to the level of demand to account for seasonal factors that change visitation to the site through the year. This analysis is based on information provided by Sydney Fish Market regarding pedestrian usage of the main retail arcade and use of the car park. The following two tables summarise this information along with calculated 85th percentile values and factors to convert August demands to 85th percentile demands.

Table E.5 - Pedestrian Counts by Month and by Weekday and Weekend, 2001/2002

| Month | Weekday | Weekend |
|------------------------|--------------|--------------|
| Jan | 5,072 | 8,951 |
| Feb | 4,335 | 8,732 |
| Mar | 4,688 | 8,046 |
| Apr | 4,485 | 8,498 |
| May | 3,607 | 7,446 |
| Jun | 3,696 | 7,084 |
| Jul | 3,928 | 7,567 |
| Aug | 3,973 | 8,339 |
| Sep | 4,056 | 8,840 |
| Oct | 4,552 | 9,067 |
| Nov | 4,191 | 8,880 |
| Dec | 6,069 | 9,213 |
| <i>Average</i> | <i>4,388</i> | <i>8,388</i> |
| <i>85th Percentile</i> | <i>4,822</i> | <i>8,991</i> |
| <i>August Factor</i> | <i>1.21</i> | <i>1.08</i> |

Table E.6 - Average Weekly Use of Car Park by Month, 2001/2002

| Month | Average Weekly Cars |
|------------------------|---------------------|
| Apr | 12,337 |
| May | 9,168 |
| Jun | 9,119 |
| Jul | 9,211 |
| Aug | 9,600 |
| Sep | 9,944 |
| Oct | 11,099 |
| Nov | 10,309 |
| Dec | 14,653 |
| Jan | 11,382 |
| Feb | 10,505 |
| Mar | 10,727 |
| <i>Average</i> | <i>10,671</i> |
| <i>85th percentile</i> | <i>11,716</i> |
| <i>August Factor</i> | <i>1.22</i> |

Travel demands were factored by 1.1 for weekday; about half the level indicated by the above tables. This lower level was chosen because it is likely that a disproportionate amount of additional demand in seasonally busier periods would occur on the relatively quiet days during the week: Tuesday to Thursday. The full factor of 1.08 was used for weekends because the weekend days have very similar levels of demand.

Seasonal factors were applied to visitor traffic only and not to SFM traffic or office traffic.

The effect of this seasonal adjustment is to increase visitor traffic by the amounts indicated in the following table.

Table E.7 – Existing Traffic Generation after Seasonal Adjustment by Vehicles Parked On- and Off-site (vehicle trips)

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|------------------------------|------------------|-------|-----|---------|-------|-----|------------------|-----|-------|--------|-------|-------|
| | Morning | | | Evening | | | In | Out | Total | In | Out | Total |
| In | Out | Total | In | Out | Total | | | | | | | |
| | | | | | | | | | | | | |
| Weekday | | | | | | | | | | | | |
| Increase due to Seasonal Adj | 14 | 3 | 17 | 3 | 12 | 16 | 28 | 28 | 56 | 209 | 202 | 411 |
| Total | 210 | 139 | 348 | 53 | 153 | 227 | 370 | 413 | 783 | 3,160 | 3,243 | 6,464 |
| | | | | | | | | | | | | |
| Weekend | | | | | | | | | | | | |
| Increase due to Seasonal Adj | na | na | na | na | na | na | 45 | 41 | 85 | 290 | 289 | 579 |
| Total | na | na | na | na | na | na | 611 | 555 | 1166 | 4,002 | 3,992 | 7,995 |

* Daily refers to survey period

Appendix E - 6 Step 5 - Future Traffic Generation

The changes to site areas proposed by the Master Plan are tabulated below, along with existing floorspace.

Table E.8 - Floorspace Schedule for Sydney Fish Market by Use (GFA)

| Use | Existing Floorspace by use Sq m | Proposed Floorspace by use Sq m | Change in Floorspace by use Sq m | % |
|---|--|--|---|-----|
| Office | 2,169 | 13,300 | 11,131 | 513 |
| Retail | 7,133 | 12,440 | 5,307 | 74 |
| Wholesale | 3,231 | 3,335 | 104 | 3 |
| SFM Area | 2,701 | 2,020 | -681 | -25 |
| Selling floor including audit, seating, crateryard, weighing sorting and data entry | 3,916 | 4,285 | 369 | 9 |
| Total floor space | 19,150 | 35,380 | 16,230 | 85 |

Source SHFA 29 January 2003.

Additional retail areas on the site would be expected to increase traffic generation in proportion to the increase in their area. The locations, areas and proportions for on- and off-site retail are in the following table.

Table E.9 – Allocation of Retail Floorspace to Type of Retail Visit (NLA sq m)

| Location | Existing | Proposed | Ratio of Floorspace |
|------------------------|----------|----------|------------------------|
| <i>On site Retail</i> | | | |
| Eat in / Take Away | 1,083 | 2,681 | 2.48 |
| <i>Off site Retail</i> | | | |
| General Merchandise | 215 | 722 | |
| Fresh Food | 3,128 | 4,948 | |
| | 3,343 | 5,670 | 1.70 |

Source SHFA 5 February 2003.

Visitors to the site with combined reasons for visiting are assumed to be generated by the overall floorspace associated with activities that make the site of interest to the public: this is total floorspace less the non-Sydney Fish Market office space.

Table E.10 - Combined Visit Floorspace Changes (GFA sq m)

| Use | Existing Floorspace | Proposed Floorspace |
|----------------------------|-------------------------------|-------------------------------|
| Retail | 7,133 | 12,440 |
| Commercial | Not included in this analysis | Not included in this analysis |
| Wholesale | 3,231 | 3,335 |
| Auction Hall | 3,916 | 4,285 |
| Sydney Fish Market Offices | 2,701 | 2,020 |
| Total | 16,981 | 22,080 |
| Growth Factor | | 1.30 |

Source SHFA 5 February 2003

These factors were applied to existing profiles of traffic generation to provide an estimate of future traffic generation.

Traffic generation by the proposed new office space is based on the RTA's standard rate for offices of 2 trips per 100 sq metres (GFA) factored down by 60 per cent to account for restrained parking and presence of public transport. A profile was applied to spread the demand over the course of the day. MWT have assumed that the office space would be occupied by a business unrelated to the Sydney Fish Market and would have typical office hours and patterns of traffic generation. The traffic generation is adjusted to broadly match the level of parking that is applicable for office use under the UDP (1 space per 150 sq metres (GFA)) – a total of 88 spaces.

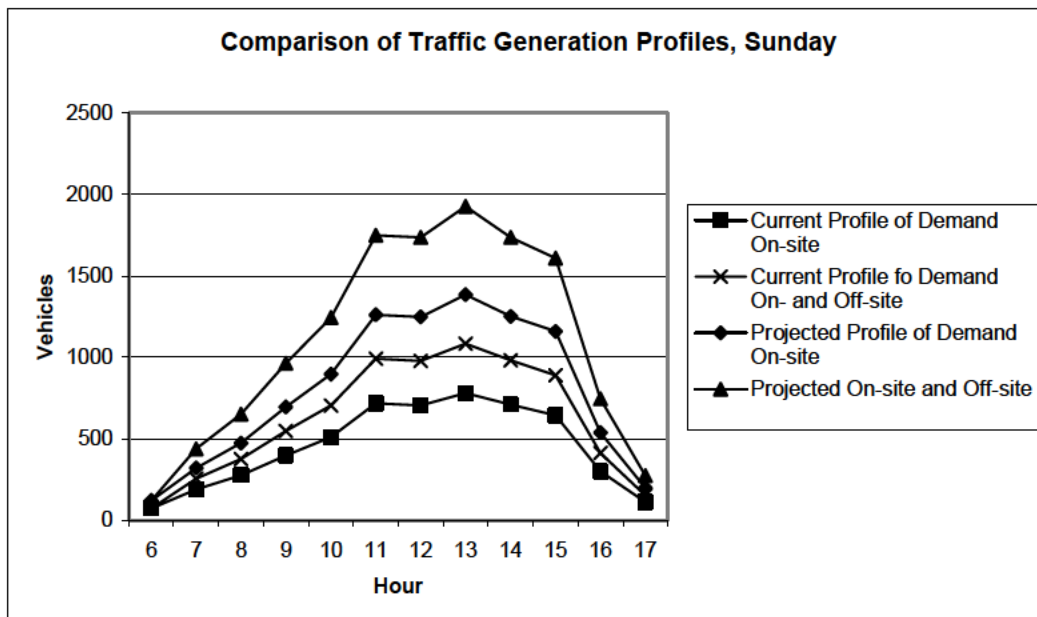
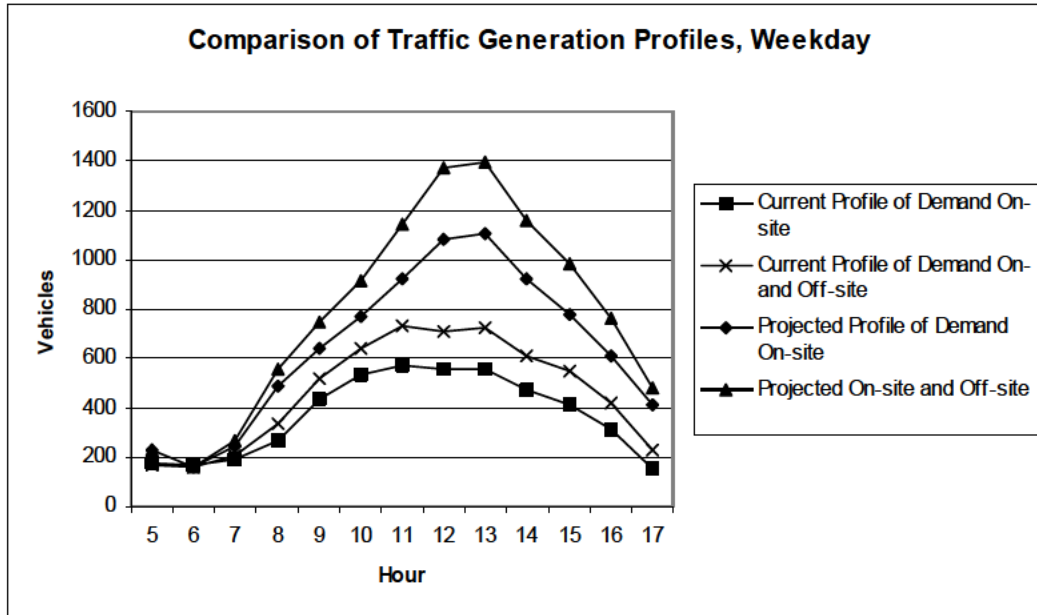
If the offices were associated with the Sydney Fish Market, then it is likely that their traffic generation during the road system peak period would be lower, due to a proportion of early starts and finishes.

The resulting traffic generation by the proposed office use is summarised in the following table.

Table E.11 - Estimated Traffic Generation by Proposed Office Space

| Time | In | Out | In | Out |
|-------|-----|-----|-----|-----|
| 7 | 12% | 1% | 20 | 3 |
| 8 | 37% | 4% | 97 | 11 |
| 9 | 10% | 5% | 26 | 14 |
| 10 | 6% | 3% | 16 | 8 |
| 11 | 6% | 6% | 16 | 17 |
| 12 | 5% | 7% | 13 | 19 |
| 13 | 8% | 3% | 21 | 8 |
| 14 | 6% | 6% | 16 | 17 |
| 15 | 6% | 7% | 16 | 19 |
| 16 | 4% | 12% | 11 | 33 |
| 17 | 2% | 40% | 5 | 111 |
| 18 | 1% | 9% | 3 | 25 |
| Daily | | | 259 | 286 |

The total projected on-site traffic generation profile and off-site traffic generation profile is compared with the existing traffic generation profile (on- and off-site traffic) in the following two charts.



The following table provides a summary of key site traffic generation parameters with the proposed development areas.

Table E.12 – Projected Traffic Generation of the Redeveloped Site, all Users, all Vehicles Parked On-site (vehicle trips)

| Component | Road System Peak | | | | | | During Site Peak | | | Daily* | | |
|----------------|------------------|-------------|-------|----|-------------|-------|------------------|-----|-------|--------|-------|--------|
| | In | Morning Out | Total | In | Evening Out | Total | In | Out | Total | In | Out | Total |
| Weekday | | | | | | | | | | | | |
| Total | 390 | 165 | 555 | 93 | 385 | 479 | 670 | 725 | 1,395 | 4,988 | 5,105 | 10,154 |
| Weekend | | | | | | | | | | | | |
| Total | na | na | na | na | na | na | 1,008 | 918 | 1,926 | 6,591 | 6,603 | 13,193 |

* Daily refers to survey period

Appendix E - 7 Step 6 – Check of Traffic Generation

An alternative approach to projecting traffic generation for the re-developed site is to use changes in floorspace at a more aggregate level, and apply these to existing total traffic generation profiles. This was done for Sunday, the peak day, assuming that all traffic is generated by retail activities on the site. The following table identifies existing and proposed retail floorspace

Table E.13 – Retail Floorspace Changes (NLA sq m)

| Use | Existing Floorspace | Proposed Floorspace |
|--------------------|---------------------|---------------------|
| Retail/Restaurants | 5,706 | 10,309 |
| Growth Factor | | 1.81 |

The existing traffic generation of the site, after seasonal adjustment and including all traffic generated by the site (parked on- and off-site), was then factored by the ratio of existing to proposed NLA retail floorspace; which is 1.81. The results are summarised in the following table which compares the results of the two methods for key traffic generation parameters.

Table E.14 - Comparison of Traffic Generation by Aggregate and Disaggregate Method, Weekend (vehicle trips)

| Component | During Site Peak | | | Daily* | | |
|--|------------------|-------|-------|--------|-------|--------|
| | In | Out | Total | In | Out | Total |
| Weekend – Aggregate Method | | | | | | |
| Total | 1,105 | 1,005 | 2,110 | 7,243 | 7,225 | 14,471 |
| Weekend – Disaggregate Method | | | | | | |
| Total | 1,008 | 918 | 1,926 | 6,591 | 6,603 | 13,193 |
| Difference between Methods | | | | | | |
| Aggregate less Disaggregate | 97 | 87 | 184 | 652 | 622 | 1278 |
| Aggregate Greater than Disaggregate method by..... | 10% | 9% | 10% | 10% | 9% | 10% |

The disaggregate process has a lower level of projected traffic generation by the proposed development as a result of a change in the balance of retail floor space and its associated activity towards more on-site consumption of product purchased on the site. This has a lower traffic generation rate than the retail floorspace associated with off-site consumption of product.

Appendix E - 8 Conclusion

The disaggregate process of projecting traffic generation provides a more rational basis for projecting likely changes in traffic generation as a result of the proposed master plan. It is undertaken assuming that parking is available on the site and current incentives for visitors to park off the site are addressed. The key traffic generation parameters are in Table E.12.

The process also assumes that the current hours of operation of the site are maintained. Extended late afternoon and evening trading during the week would spread the traffic generation profile. On a weekend such extended hours of trade would have a minor effect on the surrounding road network because the network would be relatively lightly loaded.

The projected level of traffic generation is regarded as the business as usual level of traffic demand. The site circulation and access arrangements should be sized to accommodate this level of demand. The TMAP process should develop a series of measures that will reduce this level of traffic generation.

Overleaf are more detailed tables referred to in the text.

Table A - Estimated Traffic Generation by Use, Existing Site, Friday

| SFM Traffic =====> | | | | | | | Initial | Office Traffic =====> | | | Visitor Traffic =====> | | | | | |
|--------------------------------|----|-----|-------|----|-----|-------|--------------|-----------------------|-----|-------|------------------------|-----|-------|-----|-----|-------|
| | | | | | | | Accumulation | | | | | | | | | |
| Light and Heavy Commercials | | | | | | | 92 | Cars | | | Cars, Taxi, MC | | | Bus | | |
| Time | IN | OUT | TOTAL | IN | OUT | Total | Accum | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| 5 | 94 | 10 | 104 | 50 | 12 | 124 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 56 | 30 | 86 | 58 | 19 | 77 | 169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 49 | 44 | 93 | 37 | 19 | 56 | 188 | 0 | 0 | 0 | 29 | 16 | 45 | 0 | 0 | 0 |
| 8 | 27 | 72 | 99 | 0 | 36 | 36 | 152 | 28 | 1 | 29 | 109 | 20 | 129 | 0 | 0 | 0 |
| 9 | 57 | 94 | 151 | 0 | 75 | 75 | 77 | 17 | 7 | 24 | 173 | 34 | 207 | 1 | 0 | 1 |
| 10 | 77 | 112 | 189 | 0 | 58 | 58 | 19 | 17 | 7 | 24 | 178 | 106 | 284 | 0 | 0 | 0 |
| 11 | 47 | 94 | 141 | 0 | 0 | 0 | | 14 | 9 | 23 | 216 | 215 | 431 | 1 | 1 | 2 |
| 12 | 38 | 48 | 86 | 0 | 0 | 0 | | 11 | 11 | 22 | 249 | 213 | 462 | 1 | 0 | 1 |
| 13 | 38 | 49 | 87 | 0 | 0 | 0 | | 11 | 11 | 22 | 227 | 245 | 472 | 0 | 2 | 2 |
| 14 | 43 | 47 | 90 | 0 | 0 | 0 | | 8 | 15 | 24 | 165 | 213 | 378 | 2 | 1 | 3 |
| 15 | 21 | 28 | 49 | 0 | 0 | 0 | | 8 | 15 | 24 | 158 | 203 | 361 | 0 | 1 | 1 |
| 16 | 19 | 28 | 47 | 0 | 0 | 0 | | 9 | 22 | 31 | 80 | 183 | 263 | 0 | 0 | 0 |
| 17 | 16 | 18 | 34 | 0 | 0 | 0 | | 9 | 28 | 37 | 26 | 94 | 120 | 0 | 0 | 0 |

Table B - Estimated Traffic Generation by Use, Existing Site, Sunday

| SFM Traffic =====> | | | | | | | Initial | Office Traffic =====> | | | Visitor Traffic =====> | | | | | |
|--------------------------------|----|-----|-------|----|-----|-------|---------|-----------------------|-----|-------|------------------------|-----|-------|-----|-----|-------|
| Light and Heavy Commercials | | | | | | | Accum | Cars | | | Cars, Taxi, MC | | | Bus | | |
| Time | IN | OUT | TOTAL | IN | OUT | Total | Accum | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| 6 | 8 | 2 | 10 | 0 | 0 | 0 | | 0 | 0 | 0 | 48 | 14 | 62 | 0 | 1 | 1 |
| 7 | 9 | 10 | 19 | 0 | 0 | 0 | | 0 | 0 | 0 | 100 | 68 | 168 | 2 | 0 | 2 |
| 8 | 9 | 12 | 20 | 0 | 0 | 0 | | 0 | 0 | 0 | 138 | 116 | 253 | 0 | 2 | 2 |
| 9 | 9 | 7 | 15 | 0 | 0 | 0 | | 0 | 0 | 0 | 199 | 182 | 380 | 1 | 1 | 2 |
| 10 | 9 | 8 | 17 | 0 | 0 | 0 | | 0 | 0 | 0 | 290 | 203 | 493 | 0 | 0 | 0 |
| 11 | 9 | 11 | 20 | 0 | 0 | 0 | | 0 | 0 | 0 | 388 | 306 | 694 | 2 | 1 | 3 |
| 12 | 9 | 6 | 15 | 0 | 0 | 0 | | 0 | 0 | 0 | 390 | 299 | 689 | 2 | 0 | 2 |
| 13 | 7 | 7 | 14 | 0 | 0 | 0 | | 0 | 0 | 0 | 401 | 364 | 765 | 0 | 3 | 3 |
| 14 | 11 | 9 | 19 | 0 | 0 | 0 | | 0 | 0 | 0 | 335 | 352 | 686 | 4 | 1 | 5 |
| 15 | 9 | 10 | 18 | 0 | 0 | 0 | | 0 | 0 | 0 | 233 | 388 | 620 | 2 | 4 | 6 |
| 16 | 7 | 7 | 13 | 0 | 0 | 0 | | 0 | 0 | 0 | 66 | 221 | 286 | 0 | 1 | 1 |
| 17 | 1 | 6 | 6 | 0 | 0 | 0 | | 0 | 0 | 0 | 19 | 87 | 105 | 0 | 0 | 0 |

