



Traffic Engineering

Proposed Driveway Connection to Main Drive

Willsmere, Kew

Traffic Impact Assessment Report



1 Introduction and Scope

The Willsmere Apartments community group seeks the necessary planning approvals to allow the provision of a driveway to connect the south-eastern corner of the site to Main Drive. That connection will allow residents to drive and walk more conveniently between the site and areas to the south-east of the site.

This report describes the expected traffic impact of the proposal.

2 Existing Traffic Facilities and Conditions

Figure 1 shows the Willsmere site location and the street connections that are currently available. The plan is taken from Melways.

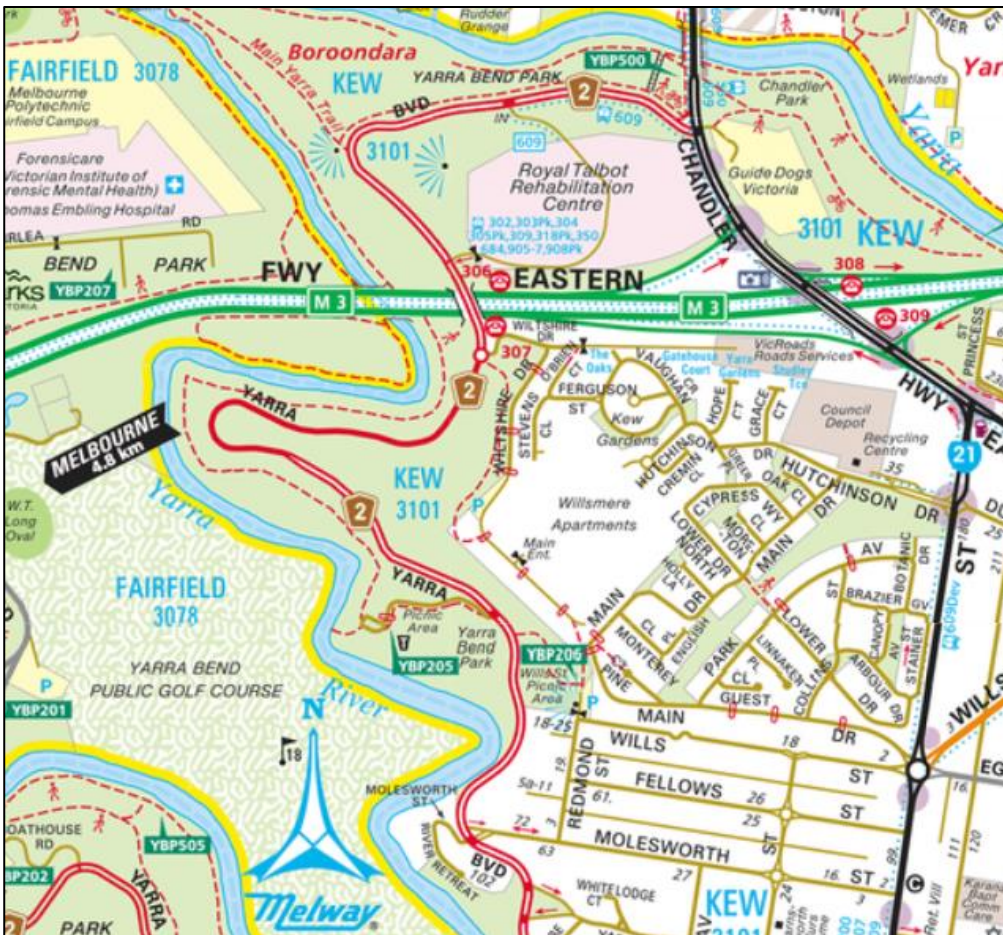


FIGURE 1 : WILLSMERE APARTMENTS LOCALITY PLAN

Record

No.	Author	Reviewed/Approved	Description	Date
1.	J. Higgs	D. Hancox	Proposed Driveway Connection to Main Drive	13/08/2018

Vehicular access is available for the apartments as follows:

- Wiltshire Drive (connects to Yarra Boulevard), and
- Hutchinson Drive, two gates along north-eastern boundary.

Drivers can connect to/from Chandler Highway and Johnston Street at Studley Park via Yarra Boulevard, or to/from Princess Street via Hutchinson Drive.

The Willsmere Apartments site contains 256 apartments of various configurations, with around 460 car parking spaces.

Main Drive at present has traffic volumes that vary from very little near the boundary of the Willsmere Apartments land to around 1,600 vehicle movements per day at the approach to the roundabout on Princess Street.

