



**TPSGROUP™**

Traffic & Parking Systems


**Review of Parking Management  
(In Period to end January 2019)**

**Mullumbimby**

**Prepared by**

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<b>Issue Doc.No.</b>	<b>Prepared By</b>	<b>Issue Date</b>	<b>Signature</b>
MullumbimbyRep1	Glen R Holdsworth (RPEQ 4152)	29 <sup>th</sup> Mar 2019	

## 1. Background

This is one of three reports aimed at providing an assessment of parking demands, supply, infringement and enforcement for Bangalow, Brunswick Heads and Mullumbimby.

The attached analysis of parking demands, durations and infringements is based on sample data provided to TPS by Council.

The sample data for Mullumbimby was generally drawn from ;

- May 2018 to Aug 2018 (inclusive) (*LOW demand period*)
- September 2018 (*AVERAGE demand period*)
- The 3 days Fri, Sat, and Mon of the 2019 Australia Day weekend in Jan 2019 (*HIGH demand period*)

As shown above, the above periods have been defined as, and referred to in this report as the “Low”, “Average” and “High “demand periods respectively.

Where cells for a particular day in the occupancy tables are shown blank, this represents that data was not available for that particular day.

## 2. Parking Space Inventory

An inventory of parking supply and associated description of the number of spaces in each zone and the allowable duration limit is attached to this report.

The inventory was prepared by Council officers.

### 3. Conclusions Drawn from the Attached Tabulated Analyses.

*Note : To assist the reading and understanding of the following conclusions see the page immediately following "Conclusions and Recommendations" for zone number definitions and locations.*

#### **Supply**

When considered in the aggregate, it appears that there is adequate parking in the Centre to satisfy overall demands over most months of the year.

However, there are zones which at peak demand times of the year experience demands which approach or are at capacity. These are Zones 1, 3, 8, 11, 12 and 13.

The only zones which offer parking opportunities to any significant degree throughout the year are zones 2, 7 and 10.

#### **Demands by Persons Holding Permits**

During Average demand (and probably high demand) periods motorists holding permits which relieve them of the need to pay at meters in Byron Bay, represent approximately 25% of all demands at most times of the year.

#### **Durations**

The average length of stay in the Low, Average, and High demand periods is approximately 30, 25 and 25 minutes respectively.

The overall level of parking duration infringement for the Low, Average and High demand periods was 5%, 3% and 4%. This is a "no less than" estimate and grossly underestimates the actual level of infringement, particularly in the 1 hour limit zones. The underestimation arises from the extent to which the time between ANPR runs exceed the posted parking limit duration. Whilst TPS has no basis for estimating the degree to which the underestimate is occurring, it is reasonable to expect that the surveyed rates of infringement represent between 30% and 50% of the actual rate.

Having regard to the above, there is considerable duration infringement occurring in zones no. 4, 7, 8 and 10 at nearly all times of the year. However, despite those higher rates of infringement, the overall infringement rate across the entire Centre is relatively low.

#### **Infringement Notices**

The rate at which duration infringements are detected at times when officers visit the Township varies from approximately 4%, 2%, and 3% of demand during Low, Average and High demand periods respectively. These rates are lower than the rate of infringement usually expected in unmetered environments.

Zones 1, 4, 12 and 13 have the highest rates of detection but this occurred in the Low demand period in May 2018. However, the detection rate in Zone 12 was also relatively high in the High demand period of the Australia Day weekend in 2019. However, even given those exceptions which occur at times in different zones, the rate of infringement detection appears relatively low across the entire Centre at most times of year.

### **Management Options**

It is apparent from the survey and other data that there is a need for Council to address the following management options in order to achieve a more efficient operation and use of on-street parking in the Centre. The primary options are :

- a. Substantially more intensive and extensive enforcement of parking duration limits.
- b. The installation of parking sensors in each on-street bay in order to detect space occupancy and parking durations. This would facilitate more efficient “real time” data collection and better informed review of parking management whilst substantially improving the efficient use of enforcement resources.

