



TRAFFIC MANAGEMENT & SAFETY CONSULTANTS

10 Haig Street Belmont NSW 2280
PH. (02) 4945 5688
Fax (02) 4945 5686
Mob. 0418 419 190
E-mail: tp.keating@hunterlink.net.au

TRAFFIC REVIEW

PROPOSED RESIDENTIAL SUBDIVISION

Morisset Park Road

MORISSET PARK

April 2009

De WITT Consulting
(for The Applicant)

Lake Macquarie City Council Local Government Area

Prepared by
Terry Keating
Director
TPK & Associates Pty Ltd

R E S I D E N T I A L S U V B D I V I S I O N , M O R I S S E T P A R K

TRAFFIC REVIEW

1. The Project

TPK & Associates Pty Ltd (TPK) was invited by Mr D Humphris, de Witt Consulting (for The Applicant) to join their project team to provide traffic review services for the subject project; the project is the proposed at:

Corner of Morisset Park Road & Chifley Street, Morisset Park

2. Task Description

The review was requested to focus on the following: -

- Review of matters raised by Lake Macquarie Council in their assessment of the application. (Council letters to DOP dated 30.01.09 & Feb 09)
- Review of relevant existing traffic studies.

3. Project Representative

Mr. Terry Keating, Director TPK, undertook the evaluation and preparation of the report. He has over 40 years experience in the road safety and traffic management profession, including the assessment of traffic generating developments.

4. References

The assessment and report have been provided as an outcome of reference to:

- Austroads Part 2 & 5
- AS 2890.1 & 2.
- RTA Guide to Traffic Generating Developments.
- Site Layout Plan as provided by de Witt Consulting.
- Report by Northern Transport Planning & Engineering (NTPE), 2008 supporting this project
- Report by Better Transport Futures (BTF), 2008 supporting development proposal at Trinity Point to the east of the subject location

5. Overview

The proposed residential development has been examined by Lake Macquarie City Council; council identified matters of concern that need to be addressed prior to final determination on the DA by the Department of Planning.

The NTPE, 2008 report for this development was prepared on the basis of a 72 lot subdivision; the subdivision proposal has subsequently been reduced to a 62 lot subdivision.

Representatives of de Witt Consulting (Mr D Humphris) and TPK (Mr T Keating) meet with council representatives on the 24th March 2009 to discuss the concerns of council.

Some matters were clarified at that meeting and following a detailed site and surrounding road network evaluation by TPK & de Witt Consulting on the 30th March 2009 this Traffic Review Report is considered to address all other concerns of Council.

6. Austroads Standards

Austroads Part 5, Table 6.3 provides the required SISD's for intersections. The new intersections to be formed under the project layout plan are:

- New Access Road to Morisset Park Road (west of Chifley Road intersection)
- Internal intersections within the estate

TPK has inspected the existing road environments and submits that the Desirable SISD of 149m for a 70 kph speed limit is available in both directions for the new intersection with Morisset Park Road; SISD is less as the speed limit reduces.

The internal intersections will be formed on a relatively flat terrain and hence detailed design will be able to achieve appropriate SISD for the 50kph speed limit applicable to urban zones without significant cut or fill.

This addresses concern with the location of intersections, regardless of the imposed speed limit relative to Safe Intersection Sight Distance (SISD) recommendations of Austroads Part 5. (Refer to Council's DGR 5 comments Feb 2009)

7. Speed Limit

TPK, subsequent to recently meeting with council completed a road network inspection/evaluation. Council has raised the question of the speed limit on the Morisset Park Road frontage of the subject site requesting The Applicant seek agreement from RTA to a reduction in speed limit.

The peninsular is subject to current and potential pockets of development and/or alteration to existing land use. The routes Fishery Point Road and Morisset Park Road are emerging significant traffic function routes that will need to be enhanced in terms of all traffic management initiatives on a progressive basis.

TPK submit that these two routes may not have been reviewed on a holistic basis for applicable speed limits in recent times and that rather than seek a small review for a short section it may be prudent timing for Council to liaise with RTA directly or through the council traffic committee with the view to establishing a speed limit strategy for these routes as development and traffic demand increase.

TPK has no doubt RTA would agree to a 50 or 60 speed limit on the Morisset Park Road frontage for this site but the bigger picture is the influence the function of the route has on the decision to apply a 50 or a 60kph speed limit; that is RTA's call no doubt in consultation with council not This Applicant.

Notwithstanding the above TPK submit there would be no adverse traffic capacity or road safety concerns implied were the 70kph to remain on this frontage until the RTA review was completed.

This addresses the council request for The Applicant to contact RTA with respect to a small extension of the 50kph speed limit on the Morisset Park Road frontage of this development site. (Refer to Item 18 of Council's Schedule of Issues & Council's DGR 5 comments Feb 2009)

8. Pedestrians & Cyclists (Refer to Council's comments DGR 5, Feb 2009)

The development will provide footpath amenity within and bordering the site to council requirements as dictated by the terms of development consent.