The carriageway width is about 7.5 metres between kerbs, and parking demand is close to zero because there are no houses that front Main Drive between the south-eastern corner of the Apartments site and Princess Street.

Traffic volumes on Princess Street are shown in copy of VicRoads data in the Appendix to this report. There has been little change other than a slight reduction over the last 15 years, and the peak period/peak direction volumes are well below those used in the Traffic Impact Assessment Report (TIAR) for the overall Willsmere development in 2009.

3 Current Travel Patterns

Residents from 60 households (of the total of 256 in Willsmere) responded with estimated weekly vehicular travel patterns.

The survey showed a rate of 1.75 vehicles owned/kept at Willsmere, fairly high by inner metropolitan standards.

Estimated travel was 1,622 daily vehicle trips, rates of:

- 3.62 daily trips per vehicle, or
- 6.34 daily trips per household.

The directional distribution of vehicle trips was classified as.

A	To and from Melbourne CBD, Richmond, Collingwood and similar directions.
B	Eastern Freeway, to the east.
C	Chandler Highway north of Willsmere.
D	Destination that would be convenient via Princes Street south.

A further split to trips was made on the basis of use of either Hutchinson Drive or Wiltshire Drive. The Appendix to this report provides a summary of the collated information, and the graphic in Drawing No. 9794105 shows the broad distribution of travel.

4 Estimated Redistribution of Traffic with Proposed Connection

After factoring to allow for the sample size an estimate of the advantages of making a vehicular connection to Main Drive at the south eastern corner of Willsmere was made. Conservatively allowing for 60% of the trips between Willsmere and Melbourne, Richmond etc. to be redirected from use of The Boulevard to Princes Street and Studley Park Road, 50% of the trips currently between Willsmere and the south east using Hutchinson Drive, and all of the trips between Willsmere and the south east using Wiltshire Drive to be diverted to Main Drive, we derive the following.

Total (factored up) Trips per Day	1622		TRIP DIRECTIONAL CATEGORY			
			A	B	C	D
Car Ownership Average per Household	1.75					
Average Daily vehicle trip ends per Household	6.34					
Average Daily vehicle trip ends per Car Owned	3.62					
Outbound Trips Via Wiltshire Drive per day	299	18%	127	32	85	55
Inbound Trips Via Wiltshire Drive per day	311	19%	148	40	78	46
Daily Trips via Wiltshire Drive	610	38%	17%	4%	10%	6%
Outbound Trips Via Hutcheson Drive per day	524	32%	180	75	38	231
Inbound Trips Via Hutcheson Drive per day	488	30%	137	77	46	227
Daily Trips via Hutcheson Drive	1012	62%	20%	9%	5%	28%
Relevant Distances						
1.4	Wiltshire Gate to Chandler/Bvd					
0.4	Chandler Bvd to EFWY Ebnd On					
0.6	Chandler Bvd to EFWY Wbnd On					
2.2	Wiltshire Gate to Molesworth St					
3.9	Wiltshire Gate to SPRoad on Bvd					
3.0	Chandler to Hoddle EFWY					
1.5	SPRoad to Hoddle					
0.8	Molesworth Street to Princess Street					
0.5	Hutchinson to Main Drive RBT					
0.7	Hutchinson to Molesworth St					
0.7	Hutchinson Drive					
0.6	SE Corner Willsmere to Main Drive RBT					
0.2	Main Drive RBT to Molesworth St					
3.3	SE Corner Willsmere to SPRd on Princes/SPRd					
Trips shortened by SECorner link to Main Drive						
Groups DW and DBW	90%		91			
Groups AW and ABW	60%		165			
Groups DH and DBH	40%		183			
Additional Traffic on Main Drive Per Day			438 vpd			

5 Traffic Impact Summary

5.1 Main Drive

The estimated additional volume of 438 vehicle trips per day on Main Drive will take the Main Drive traffic volume up to a maximum of about 2,100 vehicle trips per day. That is well within the capacity of the carriageway and will have no amenity related impacts because there are no houses abutting the street. No perceptible internal intersection impacts are likely to occur.

5.2 Impact at Princess Street Roundabout

The traffic volume basis for the SIDRA analysis used in the 2009 (updated) Traffic Impact Assessment Report for the Master Plan is:

- Southbound PM Peak Hour 1,186 in TIAR vs 1,037 actual
- Northbound PM Peak Hour 2071 in TIAR vs 1,311 actual
(Degree of Saturation 0.788)
- Southbound AM Peak Hour 1,969 in TIAR vs 1,586 actual
- Northbound AM Peak Hour 905 in TIAR vs 644 actual
(Degree of Saturation 0.744)

The addition of around 30 vehicles per hour to the peak direction in the peak hours on Main Drive will have no significant impact on the service level at the roundabout, given the low degree of saturation and the very conservative traffic volume basis for the analysis.