Table C - Estimated Traffic Generation Parked Off-site and Parked On-site, Friday and Sunday

| Time | Off-site Traffic | | | | | ON-site | | | Combined ON-site&OFF-site | | |
|---------------|------------------|-----|-----|-----|-------|---------|-----|-------|---------------------------|------|-------|
| | IN | OUT | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Friday | | | | | | | | | | | |
| 5 | 0 | 0 | 0 | 0 | 0 | 144 | 22 | 228 | 144 | 22 | 228 |
| 6 | 0 | 0 | 0 | 0 | 0 | 114 | 49 | 163 | 114 | 49 | 163 |
| 7 | 2% | 1% | 14 | 9 | 23 | 155 | 93 | 247 | 169 | 101 | 270 |
| 8 | 7% | 1% | 55 | 11 | 65 | 335 | 154 | 489 | 390 | 165 | 555 |
| 9 | 11% | 2% | 87 | 18 | 104 | 392 | 247 | 639 | 479 | 265 | 743 |
| 10 | 11% | 7% | 89 | 55 | 144 | 409 | 363 | 772 | 498 | 418 | 916 |
| 11 | 13% | 14% | 108 | 112 | 220 | 440 | 481 | 922 | 548 | 594 | 1142 |
| 12 | 15% | 14% | 151 | 135 | 286 | 570 | 512 | 1082 | 721 | 647 | 1369 |
| 13 | 14% | 16% | 138 | 155 | 293 | 532 | 569 | 1102 | 670 | 725 | 1395 |
| 14 | 10% | 14% | 100 | 135 | 235 | 405 | 514 | 919 | 505 | 649 | 1154 |
| 15 | 10% | 13% | 87 | 117 | 204 | 338 | 440 | 778 | 425 | 557 | 982 |
| 16 | 5% | 12% | 44 | 105 | 150 | 187 | 422 | 609 | 231 | 528 | 758 |
| 17 | 2% | 6% | 14 | 54 | 69 | 79 | 331 | 410 | 93 | 385 | 479 |
| Sunday | | | | | | | | | | | |
| 6 | | | 0 | 0 | 0 | 94 | 27 | 120 | 94 | 27 | 120 |
| 7 | 4% | 3% | 71 | 47 | 118 | 189 | 130 | 319 | 260 | 177 | 437 |
| 8 | 5% | 4% | 97 | 81 | 179 | 254 | 219 | 473 | 351 | 300 | 652 |
| 9 | 8% | 7% | 141 | 127 | 268 | 363 | 331 | 695 | 504 | 458 | 963 |
| 10 | 11% | 8% | 206 | 142 | 348 | 526 | 370 | 896 | 732 | 512 | 1244 |
| 11 | 15% | 12% | 275 | 215 | 490 | 703 | 558 | 1260 | 978 | 772 | 1750 |
| 12 | 15% | 12% | 277 | 211 | 488 | 708 | 541 | 1249 | 985 | 752 | 1736 |
| 13 | 16% | 14% | 285 | 256 | 541 | 723 | 661 | 1385 | 1008 | 918 | 1926 |
| 14 | 13% | 14% | 238 | 247 | 486 | 613 | 639 | 1252 | 851 | 886 | 1737 |
| 15 | 9% | 15% | 169 | 279 | 449 | 437 | 724 | 1160 | 606 | 1003 | 1609 |
| 16 | 3% | 9% | 48 | 159 | 207 | 127 | 412 | 538 | 174 | 571 | 745 |
| 17 | 1% | 3% | 13 | 62 | 76 | 34 | 164 | 198 | 48 | 226 | 274 |

Note Off-site traffic is traffic arriving in the vicinity of the site to park off-site prior to walking into the site.

In the proposed future case this traffic would park on-site as a result of parking management measures outlined in the TMAP.

SYDNEY FISH MARKETS REDEVELOPMENT
TRANSPORT & ACCESSIBILITY IMPACT
ASSESSMENT

Prepared for
Sydney Fish Markets

SYDNEY FISH MARKETS REDEVELOPMENT TRANSPORT & ACCESSIBILITY IMPACT ASSESSMENT

Prepared for
Sydney Fish Markets

This report has been issued and amended as follows:

| Rev | Description | Date | Prepared by | Approved by |
|-----|-------------------------------|------------|-------------|-------------|
| 0 | Draft for consultative review | 02/07/2010 | GM | - |
| 1 | Issue | 20/08/2010 | GM | BM |

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Executive Summary

Halcrow has been commissioned by the Sydney Fish Markets Authority to prepare a transport and accessibility impact assessment for the redevelopment of the Sydney Fish Markets in Pyrmont NSW.

The Sydney Fish Markets Authority is proposing a significant revitalisation and change in configuration, with new shops, restaurants and redevelopment of the existing at grade car park and new foreshore park. The proposal is the subject of a Part 3A application for concept approval to the NSW Department of Planning.

The proposed development represents a significant improvement to the leisure/retail precinct of the Sydney Fish Markets. It includes a removal of the existing hard surface car park and replacement by a three level public car park, additional wholesale, retail and dining spaces.

The site meets the criteria set within the *Integrating Land Use and Transport Package* and the *NSW Planning Guidelines for Walking and Cycling* for the placement of businesses and services. It is well served by public transport, located within a densely populated area and has good current and proposed walking and cycling networks.

The development will not have a significant impact on the operations of the surrounding road network, with the proposed changes to intersection operations potentially providing significant operational benefits outside of peak generation times for the site.

1 Introduction

Halcrow has been commissioned by the Sydney Fish Markets Authority to prepare a transport and accessibility impact assessment for the redevelopment of the Sydney Fish Markets in Pyrmont NSW.

The Sydney Fish Markets Authority is proposing a significant revitalisation and change in configuration, with redevelopment of the existing at grade car park and new foreshore park. The proposal is the subject of a Part 3A application for concept approval to the NSW Department of Planning.

The Director General of the Department of Planning has required the proponent to address:

Transport & Accessibility Impact Assessment prepared with regard to the RTA's Guide to Traffic Generating Developments and making reference to the Metropolitan Transport Plan – Connecting the City of Cities, NSW Planning Guidelines for Walking and Cycling and the Integrating Land Use and Transport policy package, considering the following issues:

- *an estimate of the trips generated by the proposed development, including a breakdown of vehicle types;*
- *traffic generation including:*
 - *daily and peak traffic movements likely to be generated by the project;*
 - *the impact on the safety and capacity of the surrounding road network and nearby intersections, including Pyrmont Bridge Rd/Wattle St, Pyrmont Bridge Rd/Western Distributor on/off ramps, Pyrmont Bridge Rd/Harris St and Fish Market access; and*
 - *the need and provision of upgrade, road improvement works, or funding (if required);*
- *parking (including justification of proposed quantum of parking spaces), access and loading dock arrangements, in accordance with relevant Australian Standards and including appropriate levels of onsite car parking having regard to the relevant planning controls, RTA guidelines and public transport accessibility of the site;*
- *details on whether currently used areas on Bank Street will continue to be used for overflow car parking;*

- *details on internal access and circulation arrangements, with particular regard to pedestrian safety; and measures to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages.*
- *details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements.*
- *details of construction vehicle access, movements and queuing.*

The proposed works will involve the demolition of 4 buildings on the site, removal of the existing at-grade car park, construction of a new multi-storey wholesale and retail building with car park and creation of a new foreshore park. This project is to be undertaken in 4 stages.

This report is based on a description of the works provided by Conybeare Morrison International as at 12 August 2010, site visits and surveys of the site to obtain information on the existing traffic and pedestrian situations. The report addresses the Director General's requirements and any particular traffic and transport issues raised by NSW Transport, the Roads and Traffic Authority and Sydney City Council.

The remainder of the report is set out as follows:

- Chapter 2 discusses the strategic context for the development
- Chapter 3 discusses the existing transport conditions surrounding the site;
- Chapter 4 describes the proposed development, including changes to the transport network and car parking;
- Chapter 5 examines the traffic impacts; and
- Chapter 6 presents the conclusions of the investigation.

Construction vehicle access, movements and queuing are subject to a separate report and included in the Construction Traffic Management Plan (Halcrow, 2010).

2 Strategic Context

2.1 *Strategic Planning Policy and Plans*

This chapter outlines government plans and strategies which provide a transport context within which this proposed development should be considered.

2.1.1 *NSW State Plan*

The NSW State Plan 2006 defined the NSW Government's overarching goals and priorities for action. It was intended to set a framework for linking the various other NSW Government plans and policies, including the Metropolitan Strategy. Goals

Included in the strategy are a number of transport related goals to deliver a high quality transport system; provide practical environmental solutions and improved urban environments.

Transport priority areas with targets assigned to them include:

- Increasing share of peak hour journeys on a safe and reliable public transport system
- Safer roads
- Cleaner air and progress on greenhouse gas reduction
- Jobs closer to home
- Improve the efficiency of the road network.

Specific transport targets in the NSW State Plan of relevance to the Sydney Fish Markets site include:

- Increase the mode share of bicycle trips made in the Greater Sydney region, at a local and district level, to 5% by 2016
- Increase the proportion of total journeys to work by public transport in the Sydney Metropolitan Region to 28 % by 2016.

2.1.2 *Metropolitan Strategy and Metropolitan transport plan*

The Metropolitan Strategy (December 2005) outlined a broad framework vision for the future growth of the Sydney metropolitan area to 2031. The strategy proposed the concentration of growth in centers by identifying housing and employment capacity targets for Sydney's sub regions and strategic centers.

2.1.3 *The Metropolitan Strategy*

The Metropolitan Strategy's transport vision for Sydney is "...neighbourhoods with improved local transport, with walking and cycling facilities and bus services to major centres. People will be able to carry out more of their trips closer to home, reducing the time taken and cost of longer trips".

Transport actions proposed by the Metro Strategy were:

- Improve transport between Sydney's centres
- Improve the existing transport system
- Influence travel choices to encourage more sustainable travel
- Improve transport decision-making, planning, evaluation and funding:
- Ensure sufficient port capacity is available to serve Sydney:
- Improve the efficiency of all types of freight movements in Sydney:
- Connect the regions and economic gateways within the GMR:
- Minimise the adverse impacts from freight movements

A review of the Metropolitan Strategy is presently underway and is expected to be completed by the end of 2010.

2.1.4 *Metropolitan Transport Plan*

This was released in February 2010 and provides a 25 year vision for the linking of Sydney's land use planning with its transport network. It is intended that this plan be merged with the updated Metropolitan Strategy when it is completed. The plan includes a 10 year funding guarantee for essential transport infrastructure and services.

The Metropolitan Transport Plan includes:

- The \$4.5 billion Western Express City Rail Service – a separate dedicated rail track to slash travelling times from Western Sydney to the city.
- Start of work on the \$6.75 billion North West rail link from Epping to Rouse Hill.
- A \$500 million expansion of the current light rail system with an extension from Lilyfield to Dulwich Hill and Barangaroo;
- Improvement to bus services – including 1000 new buses in strategic bus corridors.
- New trains – addition of 626 rail carriages.
- \$158 million for cycleway.
- \$400 million for commuter car park.
- \$225 millions for ferries.
- \$536 million for motorway planning, transit corridor reservations and land acquisition.
- \$483 million to deliver important freight works in Sydney.
- \$21.9 million of State and Federal Funded road projects.

2.1.5 *Integrating Land Use and Transport Policy Package*

The Integrating Land Use and Transport Policy Package consists of 5 documents to provide a framework for integrating land use and transport at regional and local levels. These documents are:

- Overview of ILUT
- Right Place for Business and Services Planning Policy
- Improving Transport Choice
- Summary of Employment and Journey to Work Patterns in the Greater Metropolitan Region.

The *Right Place for Business and Services* provides guidance on locating trip-generating developments in places that:

- help reduce reliance on cars and moderate the demand for car travel
 - encourage multi-purpose trips
 - encourage people to travel on public transport, walk or cycle
 - provide people with equitable and efficient access

- minimise dispersed trip-generating development that can only be accessed by cars
- ensure that a network of viable, mixed use centres closely aligned with the public transport system accommodates and creates opportunities for business growth and service delivery
- protect and maximise community investment in centres, and in transport infrastructure and facilities
- encourage continuing private and public investment in centres, and ensure that they are well designed, managed and maintained
- foster growth, competition, innovation and investment confidence in centres, especially in the retail and entertainment sectors, through consistent and responsive decision making.

Improving Transport Choice is the practice guidelines aimed at ensuring that developments maximize the potential for non private vehicle travel. The 10 principles encompassed by these guidelines are:

1. Develop concentrated centres of housing, employment, services and public facilities within an acceptable walking distance (400 to 1,000m) of major public transport nodes, such as railway stations and high frequency bus routes with at least a 15-minute frequency at peak times.
2. Encourage a mix of housing, employment, services, public facilities and other compatible land uses, in accessible centres.
3. Concentrate high density, mixed use, accessible centres along major public transport corridors within urban areas.
4. Plan and implement public transport infrastructure and services in conjunction with land use strategies to maximise access along corridors, and to and from centres.
5. Provide street networks with multiple and direct connections to public transport services and efficient access for buses.
6. Provide walkable environments and give greater priority to access for pedestrians, including access for people with disabilities.
7. Maximise cyclists' accessibility to centres, services, facilities and employment locations.
8. Use the location, supply and availability of parking to discourage car use.

9. Improve transport choice and propose an integrated transport approach by management road traffic flow and priority of transport modes.
10. Design with an emphasis on the needs of pedestrians, cyclists and public transport users.

2.1.6 *NSW Guidelines for Planning for Walking and Cycling*

The *NSW Guidelines for Planning for Walking and Cycling* set good principles for creating developments that are accessible by walking and cycling. It includes design principles to ensure that access to sites for pedestrians and cyclists is safe, convenient, direct, and connected to surrounding land uses, public transport and facilities.

2.2 ***Local Planning Context***

2.2.1 *City of Sydney Strategic Plan – Sustainable Sydney 2030*

This document sets objectives to guide development and foster a sustainable city. It sets the goal of making the City *Green Global and Connected*, with good walking, cycling and public transport networks.

Key objectives include:

Target 6 - By 2030, the use of public transport for travel to work by City Centre workers will increase to 80 per cent and the use of non-private vehicles by City residents for work trips will increase to 80 per cent.

Target 7 – By 2030, at least 10 per cent of City trips will be made by bicycle and 50 per cent by pedestrian movement.

Target 8 - By 2030, every resident will be within a 10 minute (800m) walk to fresh food markets, childcare, health services and leisure, social, learning and cultural infrastructure.

Target 9 – By 2030, every resident in the City of Sydney will be within a three minute walk (250m) of continuous green links that connect to the Harbour Foreshore, Harbour Parklands, Moore or Centennial or Sydney Parks.

2.2.2 *City of Sydney LEP and DCP*

City of Sydney is undertaking a major review of its LEP and DCP. This review responds to the NSW Government's planning reform program. The review will result in the preparation of a new, comprehensive local environmental plan (LEP) and consolidated development control plan (DCP) for the City of Sydney local government area.

The City of Sydney LEP 2005 sets requirements for development in the Ultimo-Pyrmont area in Chapter 3 Ultimo-Pyrmont. Key areas of focus within the LEP include Public Domain; and Movement and Parking.

(5) Public domain

The planning principles for Ultimo-Pyrmont's public domain are as follows:

- (a) Public recreation areas are to provide for a range of recreational opportunities for the residents of and workers within Ultimo-Pyrmont.*
- (b) Coordinated pedestrian and cycling networks are to be provided throughout Ultimo-Pyrmont and to link with the City centre and suburbs adjoining Ultimo-Pyrmont. Access to major natural features such as foreshores and escarpments are to be included.*
- (c) The passage of through motor traffic in residential areas and areas of pedestrian and cycling priority is to be discouraged.*

(9) Movement and parking

The planning principles for movement and parking within Ultimo-Pyrmont are as follows:

- (a) A range of housing and work, leisure and service facilities is to be provided in Ultimo-Pyrmont so that the need for travel is minimised.*
- (b) A high degree of accessibility is to be provided to places in and outside Ultimo-Pyrmont for both able and disabled persons. Walking, cycling and use of public transport are to be encouraged as the means of movement.*
- (c) Development in Ultimo-Pyrmont is to facilitate the provision and operation of a comprehensive regional public transport network.*
- (d) Development, particularly employment related development, is to be within the capacities of existing and proposed public transport and arterial road systems.*
- (e) The provision for vehicular movement is to be consistent with the development of a high-quality pedestrian environment within the street system.*
- (f) Parking controls are to support public transport strategies of the Government.*

The Sydney Fish Markets is located in a Residential-Business zone in the Sydney LEP 2005, for which the objectives of the zone are to:

- (a) to promote a wide range of uses, particularly business development including tourist, leisure, commercial, retail and office development consistent with Ultimo-Pyrmont's proximity to the Sydney CBD, harbour locations and transport infrastructure, and*

- (b) to accommodate residential development to a level compatible with adjoining business uses and consistent with the objective of creating a mixed-use area, and*
- (c) to accommodate uses which generate employment opportunities and provide facilities and services that enable people to live and work in the same community, and*
- (d) to ensure that the total amount of employment-generating development is compatible with the traffic capacity of Ultimo-Pyrmont and adjoining areas, and*
- (e) to encourage sustainable transport modes for journeys to work and other trips, including walking, cycling and all forms of public transport,*

2.2.3 Ultimo-Pyrmont Urban Development Plan 1999

The Ultimo-Pyrmont Urban Development Plan 1999 update states that the Sydney Fish Markets is a retail and leisure node that serves a “*unique retail attraction of regional significance for both tourists to Sydney and regular shoppers, and providing wholesale seafood supplies.*”

The UDP sets out the details of how development in Ultimo-Pyrmont will be implemented. Controls of relevance include:

- Identification of the possible future ramp from Wattle Street to the Western Distributor;
- Reinstatement of a view corridor at Miller Street;
- Parking provision rates of 1 space per 100 square metres of gross floor area (Map 14) for business development.
- Service Vehicle provision of:
 - 1 service vehicle space per 4,000 m2 gross floor area for first 20,000 m2;
 - 1 service vehicle space per 8,000m2 gross floor area thereafter.
 - 50% of the service vehicle spaces ' should be suitable for trucks.
- Access, parking, circulation and public domain requirements (Maps 15-18).

2.3 Approved Sydney Fish Markets Master Plan (2005)

In 2005 a Master Plan for the Sydney Fish Markets site was approved by the NSW Department of Planning. This plan included the redevelopment of the site to include significant uplift in commercial use of the site.

The approved master plan included the following floor space and parking provision for the site.

Table 2-1 Sydney Fish Markets approved Master Plan land use

| Land Use | Proposed Floor space by use Sq m |
|---|---|
| Office | 13,300 |
| Retail | 12,440 |
| Wholesale | 3,335 |
| SFM Area | 2,020 |
| Selling floor including audit, seating, crate yard, weighing sorting and data entry | 4,285 |
| Total floor space | 35,380 |

As part of the supporting documentation for the approved Master Plan, a Transport Management and Accessibility Plan was developed.

This TMAP involved the extensive use of surveys, on-site monitoring and other data sources to develop complete trip generation estimation. This was then assigned across travel modes to determine traffic trip generation for average weekday, average Friday and average Sunday.

In addition, the TMAP and approved Master Plan found that 993 parking spaces and 53 service dock spaces would be required for the combined land uses in the master plan. The NSW Department of Planning approved this number of spaces.

3 Existing Conditions

3.1 *Site Description*

The Sydney Fish Markets site is located at Bank Street, Pyrmont. It is approximately 1.2 km west of the Sydney CBD. It is located within the City of Sydney local government area.

The site is a roughly rectangular block placed on a north-south axis and is contained within an area between Pyrmont Bridge Road, Bank Street, the Western Distributor and Blackwattle Bay. As such, it has frontages to Pyrmont Bridge Road and Bank Street.

The Site is located within a maritime area fronting Blackwattle Bay and is adjacent to the Western Distributor and the Ultimo-Pyrmont Urban Renewal area. Over recent years, the surrounding parts of Pyrmont have been transformed from primarily industrial uses to mixed residential and commercial uses.

The site is home to an active fish market for both wholesale and retail trade and is a Sydney tourist attraction.

The site currently enjoys vehicular access to/from the intersection of Bank and Miller Streets Pyrmont.

Figure 3-1 shows the location of the subject site.

Figure 3-1 Site Location



3.2 *Sydney Fish Markets operations*

The Sydney Fish Markets operates as Sydney's wholesale hub for fish and seafood sales within Metropolitan Sydney. Its activities comprise:

- Sydney Fish Markets operations
- Seafood wholesale activities
- Seafood and local community retail
- Restaurant/cafés;
- Working fishing fleet;
- Seafood school;
- Commercial office space;
- Marina space for commercial cruise boats.

The existing uses are shown in the following table.

