NORTHROP
2–6 Shea Street Phillip ACT 2606
T (02) 6285 1822 F (02) 6285 1863
E canberra@northrop.com.au

CR166916b02
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Melinda Dodson
Melinda Dodson Architects
PO Box 5635
Hughes ACT 2605

Email: mdodson@melindadodsonarchitects.com.au

Dear Melinda,

Project: Dickson Apartments Lowrie St
Re: Statement on Parking & Traffic
Blocks 11-14 Section 6 Dickson

This report is prepared for the ACT Government on behalf of Melinda Dodson Architects to satisfy the DA requirements for the proposed development noted above.

This Parking & Traffic Assessment is for the proposed Re-Development of 4 blocks located on Blocks 11-14 Section 6 Dickson. This includes the demolition of the existing 4 single dwellings, construction of 20 apartment style 2-bedroom units within a 2-story high building (ground and 2 floors above), 2 concrete driveways, pathways and basement parking.

The new development will increase the amount of traffic generated when compared to the original 4 single dwellings; as such this report has been prepared to demonstrate that all parking for the proposed development can be provided onsite and that the existing road network has the capacity to absorb the additional traffic generated by the proposed 20 2-bedroom apartments.

Blocks 11-14 Section 6, (2,688m²) are located on Lowrie Street in Dickson. In accordance with the Territory Plan, these Blocks are designated as RZ4: MEDIUM DENSITY RESIDENTIAL. The existing site and surrounding roads of interest (4 in total) are highlighted overleaf on Figure 1.

This report presents an assessment of existing and future parking & traffic requirements, for the site based on the current development proposal.

Figure 1 – Aerial of Site & surrounding features (ACTmapi May 2017)

Traffic Conditions

Existing Road Network

The site is surrounded by the following roads as defined under ACT Roads Hierarchy

- Lowrie Street – adjacent to Block – Access Street nominal capacity of 0-1,000 vehicles per day (vpd)
- Moncrieff Street – East of the site connected to Lowrie Street – Access Street nominal capacity of 0-1,000 vehicles per day (vpd)
- Morphett Street – North of site connected to Moncrieff Street – Access Street nominal capacity of 0-1,000 vehicles per day (vpd)
- Dooring Street – South of site connected to Moncrieff Street – Major Collector nominal capacity of 3001-6,000 vehicles per day (vpd)

These 4 roads are the nearby roads adjacent or near the site with Morphett Street providing the most direct access to the nearby Arterial road Northbourne Ave. Dooring Street also provides access onto the nearby Cowper Street which is designated as a major collector road connecting to other roads in Canberra.

Accident Data
Accident data was obtained by Roads ACT on the roads adjacent to or near the site.

A summary of the data obtain is shown with in the table below. The full data as provided by TCCS can be observed in Appendix A.

In Summary:

- The obtained data spans from 2012-2016.
- The only accident involving an injury was observed at the intersection Dooring/Moncrieff.
- The largest number of accidents occurred at the Intersection of Dooring/Moncrieff Ave with 5 accidents observed over a period over the 5 year period.

Under the Federal Government Black Spot program, for an area to be defined as a Black spot road (midblock or intersection) requiring modification, the road in question is required to meet the following condition.

"For individual sites such as intersections, mid-block or short road sections, there should be a history of at least three casualty crashes over a five-year period. For lengths of road, there should be an average of 0.2 casualty crashes per kilometre per annum over the length in question over five years."

From this definition, none of the locations mentioned in the accident data provided meet this requirement.

Location	Type of accidents	Number of accidents
Intersection Lowrie/Moncrieff (SW)	None	None
Midblock - Lowrie Street (Moncrieff -> Moncrieff)	1 x Property damage only	1 accident in total
Intersection Lowrie/ Moncrieff	None	None
Midblock - Lowrie Street (Moncrieff -> Lowrie)	None	None
Intersection Lowrie (End)	None	None
Intersection Moncrieff/Morphett	2 x Property damage only	2 accident in total
Midblock - Moncrieff Street (Morphett -> Lowrie)	None	None
Mid Block Moncrieff Street (Lowrie -> Lowrie)	2 x Property damage only	2 accident in total
Mid Block - Moncrieff Street (Lowrie -> Dooring)	None	None
Intersection Dooring/Moncrieff	4 x Property damage only 1 x Injury (received Treatment)	5 accident in total