One focal point for a pedestrian/cycle link to the west is Bonnells Bay School; the school is a primary school and is some 1.5km from this subject site. TPK submit that the estate will not generate school pedestrian/cycle activity to a level that justifies having this development accountable for providing an off road link. The existing Bonnells Bay Shopping Centre and future Trinity Point recreational amenity will both be over 1 to 1.5km from this site; again pedestrian generated trips are unlikely from this development and cyclists will be required to use on road travel as no current off road strategies were disclosed by council.

To the north and east of the site existing footway amenity is a mixture of unformed and formed footway reserves; the standard is so varied that extending connectivity is not seen as a realistic requirement for this small development.

Fishery Point Road, around 1km walk to the north does have an existing off road combined pedestrian/cycle path but again it is submitted that this estate is unlikely to find the amenity an attractive option for trip planning.

Unless council has significant off road strategies in place and corridors approved for off road amenity for pedestrian and cyclists TPK consider the estate need only provide for footway amenity to council requirements with and fronting the estate and that there is no planning footprint established for this estate to consider providing in part construction towards completion of a strategy.

9. Public Transport

Morrisset Bus Services provide the regular services to the peninsular; TPK held discussions with the company on the 2nd April 2009.

The current services run past the subject site on Morisset Park Road; the existing system is of the hail and ride procedure hence there are no official designated bus stops. However long term patrons in association with the bus drivers have developed congregation points around the peninsular where patrons gather.

TPK submit that as the estate will provide a new point of demand for these services and an estate this size is unlikely to be penetrated by buses hence provision of bus shelters either side of Morisset Park Road could be a condition of consent for inclusion in the detailed design for the intersection of Morisset Park Road and New Access Road to the estate.

This addresses councils request to confer with the bus service provider. (Refer to Item 23 of Council's Schedule of Issues 30.01.09 & Council's DGR 5 comments, Feb 2009)

10a. Road Network Traffic Generation (This addresses Council's DGR 4.2 & 5 comments Feb 2009)

TPK considered it important to ensure the quantum of increase in traffic generation in comparison to existing traffic flow and other known peninsular growth was clarified in giving consideration to this project review; the following scenarios have been summarised:

- Figures 1 & 2 show existing 2007 level traffic flows based on details contained in NTPE, 2008 and BTR, 2008.
- Figure 3 shows the am & pm peak traffic generation and distribution for the subject project.
- Figure 4 shows the am & pm peak potential traffic generation and distribution based on data in BTF, 2008 for other known developments including:
 - Trinity Point
 - 194 lot subdivision adjoining the Trinity Point proposal, construction underway when traffic counts were taken
 - 10, 60 & 55 lot subdivisions off Fishery Point Road
- Figures 5 & 6 show the am & pm peaks for the existing traffic flows 2007 plus all the identified development (in this report) traffic added.