Table 3-1 Existing Land Uses

| Land Use | Gross Floor Area (sq m) |
|----------------------------------|--------------------------------|
| Sydney Fish Markets Auction Hall | 6945 |
| Office Space | 3246.7 |
| Cooking School | 498 |
| Seafood Wholesale | 1219 |
| Retail | 4600 |
| Restaurants | 883 |
| Kiosks etc. | 373 |
| Total | 17764.7 |

These land uses are described in the following sections.

Sydney Fish Markets operations

The Sydney Fish Markets operations include the seafood auction system, which is at the centre of Sydney's seafood supply chain. Locally caught and shipped seafood is sold on the auction floor, with the auctions commencing at 5:30 am each weekday, with Mondays and Fridays being the busiest days.

The majority of the seafood product sold by auction arrives by truck, with trucks being up to a 19 metre Semi-trailer in size. Purchased seafood is moved by hand trolley or forklift to trucks for distribution. These trucks are usually small rigid trucks or vans.

Seafood wholesaling

Seafood wholesale activities are directly related to the Sydney Fish Markets operations, and many are located on-site or close by. Seafood wholesaling tenants on the site operate seafood processing within their premises, and the Sydney Fish Markets provides a centralised offal collection service to minimise the traffic generated by the wholesale activities.

Various size trucks up to large rigid trucks are involved in the seafood wholesale activities. Offal removal is by a once-daily articulated vehicle trip (two-way).

Seafood and local community retail

There are six different seafood retailers on the site and this selection is attractive to the public seeking range, quality and price competition. Seafood retail is supported by a bakery, fruit and vegetable, bottle shop and delicatessen. These are complementary and act to enhance the attractiveness of the retail environment.

These shops also provide an important retail node for the local community.

Deliveries to the non-seafood retailers are usually by vans and small rigid trucks.

Restaurant/cafés

The restaurants and cafes are generally ancillary to the other retail activities. Sydney Fish Market is a very popular place for people wishing to eat seafood. There are two restaurants on site that provides table service; a number of the retail outlets in the retail arcade have limited seating at which patrons can eat prepared food (order from counter); similarly there are seats available outside along the edge of Blackwattle Bay.

Outdoor seating comprises approximately 76 tables with seating for up to 8 adults at each. There is also a small strip of grass next to the service lane and the two southernmost wharves which are used for seating by diners.

These activities require deliveries of non-seafood products and are usually by vans and small rigid trucks.

Working fishing fleet

There are two wharfs used by the local working fishing fleet. The fleet uses the Sydney Fish Market site to maintain their vessels and fishing equipment. This can entail the extension of nets, lines and other gear across the site for repair.

These boats unload at the northern dock, and their product is moved directly to the selling floor within the site.

Seafood school

This operates from the first floor of the main building and runs a series of cooking courses that promote the use of seafood. These occur mostly on Tuesday evenings outside of the transport peak period.

Commercial office space;

In the main building, Sydney Fish Market Pty Ltd occupies office space for administration and related use. There are also sub-let areas for commercial tenants.

Marina space for commercial cruise boats

The southernmost wharf provides marina berths for commercial cruise boats (some of whom offer services from the site) and casual berths for the general public to use when they access the site.

Public Tours and Education

Public tours for individuals, groups and schools are provided to show people over the site and introduce them to seafood. A regular flow of tourist operators have scheduled visits to the site, where their patrons are shown around. Some of these visitors may have a large seafood meal before leaving.

3.3 *Surrounding Land Uses*

Since the completion of the Sydney Fish Markets Master Plan in 2003, development of the area in Pyrmont has largely been completed, with a high residential, and employment population. Key Land uses in the area are described below.

Star City

Star City Casino is located 440 metres to the east of the site. It serves as a local retail, entertainment and dining hub in addition to being a regional entertainment venue. It has a large public car park and is also accessible via the light rail and is three stops from the Sydney Fish Markets.

Star City has approximately 2500 public car parking spaces.

Broadway shopping Centre

Broadway shopping centre is a sub-regional shopping centre with a retail food market, Coles supermarket and Target and K-Mart discount department stores located 1.3 km walk/cycle from the site. It also has cinemas and is located adjacent to the University of Sydney. Broadway shopping centre is accessible from the site via Wentworth Park road and Bay Street.

Broadway Shopping Centre has 1,872 public car parking spaces.

Sydney CBD

The Sydney CBD is located 1.2 km from the site via Pyrmont Bridge (this being the most direct walking route). The CBD is a source of visitors to site via walking, bus and bicycle and is a location for large retail and employment in the area.

Other retail in Pyrmont

There are two other, small supermarkets in Pyrmont that serve local shopping needs. These are the IGA, located on Miller Street approximately 100 metres from the site and the Coles located at the corner of Union and Edward Street

3.3.1 *Growth in Ultimo-Pyrmont*

The most recent census demographic information for the Ultimo-Pyrmont Area is shown in the following tables.

Table 3-2 Ultimo-Pyrmont residential and employment populations

| Ultimo – Pyrmont | 2001 | 2006 | % Change |
|----------------------------|--------|--------|----------|
| Employment | 17,522 | 18,424 | 5.1% |
| Residential Population | 11,915 | 16,641 | 39.7% |
| Employed Residents | 5,846 | 7,641 | 30.7% |
| Residents employed locally | 887 | 1,330 | 49.9% |

Source NSW Transport Data Centre (Journey to Work data set) and ABS Census data

NB Employment and Journey to Work information does not include the section of Ultimo west of Wattle Street

The above table shows that while population has increased by 40 percent during the 5 year period, employment increased by only 5 percent.

Table 3-3 and Table 3-4 show the mode share for workers employed in Pyrmont and Ultimo and for resident workers of Ultimo-Pyrmont.

Table 3-3 Journey to Work mode - Ultimo-Pyrmont residents

| Employed Residents Main Mode | 2001 | 2006 | % Change (absolute) |
|---------------------------------------|------|------|------------------------|
| Bus | 10% | 11% | 1 |
| Car Driver (incl truck and motorbike) | 24% | 24% | 0 |
| Car Passenger | 4% | 3% | -1 |
| Ferry or Tram | * | 2% | n/a |
| Did not work | 11% | 11% | 0 |
| Other modes | 43% | 42% | -2 |
| Train | 9% | 6% | -3 |
| Not Stated | * | 2% | n/a |

*Not recorded separately in the 2001 census

Table 3-4 Journey to Work mode - Ultimo-Pyrmont workers

| Ultimo-Pyrmont Workers Main Mode | 2001 | 2006 | % Change (absolute) |
|---------------------------------------|------|------|------------------------|
| Bus | 10% | 9% | -1 |
| Car Driver (incl truck and motorbike) | 38% | 38% | 0 |
| Car Passenger | 5% | 4% | -1 |
| Ferry or Tram | * | 2% | n/a |
| Did not work | 11% | 11% | 0 |
| Other modes | 11% | 11% | 0 |
| Train | 25% | 24% | -1 |
| Not Stated | * | 1% | n/a |

*Not recorded separately in the 2001 census

While population has increased on the Pyrmont peninsula, it is clear that there not been a significant change in mode share between 2001 and 2006.

It is noted that development potential in Pyrmont has now largely been realised and so from hereon residential growth will occur at a much slower pace.

3.4 Road Network

The site is well placed within the state road network given that it is situated in adjacent to three major arterial roads – Western Distributor, Pyrmont Bridge Road and Wattle Street.

The site is accessed from the local road network at the intersection of Bank Street and Miller Street Pyrmont.

Bank Street is generally a two-way road with two lanes in each direction, with no parking allowed between Pyrmont Bridge Road and Miller Street. To the north of Miller Street, timed parking is allowed on both sides of the road.

Pyrmont Bridge Road is a declared State Road under the jurisdiction of the Roads and Traffic Authority of NSW (RTA) and is two-way with two lanes in each direction with additional turning bays at intersections. To the West at Taylor Street, Glebe, Pyrmont Bridge Road reduces to 1 travel lane in each direction, with turning lanes provided at some intersections.

The Western Distributor and its ramps, and their connections to Pyrmont Bridge Road are declared roads under the jurisdiction of the RTA and are controlled access roads.

Other key roads in the Pyrmont area include Harris Street, Bowman Street and Pyrmont Street. All of these roads are higher order (local) roads under the jurisdiction of the City of Sydney.

Parking restrictions vary along each of these roads.

3.4.1 *Traffic Flows*

Annual average daily traffic (AADT) flows on nearby roads were obtained from the RTA's website and are summarised in Table 3-5 below.

Table 3-5 Annual Average Daily Traffic Flows (RTA)

| Road | 1999 | 2002 | 2005 | 2008 |
|--|-------|-------|-------|-------|
| Pymont bridge rd, West of Wattle St | 24616 | 22010 | 22042 | |
| Pymont bridge rd, North East of Wattle St | 34762 | 31655 | 31105 | |
| Western Distributor, West of Allen St | 43767 | 47556 | 48855 | 49840 |
| Western Distributor Ramps, South of Pymont Bridge Rd | 34713 | 29718 | 31379 | 29685 |
| Wattle Street, South of Pymont Bridge Rd | 21565 | 19137 | 19924 | 18237 |
| Western Distributor Ramps, North of Pymont Bridge Rd | 14625 | 13464 | 13600 | |

Source RTA Traffic Volume Data

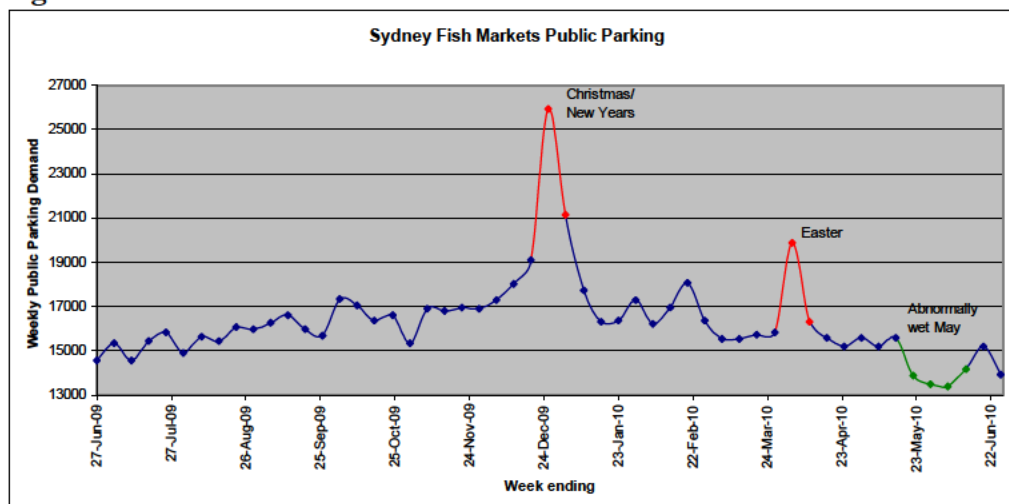
From **Table 3-5** it can be seen that Pymont Bridge Road, and Wattle street had a decline in traffic following the opening of the Cross City Tunnel, with traffic redistributing around the network following the completion of this project. Traffic volumes on the Western Distributor have increased 22 percent in the 12 years between 1996 and 2008, an average increase of 1.9 percent per annum.

3.4.2 *Seasonal Variations in visitation to the Sydney Fish Markets*

Traffic flows in and out of the Sydney Fish Markets are seasonally dependant, with volumes having a normal peak in December at Christmas/New Years and Easter.

Figure 3-2 shows seasonal variation in traffic volumes entering the Market.

Figure 3-2 Seasonal variation in Fish Market traffic volumes.



The above seasonal variations have been analysed to provide a seasonal adjustment for the basis of the analysis. The seasonal adjustment factor is used to provide a measure of evaluating performance of the road network and car park for the Sydney Fish Markets across the year.

The calculation of the seasonal adjustment factor for 2009/2010 disregarded the Christmas/New year and Easter periods as they are extreme events and not representative of the entire year. The results of this calculation are shown in the following table.

Table 3-6 Seasonal adjustments

| | Weekly Public Car park entries | |
|------------------------|--------------------------------|--------------------|
| | Including Holidays | Excluding holidays |
| Max | 25,925 | 19,862 |
| Mode | 15,519 | 15,519 |
| Mean | 16,329 | 16,041 |
| 85th percentile | 17,317 | 17,203 |
| 75th percentile | 16,919 | 16,874 |
| 6 June 2010 | 14185 | |
| 6 June 2010 percentile | 8% | 8% |
| Normalisation factor | 122% | 121% |

The seasonal adjustment factor of 121 percent has been used to enable an evaluation of the increase in vehicular traffic at the site since 2002.

Table 3-7 Hourly Sunday inflow comparison (Cars) – 2002 to 2010

| Sunday 15 minute volumes | 2002 counts | 2002 normalised (+22%) | 2010 counts | 2010 normalised (+21%) | Normalised Volume Change | % change |
|--------------------------------|----------------|------------------------------|----------------|------------------------------|--------------------------------|------------|
| 12:00 – 12:15 | 87 | 106 | 105 | 127 | 21 | 20% |
| 12:15 – 12:30 | 87 | 106 | 99 | 120 | 14 | 13% |
| 12:30 – 12:45 | 84 | 102 | 108 | 131 | 29 | 28% |
| 12:45 – 13:00 | 117 | 143 | 122 | 148 | 5 | 3% |
| 13:00 – 13:15 | 110 | 134 | 106 | 129 | - 5 | -4% |
| 13:15 – 13:30 | 98 | 120 | 100 | 121 | 1 | 1% |
| 13:30 – 13:45 | 78 | 95 | 90 | 109 | 14 | 15% |
| 13:45 – 14:00 | 96 | 117 | 107 | 130 | 13 | 11% |
| Total | 757 | 923 | 837 | 1015 | 92 | 10% |

Between the 2003 approved TMAP and the time of application, traffic volumes into and out of the Sydney Fish Markets (seasonally adjusted) have grown by 10 percent.

This increase in volume of a Sunday peak is representative of the increased activity in Sydney Fish Markets and population in the Sydney Region and is consistent with the mode share found in 2003 as shown in Section 3.7.

3.4.3 *Intersection performance*

The road network surrounding the Sydney Fish Markets is dominated by intersections controlled by traffic signals. These intersections are:

- Bank Street, Miller Street and Sydney Fish Markets access.
- Bank Street and Western Distributor Ramps.
- Pyrmont Bridge Road, Western Distributor Ramps and Bank Street;
- Pyrmont Bridge Road and Harris Street;
- Pyrmont Bridge Road and Wattle Street.

Traffic volumes for typical weekday AM and PM, and Sunday peak periods at these intersections are shown in the following figure.

Figure 3-3 Weekday PM intersection volumes (2010 counted volumes)

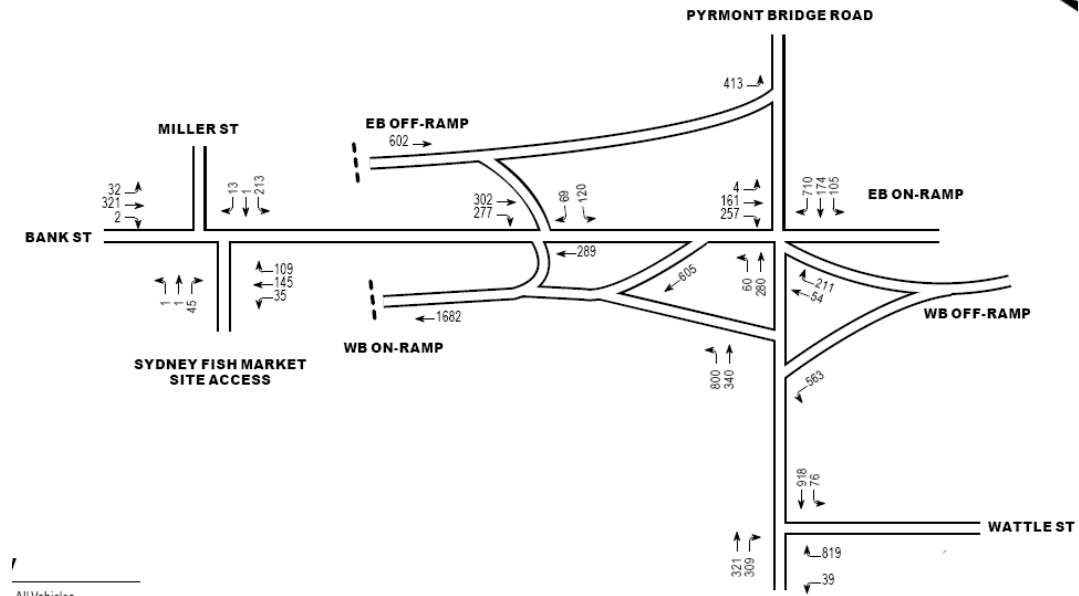
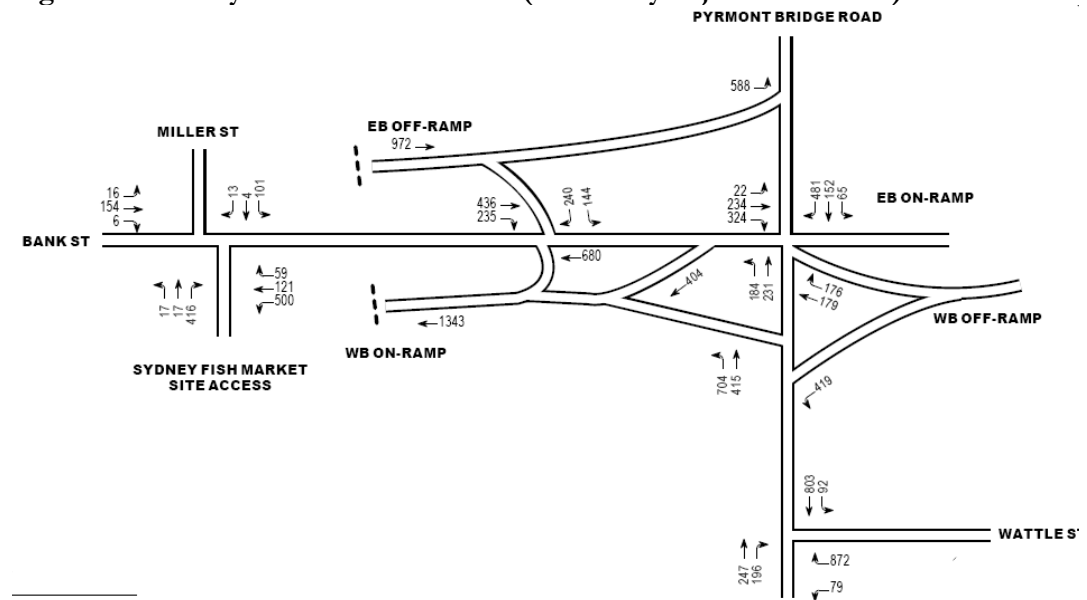


Figure 3-4 Sunday intersection volumes (seasonally adjusted volumes)



The performance of these intersections under current conditions was analysed using the Paramics traffic micro-simulation model. This traffic model evaluates the overall performance of a network by modelling individual vehicles to derive network wide statistics. Table 3-8 shows RTA intersection performance Criteria.

Table 3-8 RTA Level of Service Criteria

| Level of Service (LoS) | Average Delay per Vehicle (secs/veh) | Traffic Signals, Roundabout | Give Way & Stop Signs |
|------------------------|--------------------------------------|--|--|
| A | less than 14 | Good operation | Good operation |
| B | 15 to 28 | Good with acceptable delays & spare capacity | Acceptable delays & Spare capacity |
| C | 29 to 42 | Satisfactory | Satisfactory, but accident study required |
| D | 43 to 56 | Operating near capacity | Near capacity & accident study required |
| E | 57 to 70 | At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode | At capacity, requires other control mode |
| F | greater than 70 | Extra capacity required | Extreme delay, traffic signals or other major treatment required |

Table 3-9 shows the existing intersection performance against RTA level of service criteria

Table 3-9 Intersection Performance – 2010 AM and PM Peak Period – Levels of Service

| Intersection | Thursday PM | | Sunday Midday | |
|--|---------------|-----|---------------|-----|
| | Av. Delay (s) | LoS | Av. Delay (s) | LoS |
| Pymont Bridge Road / Wattle Street | 82 | F | 60 | E |
| Pymont Bridge Road / Harris Street | 30 | C | 27 | B |
| Bank Street / Miller Street / Fish Market Access | 39 | C | 49 | D |
| Pymont Bridge Road / Bank Street | 77 | F | 57 | E |

It is noted that the performance of the intersection of Pymont Bridge Road and Bank Street is constrained by congestion on Anzac Bridge during the PM peak period. Eastbound queuing on Pymont Bridge Road affects the operation of the Pymont Bridge Road and Wattle Street Intersection. Northbound queues on Wattle Street can extend back as far back as Fig Street.