Existing Traffic data

Existing traffic data was requested from TCCS – Roads ACT. We have been informed that traffic data is available for the following 4 locations:

- (location 1) Midblock - Moncrieff between Lowrie Street (North) to Lowrie Street (South)
- (location 2) Midblock Morphett Street - Moncrieff Street to Challis Street, West of Moncrieff Street.
- (location 3) Midblock Morphett Street - Cowper Street - Guthrie Street, East of Moncrieff Street.
- (location 4) Midblock Dooring Street Karuah Street to McGowan Street West of Moncrieff Street

We have obtained the traffic data for the 4 midblock sites with the full data being attached in Appendix B.

As the only midblock counts obtained on Dooring Street were between Karuah Street to McGowan Street (west from Moncrieff Street) it has been assumed that the similar amount of traffic will head east from Moncrieff.

From the traffic data provided by Roads-ACT the following traffic volumes were observed:

Location	Estimated Capacity (vpd)	Traffic observed/ estimated (VPD)	AM Peak (VPH)	PM Peak (VPH)
Location 1 (Southbound)	0 – 1,000	**824**	**53**	**110**
Location 1 (Northbound)	0 – 1,000	**913**	**208**	**75**
Location 2 (Eastbound)	3,001 – 6,000	**2909**	**518**	**251**
Location 2 (Westbound)	3,001 – 6,000	**2135**	**228**	**237**
Location 3 (Eastbound))	3,001 – 6,000	**1710**	**170**	**162**
Location 3 (Westbound)	3,001 – 6,000	**1299**	**170**	**129**
Location 4 (Eastbound)	0 – 1,000	**977**	**60**	**148**
Location 4 (Westbound)	0 – 1,000	**1137**	**304**	**78**
Dooring St East after Moncrieff St	0 – 1,000	**≈1137***	**≈304***	**≈78***

*As noted above this is an estimate using the data provided for the other side of Dooring St

From the traffic data provided, it can be observed that:

- Moncrieff street is operating at around 80-90% of its nominal capacity;
- No traffic data was obtained for Lowrie Street; however given that Lowrie Street only connects onto Moncrieff Street, it is safe to assume that it is operating at below its nominal capacity given the traffic volumes observed on Moncrieff Street.
- Morphett Street is operating at around half of its capacity; and
- Dooring Street is operating at close to/ slightly above its capacity

Proposed Traffic Generation

The current proposal for the site will have the traffic generation rates as noted in the below tables. The traffic generated for the 4 existing single dwellings has also been noted below to allow a comparison between preconstruction to post construction traffic generation to be made. The traffic rates noted were obtained from the RTA "Guide to Traffic Generating Developments" (October 2002) as well as the ACT Government Estate Development Plan (August 2016).

Development Option	Traffic Generation rate (vpd)	Daily Traffic generated (vpd)
Existing Single dwellings x4	9 vpd/ Dwelling	36 vpd total
Proposed 20 x 2-bedroom unit (medium density housing)	6 vpd/ Dwelling	120 vpd total
Total additional traffic generated post development		**84 vpd**

Development Option	Peak Traffic Generation (vph)	Peak Traffic generated (vph)
Existing Single dwellings x4	0.85 vph/ Dwelling	3.4 vph total
Proposed 20 x 2-bedroom unit (medium density housing)	0.5 vph/ Dwelling	10 vph total
Total additaonalpeak traffic generated post development		**7 vph total**

When the traffic rates in the above tables are added to the existing traffic volumes provided by Roads ACT it is observed that:

- Moncrieff Street has the capacity to absorb the additional traffic volume.
- Morphett Street has ample capacity to absorb the additional traffic granted with the existing road being at around 50%.
- Dooring Street will continue being at and slightly over its capacity. Even though the road is at its capacity it is likely that the additional traffic generated 42 assuming half the vehicles head south onto Dooring St) will not have a measureable impact on the road as the increase in traffic to the road represents a 5% increase to the total traffic volume. In additional to this small increase the mean traffic speed along Dooring Street was observed to be less than 50Km/h as per the provided traffic data, making this a increase a negligible to very low risk traffic increase.

Parking Generation/ Requirements

The vehicular parking demand, generated from the proposed apartment building has been assessed against the requirements in the *Parking and Vehicular Access General Code* (3 October 2014).

