

Postscript. Redland Green Park – Further Usage Survey 4th August 2008 and analysis with previous data..

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In our earlier survey of 2-4 February 2008, we stated that a survey in winter months should ideally be supplemented by further work in the summer to determine whether levels of usage are different. As a result, we conducted a similar survey over three 40 minute periods on Monday 4th August 2008. The results are summarised in Table 1 below.

	Weather	Tree 1 and Tree 2 Pedestrians	Tree 1 and Tree 2 Cyclists	Tree 3	Tree 4
08:00 – 08:40	Cloudy bright with showers	31	10	1	1
12:00 – 12:40	Cloudy bright	21	1	0	0
18:10 – 18:50	Cloudy	38	9	1	0
Mean hourly peak time occupation (seconds per hour)		258.8	35.6	7.5	3.8
Hourly slack time occupation (seconds per hour)		157.5	3.8	0.0	0.0
Annual occupation based on 2 hours a day peak traffic and 10 hours a day slack (365 days a year)		763762.5	39693.8	5475.0	2737.5
% occupation based on all year round summer rate		0.0242	0.0013	0.0002	0.0001

The times chosen for the survey are the morning and evening rush hour and a late morning slack period.

These data are during the period of school holidays. To combine these figures with previous data collected during the school term (Table 2).

Table 2. Previous data collected during February 2008 (not school holidays)

	Adults on footpath (tree 1,2)	Cyclists on footpath (tree 1,2)	Parents plus children (tree 1,2)	Dirt path by tree 3	Vicinity of tree 4
Average hourly weekend target occupation (seconds)	114.5	24.5	65.5	5.5	5.5
Average hourly weekday target occupation (seconds)- low traffic period	210.0	0.0	50.0	10.0	0.0
Average hourly weekday target occupation (seconds) - rush hour period	530.0	30.0	1520.0	10.0	10.0

Table 3. Parameter estimates by tree

	Tree1, Tree2	Tree3	Tree4
p_1	1520.0		
p_2	394.4	8.8	6.9
p_3	50		
p_4	183.8	5.0	0
p_5	65.5		
p_6	114.5	5.5	5.5
c_2	32.8		
c_4	1.9		
c_6	24.5		
<i>Total annual target occupation</i>			
	1682980	24440	10452
<i>Occupation probability</i>			
	0.0534	0.0008	0.0003

Let p_1 = Average hourly rush hour seconds of occupation of parents and children (during school term only)

Let p_2 = Average hourly rush hour seconds of occupation of adults (without children), taking the average of the summer and winter rates

Let p_3 = Average hourly low traffic seconds of occupation of parents and children (during school term only)

Let p_4 = Average hourly low traffic seconds of occupation of adults (without children) taking the average of the summer and winter rates

Let p_5 = Average hourly weekend seconds of occupation of parents and children (no summer data)

Let p_6 = Average hourly weekend seconds of occupation of adults (no summer data)

With the corresponding c_i for cyclists (treated as single individuals)

Then total seconds of occupation per year for each category i is given by

$T_1 = p_1 \times 195 \times 2$ based on 195 school days a year and 2 hours of rush hour each day

$T_2 = (p_2 + c_2) \times 260 \times 2$ based on 260 week days a year and 2 hours of rush hour each day

$T_3 = p_3 \times 260 \times 10$ based on 260 week days a year and 10 hours of low traffic period per day

$T_4 = (p_4 + c_4) \times 260 \times 10$ based on 260 week days a year and 10 hours of low traffic period per day

$T_5 = p_5 \times 104 \times 12$ based on 104 weekend days a year and 12 hours of average traffic

$T_6 = (p_6 + c_6) \times 104 \times 12$ based on 104 weekend days a year and 12 hours of average traffic

Total annual occupation (in seconds) is given by $N = \sum_{i=1}^{i=6} T_i$

Probability of occupation is given by $N / (60 \times 60 \times 24 \times 365)$

Discussion:

In summer, the muddy path next to tree 3 is much more accessible and less slippery, so one might expect usage to be higher. The grass area immediately adjacent to tree 4 is very steep and therefore difficult to walk along even in summer which must dissuade many people from walking along the target area.

The results show that the inclusion of the summer data makes little difference to the calculated annual occupation probabilities. For trees 1 and 2 the annual estimate is 0.05 (compared to 0.06 in the previous report), for tree 3 it is 0.001 (compared to 0.001 in previous report) and for tree 4 it is 0.0003 (compared to 0.004 in previous report).

5th August 2008