The intersections of Pymont Bridge Road with Wattle Street and Bank Street are operating at capacity during the Sunday Midday peak hour. The intersection of Bank Street and Miller Street operates near capacity with its operation occasionally effected by southbound queuing on Bank Street approaching Pymont Bridge Road.

These delays are consistent with those observed on site.

3.4.4 Summary

The capacity of the local road network is limited and the existing access to the Sydney Fish Markets is constrained with little scope for additional capacity due to the location of the structures and columns for the Western Distributor and its ramps. Accordingly, in line with the approved Master Plan, the amount of car parking will need to be limited to a level that is compatible with the level of spare capacity on the access road systems at different times of the week.

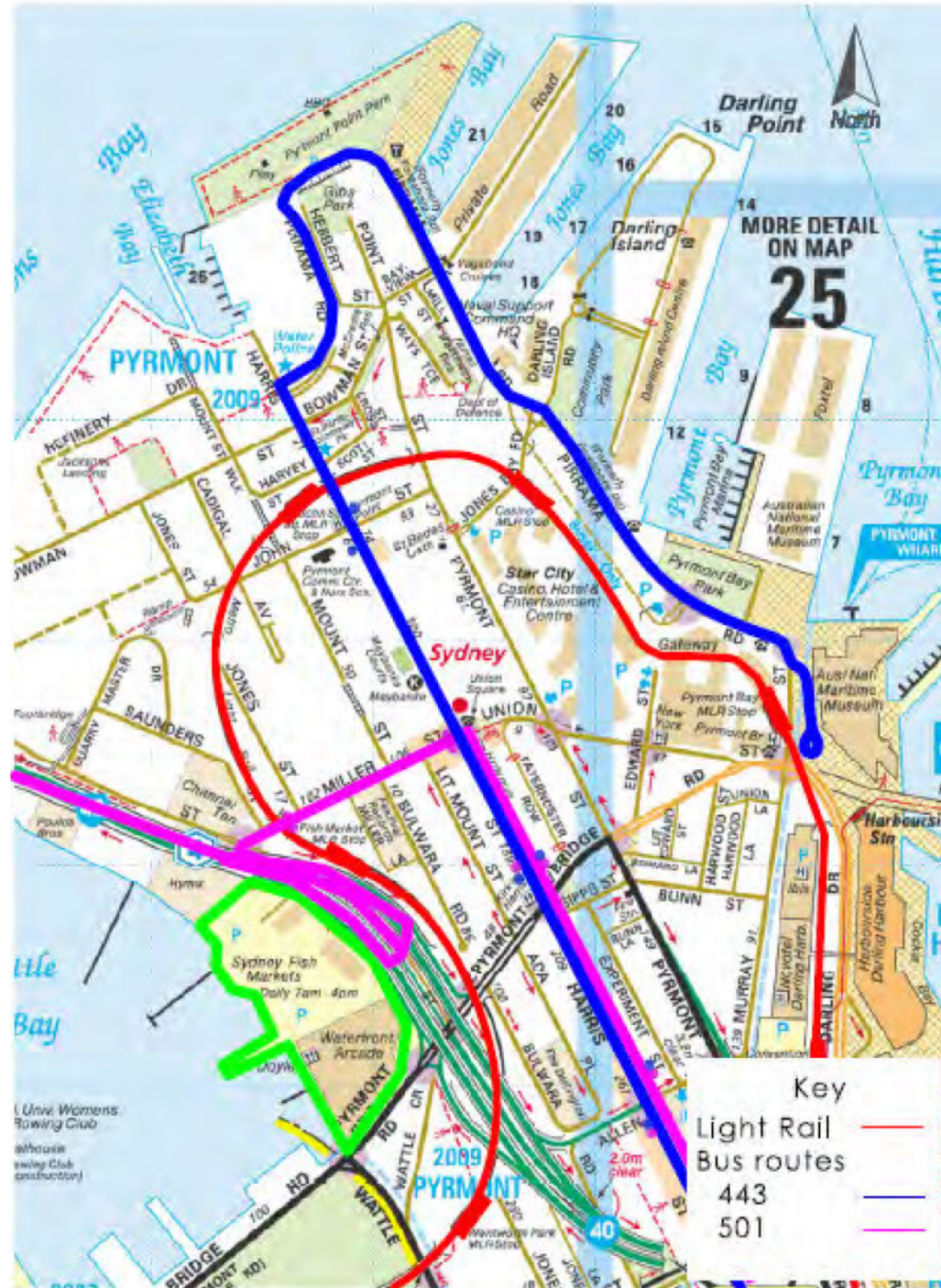
3.5 Public Transport Network

The Sydney Fish Markets is well served by public transport, with 2 major public transport services in short walking distance from the site. These are:

- Services provided by Sydney Buses connecting the Sydney Fish Markets to the Sydney CBD and the Balmain Peninsula via the Anzac Bridge;
- Services provided by Sydney Metro Light rail connecting to Pymont, Ultimo, Glebe and in 2012 to Leichardt, Summer Hill and Dulwich Hill.

These routes are shown in Figure 3-5.

Figure 3-5 Sydney Fish Markets Public Transport Network



3.5.1 Bus Services

The following bus services provide access to the Sydney Fish Markets on a regular basis.

- Route 501 – West Ryde to CBD – travels along Bank and Miller Streets, with the nearest stop located on Miller Street approximately 90 metres walk from the Fish Markets pedestrian entry at Miller Street.
- Route 443 – Darling Harbour to CBD – travels along Harris Street, with the nearest stop located on Harris Street, approximately 220 metres walk from the Fish Markets pedestrian entry at the intersection of Pyrmont Bridge Road and Bank Street.

The frequencies for these services are shown in the following table.

Table 3-10 Bus Service headways

| Direction towards | Route | Headway between services (minutes) | | | |
|------------------------------------|----------|------------------------------------|--------|-------|---------|
| | | Weekday | | | Sat/Sun |
| | | 7-9am | 12-2pm | 4-6pm | 12-2pm |
| City | 443 | 08:04 | 15:00 | 09:17 | 20:00 |
| | 501 | 9:18 | 20:00 | 20:00 | 30:00 |
| | Combined | 04:00 | 08:34 | 06:25 | 12:00 |
| Darling Harbour | 443 | 08:13 | 15:00 | 10:14 | 20:00 |
| West Ryde | 501 | 16:45 | 20:00 | 09:47 | 30:00 |
| Sydney Fish Markets (from City) | Combined | 08:00 | 08:34 | 04:55 | 12:00 |

Table 3-10 shows that the Sydney Fish markets is well served by bus services to and from the City and inner north west of Sydney, with a service delivering workers and visitors with a high frequency, accessible bus service, meeting the transport access criteria guidelines of the Integrating Land Use and Transport Package.

3.5.2 *Light Rail*

The existing light route connects the Sydney Fish Markets to Central railway station via Darling Harbour and Ultimo; and to Lilyfield via Glebe and Annandale. The Sydney Fish Markets Light Rail Station is approximately 70 metres from the Bank Street (at Miller Street) pedestrian entrance.

The Light Rail operates at 10-15 minute intervals between 6am and 10pm.

In 2010, the NSW Government committed \$500 million to the extension of the light rail to Dulwich Hill from Lilyfield, and investigation of an extension to Circular Quay from Central, via Barangaroo.

These extensions will increase the public transport access to and from the Fish Markets and potentially reducing car usage for trips to the Sydney Fish Markets.

3.5.3 *Tourist Services*

The Sydney Explorer (route 111) bus stops close to the Sydney Fish Markets near the intersection of Harris Street and Pyrmont Bridge Road. This premium tourist service operates at a 20 minute frequency from 9:03 am to 6:43pm.

3.6 ***Walking and Cycling Network***

3.6.1 *Walking network*

The Sydney Fish Markets is connected to the surrounding area of Pyrmont, Ultimo and Glebe by a good pedestrian network. Pedestrian crossings are provided at the traffic signal controlled intersections at the intersections of Bank Street with Miller Street and Pyrmont Bridge Road and along Pyrmont Bridge Road at the Wattle Street; the Western Distributor and Harris Street.

The Sydney Harbour Foreshore Authority and NSW Department of Planning have a long term plan for a foreshore walk along the length of the Sydney Harbour. Many parts of this path have been completed, including the Glebe Foreshore, Jacksons Landing and paths around Distillery Hill.

Access routes for people with disabilities near Sydney Fish Market are: the proposed foreshore promenade, Pyrmont Bridge Road and Bank Street. Miller Street is also nominated as a major route with access to Pyrmont Bridge.

The City of Sydney has identified a *Liveable Green Network* to connect the City's residents and workers to the Sydney Harbour Foreshore and a green ribbon for walking and cycling through the City. This is shown in the following figure.

Figure 3-6 City of Sydney Liveable Green Network



Source: City of Sydney, 2008

3.6.2 *Cycling network*

The Sydney Fish Markets is located close to one of the primary bicycle routes in the Sydney City area. This route connects Rozelle to the City via the Anzac Bridge, Saunders Street, Miller Street, Union Street and Pyrmont Bridge. This route is currently undergoing a significant upgrade with the Union Street Cycleway – a segregated two-

way facility on the northern side of Union Street between Harris Street and Pyrmont Bridge.

Other Cycleways to be upgraded (by Council) in the area include:

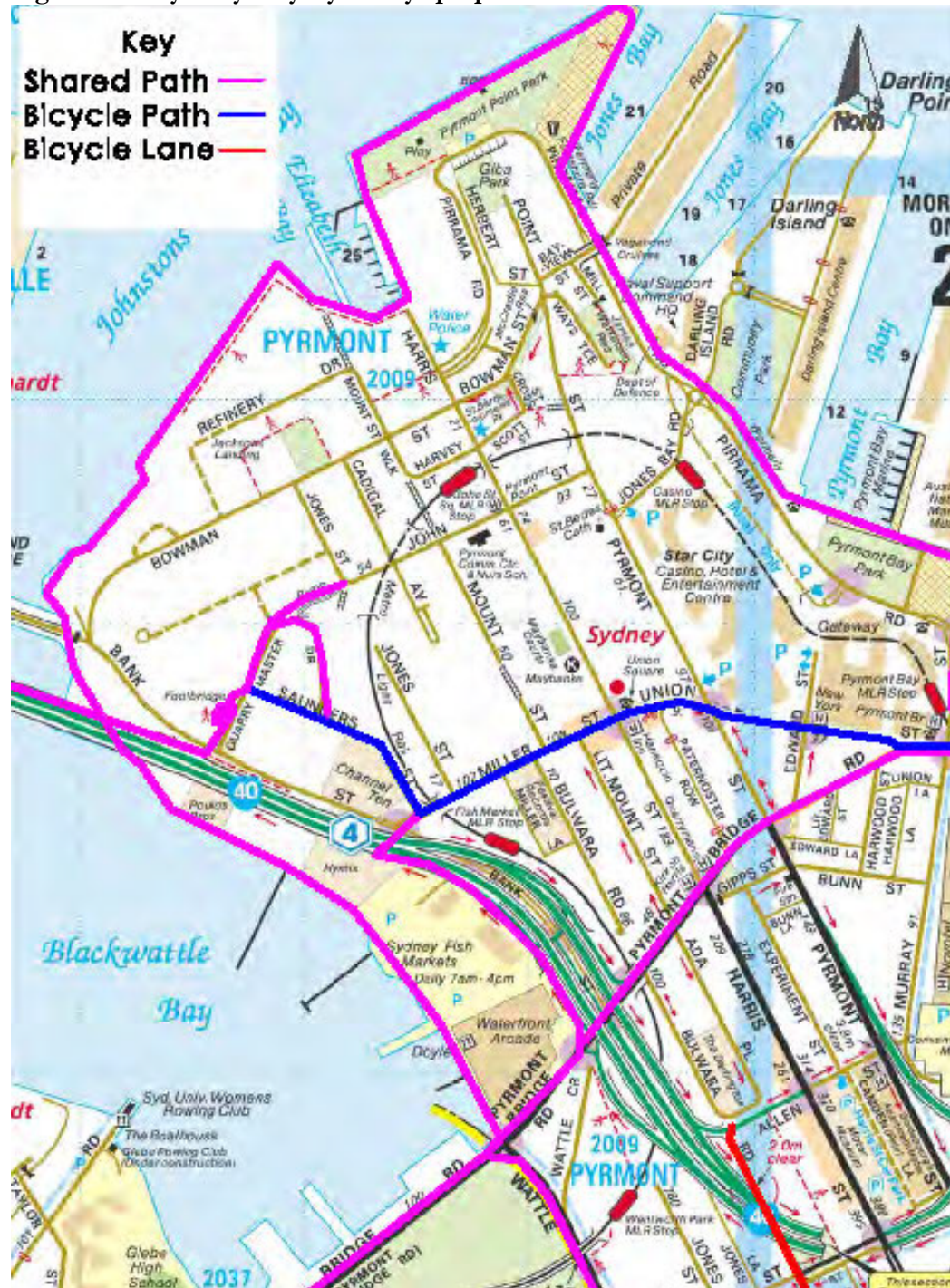
- Miller Street from Bank Street to Harris Street;
- Bank Street from Miller Street to Bowman Street;
- Saunders Street from Miller Street to the Anzac Bridge Ramps.
- Bulwarra Road from Allen Street to Mary Anne Street
- Darling Drive.
- Bowman Street

In addition, the City has identified that it will upgrade footpaths in the vicinity of the Sydney Fish Markets to be shared paths. These paths include:

- Pyrmont Bridge Road
 - Both Sides between Bank Street and Taylor Street
 - Southern side between Bank Street and Darling Drive
- Bank Street - Western side
- Wattle Street - Eastern and Western sides
- Taylor Street – Eastern side
- Quartermaster drive – northern side

These existing and proposed facilities in the area are shown in Figure 3-7.

Figure 3-7 City of Sydney Cycleways proposals



3.7 *Existing transport usage*

In June 2010, surveys were undertaken to evaluate the transport mode split for people arriving and departing at the Sydney Fish Markets. These surveys included:

- Vehicle occupancy for vehicles entering and exiting the site;
- Number of vehicles, by class entering and leaving the site;
- Number of pedestrians entering and leaving the site; and
- Interview survey to determine how pedestrians arrived at the site and their purpose.

The 2003 TMAP examined the origin of people visiting the site. This survey was repeated for pedestrians walking onto the site.

The 2010 pedestrian surveys found that 45 percent of visitors who arrived by foot parked locally off-site on a Sunday, representing 15 percent of total visitors arriving at the site.

The results of these surveys are shown in the following tables.

Table 3-11 Mode Share (2010)

| Mode | Overall | Weekday | AM (7-9 am) | PM (4-6pm) | Sunday (12-2pm) |
|------------------|---------|---------|-------------|------------|-----------------|
| Car Driver | 33% | 38% | 41% | 34% | 33% |
| Car Passenger | 41% | 8% | 7% | 10% | 45% |
| Car Total | 74% | 46% | 48% | 44% | 78% |
| Walked Only | 16% | 25% | 19% | 35% | 14% |
| Bus | 3% | 2% | 2% | 2% | 3% |
| Tram | 3% | 2% | 1% | 4% | 3% |
| Light Commercial | 1% | 10% | 13% | 6% | 1% |
| Rigid Commercial | 0% | 8% | 12% | 1% | 0% |
| Taxi | 1% | 0% | 1% | 1% | 0% |
| Bicycle | 1% | 5% | 3% | 6% | 1% |
| Other | 1% | 1% | 0% | 1% | 0% |

The above table shows that there is a high proportion of vehicle traffic to the site on both weekdays and Sundays. This is reasonable due to the nature of the seafood purchases and the desire to maintain a low temperature for seafood for transportation for off-site consumption.

Vehicle occupancy for cars has, based on surveys slightly decreased since 2003. The following table compares vehicle occupancies by time of day for the 2003 and 2010 site entry surveys.

Table 3-12 Vehicle Occupancy

| Time of Week | Average Occupancy | |
|----------------------|-------------------|------|
| | 2003 | 2010 |
| Weekday morning peak | 1.54 | 1.18 |
| Weekday evening peak | 1.32 | 1.31 |
| Sunday midday | 2.43 | 2.33 |

3.8 Summary

The Sydney Fish Markets site is well located within road, public transport and walking and cycling networks, with good accessibility to the Sydney CBD, Ultimo-Pyrmont, Glebe, Rozelle and major transport interchanges at Central and Town Hall via the Light Rail and buses respectively.

The Sydney Fish Markets site meets the criteria set within the *Integrating Land Use and Transport Package* and the *NSW Planning Guidelines for Walking and Cycling* for the placement of businesses and services. It is well served by public transport, located within a densely populated area and has good current and proposed walking and cycling networks.

While the volume of car usage to the site has increased, it has been in line with the growth in surrounding transport networks.

4 Proposed Development

4.1 *Proposed Development*

The proposed development represents a significant improvement to the leisure/retail precinct of the Sydney Fish Markets. It includes a removal of the existing hard surface car park and replacement by a three level public car park, additional wholesale, retail and dining spaces.

The project will enhance the recreational environment and increase open space in the Pyrmont area. Facilities for pedestrians and bicycle riders will be improved through the creation of a new foreshore walk and a 2.5 metre shared path along Bank Street.

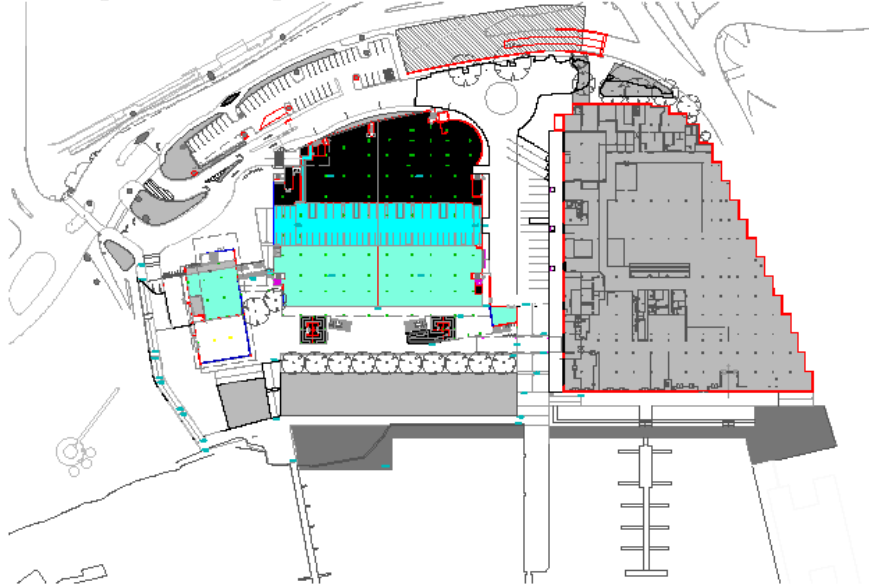
The access to the Sydney Fish Markets via the intersection of Bank and Miller Streets is proposed to be significantly improved by separating the vehicular entrance and exit; relocating the pedestrian access to the site to improve pedestrian and traffic flow and improving safety for all users.

Approval is sought for the project, which will be constructed in 3 stages, being stages 2-4 of the Fish Markets redevelopment.

These works are:

- Stage 2 – Demolition of existing building 40 construction of part of the floor slab for the new retail and wholesale building
- Stage 3 – Demolition of existing buildings 31,41,42,43 and 64 and construction of floor slabs for levels 1-4 and road works for the new entry road.
- Stage 4 — Demolition of existing buildings 36, 37 and 39, construction of an extension to the Stage 1 development and new kiosks, outdoor seating and net drying and storage area.

The final proposed development is shown in Figure 4-1 and in Appendix A.

Figure 4-1 Proposed Development

The floor areas associated with each land use are shown in the following table.

Table 4-1 Land Use Changes

| | Retail | Restaurant | Kiosk etc | Office | Wholesale | Auction Hall | Cooking School | Total |
|----------|--------|------------|-----------|--------|-----------|--------------|----------------|---------|
| Existing | 4,600 | 883 | 373 | 3,247 | 1,219 | 6,945 | 498 | 17,765 |
| Proposed | 5,921 | 2,699 | 2,509 | 3,247 | 2,514 | 6,945 | 498 | 24,333 |
| Change | 1,321 | 1,816 | 2,136 | - | 1,295 | - | - | 6568 |
| % Change | 29 | 206 | 573 | 0 | 10 | 0% | 0 | 0.37%0% |

4.2 ***RTA and City of Sydney Council requirements***

The requirements of the City of Sydney Council and Roads and Traffic Authority have been considered in the assessment of the development and its transport impacts.

