London Borough Enfield

Edmonton Leeside Area Action Plan

Transport evidence for the Edmonton Leeside AAP

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1 Introduction and background

The London Borough Enfield is collating evidence to support the Edmonton Leeside Area Action Plan preparation and Ove Arup & Partners have been commissioned by LBE to provide transport evidence.

The scope of the Ove Arup & Partners input to the AAP review were discussed in a meeting the 7th of July 2016. AECOM, who are updating the Edmonton Leeside AAP on behalf of London Borough Enfield, will provide information on Development quantum and Ove Arup & Partners will provide comments on the transport implications.

1.1 Development Quantum

AECOM have shared the *Evidence on Housing and Supporting Infrastructure* draft document the 8th of August 2016[1], set out in Table 1.

A number of scenarios had the same impacts in terms of transport, therefore these were grouped together for the purposes of this review and are presented in Table 2 below.

Table 1 - AAP Meridian Water scenario for testing (source: AECOM *Evidence on Housing and Supporting Infrastructure*)

Spatial scenario number	Dwellings	SIL	Jobs
1	5000	100%	3000
2	5000	100%	6000
3	5000	50%	3000
4	5000	50%	6000
5	5000	25%	3000
6	5000	25%	6000
7	5000	0%	3000
8	5000	0%	6000
9	8000	100%	3000
10	8000	100%	6000
11	8000	50%	3000
12	8000	50%	6000
13	8000	25%	3000
14	8000	25%	6000
15	8000	0%	3000

[1] And later confirmed this information in the email the 19th September 2016.

16	8000	0%	6000
17	10000	100%	3000
18	10000	100%	6000
19	10000	50%	3000
20	10000	50%	6000
21	10000	25%	3000
22	10000	25%	6000
23	10000	0%	3000
24	10000	0%	6000
25	12000	100%	3000
26	12000	100%	6000
27	12000	50%	3000
28	12000	50%	6000
29	12000	25%	3000
30	12000	25%	6000
31	12000	0%	3000
32	12000	0%	6000

Table 2 - AAP quantum development scenario (source: AECOM *Evidence on Housing and Supporting Infrastructure*)

Scenario N	**Homes**	**Jobs**	**Retail (sqm)**	**Leisure (sqm)**	**School (pupils)**	**School (staff)**
1;3;5;7	5000	3000	*3901*	*4290*	2904	202
2;4;6;8	5000	6000	3901	4290	2904	202
9;11;13;15	8000	3000	4945	*6235*	4647	324
10;12;14;16	8000	6000	4945	6235	4647	324
17;19;21;23	10000	3000	6181	*7980*	5808	405
18;20;22;24	10000	6000	6181	7980	5808	405
25;27;29;31	12000	3000	7418	*9352*	6970	486
26;28;30;32	12000	6000	7418	9352	6970	486

A combination of Quantum Development and the spatial scenarios based on release of Strategic Industrial Land (SIL) for development were taken into account. The total land available to development ranges from 28.2 Ha to 46.8 Ha as shown in Table 3, this determines different density requirements to deliver the housing element of the development as set out in Table 4.

Table 3 - AAP land use scenario (source: AECOM *Evidence on Housing and Supporting Infrastructure*)

Scenario Land Usage	**Developable Land (ha)**
Scenario 1 100% Existing Strategic Industrial Land (SIL) Retention	33.74
Scenario 2 Harbet Road SIL Release	38.42
Scenario 3 SIL IBP Released	44.05
Scenario 4 100% existing SIL Release	52.05

Table 4 - AAP housing density requirements (source: AECOM *Evidence on Housing and Supporting Infrastructure*)

Homes	**Land Use Scenario 1 (homes per Ha)**	**Land Use Scenario 2 (homes per Ha)**	**Land Use Scenario 3 (homes per Ha)**	**Land Use Scenario 4 (homes per Ha)**
5,000	148	130	114	96
8,000	237	208	182	154
10,000	296	260	227	192
12,000	356	312	272	231

2 Transport implications

Based on the information presented previously the section provides an assessment and sets out guidance as to the likely transport impacts of each of the AAP scenarios. This information is intended as a high-level assessment of the evidence in relation to the transport implications of the Meridian Water AAP section update.

