

**LLOYD ELSMORE PARK
TRAFFIC & PARKING IMPROVEMENTS**

**LLOYD ELSMORE PARK
PAKURANGA**

PRELIMINARY STUDY

Prepared By: J.A.J. Hyland
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1.0 INTRODUCTION

Traffic Planning Consultants Ltd have been commissioned by CLC Consulting Group Ltd on behalf of Manukau City Council to undertake a preliminary traffic engineering assessment of existing traffic management issues coinciding with winter netball games at Lloyd Elsmore Park and to provide preliminary recommendations for cost effective traffic safety and efficiency improvements.

In carrying out this study a site visit was undertaken to observe traffic conditions during netball competition on Saturday 25 July 2009 from 7:30am to 11:00am. A site meeting was also attended at the AMI Auckland Netball Centre in Mt Wellington to review traffic engineering aspects associated with the planning and operation of those netball facilities.

2.0 KEY ISSUES

A number of key issues pertaining to traffic conditions at Lloyd Elsmore Park during Saturday netball games were raised at the initial site meeting. These are listed below in italics together with corresponding observations recorded during the site visit on 25th July (in plain text).

- *Conflict associated with drop off zones along the main access road*

Conflict in this area is due primarily to the confusing mix of pedestrian activity, long term parking that obstructs pick up / drop off activity, pick up / drop off activity occurring from traffic lanes and broken yellow lines, U-turns, queues on approach to Pakuranga Road signals.

- *Netball users desire to park as close to the courts as possible*

This may be more accurately stated as a desire to park as close to the pedestrian access points to the courts.

- *Feasibility of / issues with existing pedestrian entrance points to courts*

- At present there are three primary pedestrian access points to the courts.
- Parking is limited adjacent to two of these accesses, i.e. the entry point from CP14 and the entry point along the service lane from the Depot access road. Hence, the majority of users gravitate to parking spaces close to the pedestrian access from Sir Lloyd Drive.
- It was observed that a gate providing pedestrian access from CP14 at the western end of the courts was padlocked for the duration of the Saturday games. This resulted in some people walking down Sir Lloyd Drive or through the gardens in order to move from CP14 into the courts via the gate from Sir Lloyd Drive.

- The Sir Lloyd Drive pedestrian access to the netball courts is situated close to the signalised intersection at Pakuranga Road as well as the vehicle accesses to CP13 and CP14. This contributes to the general confusion of vehicle and pedestrian movements in this vicinity particularly during the transition periods between scheduled netball rounds.
- *Issues associated with pedestrian use of existing speed hump for crossing main access road*
 - The central pedestrian route across the southernmost netball courts and the only pedestrian access linking the courts with the main parking areas CP12 and CP13, both channel all pedestrians directly to the existing speed hump in order to cross Sir Lloyd Drive.
 - Pedestrians have no choice but to cross Sir Lloyd Drive at the speed hump as there are no alternative pedestrian routes linking either of the other pedestrian access points with the car parks CP12 and CP13.
- *Directional guidance / signage from parking areas to facilities*
 - It is likely that lack of directional signage contributes to under-utilisation of parking in the Depot area (CP18), as this area is currently out of 'line of sight' for most drivers and the threshold to this area with the large gate gives the impression that this area is not available for general parking. During our site observations only one half of the gate was open during the netball games.
 - Furthermore, the tree lined isolation of the Depot parking area may give some motorists security concerns with regard to their vehicles and they may therefore be reluctant to park there.
- *Provision of a suitably located drop off zone*

The courtside kerb line of Sir Lloyd Drive is a suitable drop off area however this is not used as such because this is first area to be fully 'parked out' before motorists begin filling the main car parks CP12, CP13 and CP14.

- *Overflow parking practices onto green areas / illegal parking*

There is insufficient parking available to cater for existing parking demand peaks between 9:30am and 11:00am. This results in drivers parking on grass berms and broken yellow lines. Once vehicles begin to park on grass areas and broken yellow lines, others soon follow. This occurred during our site observations despite the grass areas being very wet and mushy. Some motorists were observed to travel over long expanses of grass rather than using paved roads to reach the same point.

3.0 STUDY OBJECTIVES

The overall objective of this assessment is to rationalise the use of existing parking areas and access arrangements under peak parking conditions and to identify traffic and parking management initiatives to optimise the use of these areas. Specifically, the recommendations made in this report aim to:

- Reduce confusion and improve safety on Sir Lloyd Drive between the Pakuranga Road signals and the existing speed hump.
- Provide a safe pedestrian route and crossing point on Sir Lloyd Drive for pedestrians moving between the netball courts and the primary car parking areas CP12 and CP13.
- Encourage better distribution of pick up and drop off activity around the netball courts with respect to the 3 primary pedestrian access points label A, B and C on Drawing 09178-01.
- Increase / optimise the availability of parking.