#### 4. Conclusions & Recommendations

*Note : To assist the reading and understanding of the following conclusions and recommendations see the page immediately following "Conclusions and Recommendations" for zone number definitions and locations.*

Parking demand surveys indicate that aggregate parking is able to satisfy parking demands throughout the year. However, there are zones in which demands are regularly at or near capacity. These are Zones 1, 3, 8, 11, 12 and 13. Zones 2, 7 and 10 are the only zones which appear to regular offer parking opportunities throughout the year.

Whilst the rate at which motorists exceed posted duration limits across the Centre is generally a little lower than expected in an unmetered parking environment, there is a higher rate of infringement occurring in Zones 4, 7, 8 and 10 at many times of the year and in zones 1, 12 and 13 at other times.. However, despite those higher rates of infringement occasionally in some zones at some times, the overall infringement rate across the entire Centre is relatively low.

Surprisingly, the ANPR duration data does not generally reflect in the number of infringement notices being issued in the above-mentioned Zones, except for Zone 4. Zones 1, 4, 7, 8 and 10 are all 4 hour limit zones located in and at the perimeter of the Main Street.

Based on the above findings there is evidence that medium and long term parking is intruding significantly into the Town Centre Core, with the effect to effectively reduce the availability of parking for motorists in the 1 and 2 hour demand sector. This may explain the relatively higher rate of infringement detection being recorded in Zones 12 and 13 which are both 1 hour zones in the Town Centre core (Burringbar Street).

The response to the above finding could potentially take the following forms.

- a. Reduce the duration limit in some 4 hour zones to 2 hours in order to divert long term parkers to the Centre perimeter and so allow 2 hour duration demands greater parking supply. This would in turn release parking supply in existing 1 hour zones due to the probable diversion of overstay parkers in those zones to other locations.

and/or

- b. Expand 1 hour parking supply

or

- c. Increase the duration limit in the 1 and 2 hour Zones.

The latter action would be highly undesirable in having the effect to further reduce short and medium-term parking availability for the Centre.