Locational Parking Requirements

The locational requirements for long stay, short stay, operational and visitor parking are as follows (*Clause 3.1.4, Locational requirements, Residential zones)*:

For Residential use:

- For long stay parking (resident parking), on site;
- For short stay/ visitor parking, on site or within 100m;

Parking Generation Rates

The following parking generation rates in the *Parking and Vehicular Access General Code were used for the proposed development (schedule 1 parking provision rates for Residential zones).*

Space/type	Area/ No.	Rate	Parking Spaces Required
2-Bedroom Apartment	20	1.5 spaces/apartment	30 Long stay spaces
Visitor Parking	N/A	1 space/ 4 apartments	5 Visitor spaces
Total Parking Generated			**30 Long stay spaces** **5 Visitor spaces**

Disabled Space Parking Requirements

The ACTPLA *Parking and Vehicular Access General Code (*Clause 2.2.4) sets out requirements for the number of Disabled spaces to be provided. Notwithstanding any provision in the Building Code of Australia or in AS2890, parking spaces for people with disabilities are to comprise a minimum of 3% (rounded up to the nearest whole number) of the total number of parking spaces required in accordance with the code.

Considering the total generation of parking spaces from the previous section is expected to be approximately 35 spaces a minimum of, (0.03*35) = (2) car parking spaces are required to be designated as disabled.

Motorcycle Parking Requirements

As per the requirements of *Clause 2.4, Parking for motorcycles and motor scooters, Parking and Vehicular Access General Code*, the provision rate for motorcycles is three (3) dedicated spaces per (100) vehicle parking spaces, with a minimum of one (1) space for car parks with a minimum of (30) parking spaces. These spaces are to be provided in addition to the number of car parking spaces required under this code.

The minimum required number of additional spaces for motorcycles is (0.03*35) = (2) spaces.

Bicycle Parking Requirements

In Accordance with the ACTPLA Bicycle Parking General Code (October 2013) the following bicycle parking provisions are to be meet onsite in addition to the above mentioned vehicle parking requirements.

Development Type	Bicycle Parking type	Rate	Bicycle Parking Required
Apartment	Class 1 or 2	1 per apartment	20 x class 1 or 2 spaces
Visitor Parking	Class 3	1 per 12 apartments after the first 12 apartments	1 x class 3 space
Total Parking Generated			20 x class 1 or 2 spaces 1 x class 3 spaces

The classes of bicycle parking are defined as follows:

- Class 1 – Bicycle Locker - Fully enclosed individual locker
- Class 2 - Bicycle Enclosure - Locked cages or compounds containing Bicycle Rail installations for multiple users
- Class 3 - Installations which support the bicycle, which allow both the bicycle frame and both wheels to locked against such as metal hoops and rails

Parking Provisions Onsite

From the most recent architectural Plans provided by Melinda Dodson Architects on 02/06/2017, it can be seen that the follow onsite parking provisions have been made for the proposed development:

- 31 long stay parking spaces within the basement for residents to use of which 2 are designated as disabled accessible;
- 5 short stay/ visitor spaces on the ground floor of which 1 is designated as disabled accessible;
- 2 motorcycle parking spaces are shown within the north West corner of the basement away from the other parking spaces;
- 21 individual lockers are available in the basement for resident to use for class 1 bicycle parking;
- No additional bicycle racks or similar have been nominated on the ground floor for class 3 visitor bicycle parking, however there is ample space on the ground floor for a fixed rail/ metal hoop to be installed.

Parking & Traffic Provision Conclusions

It was concluded that:

- Based on the current *Parking and Vehicular Access Code*, the proposed development on Blocks 11-14 Section 6 Dickson meets all the required parking provisions for parking spaces, disabled spaces, motorcycle spaces and resident bicycle parking.
- An area should be nominated on the ground floor for Class 3 visitor bicycle parking. This area should contain installations which support the bicycle, which allow both the bicycle frame and both wheels to be locked against such as metal hoops and rails.
- From the traffic data obtained from Roads ACT the nearby roads of Lowrie St, Moncrieff St & Morphett Street is assessed to have capacity to absorb the additional traffic generated by the proposed development.
- The traffic data provided suggest that Dooring Street will continue being at and slightly over its nominal capacity. It is likely that the additional traffic generated (42vpd assuming half the vehicles head south onto Dooring St) will not have a negative impact on the road as the increase in traffic to the road represents a 5% increase to the total traffic volume.
- In addition to the small traffic increase on Dooring Street, the mean traffic speed along Dooring Street was observed as less than 50Km/h. From this it can be accessed that the small increase in traffic on Dooring Street represents a negligible to very low risk.