1.2 Accessibility and sustainable density

The current London Plan (GLA, 2016) sets principles for optimising housing potential across London, with the local context, design and transport capacity taken into account as benchmark for optimum development density.

The relationship between housing density (habitable rooms and dwellings per hectare) and local context (suburban, urban or central) is linked to the access to public transport. The Public Transport Accessibility Level (PTAL) is a standard measure used for benchmark access to public transport in London. The PTAL categories are:

- PTAL 0 – none
- PTAL 1a – very poor
- PTAL 1b – very poor
- PTAL 2 – poor
- PTAL 3 – moderate
- PTAL 4 – good
- PTAL 5 – very good
- PTAL 6a – excellent
- PTAL 6b – excellent

Table 5 - The London Plan MALP (2016) Chapter 3 Policy 3.4 Optimising housing potential

The Policy 3.4 from the London Plan (GLA, 2016) states:

> *Taking into account local context and character, the design principles in Chapter 7 and public transport capacity,* ***development should optimise housing output for different types of location within the relevant density range shown in Table 3.2*** *(below source: GLA). Development proposals which compromise this policy should be resisted.*

Table 3.2 Sustainable residential quality (SRQ) density matrix (habitable rooms and dwellings per hectare)

Setting	Public Transport Accessibility Level (PTAL)		
	0 to 1	2 to 3	4 to 6
Suburban	150–200 hr/ha	150–250 hr/ha	200–350 hr/ha
3.8–4.6 hr/unit	35–55 u/ha	35–65 u/ha	45–90 u/ha
3.1–3.7 hr/unit	40–65 u/ha	40–80 u/ha	55–115 u/ha
2.7–3.0 hr/unit	50–75 u/ha	50–95 u/ha	70–130 u/ha
Urban	150–250 hr/ha	200–450 hr/ha	200–700 hr/ha
3.8 –4.6 hr/unit	35–65 u/ha	45–120 u/ha	45–185 u/ha
3.1–3.7 hr/unit	40–80 u/ha	55–145 u/ha	55–225 u/ha
2.7–3.0 hr/unit	50–95 u/ha	70–170 u/ha	70–260 u/ha
Central	150-300 hr/ha	300–650 hr/ha	650–1100 hr/ha
3.8–4.6 hr/unit	35–80 u/ha	65–170 u/ha	140–290 u/ha
3.1–3.7 hr/unit	40–100 u/ha	80–210 u/ha	175–355 u/ha
2.7–3.0 hr/unit	50–110 u/hr	100–240 u/ha	215–405 u/ha

The London Plan also states that while this Policy sets a good starting point, the *SQR density matrix*[2] should not be applied mechanistically. It is suggested that the ranges shown form the framework within which Boroughs can refine local approaches to implementation through their LDFs.

[2] Table 3.2 Chapter 3 of the London Plan 2016, Sustainable residential quality (SQR) density matrix. The matrix sets optimum density against local context and Public Transport Accessibility Levels (PTAL).

The density requirements are given by the quantum of housing and SIL scenarios as shown in Table 4 - AAP housing density requirements (source: AECOM *Evidence on Housing and Supporting Infrastructure*) were benchmarked against the above policy, the resulting requirements in terms of Public Transport Access Level[3] and context are set out in Table 6.