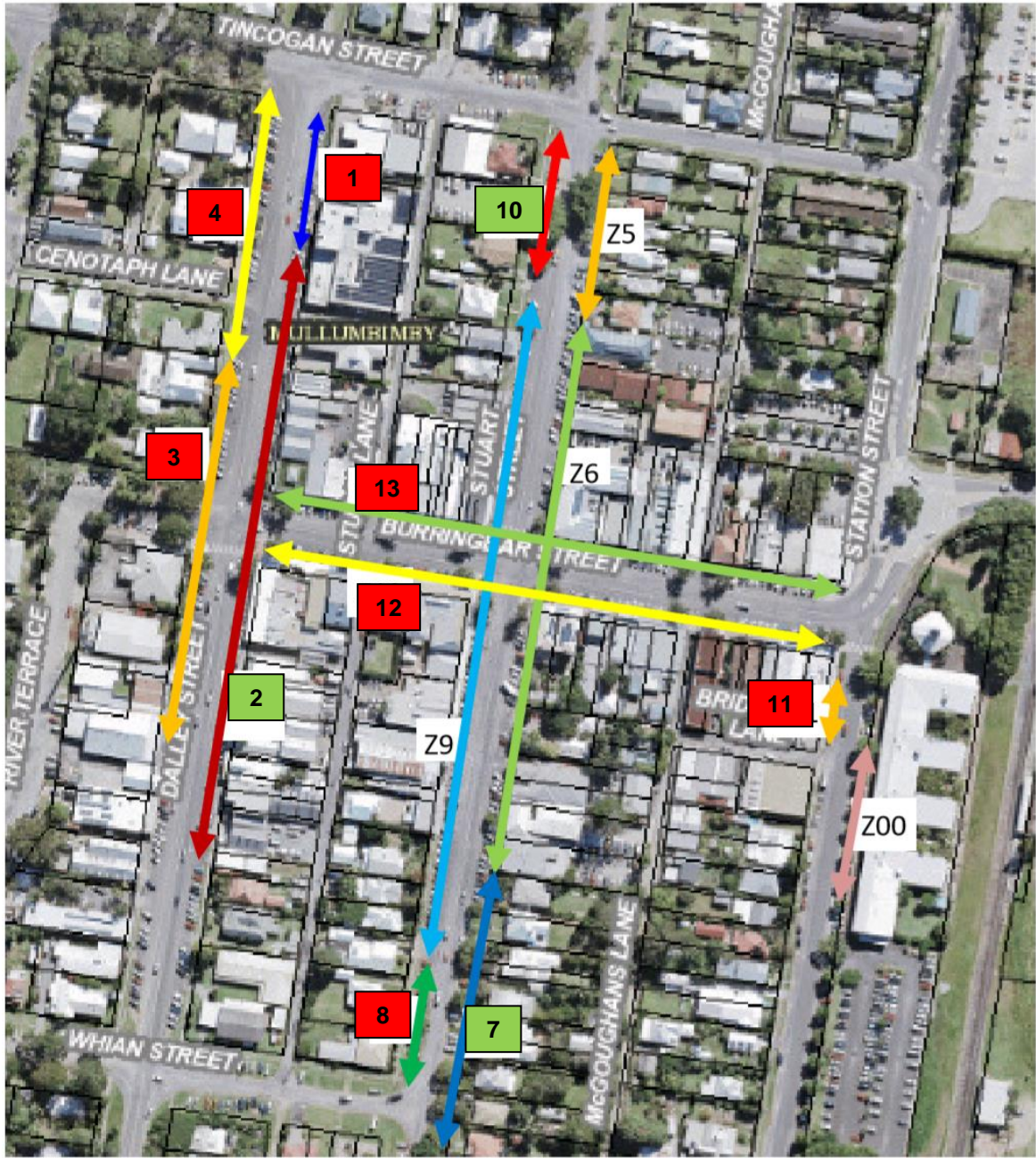
The relatively low rates of parking infringement detection in the Centre during most times of the year may be evidence that the posted parking durations in the Centre may be too lenient, enabling motorists to park for relative long periods with the effect being to consume space which otherwise would be available to short term parkers.

- d. In the absence of reducing parking durations in Burringbar Street to less than 1 hour, together with intensive enforcement, one option to encourage higher turnover (low parking durations) would be through the introduction of on-street pricing (ie. metering). However, in view of the relative uncertainty regarding the adequacy of existing parking duration limits in Burringbar Street (which arises from ANPR data collection deficiencies), it may be more prudent at this stage to continue to monitor parking demands and durations in order to better understand the nature and extent of demand.

An appropriate data collection and review plan to address all the above matters is described in a “Notes re Review Process” prepared by TPS, dated 27<sup>th</sup> March 2019.







Zone	Location
2P MON-FRI 8:00AM 5:00PM	00 - Station St (Burringbar St - Whian St)
4P MON-FRI 8:00AM 5:00PM	01 - Dalley St (Tincogan St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	02 - Dalley St (Tincogan St - Whian St)
2P MON-FRI 8:00AM 5:00PM	03 - Dalley St (Whian St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	04 - Dalley St (Burringbar St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	05 - Stuart St (Tincogan St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	06 - Stuart St (Tincogan St - Whian St)
4P MON-FRI 8:00AM 5:00PM	07 - Stuart St (Burringbar St - Whian St)
4P MON-FRI 8:00AM 5:00PM	08 - Stuart St (Whian St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	09 - Stuart St (Whian St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	10 - Stuart St (Burringbar St - Tincogan St)
2P MON-FRI 8:00AM 5:00PM	11 - Station St (Whian St - Burringbar St)
1P MON-FRI 8:00AM 5:00PM	11 - (12) - Station St (Whian St - Burringbar St)
1P MON-FRI 8:00AM 5:00PM	12 - Burringbar St (Station St - Dalley St)
1P MON-FRI 8:00AM 5:00PM	13 - Burringbar St (Dalley St - Station St)