6 Summary and Conclusions

The proposed connection will have minimal traffic impacts on Main drive and the roundabout at Princess Street, whilst providing Willsmere Apartments with significantly greater flexibility of movement by both motor vehicle and otherwise.

An alternative easterly access will also afford better emergency service access to the Apartments site, and provide an opportunity for greater presentation of the original Willsmere building.

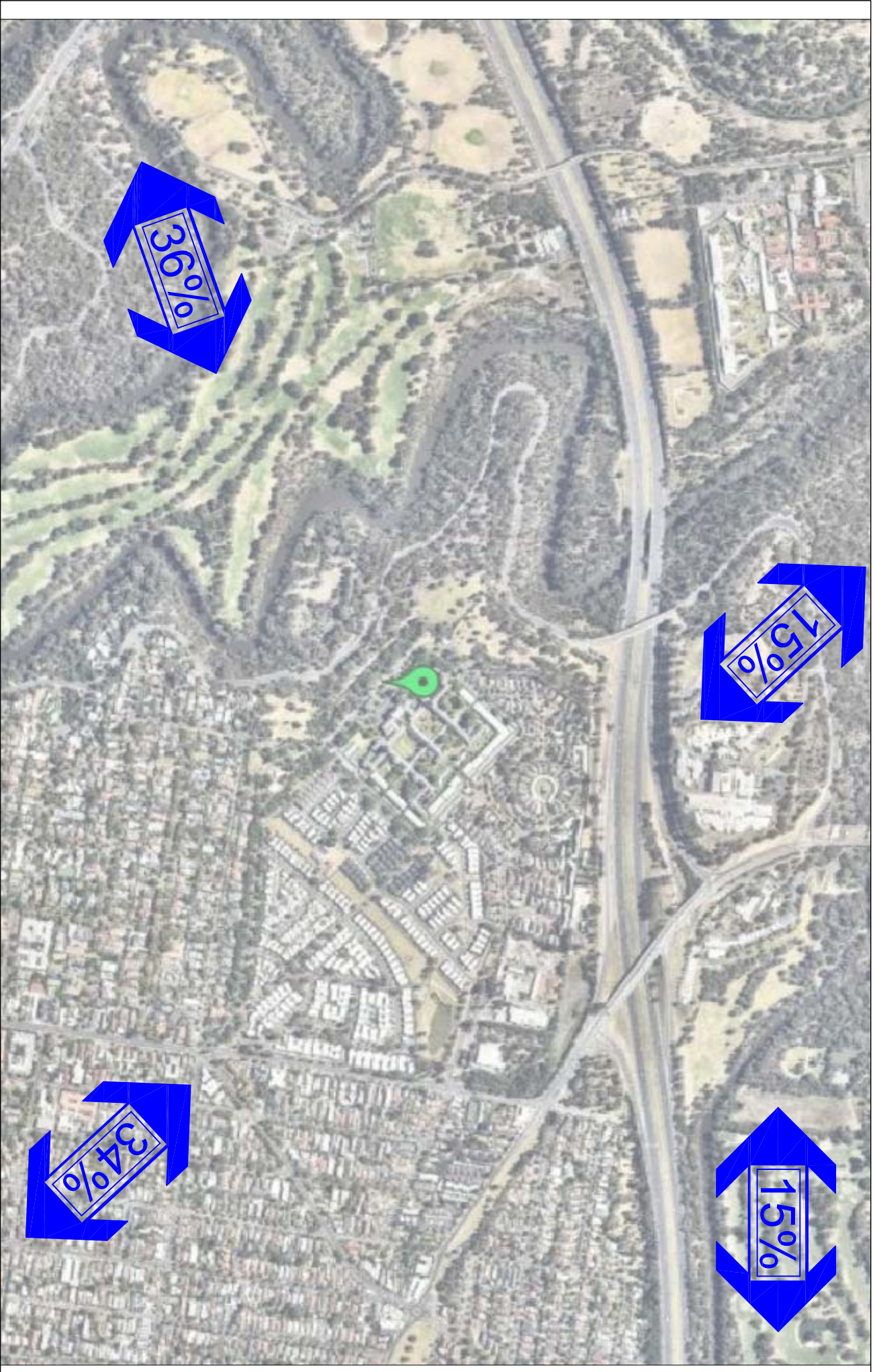
We see no traffic related reasons for refusal of any necessary town planning approvals.