Based on the above, it is recommended that the proposed development of the Blocks 11-14 Section 6 Dickson be supported on parking & traffic grounds.

Don’t hesitate to contact the undersigned if you have any questions

NORTHROP CONSULTING ENGINEERS

Sincerely,

Joey Wiltshire
Civil Engineer

Reviewed by:

David Field
Principal

Appendix A: Roads ACT Accident Data 2012-2016

STREET REPORT

History Location: LOWRIE STREET - showing Intersections (including Major Intersection) and Midblocks

Report Date Range: 01/01/2012 12:00:00 AM -> 31/12/2016 11:59:59 PM

Location Type Intersection

Location Description LOWRIE/MONCRIEFF (SW)

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type Mid Block

Location Description LOWRIE STREET (MONCRIEFF -> MONCRIEFF)

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

LOWRIE STREET (MONCRIEFF -> MONCRIEFF) : 40	**2016-1164124**	**26/02/2016 18:59**	**Property Damage Only**		**9**	**0**	**2**	**Good dry surface**	**Fine**	**406**
	Vehicle 1	West bound	1st (kerb or left) lane	Not related to intersection	Parked	Not obstructed				
	Vehicle 2	South bound	Other	Out of driveway	Backing	Not obstructed				

Crashes = 1

Location Type	**Intersection**
Location Description	**LOWRIE/MONCRIEFF**

Location : Chainage	**Police Reference**	**Date/Time**	**Severity**	**Injury Type**	**Crash Type**	**Number of Casualties**	**Number of Vehicles**	**Road Surface**	**Weather**	**Rum Code**
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type	**Mid Block**
Location Description	**LOWRIE STREET (MONCRIEFF -> LOWRIE)**

Location : Chainage	**Police Reference**	**Date/Time**	**Severity**	**Injury Type**	**Crash Type**	**Number of Casualties**	**Number of Vehicles**	**Road Surface**	**Weather**	**Rum Code**
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type	**Intersection**

Location Description **LOWRIE (END)**

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Total Crashes = 1

STREET REPORT

History Location: **MONCRIEFF STREET - showing Intersections (including Major Intersection) and Midblocks**

Report Date Range: **01/01/2012 12:00:00 AM -> 31/12/2016 11:59:59 PM**

Location Type **Intersection**

Location Description **MONCRIEFF/MORPHETT**

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

MONCRIEFF/MORPHETT	**2012-1167063**	**30/05/2012 17:10**	**Property Damage Only**		**6**	**0**	**2**	**Good dry surface**	**Fine**	**303**
	Vehicle 1	North bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed				
	Vehicle 2	North bound	1st (kerb or left) lane	Approaching intersection	Left turn	Not known				
MONCRIEFF/MORPHETT	**2014-2124551**	**4/09/2014 11:00**	**Property Damage Only**		**6**	**0**	**2**	**Good dry surface**	**Fine**	**302**
	Vehicle 1	North bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed				
	Vehicle 2	North bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed				

Crashes = 2

Location Type **Mid Block**
Location Description **MONCRIEFF STREET (MORPHETT -> LOWRIE)**

Location : Chainage	**Police Reference**	**Date/Time**	**Severity**	**Injury Type**	**Crash Type**	**Number of Casualties**	**Number of Vehicles**	**Road Surface**	**Weather**	**Rum Code**
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type	**Intersection**
Location Description	**LOWRIE/MONCRIEFF**

Location : Chainage	**Police Reference**	**Date/Time**	**Severity**	**Injury Type**	**Crash Type**	**Number of Casualties**	**Number of Vehicles**	**Road Surface**	**Weather**	**Rum Code**
		Direction	Lane	Position	Movement	Visibility				
Crashes = 0										

Location Type	**Mid Block**
Location Description	**MONCRIEFF STREET (LOWRIE -> LOWRIE)**