**Surveyed Parking Zone Occupancy for Sample Periods in Indicated Months  
As % of Supply**

		Percent Demand Relative to Supply															
<b>MAY-AUG</b>	Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tot	% Permit
All Days	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	117%	62%	90%	66%	77%	74%	28%	39%	72%	54%	81%	82%	92%		70%	
	Permits	23%	26%	27%	21%	18%	25%	9%	43%	26%	17%	28%	25%	26%		18%	25%
Saturday	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	117%	61%	72%	49%	62%	74%	30%	39%	76%	47%	71%	79%	92%		67%	
	Permits	13%	27%	24%	32%	11%	25%	13%	54%	24%	8%	72%	22%	24%		16%	24%
Sunday	Spaces																
	Demand																
	Permits																

		Percent Demand Relative to Supply															
<b>SEPT</b>	Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tot	% Permit
All Days	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	147%	58%	55%	64%	72%	69%	45%	192%	66%	63%	84%	74%	91%		72%	
	Permits	26%	25%	26%	39%	32%	31%	3%	31%	27%	11%	21%	32%	27%		20%	27%
Saturday	Spaces															0	
	Demand																
	Permits																
Sunday	Spaces																
	Demand																
	Permits																

Note : Where occupancy is indicated as exceeding 100% this is due to vehicles recorded by the ANPR system exceeding the nominated capacity of the zone. Gross error appears to have occurred for Zone No.1 for Sept 2018 and for Zone No. 8 in Sept 2018..



**Surveyed Parking Zone Occupancy for Sample Periods in Indicated Months  
As % of Supply**

JAN	Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tot	% Permit
All Days	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	411%	46%	46%	122%	79%	26%	70%	92%	37%	66%	491%	40%	75%		68%	
	Permits	17%	30%	23%	23%	12%	33%	21%	16%	26%	26%	36%	17%	19%		16%	23%
Saturday	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	458%	40%	52%	140%	73%	23%	54%	106%	42%	71%	517%	11%	81%		67%	
	Permits	69%	10%	14%	34%	12%	5%	10%	15%	11%	20%	190%	3%	16%		15%	23%
Sunday	Spaces																
	Demand																
	Permits																

		Percent Demand Relative to Supply															
MAY-JAN	Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tot	% Permit
All Days	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	128%	61%	83%	65%	75%	73%	34%	131%	71%	57%	82%	80%	92%		73%	
	Permits	24%	26%	27%	27%	22%	27%	6%	33%	26%	15%	26%	27%	27%		19%	26%
Saturday	Spaces	9	55	35	19	13	53	37	16	63	13	5	38	34		390	
	Demand	117%	61%	72%	49%	62%	74%	30%	39%	76%	47%	71%	79%	92%		67%	
	Permits	13%	27%	24%	32%	11%	25%	13%	54%	24%	8%	72%	22%	24%		16%	24%
Sunday	Spaces																
	Demand																
	Permits																

Note : Where occupancy is indicated as exceeding 100% this is due to vehicles recorded by the ANPR system exceeding the nominated capacity of the zone. Gross error appears to have occurred for Zone No.1 for Sept 2018 and for Zone No. 8 in Sept 2018..