4.0 RECOMMENDED IMPROVEMENTS

4.1 Short Term Improvements

In the context of this report short term improvements are either critical or can be implemented at relatively low cost. In general these recommendations are shown in 'yellow' on the attached schematic plans 09178-01 to 09178-06

- (i) Close the existing pedestrian access to the courts from Sir Lloyd Drive, and relocate the primary pedestrian crossing point eastward away from the confusion of traffic around the vehicle accesses to CP13 and CP14 and the approach to the Pakuranga Road signals. (Drawing 09178-02).
 - This will reduce the desirability of performing pick ups and drop offs from the broken yellow lines on Sir Lloyd Drive and reduce the risk to pedestrians crossing Sir Lloyd Drive.
- (ii) Install a raised zebra crossing across Sir Lloyd Drive at a central location corresponding to the interface of the existing netball courts with the proposed netball courts. (Drawing 09178-02).
 - This crossing should incorporate kerb extensions on either side of the crossing and carriageway to reduce the two-way flow over the crossing to 5.5 metres and to maintain clear sight lines for pedestrians beyond parked cars along the approaches to the crossing.
 - The crossing should connect with paths providing a continuous route across the grass berms on either side of Sir Lloyd Drive connecting the courts with the parking in CP13.

- (iii) A parking space or spaces should be reserved for the mobile coffee cart within CP13 in the vicinity of the zebra crossing i.e close the main pedestrian desire line.
- (iv) Clearly mark out yellow painted pick up / drop off zones along the northern (court-side) kerb line of Sir Lloyd Drive to either side of the zebra crossing. (Drawings 09178-02 & 04).
- (v) Construct a clear kerbed termination to the drop off zone at the eastern end to discourage parking in this location which creates a bottle neck under current circumstances.
- (vi) Construct a kerbside footpath adjacent to the marked drop of zones providing a safe continuous pedestrian route from all positions along the drop off zone to the new pedestrian court access labelled Gate 'A' on Drawing 09178-02.
 - In the event that protection of existing trees prohibits the construction of a path along the kerb line, this path should be constructed behind the trees along the outside of the court fence line with regular connecting paths through the trees.
 - Either path option should not extend westward as far as CP14. It is preferable that pedestrians originating from CP14 use the existing pedestrian entrance to the courts marked Gate 'C'. (Drawing 09178-02). The repositioning of Gate A will further discourage this practice. It is also desirable to discourage pedestrians from gathering around the entrance to CP14 in order to be picked up, as currently happens.
- (vii) Formally mark out parallel parking spaces along Sir Lloyd Drive. The MCC Standard is 2.5 metre wide spaces however other standards utilise 2.0 metre wide spaces to further contain parking and maintain through traffic lane widths.
 - In combination with the proposed marking of drop off zones, this will assist in channelling through movements along Sir Lloyd Drive whilst providing a visual traffic calming effect.
- (viii) Introduce a painted hatched buffer zone between entry and exit lanes from Pakuranga Road and tapered markings to channel entry traffic through this wide expanse of seal to the narrower section of Sir Lloyd Drive. (Drawing 09178-02).
 - Channelling entry traffic in this manner will help discourage motorists from using this area as a drop off whilst also breaking up the wide expanse of un-marked seal.
- (ix) Remove the existing speed hump. (Drawing 09178-02).
- (x) Install new speed humps to act as entry thresholds at either end of this zone of high pedestrian activity along Sir Lloyd Drive.
 - The western speed hump is positioned away from pedestrian routes / desire lines and terminates in the middle of a parking space at it's southern end so that cars parked across the hump will further deter pedestrians.

- This speed hump also breaks up the wide expanse of seal on approach to the Pakuranga Road signals and discourages vehicles from rushing toward a green traffic signal through this area of potential conflict.
- (xi) Remark painted parking spaces in CP12, reducing stall widths from 2.6 metres to 2.5 metres. In two instances this will create an additional complying parking space without requiring alterations to traffic islands. (Drawing 09178-03).
- Altering traffic islands at the ends of these parking rows in conjunction with reducing stall widths will produce up to eight additional parking spaces. It was observed that under peak conditions cars already park on these grassed areas.
 - The same reduction of stall widths from 2.6 metres to 2.5 metres along the four existing parking rows in CP13 will produce a further four parking spaces without altering traffic islands.
- (i) Install a mini mountable 'dome' roundabout at the intersection of Sir Lloyd Drive with the Depot access road.
- This style of roundabout can be incorporated within the existing kerb line constraints at this intersection with the possible addition of some deflecting islands. The approach islands can also be fully mountable.
 - This roundabout would enable cars to perform U-turns at this point providing additional circulating flexibility for drivers, without impeding the passage of trucks. Trucks would not be able to perform U-Turns, however neither can they do so at present.
- (xii) Construct an indented pick up / drop off zone along the access road leading to the Depot area.
- In combination with improved directional signage and pedestrian access facilities, a drop off area along this access road will encourage the use both of Gate 'B' and the revamped Depot parking area (CP18).
 - An indented drop off zone enables the opposite side of the access road to be marked out with parallel parking spaces. These spaces should also be serviced by a footpath along the kerb line leading to pram crossings opposite Gate B.
- (xiii) Construct a footpath around the kerb line perimeter of the proposed netball courts linking the indented drop off zone with Gate A, Gate B and the revamped Depot parking area.
- With the construction of the new netball courts it will be important to promote the use of pedestrian access 'B' to further distribute parking demand around the Courts. At present this Depot access road is uninviting as there is no where to turn around easily and the entry to the Depot area looks out of bounds.