Table 6 - AAP scenario PTAL accessibility and density benchmark

Homes	**Context**	***Land Use Scenario 1 (dwellings per ha)***	***Land Use Scenario 2 (dwellings per ha)***	***Land Use Scenario 3 (dwellings per ha)***	***Land Use Scenario 4 (dwellings per ha)***
5,000	Urban	PTAL 3+	PTAL 3	PTAL 2	PTAL 1+
	Central	PTAL 2	PTAL 2	PTAL 1 - 2	PTAL 1
8,000	Urban	PTAL 6	PTAL 6	PTAL 5	PTAL 4
	Central	PTAL 4	PTAL 3 - 4	PTAL 3	PTAL 2
10,000	Urban	///	PTAL 6	PTAL 6	PTAL 5 - 6
	Central	PTAL 5 - 6	PTAL 5	PTAL 4	PTAL 3
12,000	Urban	///	///	PTAL 6	PTAL 6
	Central	PTAL 6	PTAL 6	PTAL 5	PTAL 4
///	Not Compliant with current policy				
Urban	Areas with predominantly dense development, for example, terraced houses, mansion blocks, a mix of different uses, medium building footprints and typically buildings of two to four storeys, located within 800 metres walking distance of a District centre or, along main arterial routes.				
Central	Areas with very dense development, a mix of different uses, large building footprints and typically buildings of four to six storeys, located within 800 metres walking distance of an International, Metropolitan or Major town centre. (see Chapter 2 of the London Plan)				

Referencing the densities shown in Table 4, the PTAL values stated in Table 6 are the average value across the whole site. In reality the PTAL level would change dependent on proximity to public transport, but for the purposes of this assessment an average is the most suitable value to use.

[3] Public Transport Access Level. This is a TfL standard measure of connectivity for the public transport network in London.

1.3 Parking and land take

Parking requirements are likely to represent a challenge in the delivery of the development quantum given the likely cost constraints of building underground structures for it. Considering the current policy LB Enfield DMD and the London Plan MALP 2016 the current policy suggests the following with regards to housing:

- Up to 1 or 1.5 car parking spaces for each dwelling;
- Minimum 1 Long stay cycle space each studio/ one bedroom and 1.5 cycle spaces bigger units.

- Recent medium size developments were approved in London Borough Enfield with requirement for 0.6 car parking spaces each dwelling. Assuming that the first 40% of the housing is provided with 0.6 spaces per unit, while the remaining 60% of the proposed housing might be provided with 0.4 car parking spaces per unit.
- The resulting estimate of the space required to provide the parking associated with each of the scenarios is given in Table 7.

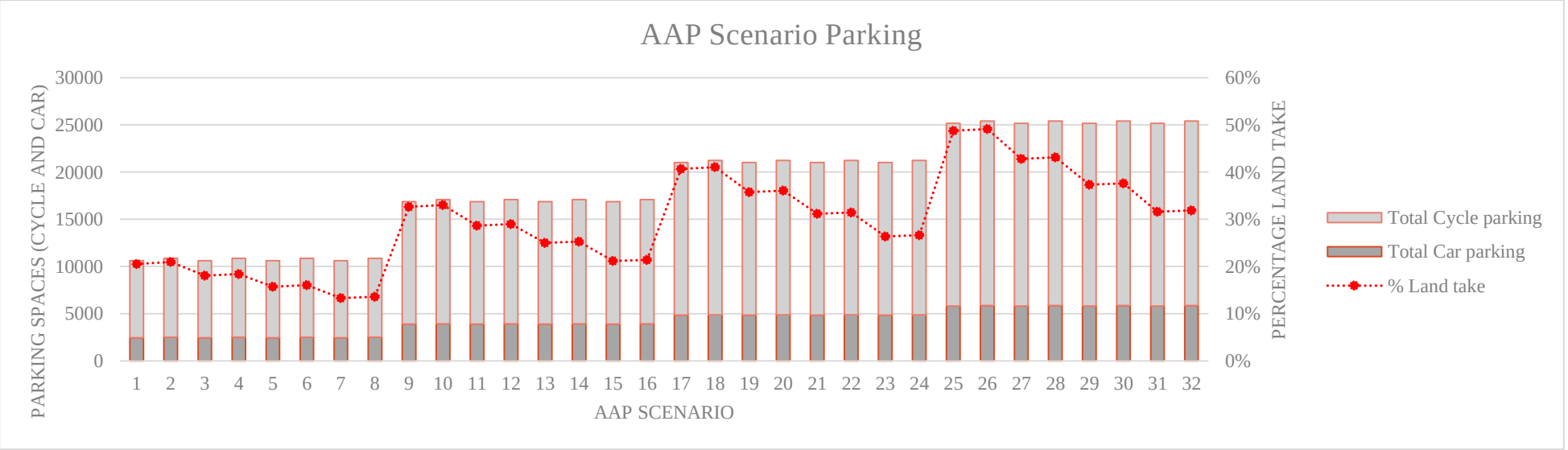
Table 7 - AAP scenario parking (including long stay cycle and car) benchmark