**Surveyed Parking Durations in Sample Periods from April 2018 to January 2019  
As % of Demand**

Duration (Less than or equal to MINUTES duration)																		
Zone	Limit (hr)	0	60	120	180	240	300	360	420	480	540	600	660	720	780	840	TOTAL	% Exceeding Limit
1	4	76%	8%	8%	0%	2%	2%	1%	1%	2%	0%	0%	0%	0%	0%	0%	100%	6%
2	2	87%	1%	7%	3%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	100%	6%
3	2	93%	0%	3%	1%	1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	100%	4%
4	4	64%	0%	10%	3%	7%	6%	3%	3%	1%	2%	0%	0%	1%	0%	0%	100%	16%
5	4	81%	0%	3%	2%	5%	4%	1%	0%	3%	0%	1%	1%	0%	0%	0%	100%	9%
6	2	93%	0%	5%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	100%	3%
7	4	52%	0%	11%	3%	11%	5%	7%	3%	1%	3%	0%	0%	3%	1%	0%	100%	23%
8	4	81%	0%	4%	2%	5%	2%	2%	0%	0%	3%	0%	1%	0%	0%	0%	100%	8%
9	2	92%	0%	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	3%
10	4	77%	0%	9%	1%	5%	2%	1%	0%	0%	1%	3%	0%	0%	0%	0%	100%	8%
11	2	97%	0%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
12	1	94%	0%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	6%
13	1	94%	0%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	6%
14																		
15																		

Surveyed Parking Durations					
Zone	Limit (hr)	AVG (min)	<=60	<=120	% Exceeding Limit
1	4	38	84%	92%	6%
2	2	31	87%	94%	6%
3	2	27	93%	96%	4%
4	4	74	64%	74%	16%
5	4	52	81%	84%	9%
6	2	24	93%	97%	3%
7	4	114	52%	63%	23%
8	4	30	81%	86%	8%
9	2	25	93%	97%	3%
10	4	53	77%	86%	8%
11	2	20	97%	98%	2%
12	1	21	94%	98%	6%
13	1	19	94%	98%	6%
14					
15					
<b>TOTAL</b>		<b>29</b>	<b>90%</b>	<b>95%</b>	<b>5%</b>

Note : Estimated average parking duration is based on surveyed ANPR demands and durations in each parking zone.

**Surveyed Parking Durations in Sample Periods from September and October 2019  
As % of Demand**

Zone	Limit (hr)	Duration (Less than or equal to MINUTES duration)															TOTAL	% Exceeding Limit
		0	60	120	180	240	300	360	420	480	540	600	660	720	780	840		
1	4	84%	0%	14%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1%
2	2	96%	0%	2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
3	2	96%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
4	4	71%	0%	10%	0%	13%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	6%
5	4	84%	0%	7%	1%	0%	5%	2%	0%	0%	0%	0%	0%	0%	0%	0%	100%	7%
6	2	97%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1%
7	4	66%	0%	7%	0%	5%	14%	5%	0%	3%	0%	0%	0%	0%	0%	0%	100%	22%
8	4	88%	0%	0%	0%	2%	6%	0%	0%	0%	2%	0%	2%	0%	0%	0%	100%	10%
9	2	98%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
10	4	73%	0%	0%	0%	10%	13%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%	17%
11	2	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
12	1	97%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	3%
13	1	97%	0%	2%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	3%
14																		
15																		

Surveyed Parking Durations					
Zone	Limit (hr)	AVG (min)	<=60	<=120	% Exceeding Limit
1	4	31	84%	98%	1%
2	2	21	96%	98%	2%
3	2	19	96%	100%	0%
4	4	63	71%	81%	6%
5	4	42	84%	92%	7%
6	2	20	97%	99%	1%
7	4	83	66%	73%	22%
8	4	36	88%	88%	10%
9	2	19	98%	98%	2%
10	4	80	73%	73%	17%
11	2	15	100%	100%	0%
12	1	19	97%	98%	3%
13	1	18	97%	99%	3%
14					
15					
<b>TOTAL</b>		<b>25</b>	<b>94%</b>	<b>96%</b>	<b>3%</b>

Note : Estimated average parking duration is based on surveyed ANPR demands and durations in each parking zone.