- (xiv) Provide a clear pedestrian route into the Depot parking area, opening up a visual site line between the courts and the parking area to encourage people to park here.
 - Defining clear pedestrian routes between the Depot parking and the netball courts in conjunction with improved directional signage to promote the Depot parking area as a viable alternative to parking in grass berms and broken yellow lines. Increased usage of this area will increase passive security thereby encouraging even more use.

- (xv) Restrict vehicle access at Gate B to service vehicles only with removable bollards and ensure that both the new courts and the existing courts are accessible to pedestrians at this point.
 - NB: Restricting vehicle access will only become effective once fence lines around the new courts are in place.
 - In order to make Gate B more inviting to pedestrians all courts in this vicinity should be readily accessible at this point without having to walk along the length of the service lane to reach gates beside the clubrooms.

- (xvi) In order to promote a even usage of the three pedestrian entrance points at Gates A, B & C, there should be minimal restriction to pedestrian movements through the courts and around the club rooms. For example a pedestrian entering at Gate B should be able to walk to the westernmost courts between Gate A and Gate C without having to walk anti-clockwise around the clubrooms. It is important that motorists do not feel dis-advantaged by parking in the Depot area compared with CP13.

- (xvii) Extend and formalise Depot parking area removing obstructions and providing sealed and marked parking areas. (Drawing 09178-05).
 - There is some uncertainty around how the various interests who use this area are prepared to operate. It seems clear that the boxing gym area is currently fenced off from the main area for security reasons. However, this also limits the availability of parking. Vehicle security is possibly a concern for some given the relatively isolated tree lined environment. Any proposed parking layout needs to balance the needs of all stake holders.
 - We have shown the approximate number of parking spaces that could be created in each of the existing fenced areas, excluding the area currently used as a BMX track.

It should be noted however, that whilst not all areas need to be incorporated into a revised parking layout, utilising all available space now will improve the efficiency of the overall car park design, maximising both the number of spaces created and the optimising circulation through the parking area. It is preferable to establish clearly which areas can be used early in the design process as incorporating an area at a later stage may not make best use of available space in the context of a previously established parking layout.

- The decision to circulate vehicles through the Depot past the boxing gym and out around the rear of the buildings, is dependant on the desired parking layout and the areas incorporated into that layout. There may also be some security concern at opening a second access point into this area and there may be stakeholder concerns about having all vehicles circulating past the building frontages when this does not currently occur.
- (xviii) Construct angle parking spaces in the existing 'bay' area (CP8) on Sir Lloyd Drive. (Drawing 09178-06).
- The current parallel parking layout through this area is an inefficient use of space providing just 6 parking spaces. By introducing 60 degree angle parking spaces and additional 8 spaces can be created.
- (xix) Extend the existing 90 degree parking rows in CP8 and CP10 to create and additional 4 parking spaces. (Drawing 09178-06).

4.2 Long Term Improvements

In the context of this report long term improvements are either not critical or require more substantial works that can be implemented to improve traffic flow or to optimise the number of parking spaces provided. In general these recommendations are shown in 'blue' on the attached schematic plans 09178-01 to 09178-05.

- (ii) Remove the first 4 parking spaces at the entry to CP14 as manoeuvring in this area creates obstructions to entry movements from the signals as vehicles wait on Sir Lloyd Drive for these spaces to be vacated.
- This has been suggested as a long term improvement because, short term improvements may improve traffic flow through this area so that this is less of a issue.
- (iii) Reformat the layout of car park CP13 utilising the central grassed island that separates CP12 and CP13 and part of the grass berm adjacent to Sir Lloyd Drive. The existing layout of CP13 is loose and could be optimised to create an additional 55 complying parking spaces.
- The central two parking rows within the existing layout appear to be oversized and may have been designed to accommodate buses. The use of this parking area by buses needs to be considered against the need to provide additional peak car parking for netball activities.
 - This suggestion also needs to be considered against the need to protect trees within these central islands.
 - The resulting expanse of sealed parking could be interspersed with 2.0 metre wide islands between abutting parking rows provided vehicle bumpers can overhang the kerb lines without obstruction.