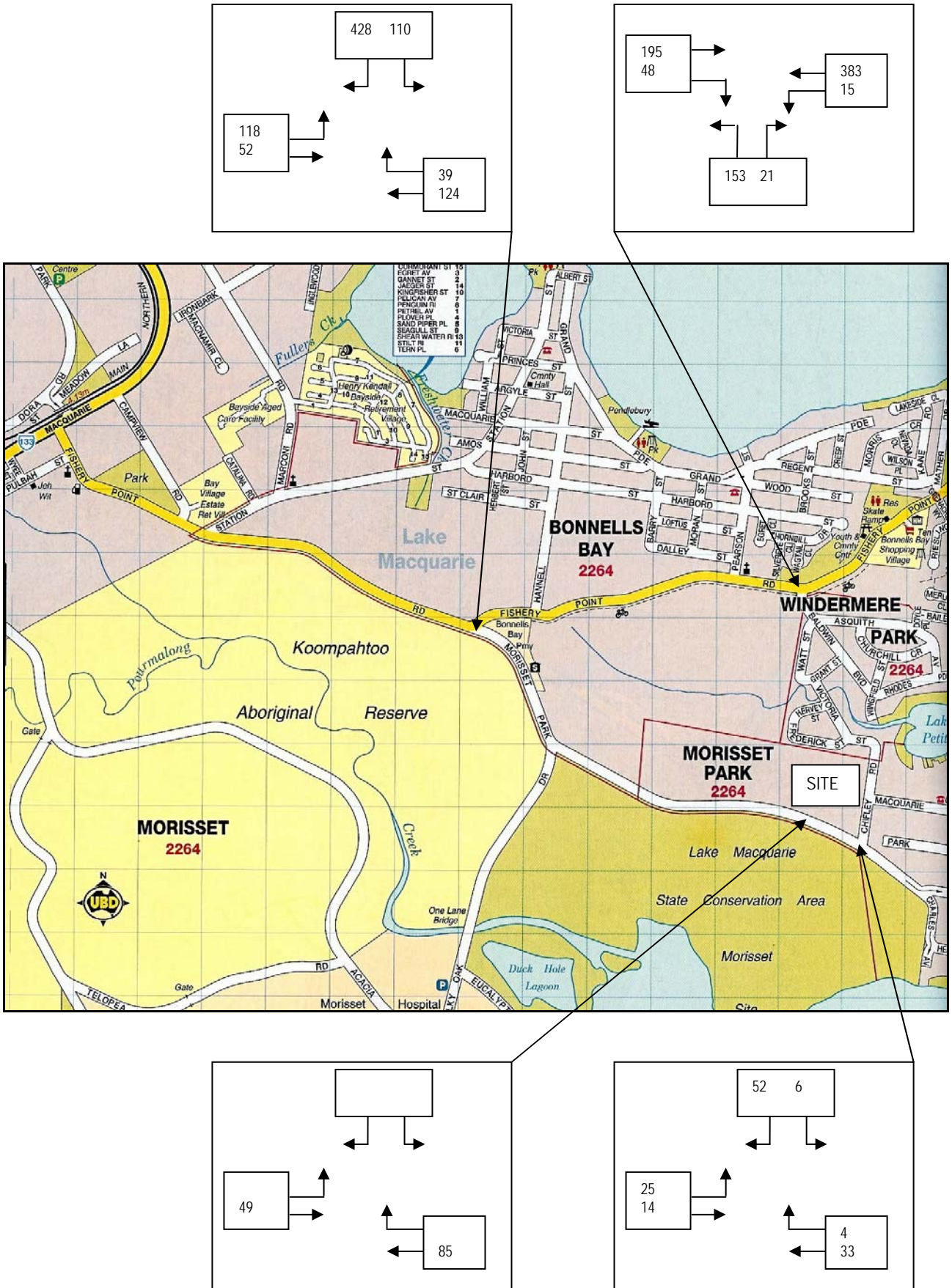


FIGURE 1 – EXISTING AM PEAK TRAFFIC FLOWS 2007

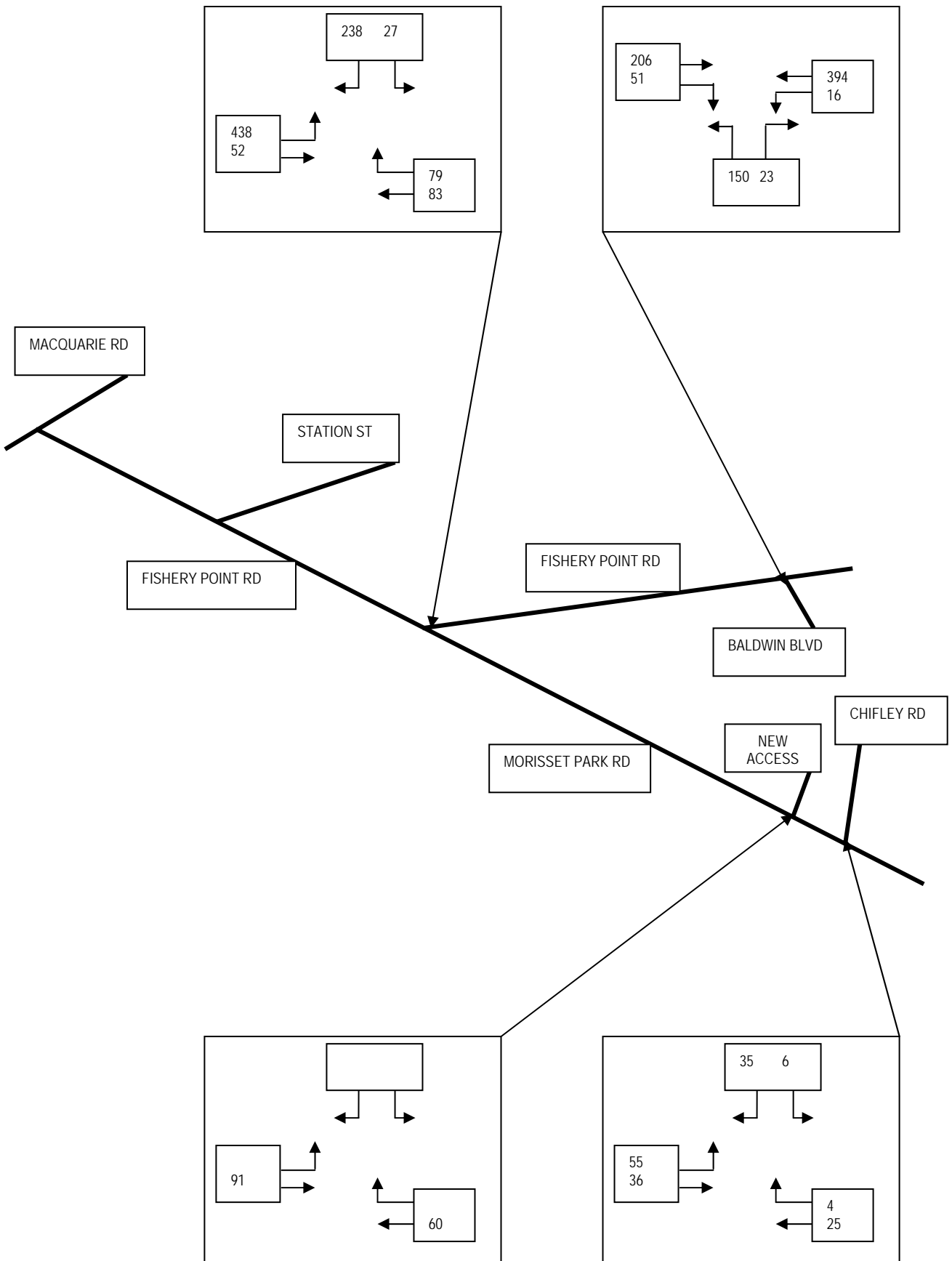