4.2.1 *City of Sydney Issues*

The City of Sydney raised traffic and transport issues in relation to:

- Pedestrian and cyclist movements;
- Details about internal access and circulation arrangements; particularly in relation to pedestrians and minimising potential conflict between vehicles and pedestrians;
- Consideration to minimising internal car parking to encourage public transport usage;
- Details about whether the existing car park on Bank Street will continue to be used for overflow parking;
- Investigation, in conjunction with the RTA of network improvements, including the Wattle Street Ramp.

4.2.2 *Roads and Traffic Authority Issues*

The Roads and Traffic Authority, in its consultation letter, raised issues relating to:

- Network performance (including intersections);
- Impacts on non car modes;
- Details of daily and peak traffic generation; and,
- A package of measures to address traffic and transport demand.

During consultation with the RTA, primary concern was the excess queuing during the peak Easter and Christmas/New Years periods. The RTA suggested that variable message signs be used during these periods to advise of delays and encourage visitors to modify behaviour.

The ramp from Wattle Street to the Western Distributor (see 4.2.1) was raised with the RTA. The RTA has no current plans for this ramp and given the scale of the Sydney Fish Markets redevelopment, which would not, of itself, precipitate such a major road system upgrade, is not appropriate for any further analysis.

4.3 *Public Parking requirements*

4.3.1 *Planning controls for parking*

The Ultimo-Pyrmont Development Plan sets allowable parking for business zoned sites north of Pyrmont Bridge Road and East of Harris Street as follows:

- Visitor/Employee parking – 1 space per 100 square metres of gross floor area.
- Service Vehicle provision of:
 - 1 service vehicle space per 4,000 m2 gross floor area for first 20,000 m2;
 - 1 service vehicle space per 8,000m2 gross floor area thereafter.
 - 50% of the service vehicle spaces ' should be suitable for trucks.

However, as the Sydney Fish Markets does not operate as a normal local retail or commercial business. As described previously, the Sydney Fish Markets is the centre of wholesale seafood trade for the entire Sydney Metropolitan area, as well as being a working port. It also is an important tourist attraction in inner Sydney, attracting visitors from Greater Sydney and beyond.

As identified in the approved 2005 Master Plan, and supporting TMAP, approximately 170 vehicles visit the Sydney Fish Markets for the basis of transporting seafood. In addition, over 400 retail and dining visitors can visit the site by car during a Sunday peak hour (peak parking demand).

4.3.2 *Parking demand for the Sydney Fish Markets*

Parking demand from visitors to the Sydney Fish Markets varies between the day of the week and time of day. Daily variations in activity are shown in the following table.

Table 4-2 Daily variation in visitations

| | Visitors | | |
|-----------|---------------|-----------------|-----------------------------|
| | Mean Visitors | Median Visitors | 85 th percentile |
| Monday | 2,629 | 2,460 | 3,192 |
| Tuesday | 2,405 | 2,263 | 2,763 |
| Wednesday | 2,582 | 2,323 | 2,629 |
| Thursday | 2,674 | 2,435 | 3,002 |
| Friday | 3,004 | 2,943 | 3,334 |

| | | | |
|----------|-------|-------|-------|
| Saturday | 4,092 | 4,188 | 4,559 |
| Sunday | 4,245 | 4,331 | 4,766 |

Daily visitors is the number of pedestrians entering via either the main entrance or Fruit shop entrance and does not include Wholesale or Auction Floor activity

Parking requirements on a Sunday vary across the year, with a high seasonal variation. The most recent traffic counts were undertaken during June 2010. This compares with counts undertaken in August 2002. In 2010, 837 vehicles entering the site between 12pm and 2pm compared with 812 vehicles in 2002. This shows a plateau in parking generation due to constraints in the supply of available parking.

The current car park has a nominal 417 parking spaces, with approximately 40 informal parking spaces and 1.2 kilometres of circulating aisle, providing space for approximately 500 cars on site. There is also queuing space for 28 cars between the Bank Street entrance and the pay booths.

A sample survey of pedestrians walking onto the site in 2010 found that 15 percent of visitors walking onto the site parked off-site and walked onto the site, representing 104 vehicles that parked elsewhere

Using the seasonal adjustment factors and growth since the approved Master Plan TMAP, the Sunday (all day) parking generation has been modelled for the entire site.

Overall parking demand for the existing situation (including visitors parking off-site and on-site staff parking) is shown in the following figure.

Figure 4-2 Sydney Fish Markets total parking demand

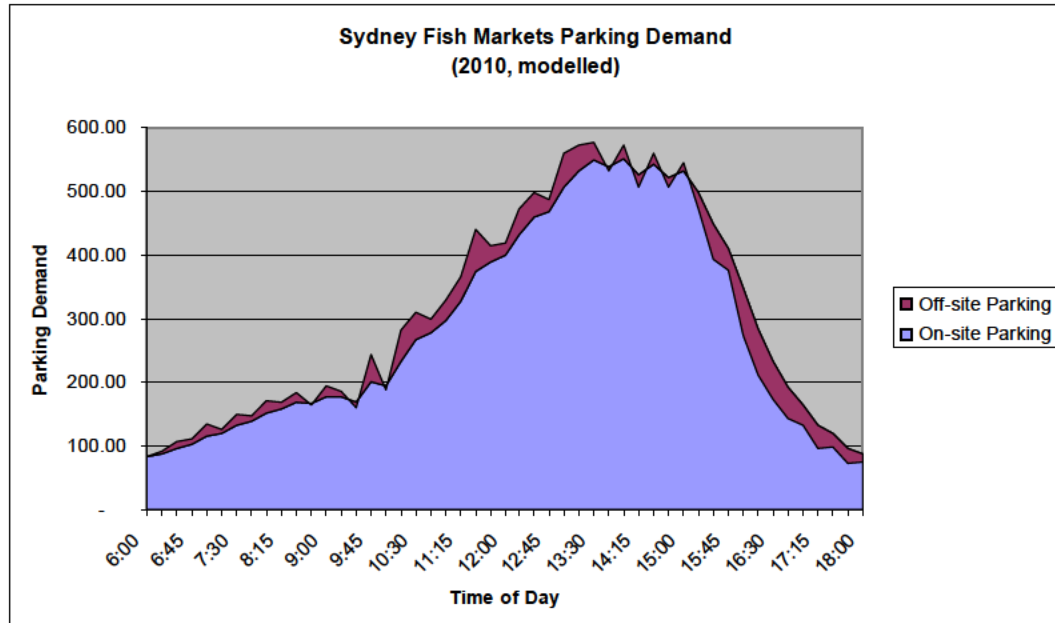


Figure 4-2 shows that total parking demand on-site for the Sydney Fish Markets on an 85th percentile day in 2010 is 551 vehicles at 2 pm for mid November. Of this parking, it is estimated that in the order of 100 spaces are used by site employees (in 2002, it was found that there was 123 vehicles on site prior to 7 am on a Sunday).

4.3.3 Evaluation of parking demand

The 2005 approved Master Plan TMAP found the following parking demand for the Sydney Fish Markets was 6.68 spaces / 100 m² (Nett Leasable Area) total for retail and restaurant (and associated activities) uses, equating to 9.54 spaces per 100 m² (Gross Floor Area).

The proposed development separates public parking from loading bays and the ground level parking, which on weekdays is dedicated to vans and small rigid trucks. On weekends, this parking is available for use by staff, freeing the multi-level car park for visitors.

As Sunday is the peak parking demand day, the requirements for public car parking have been evaluated on the following basis:

- Staff do not use the multilevel car park on a Sunday;
- All parking demand (including existing off-site parking) is included in the evaluation;
- Evaluation is based on land uses that generate trips on Sundays.

An evaluation of the peak parking demand for the entire site (including existing off-site parking) shows that for existing retail and dining associated uses, the peak parking demand is 9.80 spaces per 100 square metres of Gross Floor Area.

Applying the same principle to the entire site (17,765 m² GFA) results in a parking rate of 2.53 spaces per 100 m² GFA.

The 2010 proposal includes the following traffic generating land uses.

Table 4-3 Retail and dining related land use changes

| | Retail (m²) | Restaurant (m²) | Total (m²) |
|---------------------|-----------------------------------|---------------------------------------|------------------------------|
| Existing (GFA) | 4,600 | 883 | 5,483 |
| Proposed(GFA) | 5,921 | 2,699 | 8,620 |
| Change (GFA) | 1,321 | 1,816 | 3,137 |
| % Change | 29 | 206 | 57 |

Considering parking restraint as a goal (as requested by City of Sydney Council), a number of alternative means of determining the parking requirements for a Sunday were appraised. These are:

1. Complete restraint (supplying existing demand only).
2. Unconstrained supply based on existing parking rates.
3. Applying the Ultimo Pyrmont Urban Development Plan rates to the increased land use plus existing parking demand.
4. Applying the Roads and Traffic Authority's Guide to Traffic Generating Development parking rates to the proposed total retail and dining land uses.
5. Applying the Roads and Traffic Authority's Guide to Traffic Generating Development rates to the increased retail and dining land use in addition to the existing parking demand.
6. Applying the Ultimo Pyrmont Urban Development plan rate to the entire development.

The results of applying these rates are shown in the Table 4-4.

Table 4-4 Parking Demand

| | Parking Supply evaluation method | Evaluation measure | Gross Floor Area (m²) | Parking rate (spaces/100 m² GFA) | Peak parking demand* |
|---|---|--|---|--|-------------------------------------|
| 1 | Complete restraint | Existing retail and dining GFA | 5,856 | 8.02 | 451 |
| 2 | Unconstrained supply | Proposed retail and dining GFA | 11,129 | 8.02 | 857 |
| 3 | Applying UDP to increased GFA plus existing demand | Existing site total GFA | 17,764.7 | 2.54 | 451 |
| | | Increased total GFA | 6,568 | 1 | 66 |
| | | Total | 24,332.7 | | 516 |
| 4 | Applying RTA rates to total retail and dining development | Proposed Retail GFA | 5,921 | 6.1 | 361 |
| | | Proposed Restaurant GFA | 2,699 | 15 | 405 |
| | | Total | | | 766 |
| 5 | Applying RTA rates to increased GFA plus existing demand | Existing site retail and dining GFA | 5,856 | 8.02 | 451 |
| | | Increased retail GFA | 1,321 | 6.1 | 81 |
| | | Increased restaurant GFA | 1,816 | 15 | 272 |
| | | Total | | | 804 |
| 6 | Applying the UPD to the entire development | Total site GFA | 24,333 | 1 | 244 |

*visitor parking demand

The above table shows that applying the UDP parking rates for the site to the entire redevelopment will not address existing parking demand and will push parking onto the surrounding street network.

In order to address the City of Sydney's issues relating to “...*minimising internal car parking to encourage public transport usage...*”, The Sydney Fish Markets will provide a lower level of parking that applies some constraint, while providing sufficient spaces to allow for the metropolitan wide nature of the development.

The 2005 Master Plan included provision for 993 parking spaces. The consent for this Master Plan identified that parking supply may need to be reduced if improvements to the external road system to accommodate additional traffic generation could not be made.

As identified in section 3.4.4, the existing road network has limited capacity to manage additional traffic generation from the site. Based on analysis of various levels of parking provision and associated parking space turn over (see section 5.1), an appropriate level of parking was found by applying the Ultimo Pyrmont Urban Development Plan rates for the area to the increased floor area, in addition to meeting existing parking supply (evaluation method 3).

The proposed level of public car parking in the multi-level car park (including disabled spaces) is 510 spaces. This is 6 spaces lower than would otherwise be required using the identified evaluation method. However, based on the existing design, which aims to maximise improvements to the urban environment, this would require an extra level of parking to be constructed – which is not appropriate.

Staff parking will take place in the ground floor loading area on weekends and they will not be able to use the multi-storey car park in order to ensure that an appropriate level of public car parking is provided on-site. During peak times of the year (Christmas/New Years and Easter), staff parking may be relocated to off-street parking away from the site, as occurs currently.

4.4 Access and Parking

The development proposes an increase in on-site parking provision, with the creation of the 3 level car park, and undercroft loading area. The existing hard surface Jones Street car park will be retained, with a reduction in parking at this location in order to provide the new access from Bank Street.

4.5 *Parking Management during construction*

During the stages of construction, parking on-site, will at times be reduced below the current levels of provision. The levels of parking supply available during each stage of construction have been evaluated as part of the Construction Traffic Management Plan (separate report).

Hours of operation for the Sydney Fish Markets wholesale and retail businesses may be modified to ensure maximum opportunity for parking when Stages 2 and 3 are under construction. This will enable vehicles collecting seafood to use the car prior to 9-10 am and the general public to use the car park after this time.

Sydney Fish Markets will develop a plan, in consultation with Transport NSW, Roads and Traffic Authority and the City of Sydney Council to manage parking during the construction phase, including promotion of the use public transport, walking and cycling.

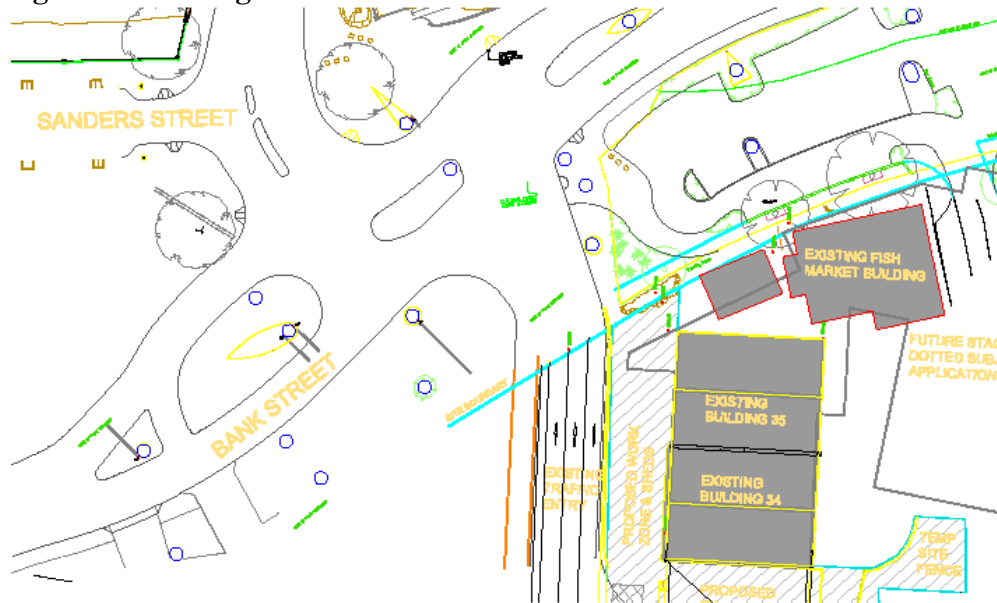
This construction parking management plan will also identify alternative parking locations for necessary car trips and means of accessing the Fish Markets from the parking stations located around Pyrmont, Ultimo and Glebe.

4.6 *Site Access Considerations*

As part of the revitalisation of the Sydney Fish Markets, the Miller Street intersection is proposed to be reconfigured to create a more pedestrian friendly access.

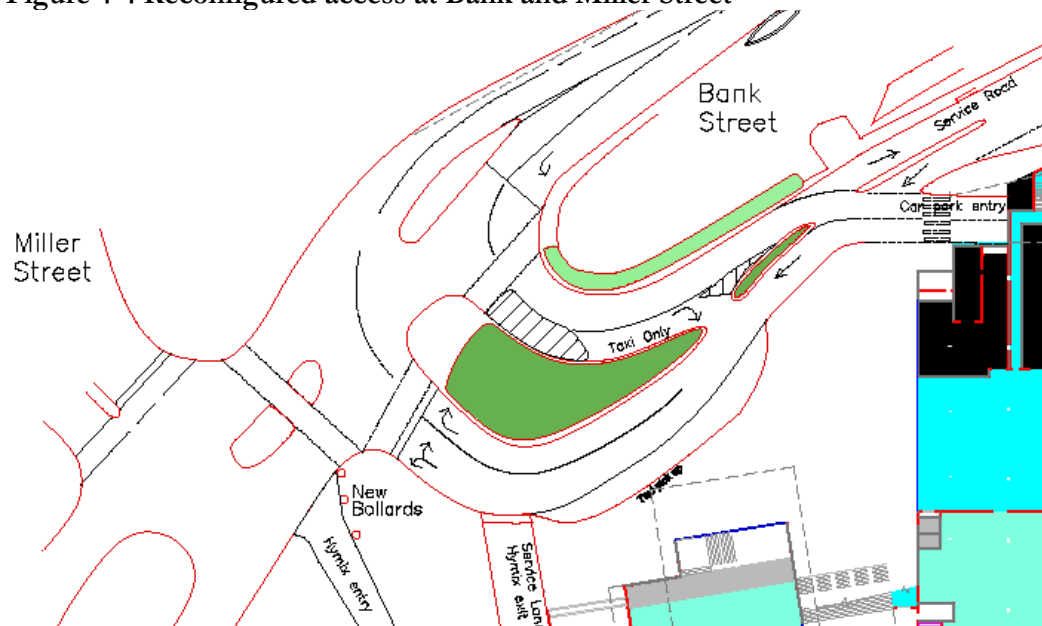
The existing intersection of Bank Street and The Sydney Fish Markets access driveway is shown in Figure 4-3.

Figure 4-3 Existing access at Bank and Miller Street



The proposed reconfiguration of the intersection is shown in Figure 4-4.

Figure 4-4 Reconfigured access at Bank and Miller Street

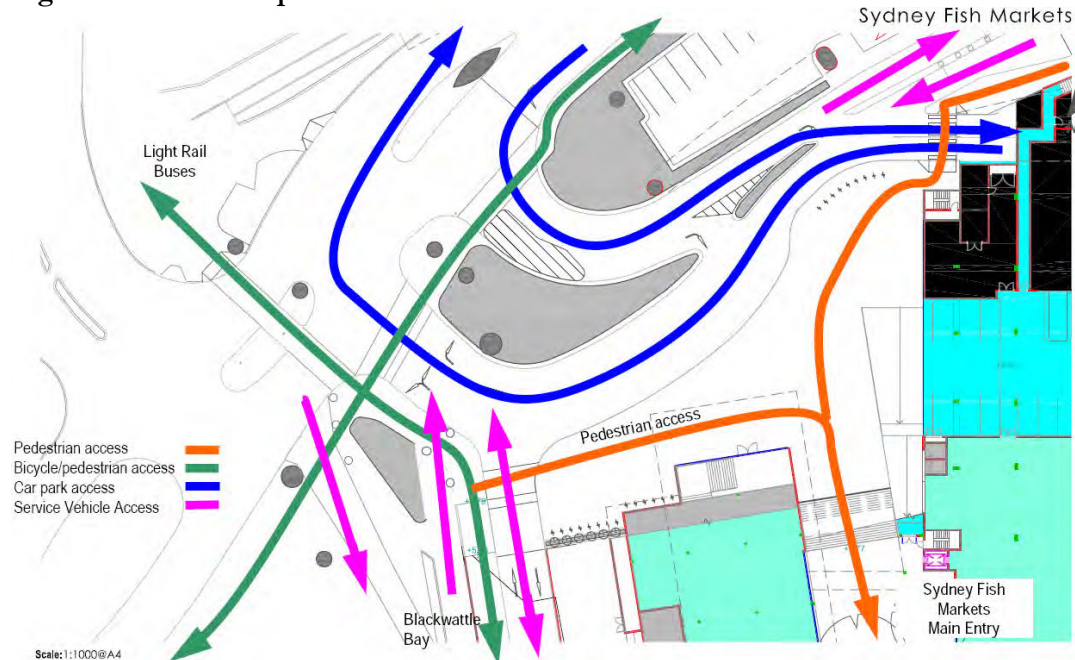


The modified arrangements at this intersection will provide the following improvements to access and amenity to the Sydney Fish Markets:

- Modification to the intersection to improve pedestrian access and overall traffic operations;
- New Taxi drop off and rank;
- Improved pedestrian access from Bank Street;
- 2.5 metre shared footpath along Bank Street.

The modifications to the intersection are designed to improve the safety and amenity for pedestrians and bicycle riders accessing the Sydney Fish Markets and Blackwattle Bay. By relocating the pedestrian crossing across Bank Street from the southern side of the intersection to the northern side of the Sydney Fish Markets driveway, significant improvements will be achieved. These include:

- A more direct entrance for pedestrians and public transport users arriving from Miller Street.
- Significant reduction in pedestrian/vehicle conflict by separating pedestrians from the main service vehicle access and car park access.
- Improvement to traffic signal operations by reducing delays for vehicles through the relocation of the marked foot crossing at the intersection.