- (iv) Install a cul-de-sac style head at the entrance to the Depot parking area. This will provide vehicles using the new drop off area with an opportunity to turn around easily without entering the Depot area either after drop off or to enable vehicles to use the parallel parking opposite the proposed drop off.
 - This preliminary design also incorporates a painted or dome mountable centre island to assist in channelling traffic.
 - This design has a diameter of 15 metres which is less than the MCC cul-de-sac standard of 20 metres which caters for truck movements. This layout does not inhibit truck movements any more than the existing situation which does not cater for truck turning movements as these can occur within the Depot area if necessary.
 - A short term alternative to a cul-de-sac would be to provide a turning head in this location or to encourage vehicles to enter the depot area in order to turn around.

- (v) Extend the main existing swimming pool parking area CP9 to create an additional 43 parking spaces.
 - It is noted that the existing parking area is surrounded by a grassy knoll that acts as a visual buffer to traffic approaching along Sir Lloyd Drive from Pakuranga Road. This may have benefits in terms of maintaining a continuous 'park like' visual aesthetic, however it may be detrimental in terms of providing a visual link between the netball area and the pool area that might encourage motorists to utilise parking a little further from their destinations rather than simply parking illegally on the grass.
 - Extending this parking area also provides an opportunity to provide a more direct the pedestrian route between the parking in CP9 and the netball courts.

- (vi) Extend parking area CP8 along the water utility access road to create an additional 21 parking spaces.
 - This will require a possible revision of access points into this parking area.

5.0 PARKING DEMAND

Data provided by the Howick Pakuranga Netball Centre, indicates that Saturday morning matches are scheduled over four rounds with up to 18 matches played per round. Transition times between rounds occur at 9:20am, 10:10am and 11:00am respectively. Peak traffic generation and parking demand occurs just prior to these change over periods when players and spectators from the 18 later matches begin to arrive whilst those associated with the 18 earlier matches have yet to depart.

This is reflected in the parking survey data collected by MCC which shows no parking spaces available in the 3 main parking areas CP12, CP13 and CP14 between the hours of 9:30am and 11:00am, based on counts taken every ½ hour.

However, our site observations suggest that peak parking demand is more isolated being in the order of 10 to 15 minutes around these transition periods. Shortly after the transition periods, parking spaces again became available once motorists from earlier matches have departed. Parking demand then builds again prior to the next round of games.

It is during this transition period when there is not enough parking to cater for peak demand, that vehicles start to park illegally on grass berms and broken yellow lines. In addition to vehicles parked within parking areas, it was observed that 67 cars parked legally on access roads in the vicinity of the courts and an additional 30 cars parked illegally on grass berms or broken yellow lines.

The approximate parking demand during the second round of games (excluding parking in the vicinity of the swimming pool complex) is as follows:

Parking Area	Number of Cars
CP12	148
CP13	112
CP14	46
CP15 (Theatre parking)	18
CP16 (Authorised only)	2
Along access routes	67
Illegal (Grass and NSAAT)	30
Circulating	12
Total	435

This equates to a parking demand of approximately 27 cars per court based on 16 matches being played per round. Note that peak activity corresponds to the arrival of two teams and the departure of two teams per court, or 7 cars per team.

On this basis, assuming that the scheduled rounds remain the same, an estimate for additional peak parking demand associated with the operation of 6 new courts equates an additional peak parking demand of 162 parking spaces over these transition periods.

6.0 PARKING AVAILABILITY

6.1 Netball Courts and Depot Area

Overall the suggested improvements outlined in Section 4.0 would have the following impact in terms of the availability of parking:

Short Term Improvements			
Parking Spaces Lost		Parking Spaces Gained	
Provision of Dedicated Drop Off areas	12	Reformat of Depot Parking	100
Zebra Crossing	6	Adjustments to CP12	9
		Markings Adjustments to CP13	4
Sub-Totals	18		113
Long term Improvements			
Adjustment to CP14	4	Full reformat of CP13	55
Mini Roundabout	4		
Sub-Totals	8		55
Totals	26		168

Hence, the net increase in parking around the netball courts from the short term improvements is expected to be in the order of 95 additional parking spaces with an additional 47 created through the full implementation of the long term improvements. Overall this equates to an net increase of 142 parking spaces.

However, this needs to be balanced against the desired outcome that vehicles which have previously parked illegally now park legally. Allowing for any overlaps between illegal parking and proposed improvements this equates to about 24 vehicles. Hence, the overall net increase in parking, assuming illegal parking no longer occurs, equates to 118 spaces.

Considering this against the expected additional parking demand associated with 6 new netball courts of 162 spaces, suggests that an additional 44 parking spaces would need to be created to cater for peak parking demand assuming the existing netball scheduling practices are maintained.

6.2 Swimming Pool Complex

In practical terms additional parking around the swimming pool complex is likely to be too far 'out of the way' for most netball traffic. Nevertheless, there is scope to provide an additional 72 parking spaces in this vicinity.

7.0 OTHER CONSIDERATIONS

7.1 Netball Draws and Scheduling Procedures

The above discussions about anticipated peak parking demand for 6 new netball courts and thus the amount of additional parking that may be required are based on the existing practice of scheduling 4 rounds of matches with transitions during which the arrival of up to 36 teams for later matches coincides with the departure of up to 36 teams from the earlier round.