Spatial scenario number	**Dwellings**	**SIL**	**Jobs**	Parking	% land take
1	5000	100%	3000	2445/ 8180	21%
2	5000	100%	6000	2490/ 8360	21%
3	5000	50%	3000	2445/ 8180	18%
4	5000	50%	6000	2490/ 8360	18%
5	5000	25%	3000	2445/ 8180	16%
6	5000	25%	6000	2490/ 8360	16%
7	5000	0%	3000	2445/ 8180	13%
8	5000	0%	6000	2490/ 8360	14%
9	8000	100%	3000	3885/ 12980	33%
10	8000	100%	6000	3930/ 13160	33%
11	8000	50%	3000	3885/ 12980	29%
12	8000	50%	6000	3930/ 13160	29%
13	8000	25%	3000	3885/ 12980	25%
14	8000	25%	6000	3930/ 13160	25%
15	8000	0%	3000	3885/ 12980	21%
16	8000	0%	6000	3930/ 13160	21%
17	10000	100%	3000	4845/ 16180	41%

18	10000	100%	6000	4890/ 16360	41%
19	10000	50%	3000	4845/ 16180	36%
20	10000	50%	6000	4890/ 16360	36%
21	10000	25%	3000	4845/ 16180	31%
22	10000	25%	6000	4890/ 16360	31%
23	10000	0%	3000	4845/ 16180	26%
24	10000	0%	6000	4890/ 16360	27%
25	12000	100%	3000	5805/ 19380	49%
26	12000	100%	6000	5850/ 19560	49%
27	12000	50%	3000	5805/ 19380	43%
28	12000	50%	6000	5850/ 19560	43%
29	12000	25%	3000	5805/ 19380	37%
30	12000	25%	6000	5850/ 19560	38%
31	12000	0%	3000	5805/ 19380	32%
32	12000	0%	6000	5850/ 19560	32%

Figure 1 shows the relationship between quantum of parking spaces and potential land take from the developable area (this assumes all parking is surface and not in underground or multi-storey structures. It was assumed that car and cycle parking spaces were standard size, each car space would need 25 square metres of space and cycling assumed as one square meter per two cycles.

Figure 1- AAP scenario parking assessment



1.4 Person travel

The balance of housing versus employment and other uses will determine the travel patterns of each scenario. The likely peak morning and evening person trips were estimated and are shown in Figure 2 and Figure 3 according to land use and development quantum.