Figure 4-5 Access improvements from Bank and Miller Streets

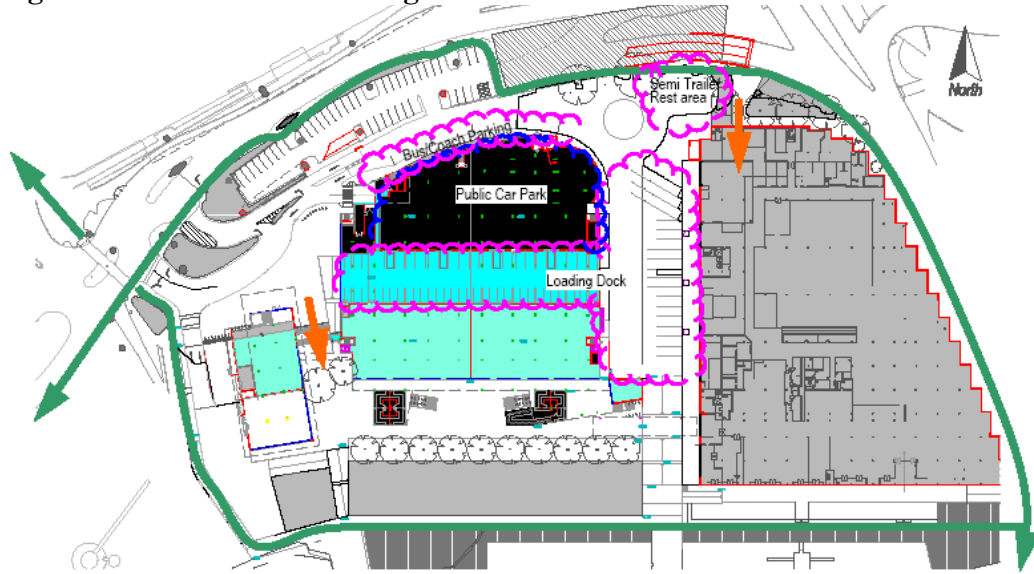
4.7 *Internal Arrangements*

The internal arrangements for the Sydney Fish Markets are the following:

- An internal roadway from the Bank/Miller Street intersection
- A separate service vehicle and distribution roadway
- Dedicated Bus pickup and drop off
- Improved pedestrian access
- Separation of seafood wholesale vehicles from public car parking
- Rest and recovery area for Heavy Vehicle Drivers
- Improved access for bicycle riders
- Dedicated guidance signage to access Fish Markets and Wentworth Park Light Rail Stations.

The internal access arrangements are shown in the following figure.

Figure 4-6 Internal access arrangements



4.8 *Public Car park arrangements*

Access to the public car park is via an internal roadway connected to the Bank and Miller Street intersection. This internal roadway diverges from the service roadway, with ticket barriers within the car park building.

The Car park will have three levels of parking accessed via a ramp. The design of the Car park will comply with the relevant Australian Standards – AS2890.1 – Off street car parking and AS2890.6 – Parking for people with disabilities.

4.9 *Service Vehicle Requirements*

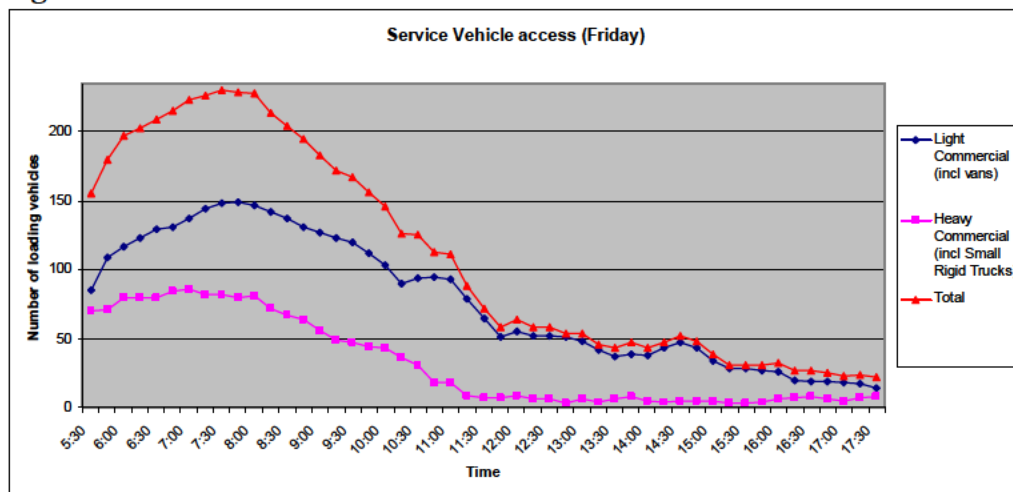
Service vehicle access and design has been developed based on information provided by the Sydney Fish Markets. As the Sydney Fish Markets is the regional wholesale auction and distribution facility, parking for large vehicles for loading and unloading is required. These operations usually operate in the following manner.

- Heavy trucks, including semi-trailers arrive during the night from the arterial road network. These trucks unload in the hours prior to commencement of the seafood auction at 5:30am.

- From 4:30am onwards, distribution trucks begin to arrive to collect seafood for distribution to restaurants and retail shops. The inbound activity peaks at 530 am at the beginning of the auction.
- Following commencement of the auction, laden vehicles (either refrigerated or following ice purchase) commence leaving the site. In addition, other vehicles will arrive to collect processed fish from the on-site wholesale operations.
- Service vehicle exits peak at 8am on a Wednesday and 11am on a Friday.

The approved Master Plan TMAP showed that service vehicle demand peaked at 230 vehicles during the Friday morning peak. It is understood that these numbers have remained stable in the intervening period to 2010. This is shown Figure 4-7.

Figure 4-7 Service Vehicle Demand Profile



The size and number of the service vehicle parking spaces has been determined by Sydney Fish Markets based on current and future operations. This requirement is:

- 3 Semi Trailer loading docks
- 4 Semi-trailer rest and recovery bays
- 19 Small Rigid vehicle bays.
- 13 loading docks for medium and large rigid trucks.
- 69 dedicated bays for vans and other light commercials.

All un-processed fish will be loaded in the dedicated loading areas.

In addition, small vans and light commercial vehicles will be able to use level 1 of the car park and the Bank Street Car Park for loading small boxes of processed fish. During periods of high trading, Small Rigid Vehicles (up to 6.4 metres) may use level 1 of the car park.

The Service Vehicle loading docks have been designed to comply with AS2809.5 – Commercial Vehicle Off-Street Facilities. Swept paths for heavy vehicles accessing the loading areas are shown in Appendix D.

4.10 Bicycles

4.10.1 Bicycle routes

The proposal includes the provision of:

- A new shared path along Bank Street from the corner of Pyrmont Bridge Road to Miller Street. This route will be designated for commuters who wish to access the Miller/Union Street Corridors.
- A new shared path for access along the Blackwattle Bay to the new promenade park and the future connections to Jacksons Landing and Pyrmont Park.
- The proposed development is well connected to the City's proposed network.

4.10.2 Bicycle Parking

The governing planning requirements for bicycle parking at the Sydney Fish Markets is the Urban Development Plan for Ultimo-Pyrmont. This sets bicycle parking at the following rates

UDP requirements for bicycle parking are:

- 1 space per 300 m² GFA for staff
- 1 space per 2500 m² GFA for visitors.

The NSW Government's State Plan sets a target of 5 percent of all trips in Greater Sydney will be by bicycle in 2016, while City of Sydney has a higher target of 10 percent of all trips by bicycle by 2016.

The current bicycle mode for the site varies between the time of day and weekday vs. weekend. The average mode share is 1-2 percent of trips.

As the site is dependant on visitor trade and the Sydney Fish Markets aims to reduce car dependency, doubling mode share is reasonable target for the provision of bicycle parking.

The comparative bicycle parking requirements are shown in Table 4-5.

Table 4-5 Bicycle Parking Provision

| Criteria | Rate type | Rate | Number of bicycle racks/lockers |
|-----------------------|-----------------|-----------------------------|---------------------------------|
| NSW State Plan | Staff | 5 % of trips | 23 |
| | Visitors | 5 % of trips | 132 |
| | | Total | 155 |
| UDP | Staff | 1 per 300 sq m GFA | 107 |
| | Visitor | 1 per 2500 sq m GFA | 12 |
| | | Total | 119 |
| Proposed Level | Staff | 6 % of weekday trips | 28 |
| | Visitors | 4 % of peak trips | 94 |
| | | Total | 122 |

Bicycle parking will be placed at the following locations:

- | | |
|---|-------------------|
| • Main pedestrian arrival forecourt (Level 1) | 46 visitor spaces |
| • Ground floor under the Foreshore Urban Plaza stairs | 48 visitor spaces |
| • Ground Level service lane | 14 staff spaces |
| • Jones Street car park | 14 staff spaces |

4.10.3 *Promotion of bicycle use*

Sydney Fish Markets will promote bicycle usage through the prominent placement of bicycle parking locations and bicycle access routes on its website.

4.11 ***Pedestrian access***

Pedestrian access to the site is being significantly improved as part of this project. Improvements include:

- A new high quality access from the Bank Street intersection.
- Improved access from the intersection of Pyrmont Bridge Road and Bank Street (Southwest corner).
- New foreshore promenade as part of the Sydney Harbour foreshore walk.
- Improved internal access.

Bank Street intersection

- Pedestrian access from the Bank Street intersection is improved in the following ways.
- A 2.5 metre or wider accessible path.
- Pedestrians directed away from the traffic intersection by means of planted areas to encourage safer access to and from the Sydney Fish Markets
- Pedestrian priority over the internal access road via a raised pedestrian crossing.

Improved access from Pyrmont Bridge Road

- Access from Pyrmont Bridge Road at the intersection with Bank Street will be improved in the following ways.
- A dedicated footpath will be provided from the boundary of the site to the main entrance near Miller Street.

- A 2.5 metre wide shared footpath will provide on the perimeter of the property as an alternative route.
- Both routes will be accessible.

New foreshore promenade

A new 10 metre foreshore promenade connected to the foreshore park, retail area and future pathways through the adjacent Hymix site (northern boundary) will be provided by the NSW Government as a separate project at an appropriate time.

This new path, combined with the Bank Street access will provide an alternate through route from Wattle Street to Miller Street.

Internal access

The internal pedestrian circulation will be improved by:

- Providing a dedicated pathway from the bus pick up/drop off area to the new pedestrian access.
- Separating visitors from delivery and seafood distribution vehicles.
- Providing safer, vertical access from the car park to the retail and dining areas.

4.12 Buses and Taxis

The development will improve access for mini-buses, tourist buses and taxis by:

- Providing a dedicated taxi lane and pick and drop off area near the new north eastern entrance.
- Providing dedicated min-bus and bus parking, with a roundabout for turn around next to the multi-level car park, with dedicated pedestrian walkway connecting to the new entrance.

No improvements to public passenger bus access within the site are proposed. Bank Street is constrained due to the placement of freeway columns and not suitable for stops for regular bus routes.

4.13 *Light Rail*

The existing Light Rail station (Fish Markets) at Miller Street is well patronised, clean and accessible. A lift connects the station to Miller Street and an accessible ramp connects from the station to Bank Street.

The improvements for light rail customers arise from the improved pedestrian arrival conditions within the site, with pedestrians no longer having to walk through the main car park.

4.14 *Emergency vehicles*

Emergency vehicles will be able to access the site from the Bank and Miller Street intersection. From this point they will be able to access:

- The concrete driveway to the foreshore path and waterfront park;
- The main and new buildings;
- The multi level car park and service lane and undercroft loading area via the internal roadway
- The existing main building via Pyrmont Bridge Road

Emergency services personnel will be able to access the site from the three pedestrian accesses at:

- Miller Street
- Pyrmont Bridge Road (at Bank Street)
- Pyrmont Bridge Road (at Wattle Street)

Access from Blackwattle Bay is possible for fire tenders and other personnel if required.

4.15 *Summary*

The proposed development of the Sydney Fish Markets provides improved pedestrian, public transport and vehicular access, while addressing the need to constrain growth in car travel by lowering the ratio of available parking to travel demand.

5 Traffic Assessment

A traffic assessment has been undertaken to evaluate the impact of the development on the road network. This assessment considers the existing traffic situation and the impact of the proposed development.

5.1 *Trip Generation of Proposed Development*

As the Sydney Fish Markets is a Sydney metropolitan wholesale and retail venue and tourist attraction, the appropriate method of traffic generation is to evaluation the turn over in parking for each parking space within the site. This is due to the constrained level of parking supply lowering demand for car usage to the site.

The periods identified for analysis were based on both the times at which the surround traffic network has maximum traffic flows and when the Sydney Fish Markets has peak traffic generation. As identified in section 3.4.3, the adjacent arterial road network has its traffic peak during the 5-6 pm period on a weekday, while as identified in section 4.3.2, the Sydney Fish Markets has its peak traffic generation during the 12-2pm period on a Sunday.

These two periods have been used as the basis for evaluation of the traffic impact of the proposed development because the proposed retail/restaurant additions would have the potential to add the most traffic during these two main traffic peak periods in the area.

5.1.1 *Future Weekday PM Peak Traffic Generation*

The future traffic generation of the restaurant component of the development have been calculated using trip generation rates from the RTA's to Guide to Traffic Generating Developments for the evening peak period. The average trip generation rate for the evening peak is 5 vehicle trips per 100m² of Gross Floor Area and it is assumed these trips would be distributed 80:20 between arrival and departure trips.

The proposed restaurant Gross Floor Area is 2,929 m² which equates to 146 vehicle trips / hour at 5 trips per 100 m² of GFA.

The present weekday evening traffic generation of the site component of the existing retail development provides a guide to how this traffic might increase in the future.

The existing traffic generation is 14 arrival vehicles /hour and 48 departure vehicles / hour. By applying an increase of 29% as per the increase in retail Gross Floor Area to the existing traffic, the future retail Weekday PM Peak and Weekend Midday generation can be calculated. These trips are shown in the following table.

Table 5-1 – Predicted Peak Hour Trip Generation

| Period | Arrivals | Departures | TOTAL |
|-------------------------|------------|------------|------------|
| Thursday Evening | | | |
| Restaurant | 117 | 29 | 146 |
| Retail | 18 | 61 | 80 |
| TOTAL | 136 | 94 | 226 |

5.1.2 *Future Weekend Midday Peak Traffic Generation*

Given the complex tourist, retail and dining function of the site, using standard RTA traffic generation rates is not appropriate. As such, traffic generation for the Sunday midday period has been evaluated using the turnover of existing parking spaces on the site.

The existing site has a total of 417 formal parking spaces, with an inflow of 450 vehicles and an outflow of 510 vehicles (seasonally adjusted) during the peak period. This yields and traffic generation rate of 1.22 trips per space (outbound) and 1.08 trips per space (inbound). The difference between these two rates is reflected in the parking accumulation (see Figure 4-2) prior to the commencement of the peak period.

The parking turnover assessed for the future peak period (Sunday midday) is shown in Table 5-2.

Table 5-2 – Future Traffic Generation – Weekend Midday Peak

| | Existing volumes | Existing volumes | Turnover (vehicles/space/ hour) | Future Traffic Generation (1) | Analysed Traffic Generation (2) |
|------------|---------------------|--------------------------|---------------------------------------|----------------------------------|------------------------------------|
| | (June 2010) | (Seasonally Adjusted) | | | |
| Departures | 385 | 450 | 1.08 | 555 | 614 |
| Arrivals | 436 | 510 | 1.22 | 622 | 698 |
| Total | 821 | 960 | | 1177 | 1312 |

(1) Based on 510 car parking spaces

(2) Assessment undertaken to evaluate the 95th percentile day (first Sunday in December).

Thus the proposed development is to increase the seasonally adjusted Sunday peak traffic generation of the site by some 352 vehicle trips per hour.

5.2 Traffic Distribution

The distribution of the additional traffic from the Fish Market development has been based on the existing Fish Market travel patterns.

In summary, generated trips are expected to be distributed as follows:

- North – 32%;
- South – 36%;
- East – 11%;
- West – 21%.

The volumes of traffic on Bank Street (north of Miller Street) is constrained by the local environment, with some local trips using Harris Street in preference to Bank Street to avoid any congestion along Bank Street and Pyrmont Bridge Road associated with the complexity of the road network..

The predicted future Fish Market development traffic is shown in the following figures

Figure 5-1 Sydney Fish Markets development traffic, Weekday PM

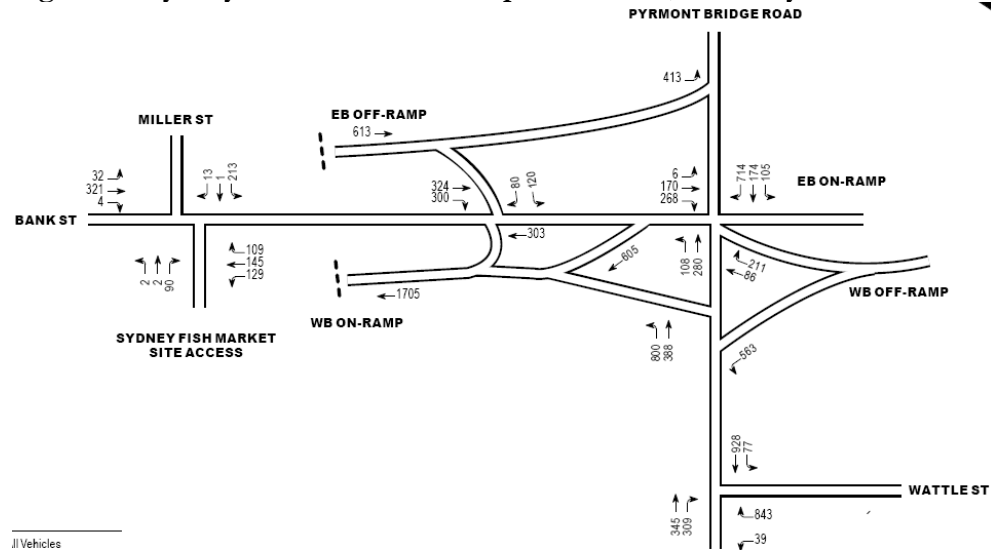
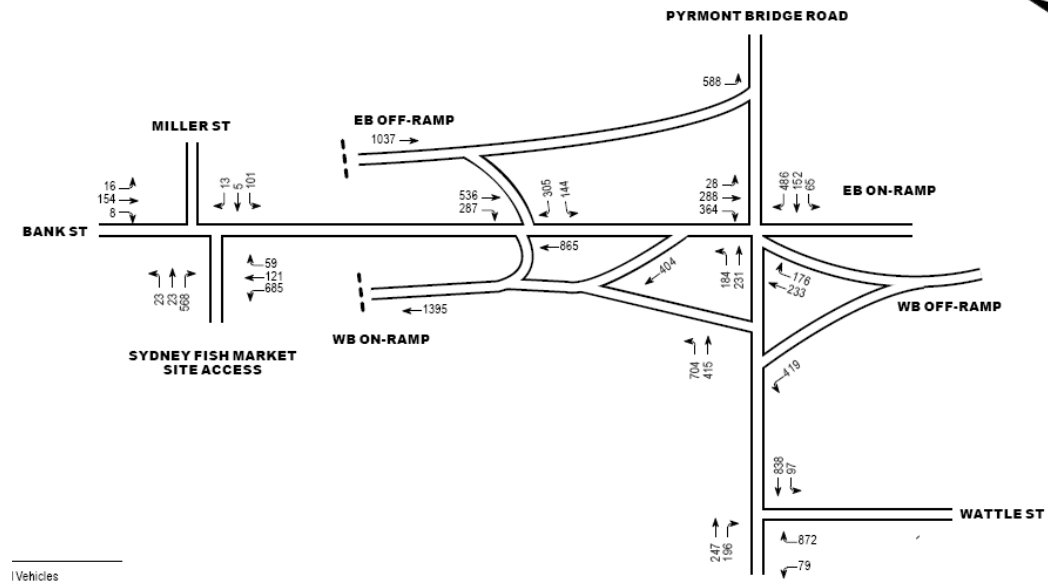


Figure 5-2 Sydney Fish Markets development traffic, Weekend midday peak



5.3 *Future Intersection Operations*

The proposed development was analysed using the Paramics micro-simulation traffic model and compared against the existing situation. In order to maintain traffic efficiency and minimise queuing and impact on the surrounding road network, two changes to the operations of traffic signals in the area are proposed. These are:

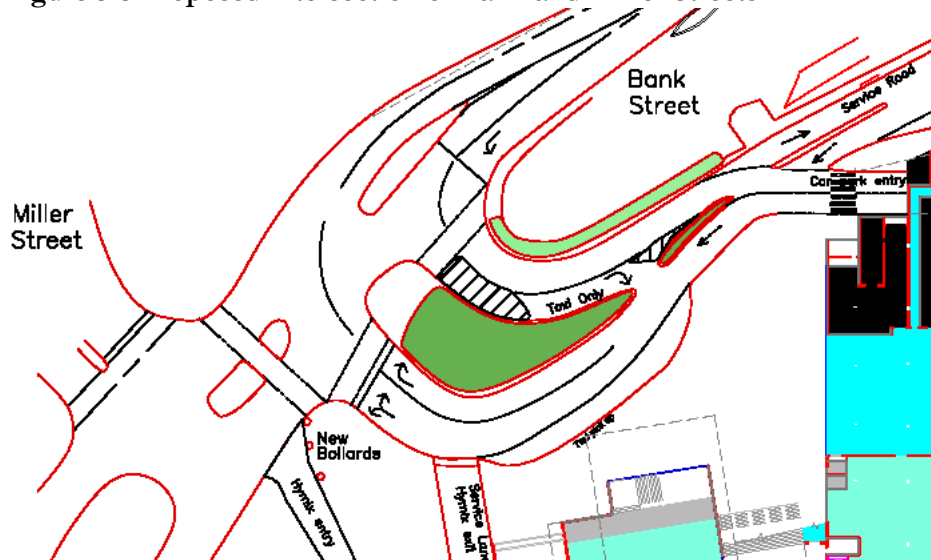
1. Changes to the layout and signal operations at the intersection of Bank and Miller Streets.
2. Changes to the lane markings and signal operations at the intersection of Pymont Bridge Road, Bank Street and the Western Distributor ramps.