An alternative approach to reducing peak parking demand, which essentially lasts no more than 20 minutes, would be to stagger netball rounds so that not all games finish at the same time. An adjustment that resulted in people from just half of the courts departing at one time could reduce the peak parking demand by up to 50% on which basis no additional parking spaces would need to be created above those proposed in this report.

This approach may not be practical in terms of the logistics and practice of managing multiple netball match, nevertheless the impact on parking demand would be significant and therefore worth considering.

7.2 Long Term Strategic Planning

Traffic Planning Consultants attended at site meeting at the Mt Wellington AMI Auckland Netball Centre to discuss traffic planning associated with the operation of those courts with Kay McIntyre of Alpha K Management Ltd and representatives of the Howick Pakuranga Netball Centre. Some of the key conclusions to come out of that discussion were:

- (i) Growth management strategies throughout Auckland are committed to increasing population densities. On this basis it will not be feasible to continue building additional netball outdoor netball courts to cater for growing demand.
- (ii) The solution is to begin planning for the eventual synthetic roofing over existing courts. This would enable netball matches to be played during the evenings up to 11:00pm which is not otherwise practical or popular with players on outdoor courts.
- (iii) From a traffic engineering perspective roofing courts in the future would have the positive effect of spreading traffic generation over a much wider timeframe resulting in less severe peak parking demand and traffic generation.
- (iv) Whilst the cost of roofing courts in the short term may be prohibitive, there are low cost planning steps that can be taken to future proof a site when replacing or redesigning infrastructure in anticipation of possible future roofing. This is applicable from a traffic engineering perspective particularly in relation to the construction of parking that caters for short term peak parking demand only.

7.3 The Feasibility of Reopening Direct Access from CP14 onto Pakuranga Road

From a traffic engineering perspective this is not considered feasible for the following reasons:

- (i) This is likely to attract through movements through this car park as vehicles enter from Pakuranga Road in order to avoid the traffic signals at Sir Lloyd Drive and proceed through to the existing crossing onto Sir Lloyd Drive. Through movements do not currently occur and would be likely to compromise pedestrian safety around Gate C.
- (ii) The existing crossing from CP14 onto Sir Lloyd Drive is already chaotic and congested at peak times, additional through traffic would further complicate the situation with no obvious traffic safety or operational benefits.

7.4 Enforcement of Parking of illegal Parking Practices

Traffic Planning Consultants understand that parking rules have been enforced from time to time within Lloyd Elsmore Park. The key consideration in this regard are as follows:

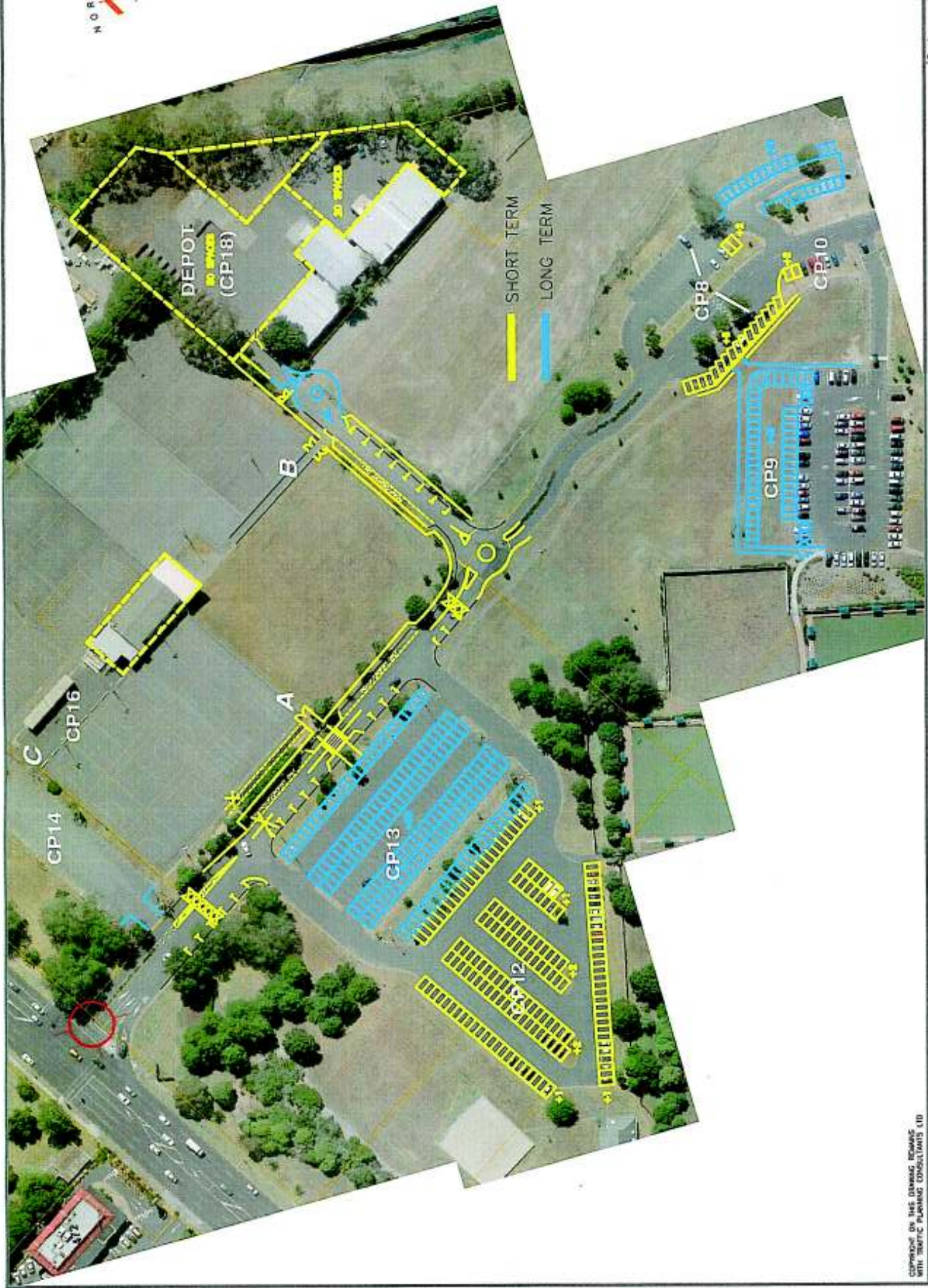
- Enforcement is unlikely to be effective as a means of modifying driver behaviour unless used in conjunction with the provision of additional alternative parking resources.
- Sir Lloyd Drive is not defined as a public road in the Manukau Operative District Planning Maps. Therefore, the legality of parking rules can potentially be challenged by persons who are ticketed.