TTM Consulting (Vic) Pty Ltd



J. D. Higgs

APPENDIX



Issue/Appdl	Date	Original Issue	Comments
A	JH 02/04/18		





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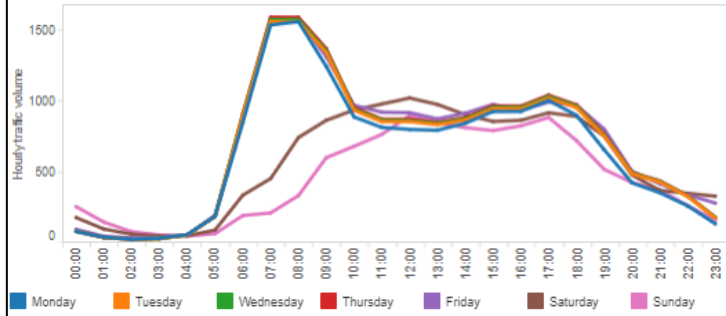
**WILLSMERE RESIDENT
 VEHICULAR TRAVEL
 PATTERNS
 BROAD DIRECTIONAL
 DISTRIBUTION OF TRIPS**

Drawing No : 97/94.105
 Sheet No : 1 Issue : A

PRINCESS STREET btwn CHANDLER HIGHWAY & EGLINTON STREET

Daily Profile

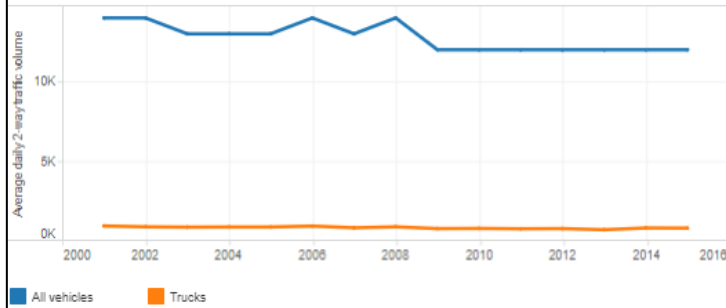
Direction: SOUTH BOUND Period Type: SCHOOL TERM/NORMAL



Weekly Profile



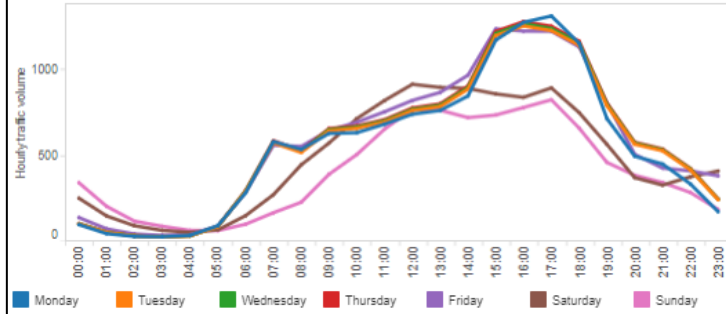
Last 15 Years



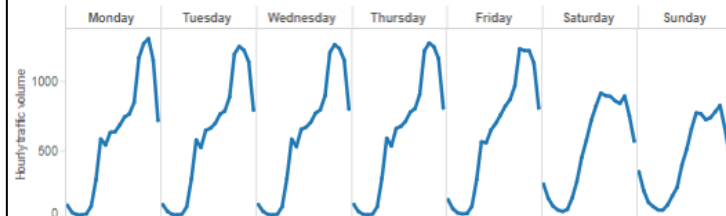
PRINCESS STREET btwn CHANDLER HIGHWAY & EGLINTON STREET

Daily Profile

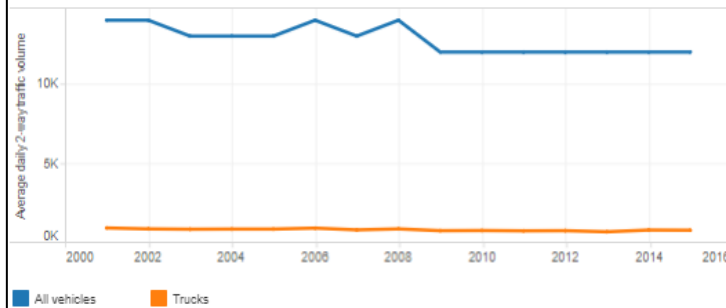
Direction: NORTH BOUND Period Type: SCHOOL TERM/NORMAL