5.3.1 *Intersection of Bank and Miller Streets*

The intersection of Bank and Miller Streets (TCS2360) intersection is proposed to be modified in the following ways (see Figure 5-3 and Appendix B):

- Separating the Sydney Fish Markets entrances by a central island associated with the improved pedestrian access.
- Relocating the marked foot crossing across Bank Street from the southern side of the Sydney Fish Markets entrance to the northern side of the entrance.
- Modifying traffic signal operations in line with the above.

Figure 5-3 Proposed intersection of Bank and Miller Streets

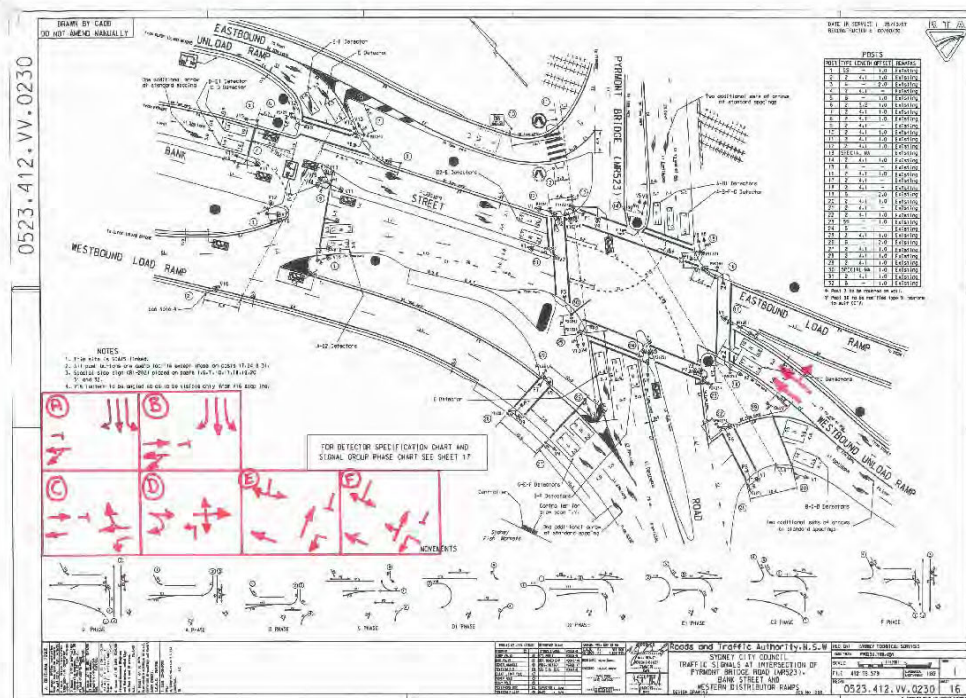


5.3.2 Intersection of Pyrmont Bridge Road, Bank Street and the Western Distributor ramps

The intersection of Pyrmont Bridge Road, Bank Street and the Western Distributor ramps (TCS 230) is proposed to be modified in the following ways (see Figure 5-4 and Appendix C):

- Remarking the northbound off ramp lanes from Western Distributor to be a through lane plus one shared through and right turn lane.
- Re-phasing the traffic signals to reconfigure which traffic movements operate at the same time.
-

Figure 5-4 Proposed intersection of Pyrmont Bridge Road, Bank Street and Western Distributor ramps



Under the proposed arrangement the Western Distributor north-westbound off ramp left turn movement onto Pymont Bridge Road would be included in 'phase F' combined with south-west approach traffic movements on Pymont Bridge Road. The demands of the north-east to south-west and south-east movements are relatively low and therefore the performance is not affected by the change in phasing.

The benefit of the proposed phase arrangement is that the length of 'phase C', Western Distributor north-westbound off ramp approach, can be shortened resulting in an increase in green time for other phase movements.

5.3.3 *Analysis*

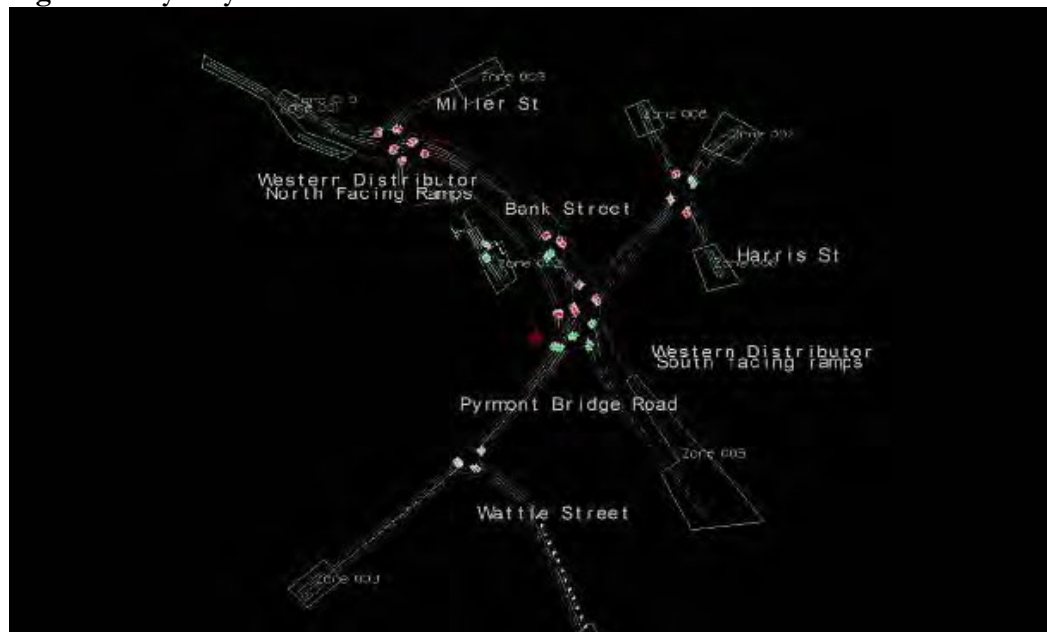
The analysis of the existing situation and proposed development was undertaken in the Paramics traffic micro-simulation software. This allowed the complex operations and interactions between the Bank/Miller, Pymont Bridge/Bank/Western Distributor, Pymont Bridge/Harris and Pymont Bridge/Wattle intersections to be evaluated together.

The analysis was undertaken using the existing and future (post development) traffic volumes, with the traffic generation for the Weekend peak period being for the 95th percentile week of the year.

Three scenarios were analysed. These were:

- The existing situation (Existing)
- The proposed development with modifications to only the Bank/Miller intersection (Development)
- The proposed development with modifications to both the Bank/Miller and Pymont Bridge/Bank/Western Distributor ramps (Dev + Phasing)

The Paramics network for the proposed development is shown in Figure 5-5.

Figure 5-5 Sydney Fish Markets Paramics network

The evaluation of the scenarios has been undertaken using two measures of performance. These are:

- RTA NSW Level of Service
- Average Network operational speed

The results of these analyses are shown in Table 5-3 and Table 5-4.

Table 5-3 Existing and Future Peak Hour Intersection Performance

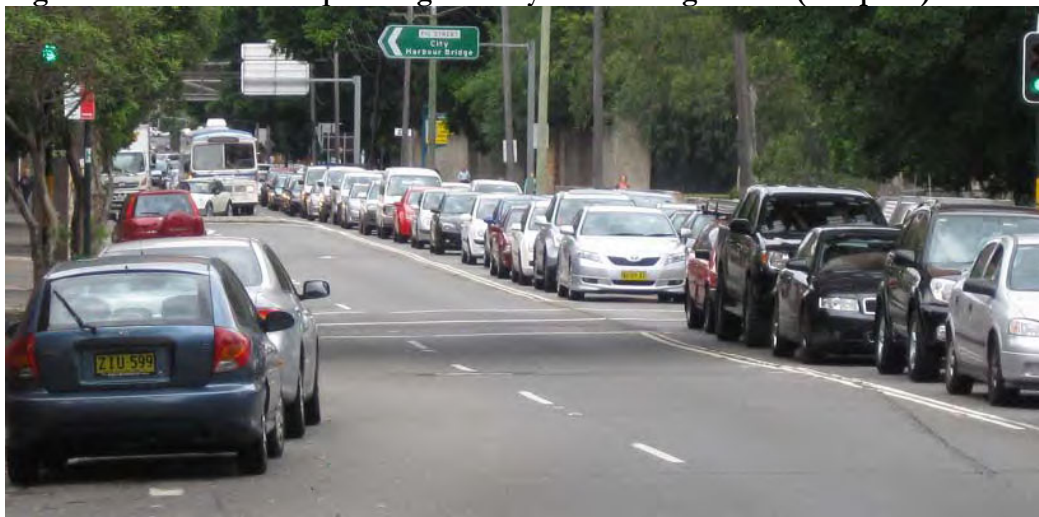
| Intersection | Scenario | Thursday PM Peak | | Sunday Midday Peak | |
|---|----------------|------------------|-----|--------------------|-----|
| | | Avg. Delay (s) | LoS | Avg. Delay (s) | LoS |
| Pyrmont Bridge Road / Wattle Street | Existing | 82 | F | 60 | E |
| | Development | 102 | F | 57 | E |
| | Dev + Phasing* | 97 | F | 57 | E |
| Pyrmont Bridge Road / Harris Street | Existing | 30 | C | 27 | B |
| | Development | 32 | C | 25 | B |
| | Dev + Phasing* | 33 | C | 31 | C |
| Bank Street / Miller Street / Fish Market | Existing | 39 | C | 49 | D |
| | Development | 43 | D | 78 | F |
| | Dev + Phasing* | 39 | C | 59 | E |
| Pyrmont Bridge Road / Bank Street | Existing | 77 | F | 57 | E |
| | Development | 80 | F | 89 | F |
| | Dev + Phasing* | 68 | E | 70 | E |

* Development traffic plus proposed phasing arrangement at Pyrmont Bridge Road and Bank Street

The analysis shows that the proposed development and arrangements will, in some cases provide an improvement in traffic operations during the critical PM peak, with only the increase in delay of only 10-15 seconds at intersections during the Sunday midday peak.

The increase in delay for the Weekday evening peak for the Pyrmont Bridge Road and Wattle Street intersection is due to the intersection already operating above capacity during the PM peak period, with significant queuing exhibited on Wattle Street (as shown in Figure 5-6). In these types of conditions, a minor increase in traffic volumes associated with a development can result in the traffic models reporting excessive delays because it is not able to take into account normal driver behavioural results.

Figure 5-6 Wattle Street queueing from Pyrmont Bridge Road (PM peak)



In complex networks, average travel speed is often a better measure of performance of the network. Average travel speed is used by the NSW Government in reporting the progress on implementing the *NSW State Plan*.

Table 5-4 shows average network travel speed for the analysis period.

Table 5-4 – Average Peak Network Travel Speed (km/hr)

| Scenario | Average network speed (km/h) | |
|---|------------------------------|---------------|
| | Thursday PM | Sunday Midday |
| Existing | 8.9 | 13.4 |
| Existing + Development | 7.8 | 9.1 |
| Existing + Development + Proposed Phasing Arrangement | 8.2 | 12.1 |

The results in the above table show that while the improvements to the Sydney Fish Markets is a large development, the overall network performance remains relatively unchanged.

Movements onto the Western Distributor during the weekday PM peak period are constrained by the prevailing speed and conditions on the Anzac Bridge, which contributes to congestion on Pyrmont Bridge Road, Wattle Street and Bank Street. With the changes to the signal arrangements, significant benefit is realised for the movement from the Western Distributor off ramp (away from the City) turning left into Pyrmont Bridge Road.

During the Sunday midday peak, the proposed signal arrangements assist flows into and out of the Sydney Fish Markets while improving overall operations.

The average network speed analysis shows that the Sydney Fish Markets will not have a significant impact on overall speeds and journey times, with a 10 percent decrease in prevailing travel speeds through the network.

5.4 Summary

The proposed Sydney Fish Markets development will have not have a significant impact on the operations of the surrounding road network, with the proposed changes to intersection operations potentially providing significant operational benefits outside of peak generation times for the site.

6 Conclusions

The proposed Sydney Fish Markets redevelopment involves the significant redevelopment of the site. The project will result in easier access to the site by pedestrians and public transport users and bicycle riders.

The development has been planned and designed in accordance with NSW Government and City of Sydney land use and transport planning policies and guidelines. With the Sydney Fish Market's location near significant pedestrian and bicycle paths in Pyrmont, good access to public transport and proximity to the State Road network, it is placed in the "*... the right place for business and services...*".

The Sydney Fish Markets development balances the City of Sydney's goal of "*...minimising internal car parking to promote public transport...*", while recognising the significant Sydney metropolitan nature of the wholesale and retail seafood trade and important tourist activity in inner Sydney. By separating pedestrians walking onto the site, visitor cars and wholesale activity within the site, safety and amenity will also be improved.

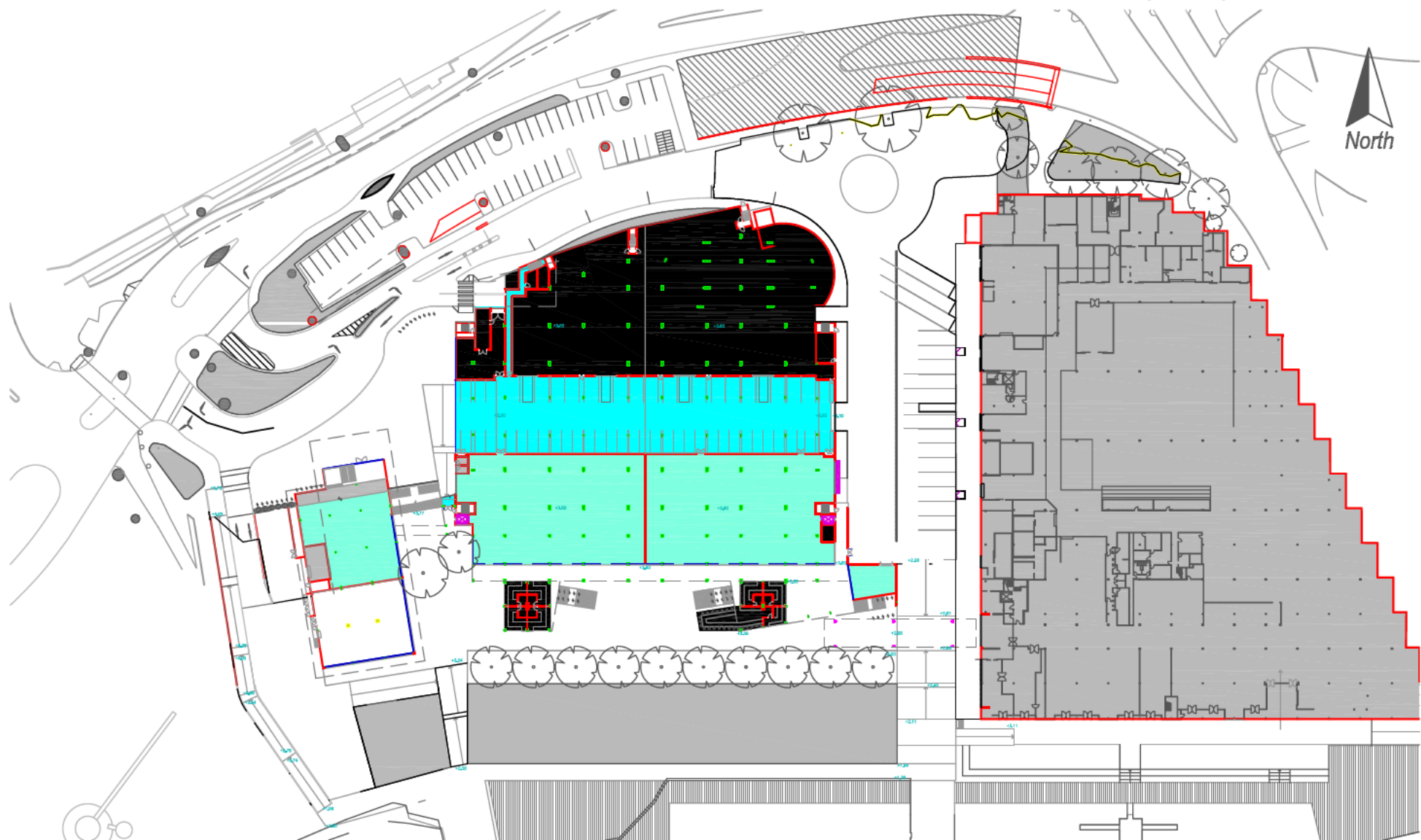
The proposed development will not have a significant impact on road network operations, and changes to intersections proposed as part of the development will provide benefits to general traffic flow outside of the peak times for the Sydney Fish Markets.

In conclusion, the Sydney Fish Markets redevelopment will improve access, safety and amenity for all transport users and improve access to the site for non-car modes while maintain vital access for wholesale and retail activity.