Location : Chainage	**Police Reference**	**Date/Time**	**Severity**	**Injury Type**	**Crash Type**	**Number of Casualties**	**Number of Vehicles**	**Road Surface**	**Weather**	**Rum Code**
		Direction	Lane	Position	Movement	Visibility				
MONCRIEFF STREET (LOWRIE -> LOWRIE) : 63	**2013-1209835**	**28/04/2013 13:30**	**Property Damage Only**		**9**	**0**	**2**	**Good dry surface**	**Fine**	**406**
	Vehicle 1	West bound	Other	Out of driveway	Backing	Not obstructed				
	Vehicle 2	North bound	1st (kerb or left) lane	Not related to intersection	Parked	Not obstructed				

MONCRIEFF STREET (LOWRIE -> LOWRIE) : 94	**2015-1095416**	**14/12/2015 8:20**	**Property Damage Only**		**9**	**0**	**2**	**Good dry surface**	**Fine**	**406**
	Vehicle 1	North bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed				
	Vehicle 2		Other							

Crashes = 2

Location Type **Intersection**
Location Description **LOWRIE/MONCRIEFF (SW)**

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type **Mid Block**
Location Description **MONCRIEFF STREET (LOWRIE -> DOORING)**

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				

Crashes = 0

Location Type **Intersection**
Location Description **DOORING/MONCRIEFF**

Location : Chainage	Police Reference	Date/Time	Severity	Injury Type	Crash Type	Number of Casualties	Number of Vehicles	Road Surface	Weather	Rum Code
		Direction	Lane	Position	Movement	Visibility				
DOORING/MONCRIEFF	**2012-1117893**	**5/03/2012 17:03**	**Property Damage Only**		**2**	**0**	**2**	**Good dry surface**	**Fine**	**104**
	Vehicle 1	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed				
	Vehicle 2	South bound	1st (kerb or left) lane	Within intersection	Right turn	Glare or dazzle				
DOORING/MONCRIEFF	**2013-2166077**	**4/09/2013 18:05**	**Injury**	**Received medical treatment**	**2**	**1**	**2**	**Good dry surface**	**Fine**	**107**
	Vehicle 1	South bound	1st (kerb or left) lane	Within intersection	Left turn	Other				
	Vehicle 2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed				

DOORING/MONCRIEFF	**2013-2180441**	**9/12/2013 18:10**	**Property Damage Only**		**6**	**0**	**2**	**Good dry surface**	**Fine**	**303**
	Vehicle 1	South bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed				
	Vehicle 2	South bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed				
DOORING/MONCRIEFF	**2016-1199313**	**19/02/2016 16:30**	**Property Damage Only**		**2**	**0**	**2**	**Good dry surface**	**Fine**	**106**
	Vehicle 1	South bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed				
	Vehicle 2	East bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed				
DOORING/MONCRIEFF	**2016-1133028**	**8/09/2016 12:30**	**Property Damage Only**		**8**	**0**	**2**	**Good dry surface**	**Fine**	**404**
	Vehicle 1	North bound	1st (kerb or left) lane	Within intersection	Backing	Not obstructed				
	Vehicle 2	East bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed				

Crashes = 5

Total Crashes = 9

Appendix B: Roads ACT Traffic data May 2017

Street Name	Suburb	Survey Location A	Survey Location B	Survey Start Date	Location Map
Moncrieff Street	Dickson	Lowrie Street (North)	Lowrie Street (South)	22/07/2012	Site Map
Morphett Street	Dickson	Moncrieff Street	Challis Street	1/09/2015	Site Map
Morphett Street	Dickson	Cowper Street	Guthrie Street	2/09/2015	
Dooring Street	Dickson	Karuah Street	McGowan Street	2/05/2011	

Towards	Weekday Volume	AM Peak	PM Peak	Percentage of HV	Mean Speed	85th Percentile Speed
Lowrie Street (North)	824	53	110	1.1	49.6	58.0
Moncrieff Street	2909	518	251	2.6	36.7	48.2
Cowper Street	1710	170	162	3.3	42.3	51.1
Karuah Street	977	60	148	1.2	46.8	54.4

Towards	Weekday Volume	AM Peak	PM Peak	Percentage of HV	Mean Speed	85th Percentile Speed
Lowrie Street (South)	913	208	75	0.9	52.4	60.0
Challis Street	2135	228	237	3.5	36.7	46.8
Guthrie Street	1299	170	129	3.6	42.4	50.4
McGowan Street	1137	304	78	0.4	47.2	54.8