**Surveyed Parking Durations on FRI, Sat, Sun and Mon of Australia Day 2019  
As % of Demand**

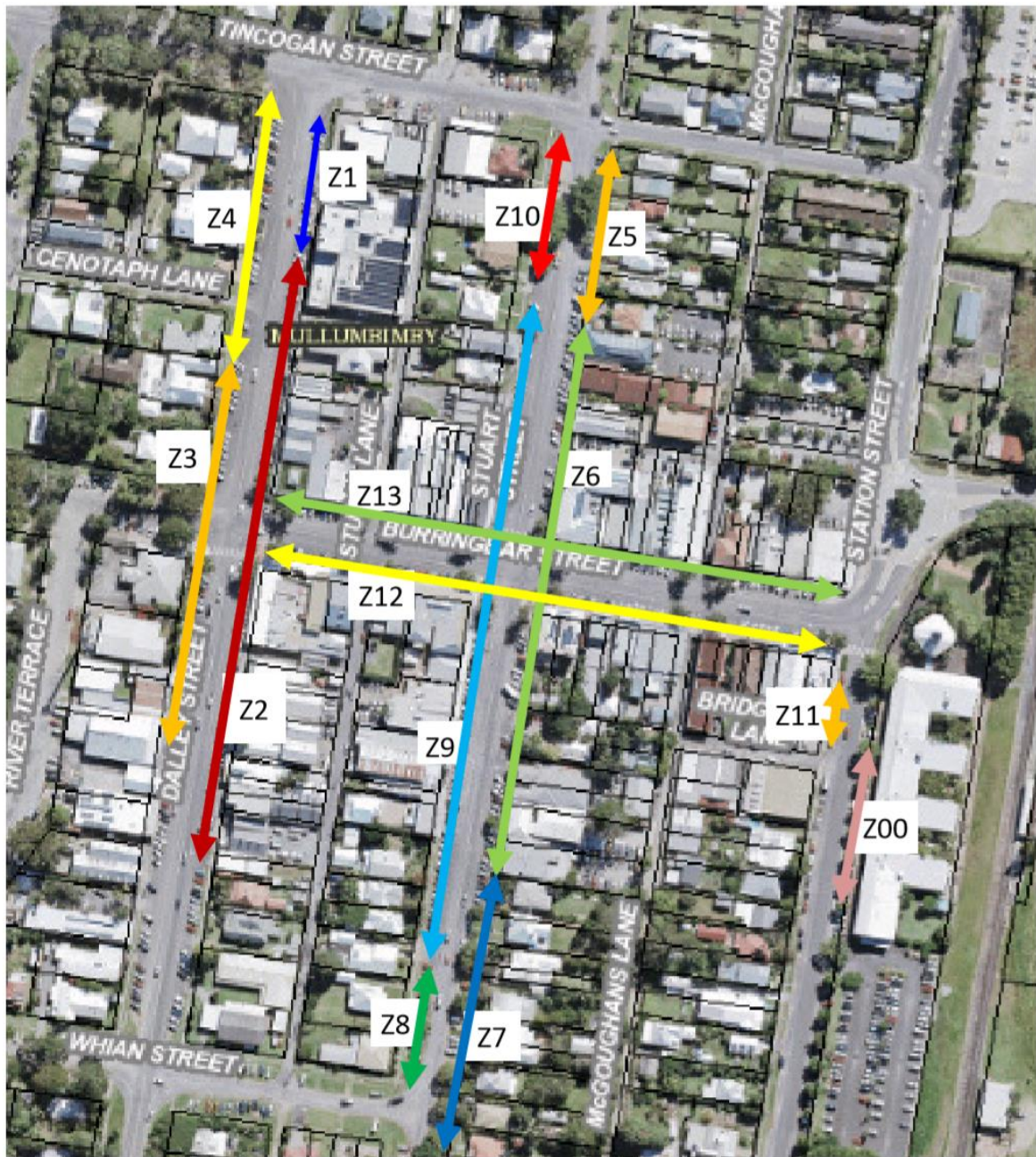
Duration (Less than or equal to MINUTES duration)																		
Zone	Limit (hr)	0	60	120	180	240	300	360	420	480	540	600	660	720	780	840	TOTAL	% Exceeding Limit
1	4	73%	25%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
2	2	82%	9%	2%	5%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	7%
3	2	92%	1%	5%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
4	4	40%	0%	7%	13%	0%	13%	0%	0%	27%	0%	0%	0%	0%	0%	0%	100%	40%
5	4	77%	0%	0%	0%	8%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	100%	15%
6	2	92%	1%	3%	2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5%
7	4	52%	0%	14%	14%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
8	4	40%	0%	10%	40%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
9	2	93%	1%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
10	4	90%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
11	2	93%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
12	1	92%	1%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	6%
13	1	96%	1%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	3%
14																		
15																		