TRAFFIC PLANNING CONSULTANTS



Joshua Hyland
September 2009

ATTACHMENT 1
Preliminary Site Plans

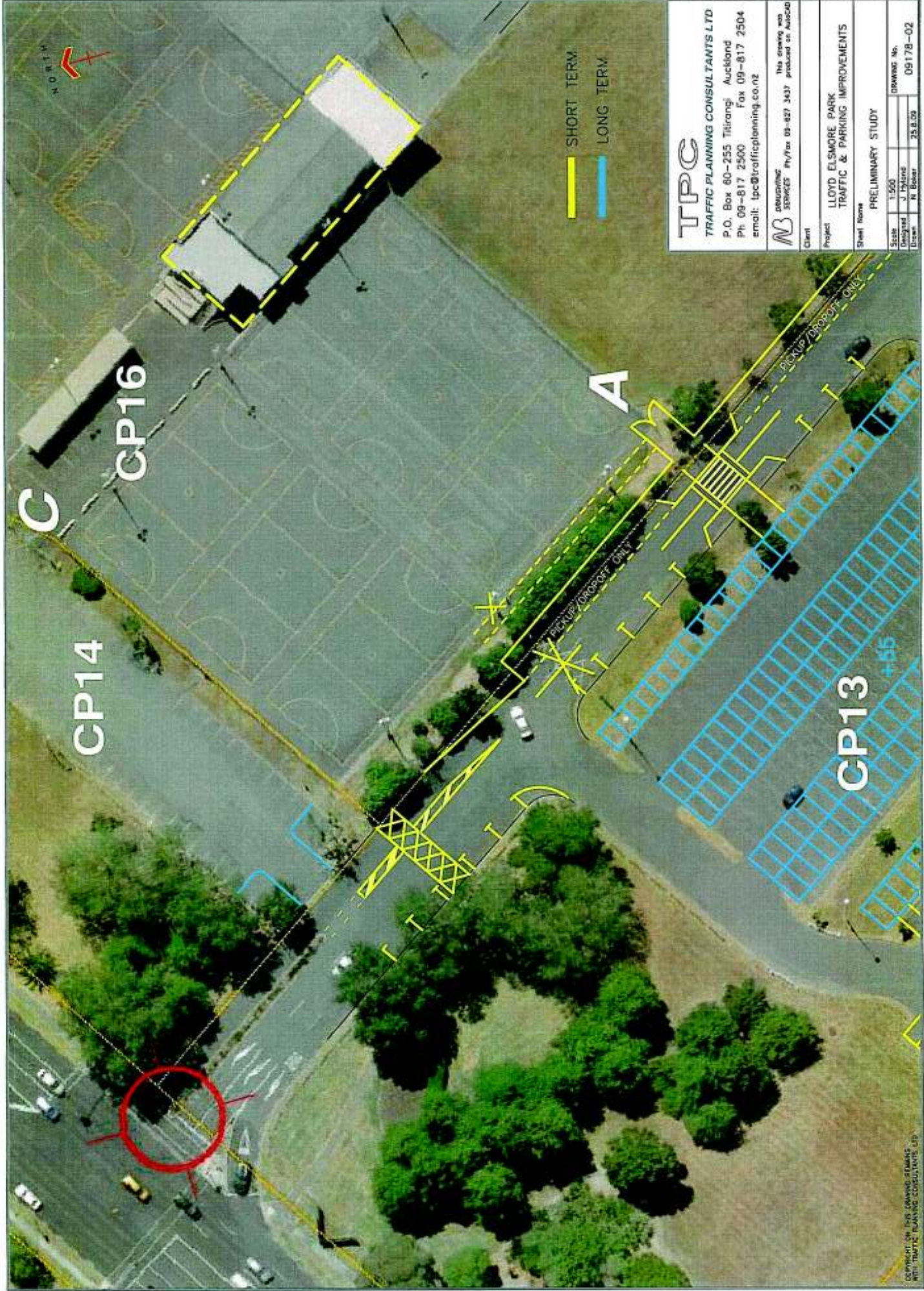


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NORTH

— SHORT TERM
— LONG TERM

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Sheet Name **PRELIMINARY STUDY**