Weekly Profile



Last 15 Years



WILLSMERE APARTMENTS RESIDENTS TRAVEL SURVEY DATA

Lot No.	Owned Vehicles	OUTBOUND vehicle trips per normal 7 day week PER HOUSEHOLD								INBOUND vehicle trips per normal 7 day week PER HOUSEHOLD							
		CBD, Richmond, Collingwood,		Eastern Freeway eastbound		Chandler Highway north of Willsmere		Princess St south, inc Kew, Hawthorn, Malvern		CBD, Richmond, Collingwood,		Eastern Freeway eastbound		Chandler Highway north of Willsmere		Princess St south, inc Kew, Hawthorn, Malvern	
		AW	AH	BW	BH	CW	CH	DW	DH	ABW	ABH	BBW	BBH	CBW	CBH	DBW	DBH
10	2	7	4	1	1	2		5	4	5		2	4		7	4	
18	1	5		2		2		0		5		1	1				
20	3	0	14	0	14	7	0	0	14	14	0	14	0	14	0	0	
21	1	4	0		1	1		0	2	4		1	1			2	
25	1		0				0		6							6	
29	1	7	7		0		0		3	7	7			7			
35	2	3	4	1		4		5		4			6	6	5	5	
36	1	0	1	0	1	1	0	1	7	0	1	0	1	0	1	7	
38	2	10	2	1		2		6		10	2	1	2			6	
42	2	4		0		0		0		4			0	0		0	
46	1		3						7	2						8	
48	1	10	1	2	1	2	1	4	0	4	4	1	1	1	2	0	
52	1	2							1	2						1	
56	2	4	7	4	7	2	4	7	5	7	3	1	7	3		3	
66	3	5	15	5			10	3	20	5	15					20	
74	2		3		7		2		5		3		7		2	5	
75	2	6	8	0	2	0	4	8	0	6	8	0	2		4	8	
81	2	10	30						20	10	30					10	
85	1	1	1		1	5			2	1	1		1	5		2	
86	1	3			2	0	0	0	5	3			5	0	0		
87	1	1						0	3	1						3	
91	2	5	13						6	5	13					6	
94	1	5	2		1	2			2	5	2		1	2		2	
99	1	0	5	2	1	0	0	0	3	0	5	0	2	0	0	3	
103	2	3	7	0	4	1	1	0	2	4	4	0	6	5	0	2	
105	2	10	0	0	6	5	0	0	4	10	0	0	6	5	0	4	
115	1		3			7			4		3			7		4	
124	1	2	5					4		2	5					5	
126	1	2	4	0	1	1	0	2	4	2	4	2	0	1	0	4	
128	2	0	10		4	2			4		7		4	2		4	
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130	2	3		3					2	1		5				2	
133	2		2	1	5	3			1	1	1		8	1		1	
138	2	1	16		2	1	1	0	11	1	1		1		1	11	
148	2	2	4	3				2		2	4	3			2		
153	1		1		4		5		7		1		4		5	7	
155	2	10			3	10		2	10	10	2		6	12		10	
157	1	1	0		1	1		10	4	9		2				6	
160	1	8	4		1		8		8	10	6	0	1	2		8	
162	2	4	4	2	0	1	0		2	6	2	0	2	2	0	4	
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167	1	4	2		1	2			2	4	2		1	2		2	
169	1	4	2	0	1	0	1	4		4	2		1		1	4	
173	6	5	0	8	2	10		6	6	8	4	2	10	10	7	10	
181	2	3	0	0	1	0	0	0	10	3	0	0	1	0	0	10	
183	2	9	7	0	10	1	1	0	5	5	4	0	8	0	1	5	
190	2	0	5	0	4	0	2	0	30	0	10	0	5	0	2	20	
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211	2	0	9	2	1				3		9	1	2			3	
226	2	4	8	0	0	2	5	6	6	9	3	0	0	2	5	12	
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232	2	0	15	2	2	5	0	0	12	0	5	2	5	5	0	15	
232	2	0	7	0	3	7	0	0	7	0	2	0	2	0	7	7	
233	2	4			3	28			5	4		14		4		10	
235	2	0	10	2					15		10	2				15	
242	2	16							10	16						10	
249	4	7	7	7	7	7	7	15	15	7	7	7	7	7	14	14	
251	2	5	9	4	5	1	1	4	10	9	5	4	6	10	5	10	
255	2	1				2	3	0	9	1				2	3	9	
105		208	295	53	123	140	63	90	379	242	225	65	127	128	75	75	373

Factored for 256 dwellings

4.27	448	887	1259	226	525	597	269	384	1617	1033	960	277	542	546	320	320	1591
		2146		751		866		2001		1993		819		819		866	