FIGURE 2 – EXISTING PM PEAK TRAFFIC FLOWS 2007

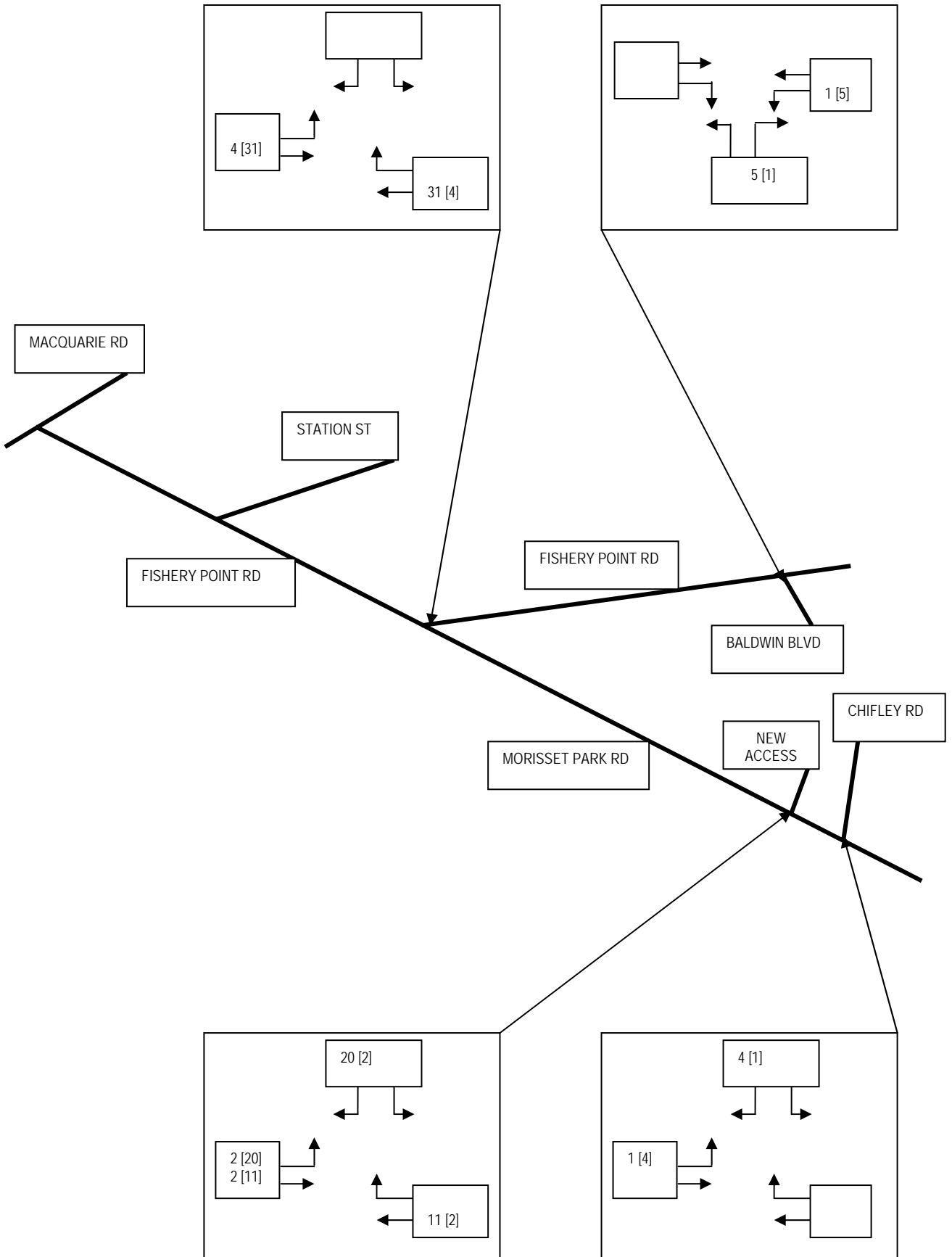


FIGURE 3 – TRAFFIC GENERATION & DISTRIBUTION SUBJECT DA (PM PEAK SHOWN IN [])