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Drawn		Date	25.8.09
			DRAWING No. 09178-02

C

CP14

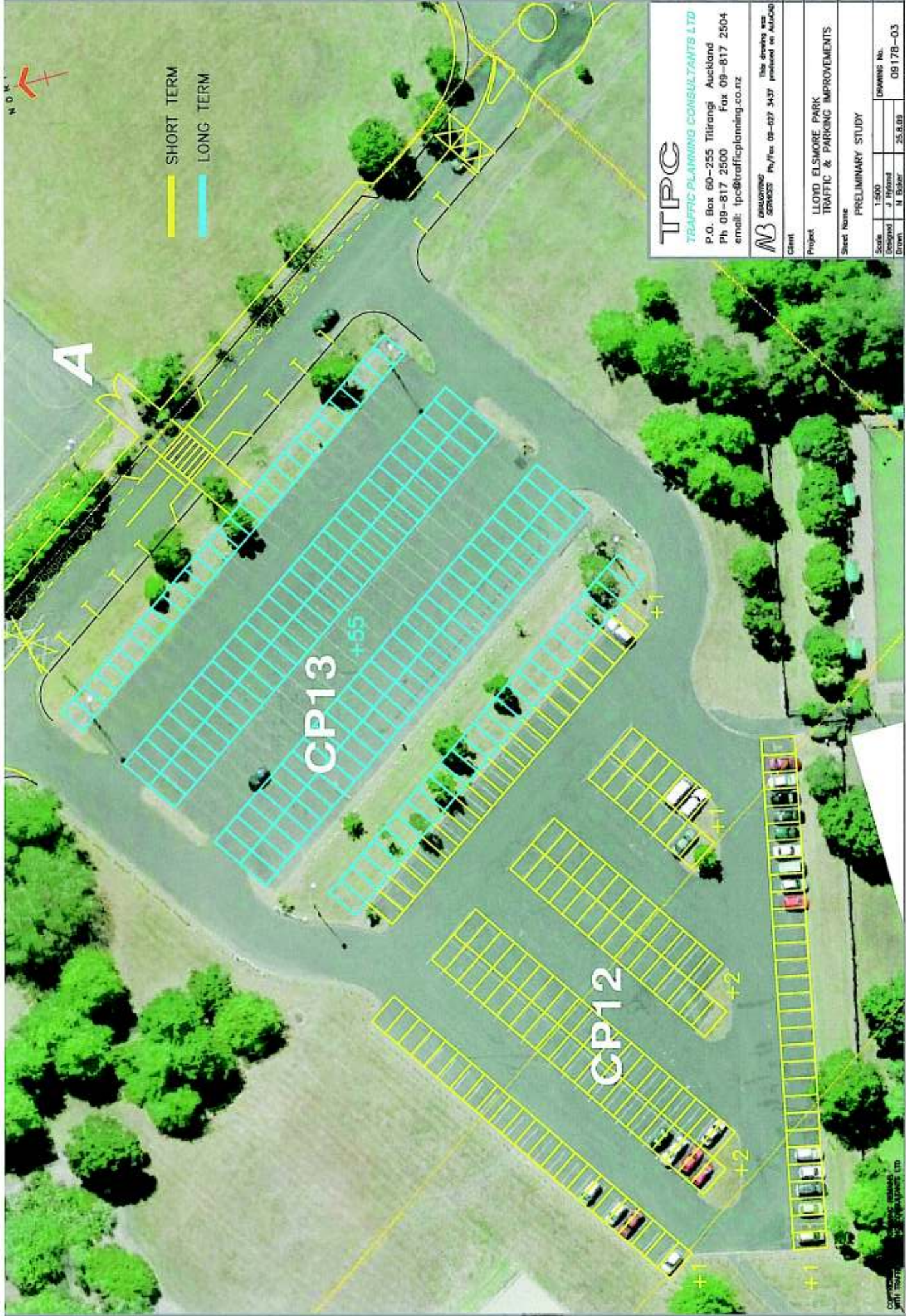
CP16

A

CP13

+55

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— SHORT TERM
— LONG TERM



A

CP13 +55

CP12 +2

+2

+2

+1

+1

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 Street Name: PRELIMINARY STUDY