Figure 2 - AAP quantum development morning travel

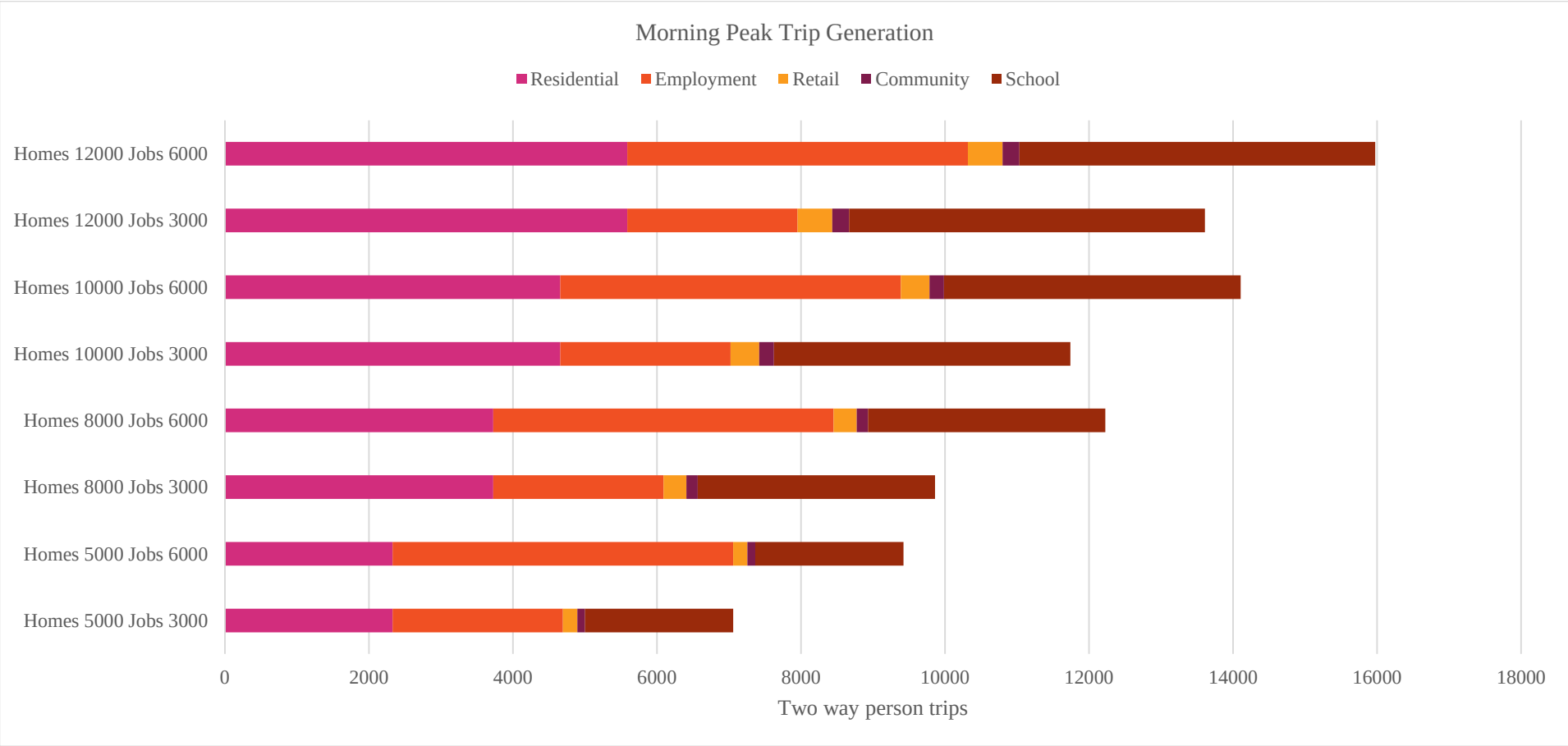
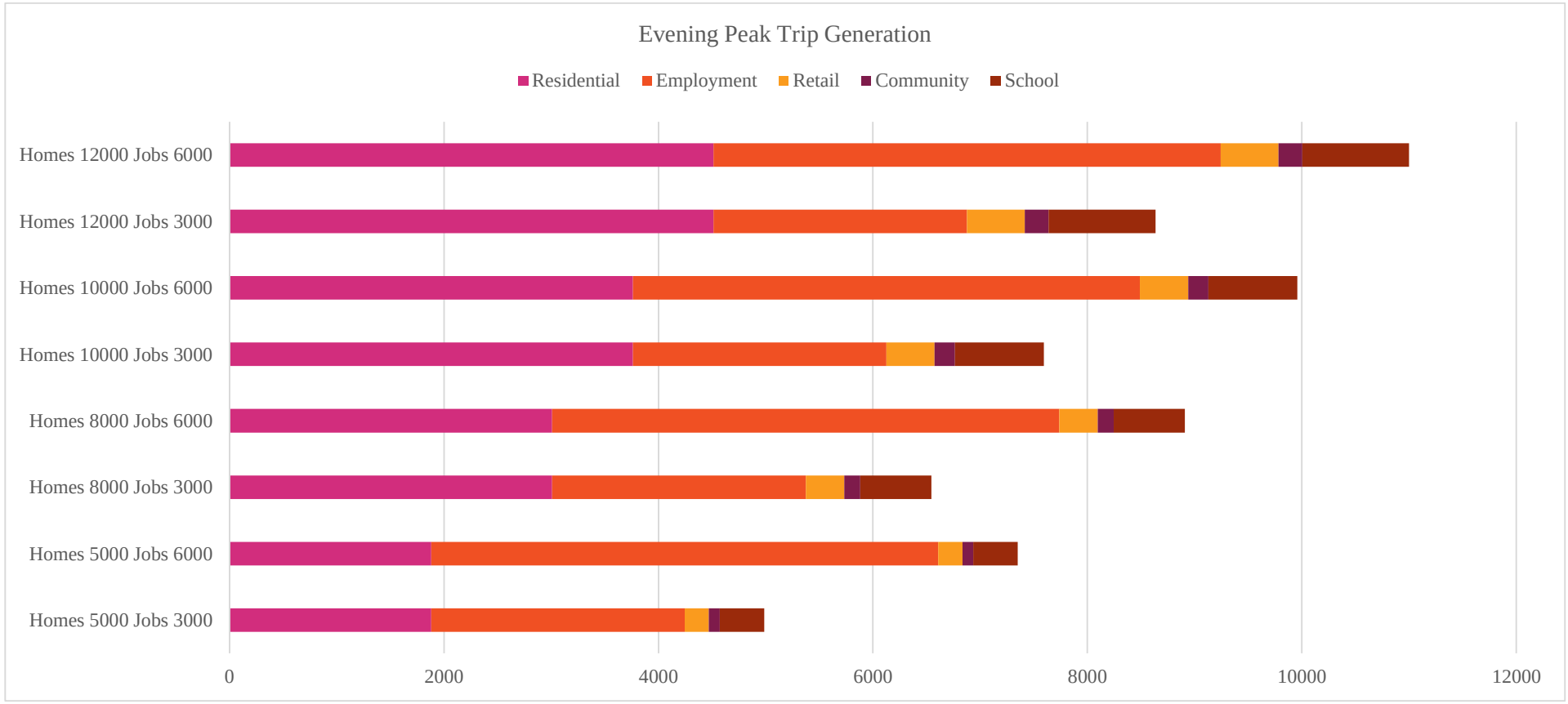