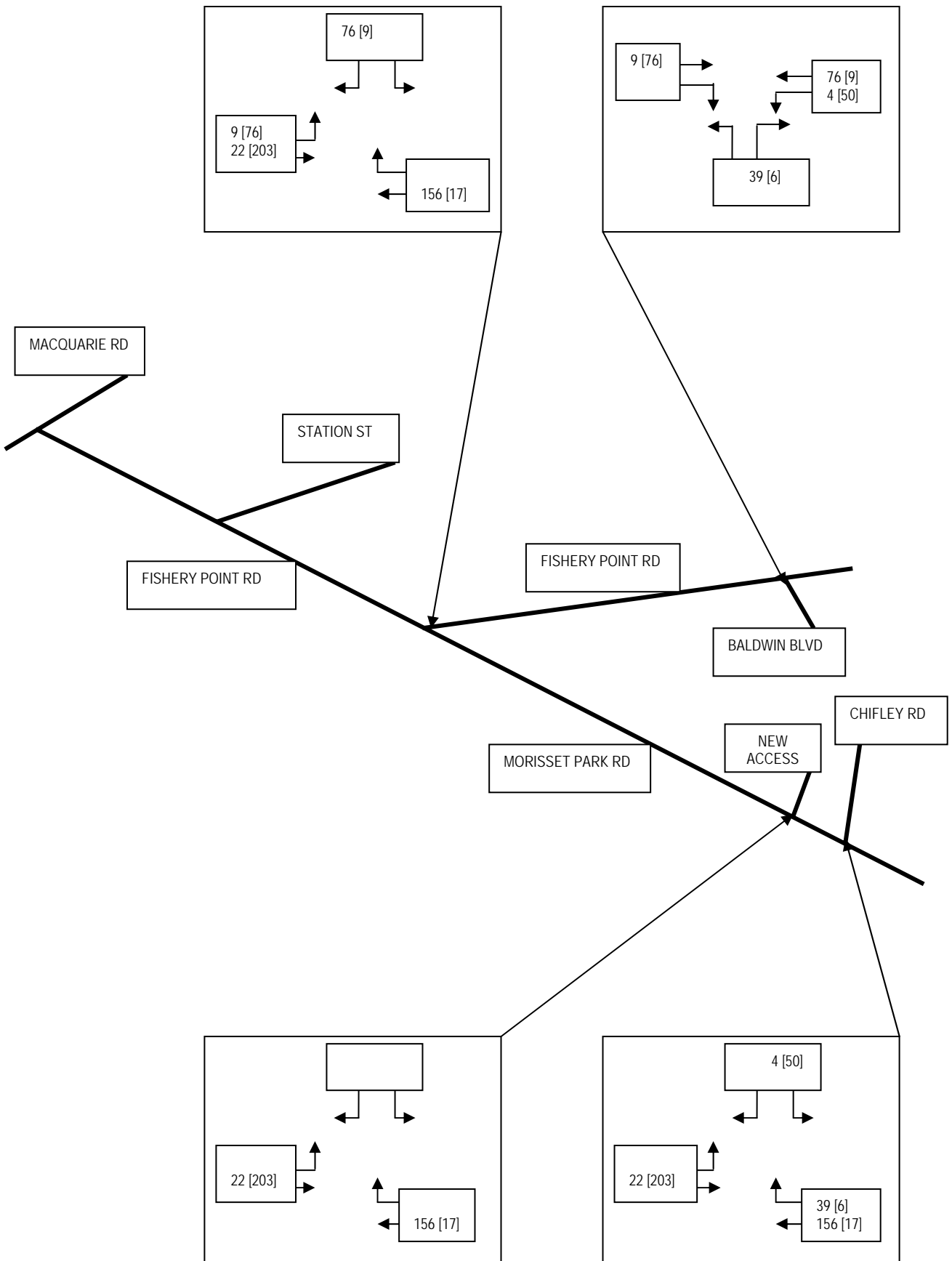


FIGURE 4 – TRAFFIC GENERATION AND DISTRIBUTION OTHER KNOWN DEVELOPMENT POTENTIAL (PM PEAK IN [])