Surveyed Parking Durations					
Zone	Limit (hr)	AVG (min)	<=60	<=120	% Exceeding Limit
1	4	20	98%	99%	0%
2	2	29	92%	93%	7%
3	2	23	93%	98%	2%
4	4	80	40%	47%	40%
5	4	35	77%	77%	15%
6	2	26	92%	95%	5%
7	4	82	52%	67%	0%
8	4	96	40%	50%	0%
9	2	21	94%	98%	2%
10	4	22	90%	100%	0%
11	2	20	93%	100%	0%
12	1	21	94%	99%	6%
13	1	18	97%	99%	3%
14					
15					
<b>TOTAL</b>		<b>25</b>	<b>92%</b>	<b>95%</b>	<b>4%</b>

Note : Estimated average parking duration is based on surveyed ANPR demands and durations in each parking zone.

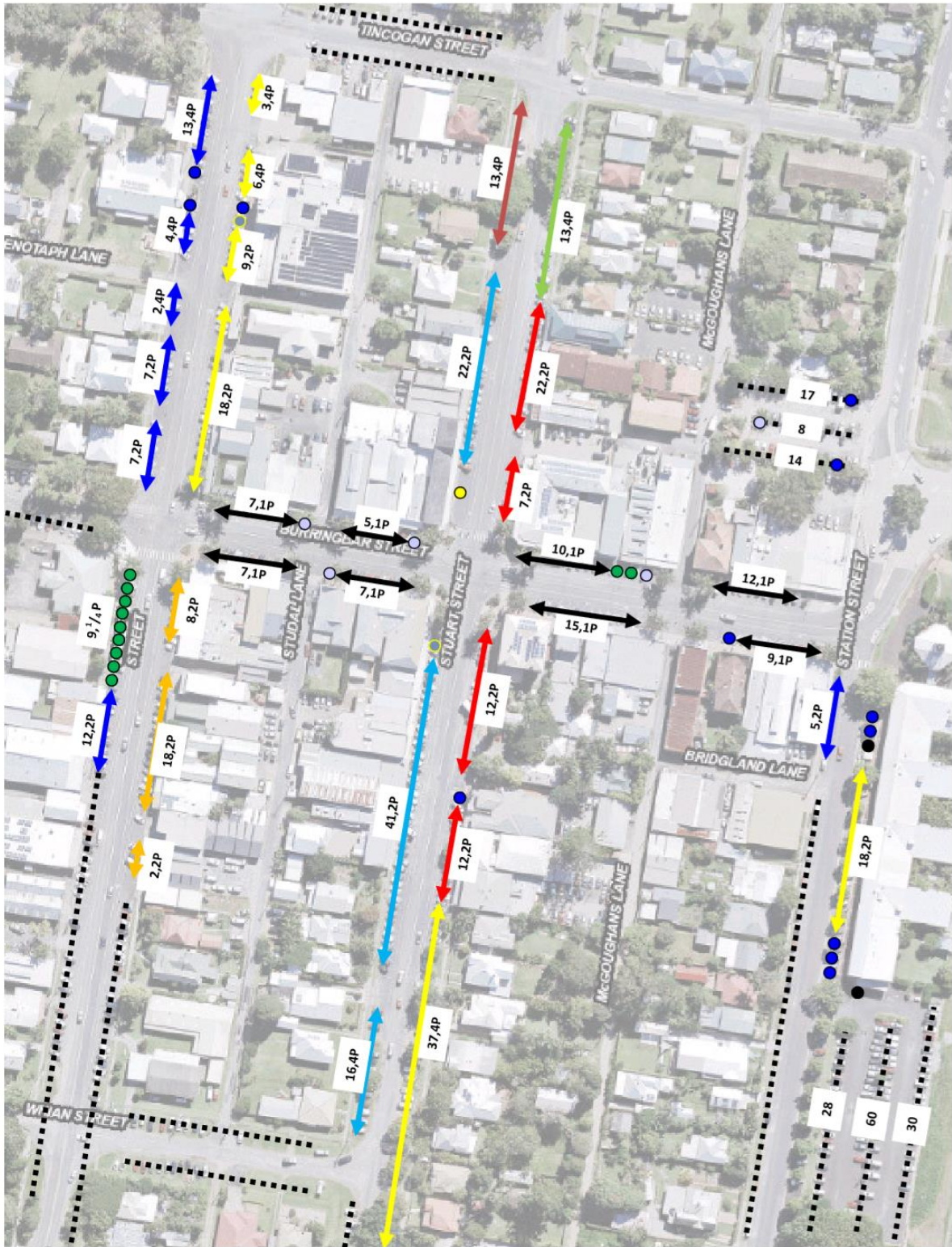
**Infringements Issued by Zone Per Day as % of Average Demand in Period**