Appendix A Proposed site layout

Internal arrangements

Sydney Fish Markets



Scale: 1:1000@A4



Filename: CTLRK8da01

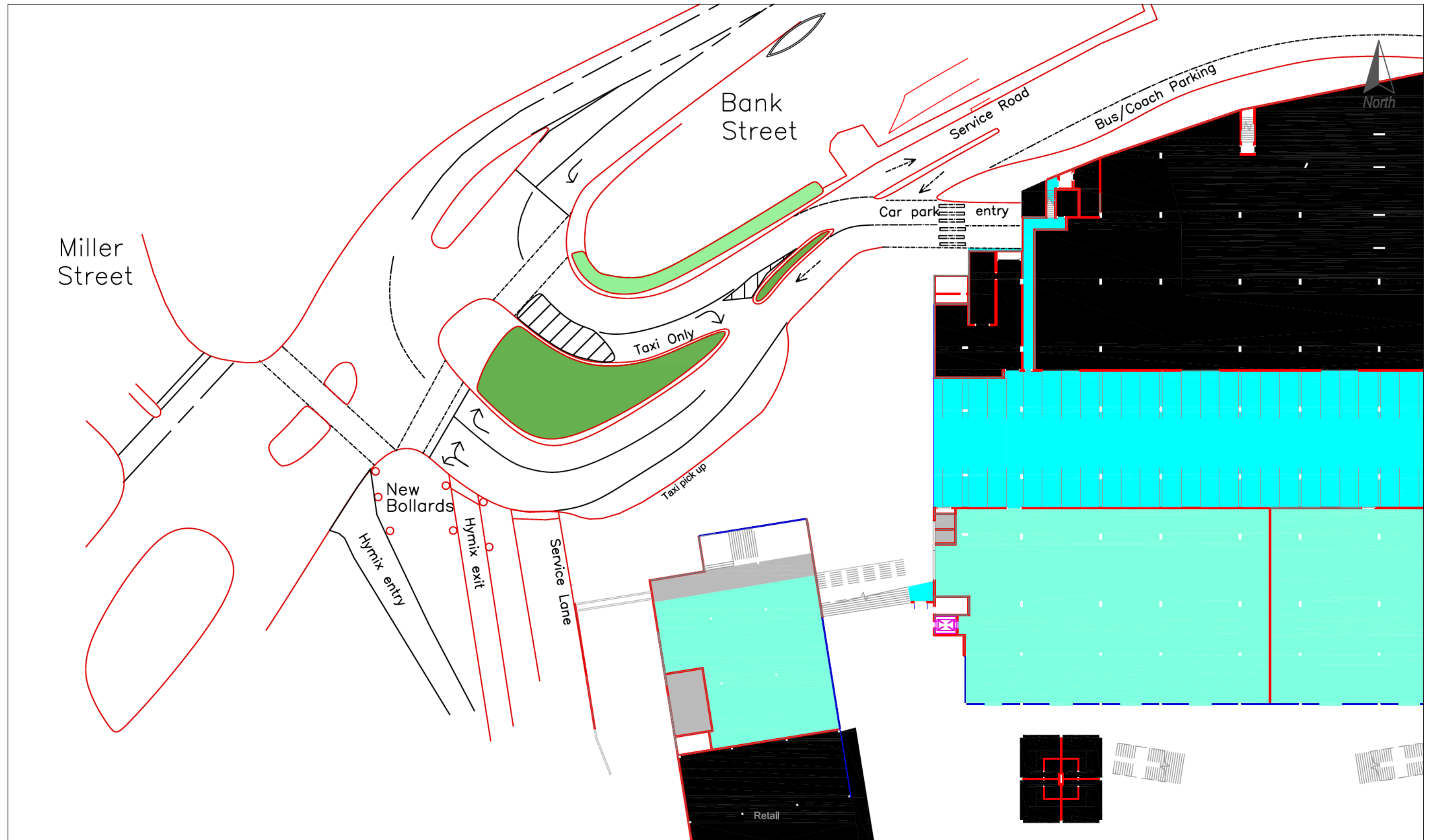
Figure 4-7

Date: 16 August 2010

Appendix B Proposed reconfiguration of the intersection of Bank and Miller Streets

Intersection of Bank and Miller Streets Pyrmont

Sydney Fish Markets



Scale:1:100@A3



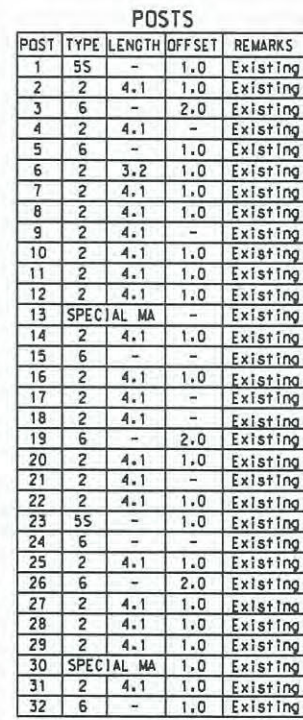
Filename:CTLRKBda01

Figure 1

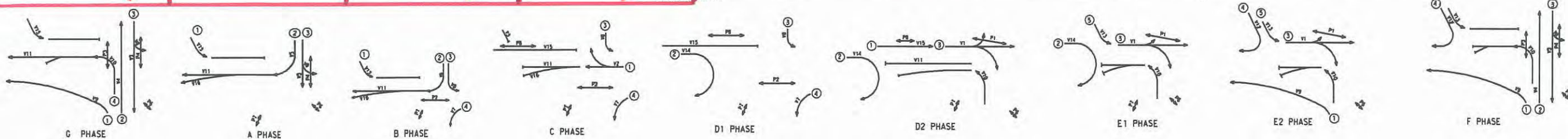
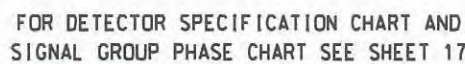
Date: 20 July 2010

Appendix C Proposed changes to the intersection of Pyrmont Bridge Road, Bank Street and the Western Distributor Ramps

0523.412.VV.0230

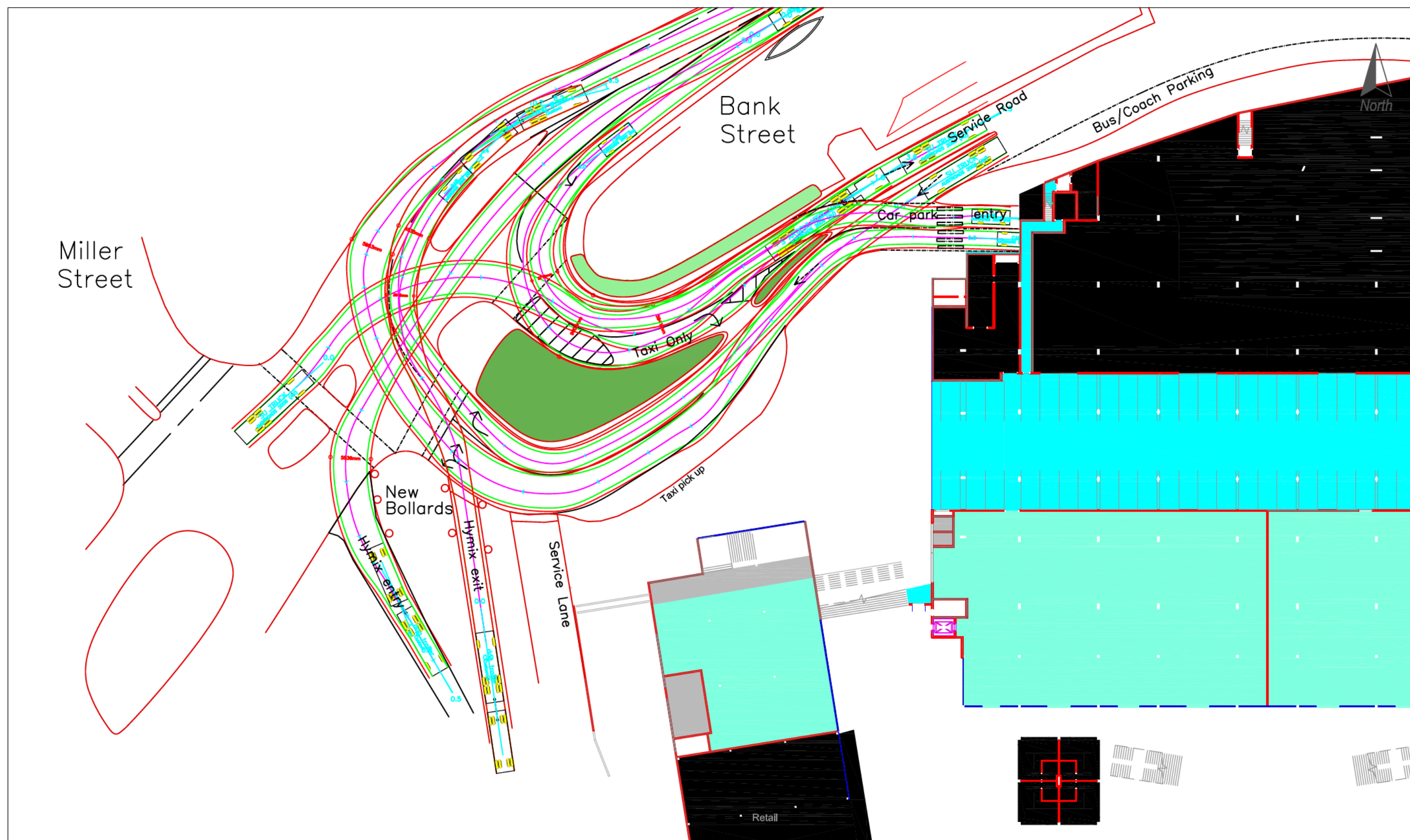


1. This site is SCATS linked.
2. All push buttons are audio tactile except those on posts 17,24 & 31.
3. Special stop sign (R1-202) placed on posts 1,6,7,10,17,18,19,20
31 and 32.
4. V16 lantern to be angled so as to be visible only from V16 stopline.



| | | | |
|------------|---------------------------|-------------------------|----------|
| REGION: | SYDNEY TECHNICAL SERVICES | | |
| CADD FILE: | VV0230.16H.dgn | | |
| SCALE | | | 1596 |
| FILE | 412 TS 579 | AUTOCAD'S SHEET/1596 | 16G |
| REGN. | 0523.412.VV.0230 | | SHEET 16 |

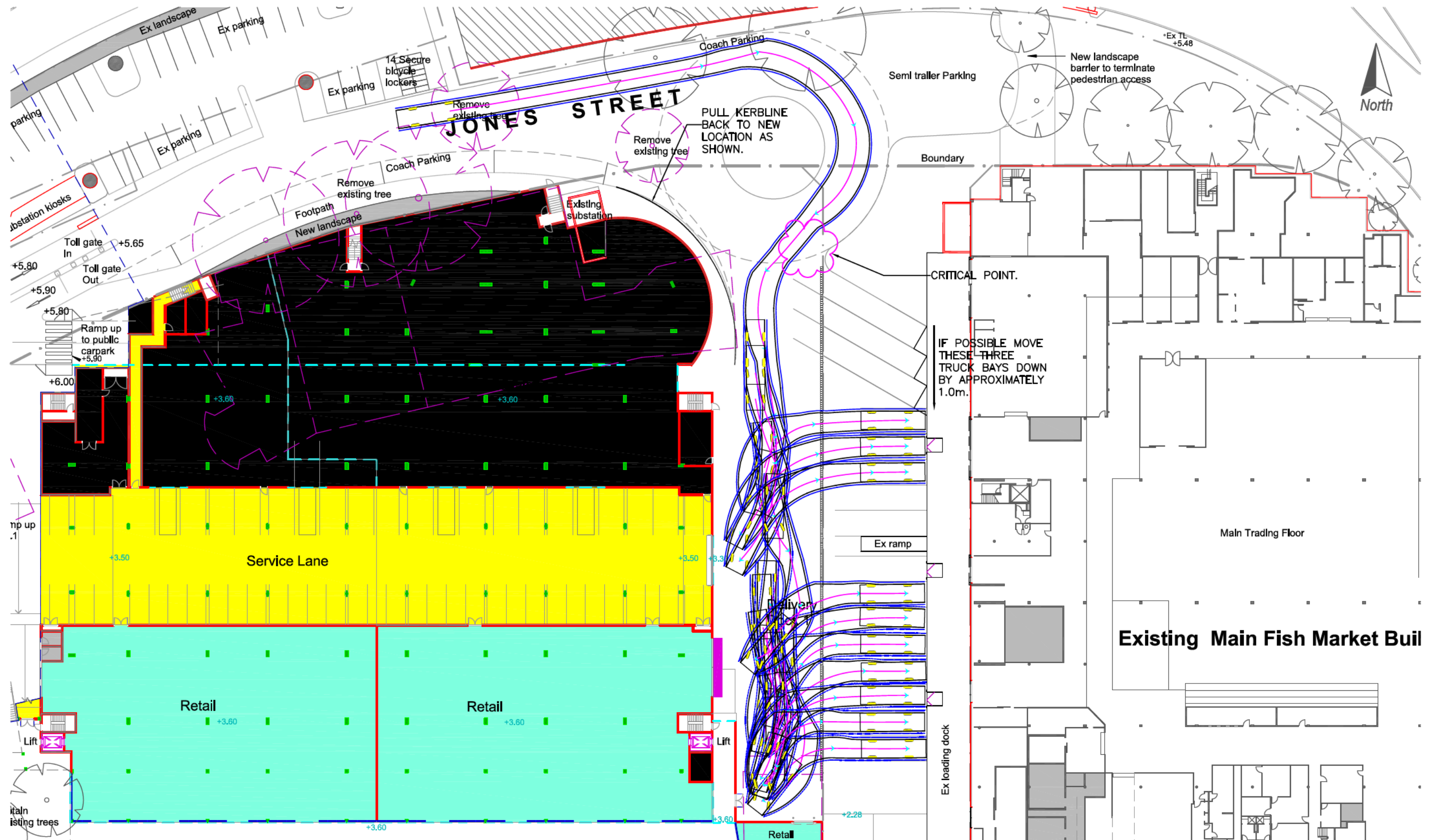
Appendix D Service Vehicle Arrangement and Swept Path Diagrams



Scale: 1:100@A3

8.8m MRV TURN PATHS

SYDNEY FISH MARKETS



Scale: 1:500 @ A3

Halcrow

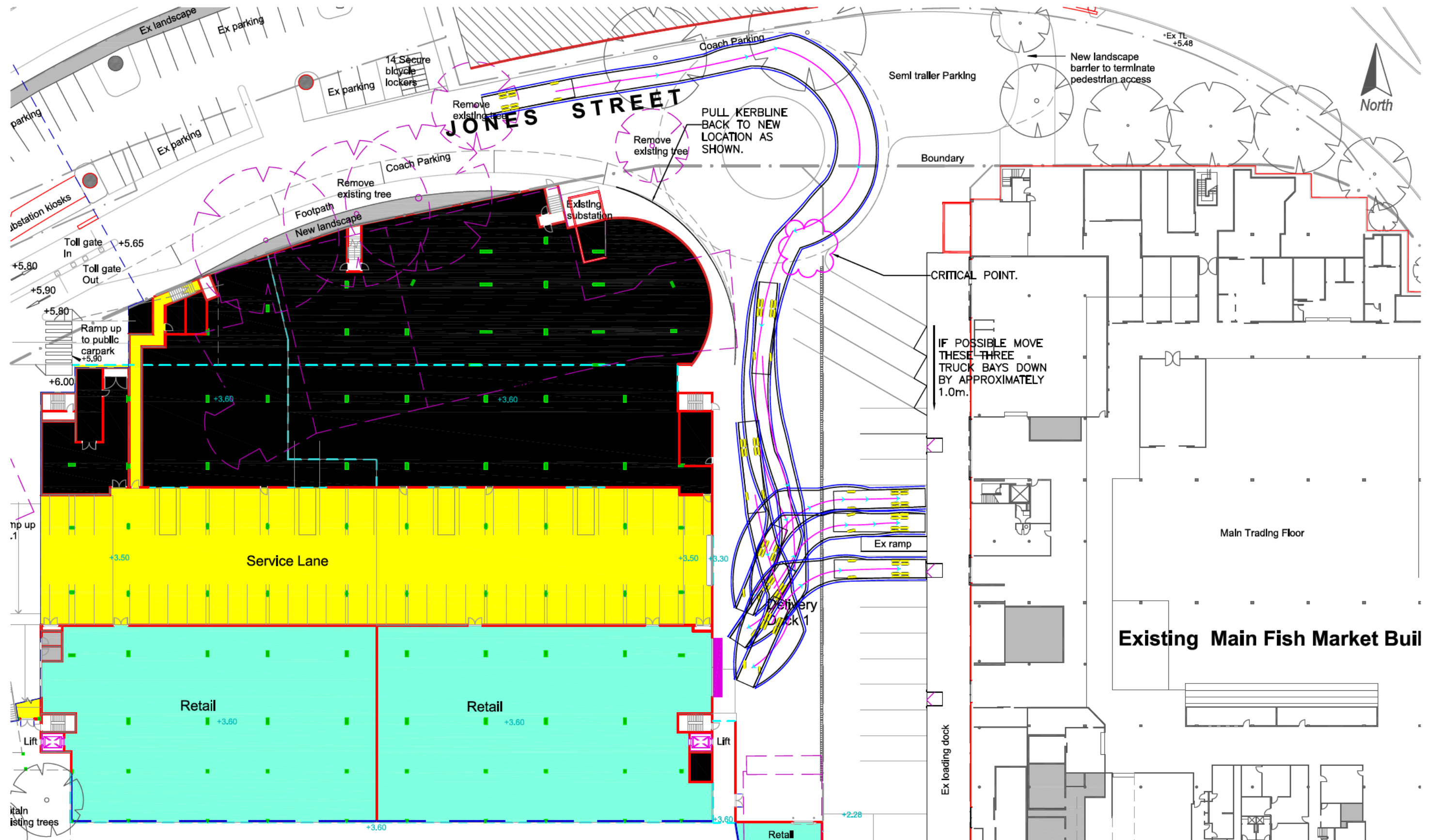
Filename: CTRLKBDa05

Figure 11

Date: 29 JULY 2010

12.5m HRV TURN PATHS

SYDNEY FISH MARKETS



Scale: 1:500 @ A3

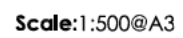
Halcrow

Filename: CTRLKBDa05

Figure 12

Date: 29 JULY 2010

SYDNEY FISH MARKETS



Sydney Fish Markets Stage 2-4 8.8 m waste vehicle

Sydney Fish Markets



Scale: 1:100@A3



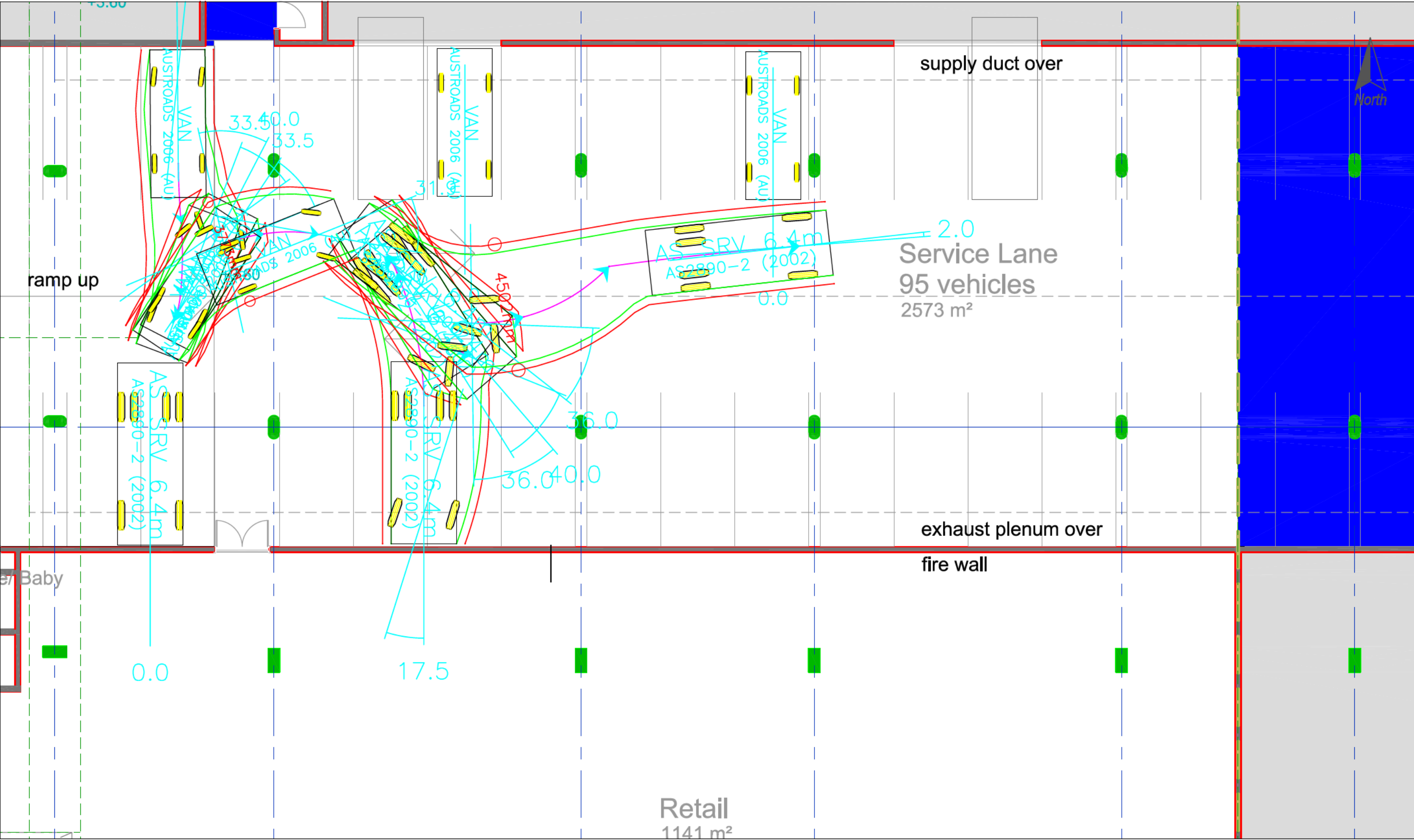
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Figure 1

Date: 31 May 2010

Sydney Fish Markets Stage 2-4 Service Lane Operations

Sydney Fish Markets



Scale: 1:100 @ A3



Filename: CTRLKBDa01

Figure 1

Date: 31 May 2010