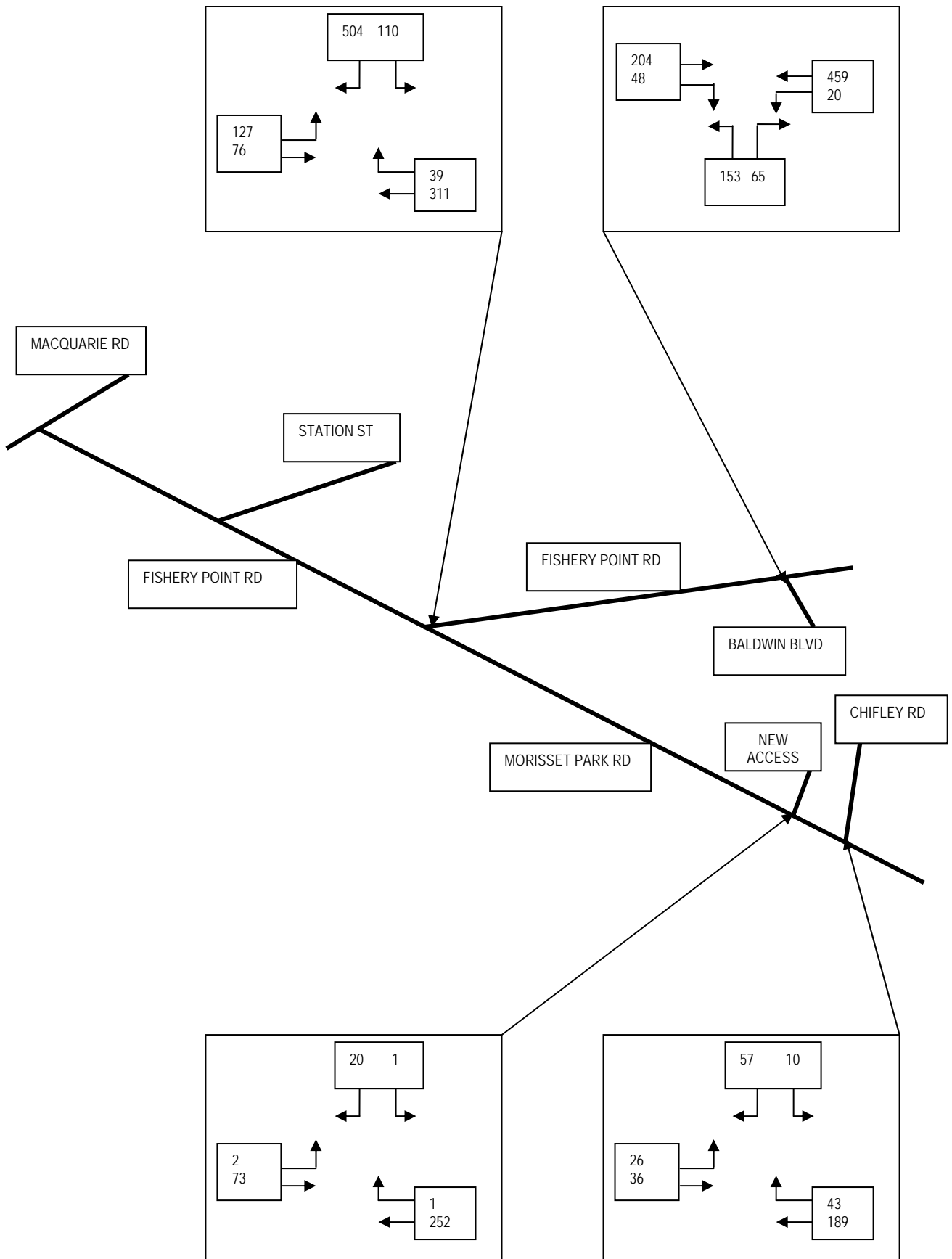


FIGURE 5 – POTENTIAL AM PEAK EXISTING PLUS ALL KNOWN DEVELOPMENT

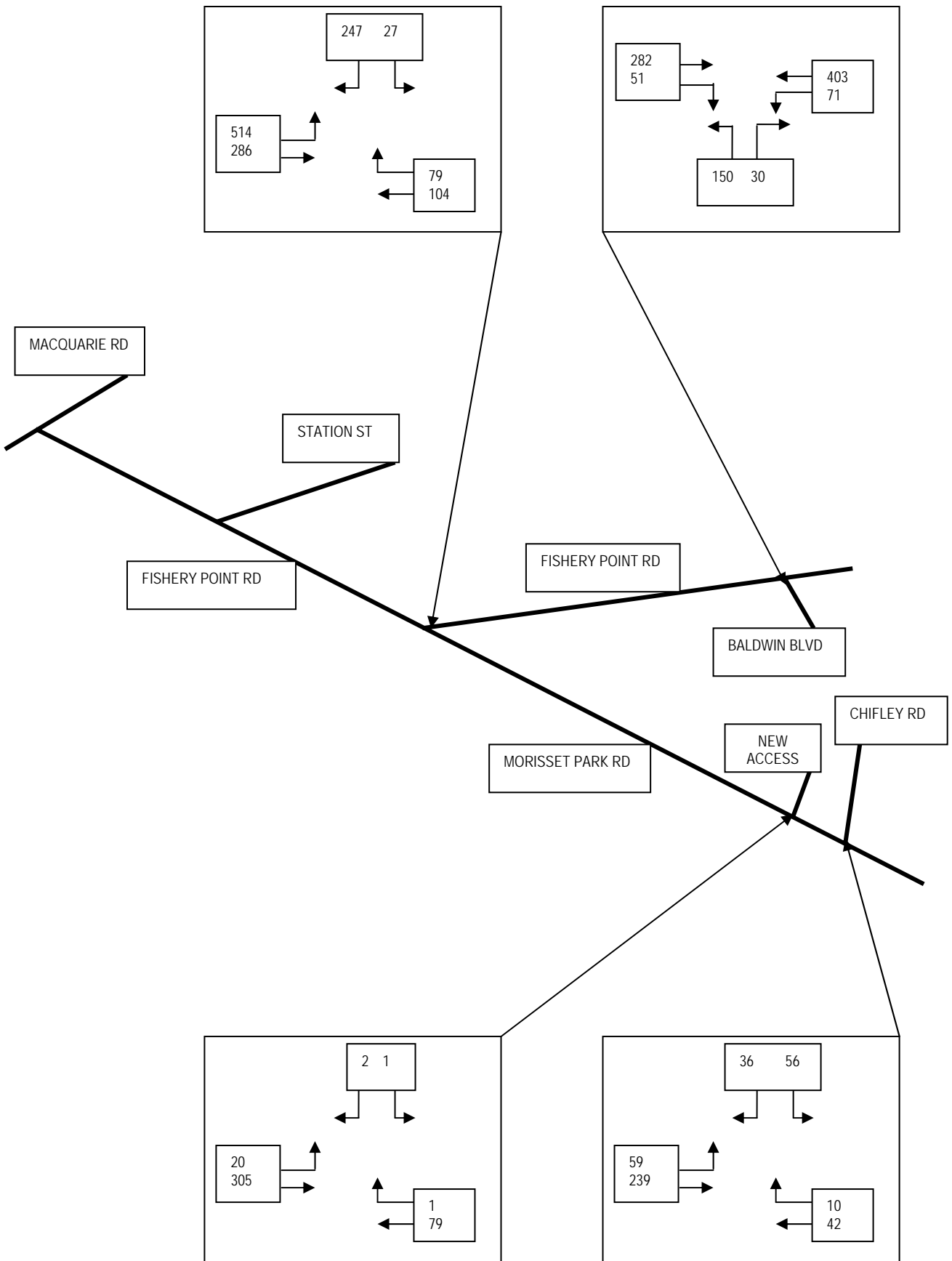


FIGURE 6 – POTENTIAL PM PEAK EXISTING PLUS ALL KNOWN DEVELOPMENT

10b. Traffic Generation Implications

Analysis of the traffic volumes offers many facts including:

- This development will increase existing traffic on Morisset Park Road at its frontage by 20%.
- Additional identified development to the east of this site will increase existing traffic on Morisset Park Road at the subject development frontage by 60%.
- This development will increase existing traffic at the Fishery Point Road & Baldwin Blvd intersection by 0.007%
- Additional identified development will increase existing traffic at the Fishery Point Road & Baldwin Blvd intersection by 0.09%.
- This development will increase existing traffic on the Morisset Park & Fishery Point Roads intersection by 0.06% and even less % at the Station Street intersection.
- Of the total developments identified in reports referenced by TPK for this review the subject development represents around 1% of the total increase in traffic demand on the road network.

Therefore it is logical to consider that the subject development had:

- An obvious accountability to construct Morisset Park Road & New Access intersection.
- 20% accountability for any upgrade of the Morisset Park & Chifley Roads intersection.
- 1% accountability for Morisset Park & Fishery Point Roads intersection.
- 1% accountability for Fishery Point Road & Baldwin Boulevard intersection upgrade and
- Given the Station Street development adds further traffic to the system this development hardly registers in terms of traffic growth/impact at the Fishery Point Road and Station Street upgrade.

The above considerations put into perspective the potential influence and/or impact of this development on the immediate and distant road network.

11. Road Network upgrades (This addresses Council's comments DGR 4.2 & 5 Feb 2009)

The Applicant has a settled agreement with the RTA for a contribution to the upgrade of the intersection of Macquarie and Fishery Point Road; no further comment needed in this report.

TPK has concluded from discussion with council and a review of referenced peninsular traffic studies that the following intersections will be impacted upon from either individual or accumulated peninsular development; those intersections are:

- a. Morisset Park & Chifley Roads
- b. Morisset Park & New Access Roads (at subject site)
- c. Fishery Point Road and Baldwin Boulevard
- d. Morisset Park & Fishery Point Roads
- e. Fishery Point Road and Station Street

TPK discusses each intersection in the following text:

a. Morisset Park & Chifley Roads