MULLUMBIMBY		Infringements Issued x Zone																
Dates	Days Attended	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	U/K	All
May 9, 11 and 12	300.0%	6.3%	1.0%	4.2%	5.3%	0.0%	2.5%	0.0%	0.0%	3.7%	0.0%	0.0%	7.5%	9.6%				4.1%
Aug 4, Sept 10, 26	300.0%	2.5%	2.1%	0.0%	5.5%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	3.5%	2.2%				1.8%
Jan 25, 26, 27, 28	200.0%	0.0%	3.9%	0.0%	0.0%	0.0%	11.0%	0.0%	0.0%	2.1%	0.0%	0.0%	9.8%	2.0%				3.2%



Zone	Location
2P MON-FRI 8:00AM 5:00PM	00 - Station St (Burringbar St - Whian St)
4P MON-FRI 8:00AM 5:00PM	01 - Dalley St (Tincogan St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	02 - Dalley St (Tincogan St - Whian St)
2P MON-FRI 8:00AM 5:00PM	03 - Dalley St (Whian St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	04 - Dalley St (Burringbar St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	05 - Stuart St (Tincogan St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	06 - Stuart St (Tincogan St - Whian St)
4P MON-FRI 8:00AM 5:00PM	07 - Stuart St (Burringbar St - Whian St)
4P MON-FRI 8:00AM 5:00PM	08 - Stuart St (Whian St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	09 - Stuart St (Whian St - Tincogan St)
4P MON-FRI 8:00AM 5:00PM	10 - Stuart St (Burringbar St - Tincogan St)
	11 - Station St (Whian St - Burringbar St)
2P MON-FRI 8:00AM 5:00PM	11 - (12) - Station St (Whian St - Burringbar St)
1P MON-FRI 8:00AM 5:00PM	12 - Burringbar St (Station St - Dalley St)
1P MON-FRI 8:00AM 5:00PM	13 - Burringbar St (Dalley St - Station St)





- Disabled Space
- Bus Zone
- 1/4P Parking
- No Time Restrictions
- Loading Zone
- Motorcycle Spaces
- Taxi
- 12,2P - 12 Car Spaces, - 2P time limit