Figure 3 - AAP quantum development evening travel



1.5 Public Transport

On the basis of similar local area travel patterns (mode share and trip generation) use of public transport has been estimated for each development quantum. Table 8 shows the number of buses (double decker) and trains (STAR services) likely to be required to accommodate the peak hour public transport demand generated by the quantum development.

Table 8 - AAP quantum development demand for public transport

AAP development quantum	**Morning peak hour**				**Evening peak hour**			
	Bus arriving	Bus departing	Train arriving	Train departing	Bus arriving	Bus departing	Train arriving	Train departing
Homes 5000 Jobs 3000	9	6	*3*	*2*	4	8	*1*	*3*
Homes 5000 Jobs 6000	14	6	*6*	*2*	4	12	*1*	*6*
Homes 8000 Jobs 3000	11	9	*3*	*2*	6	9	*2*	*3*
Homes 8000 Jobs 6000	16	9	*6*	*2*	6	14	*2*	*6*
Homes 10000 Jobs 3000	13	12	*3*	*3*	7	10	*2*	*4*
Homes 10000 Jobs 6000	18	12	*6*	*3*	7	15	*2*	*6*
Homes 12000 Jobs 3000	14	14	*4*	*4*	9	12	*2*	*4*
Homes 12000 Jobs 6000	19	14	*6*	*4*	9	16	*2*	*7*