TPK considers that the road environment makes reference to Austroads, Part 5, and Figure 6.41 relevant to this intersection as the environment will remain semi-rural with the land opposite the subject site unlikely to be developed.

The warrant chart (Figure 6.41) indicates that an AUR type geometric layout is applicable to this intersection.

SIDRA modelling undertaken in NTPE, 2008 has already confirmed that such a layout would provide adequate intersection capacity.

An estimate of cost to upgrade the existing intersection is \$150,000 as there may be a need for power pole relocations.

b. Morisset Park & New Access Roads (at subject site)

TPK considers that the road environment makes reference to Austroads, Part 5, and Figure 6.41 relevant to this intersection as the environment will remain semi-rural with the land opposite the subject site unlikely to be developed.

The warrant chart (Figure 6.41) indicates that an AUR type geometric layout is applicable to this intersection. SIDRA modelling undertaken in NTPE, 2008 has already confirmed that such a layout would provide adequate intersection capacity.

This intersection may need to incorporate provision for bus shelters on both sides, dependant on the terms of development consent.

An estimate of cost to upgrade works over and above providing a basic BAR intersection is \$250,000 as there may be power pole relocation and retaining walls required to provide lane widths and bus amenity.

c. Fishery Point Road and Baldwin Boulevard

NTPE, 2008 modelled the intersection as part of the analysis for this development. In applying a 2% growth across all movements rather than selectively NTPE concluded that in 2018 intersection works were needed to provide intersection capacity.

The growth at this intersection would, in TPK's view be confined predominately to the through traffic as known development has little impact in terms of growth.

NTPE's modelling identified the right turn from Baldwin Boulevard as the movement impacted upon and recommended a Type C geometric upgrade. The delay to the right turn from Baldwin Boulevard will be generated by growth in the through traffic so the NTPE identified capacity issue remains valid; just the volumes may not be as high.

TPK suggests that the NTPE recommended Type C upgrade would not assist the impacted movement and perhaps NTPE were considering sea gull channelisation to reduce the number of opposing movements the right turn from Baldwin Boulevard had to give way to.

This intersection attracts traffic from a number of residential precincts and will continue to facilitate a connection between Morisset Park Road and Fishery Point Road via Chifley Road and Baldwin Boulevard, regardless of whether the connectivity is improved.