Scale: 1:500	Design: J. Wilson	Drawn: N. Baker	25.8.09
DRAWING No.			0917B-03

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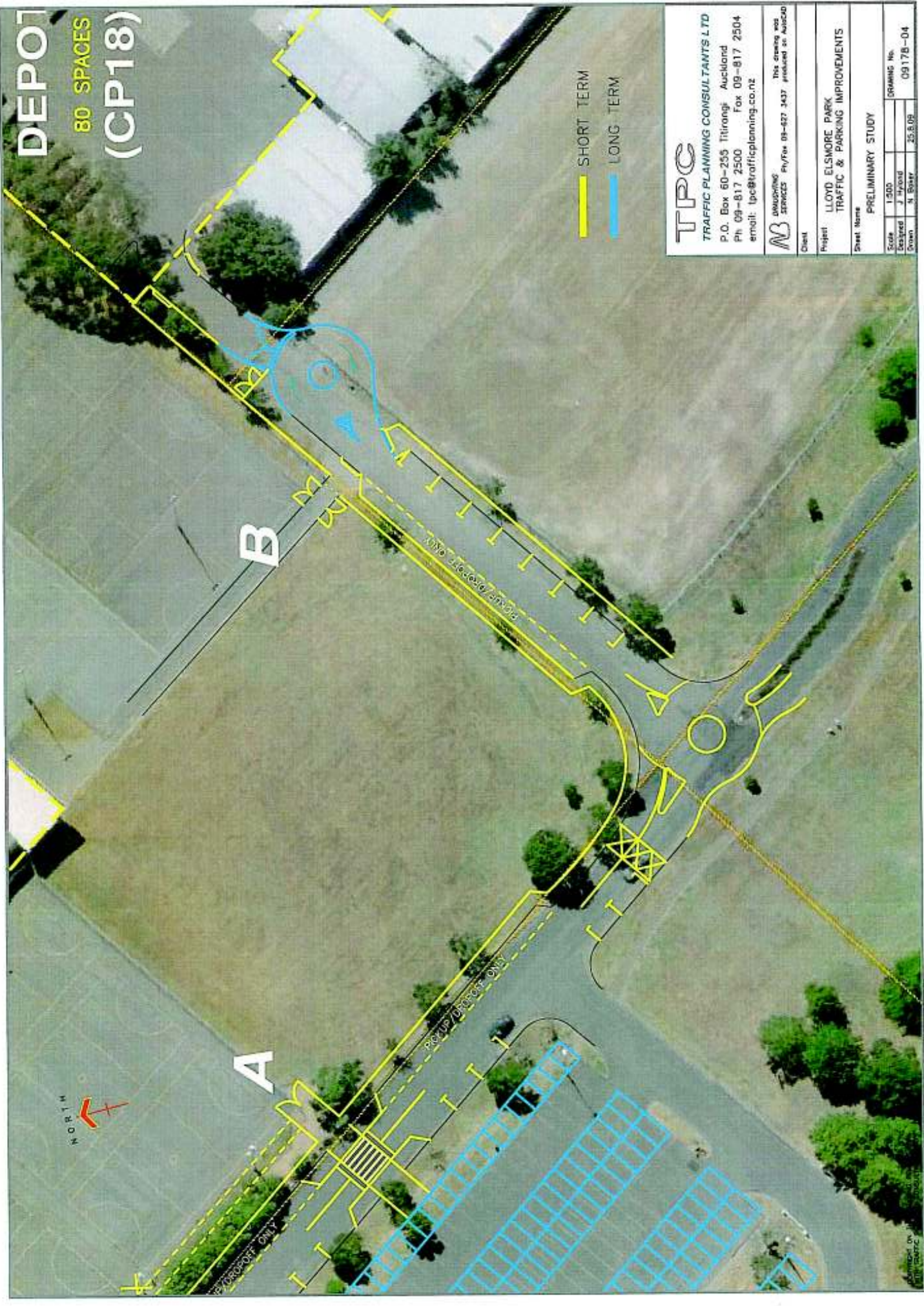
DEPOT 80 SPACES (CP18)



A

B

- SHORT TERM
- LONG TERM



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Designer	J. Hynd	Drawn	N. Bosser
Drawn	N. Bosser	Date	25.8.09



- SHORT TERM
- LONG TERM

DEPOT
80 SPACES
(CP18)

20 SPACES

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SHORT TERM
LONG TERM

CP8

+2

+2

+8

CP10

CP9

+43

TPC

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Client

Project LLOYD ELSMORE PARK
TRAFFIC & PARKING IMPROVEMENTS

Sheet Name PRELIMINARY STUDY

Scale	1:500	Drawing No.	09178-06
Designed	J. Inland		
Drawn	N. Baker	25.8.08	

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