TPK, following a review of the road network surrounding this site suggests that as growth occurs both in land use and traffic this intersection would be best forward planned for upgraded to a small roundabout layout; this would be in balance with nearby intersections and extend the benefit of traffic calming whilst maintaining route capacity and efficiency, as the existing nearby roundabouts do.

An estimate of cost to upgrade is \$3 to 400,000. The subject developments increase in traffic generations in comparison to existing traffic demands is minimal (see Section 10b of this report) that the accountability for total works cannot be justified; any accountability to contribute to the upgrade is negligible in dollar terms and TPK were unable to identify any interim works of viable value.

d. Morisset Park & Fishery Point Roads

BTF, 2008 modelled for roundabout control whilst NTPE indicated a preference to signal control.

Council has advised that signal control has been adopted; TPK is unaware if this has RTA approval.

TPK as part of the review has discussed with the School Principal the potential for the Bonnells Bay Primary to remain on its current site as the school should be a major influence on the preferred intersection upgrade; the Principal has advised the plan is for long term occupancy of the site and hence further support for traffic signal control.

Currently Fishery Point Road from the east is the controlled leg of the T-Junction. With single lane approaches driver decision making on the controlled leg must be impeded, in terms of the intended direction of approaching traffic due to no lane discipline/dedication for turn movements.

TPK suggest that construction of a dedicated left turn slip lane for traffic from Morisset turn left into the eastern leg of Fishery Point Road would provide an interim upgrade for capacity and road safety.

The pavement for the lane would be incorporated into the ultimate traffic signal layout and hence would not be a waste of upgrade funds.

The cost of roadworks for suitable traffic signal operation is considered to be significant and intersection costs of \$500,000 including the traffic signals would not be unexpected. In the interim it has been estimated that the left turn slip lane could be provided for around \$80,000 subject to services.

e. Fishery Point Road and Station Street

TPK earlier in this review report demonstrated how insignificant the traffic generation increase from this development is relative to not only existing traffic flow but when taking into account existing and future traffic growth.

To consider this development in terms of a peninsular master plan again the impact is not significant but it does contribute to the overall need to upgrade the peninsular road network; the extent of the impact is the matter of influence.

TPK submits the percentage accountability could be no more than 1% when the additional traffic is added from Station Street; this would equate to around \$3,000 if the estimate remains at around \$300,000.

12. Contributing to Road Network upgrade

The applicant does not dismiss the requirement to contribute to road network upgrade; there are works that are essential to the project and then there are works that are required to manage the impact of the wider land use development of the peninsular.

TPK has provided Table 1 as a means to balance/consider the options for contribution to road network upgrade.

Agreed Intersections in the Area of Influence for this Development	Recommended works in kind roadworks schedule responding to essential and interim works	Potential scope of works under a Voluntary Agreement based on % Traffic Increase.
Morisset Park & Chifley Roads	\$150,000	\$50,000
Morisset Park & New Access Road (This Development)	\$250,000	\$250,000
Fishery Point Road & Baldwin Boulevard		\$4,000
Morisset Park & Fishery Point Roads	\$80,000 #	\$5,000
Fishery Point Road & Station Street		\$3,000

TABLE 1 – ROADWORKS SCHEDULE

The left turn lane is a safety initiative recommended by this review. It will assist driver decision making under existing traffic demand let alone any increased traffic demand; the initiative has value regardless of development.

It would seem acceptable to simply require this development to provide the works at the two frontage intersections on Morisset Park Road under “works in kind” this would ensure that an acceptable contribution is made to the overall road network upgrade.

The two intersections are estimated to cost \$400,000 which is 25% of the total road network upgrade cost estimates identified in this report. That contribution is greater than the 1% increase in traffic this development creates by comparison to the total identified traffic increases of the peninsular; TPK does acknowledge the two intersections are integral to the development and are required regardless of traffic increase percents but the point is valid in considering acceptable contributions.

13. Summation

The assessment by TPK has concluded that:

- The subject development is not a significant impact on the road network when considered in isolation or as part of an accumulated know potential increase in land use development/traffic demand.
- The development has an accountability to participate in road network upgrade and that can be facilitated by consideration to completion of selective works in kind that contribute to a council masterplan view of the peninsular road network. (Rather than a payment to council via a Voluntary Planning Agreement)
- The scope of roadworks that would be an acceptable contribution to enhanced capacity and road safety on the peninsular road network by the subject applicant, subject to the timing of all known potential development is submitted to be:
 - a. Construct an AUR geometric intersection for Morisset Park Road and Chifley Road.
 - b. Construct an AUR geometric intersection for Morisset Park Road and the New Access Road to the estate; including bus amenity.
- Whilst not submitted as a work generated by the demands of the subject development, the construction of the suggested left turn slip lane on Fishery Point Road at the Morisset Park Road intersection (for traffic from Morisset travelling east on Fishery Point Road) would assist driver decision making of the existing road network.

The last dot point above is potential interim works that TPK consider would assist the existing road network driver decision making and provide interim value as the traffic demands grow to ultimate demands; it was not seen as an essential upgrade to manage the impact of this development alone.

TPK submit that this review provides a suitable response to comments from Lake Macquarie City Council on the project and tenders a work schedule that is an acceptable contribution to road network upgrade.

Prepared by

T Keating

Mr. T Keating
Director, TPK & Associates