

DRAFT

Botley Central Area - Supplementary Planning Document (SPD)
Transport Review Note – for internal team and client group use only
DRAFT

July 2015

Botley Central Area – Transport Review

Introduction

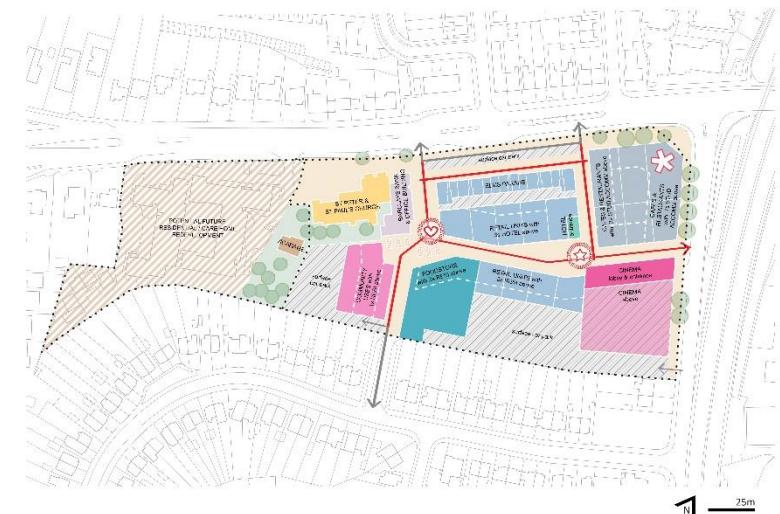
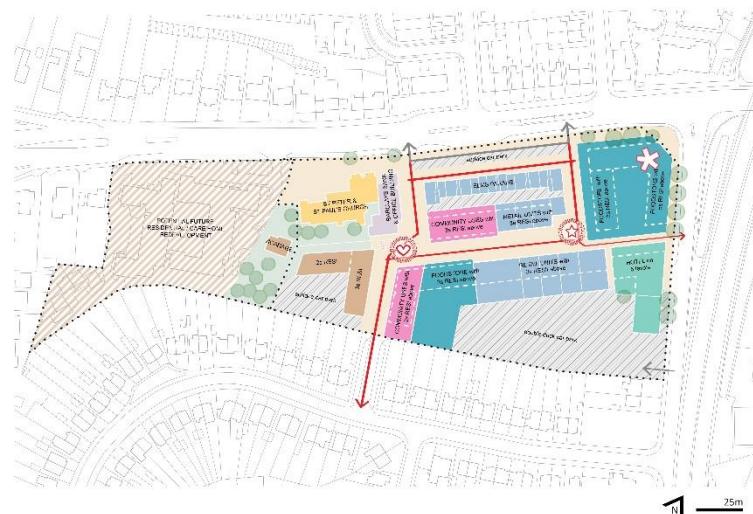
This Review Note sets out our findings and conclusions regarding transport considerations for the Botley Central Area development site. This work has been undertaken to assist development option preparation for the Central Area Supplementary Planning Document (SPD) with this summary note intended for distribution to Vale of White Horse District Council client and consultant team only.

Our findings draw upon our site observations, a desktop review, discussion with the wider project team and prior technical work undertaken by others – the latter examined for robustness and applicability.

Content

The Review is in two main sections, the first providing a summary of site conditions, the second examining the feasibility of proposals for site development as prepared for the SPD.

Generally, these findings are presented in summary / note form with the main focus of related technical work having been on collaborative Option preparation and site capacity movement and parking analysis.



Sect 1: Transport Conditions

Botley Central Area - Supplementary Planning Document (SPD)
Transport Review Note – for internal team and client group use only

July 2015



Site Conditions

Site Conditions

The site well connected to the local and strategic road network, with the A34 trunk road to the east providing good access between the M4 to the south and the M40 to the north. The B4044 West Way acts as a primary vehicular route offering connections to the wider area including Oxford City Centre which is within a 5 minute drive away.

Although there is no railway station in the Botley area, Oxford Station is within a 25 minute walk from the site offering national rail and regional connections. The site also benefits from good bus connections with bus stops located along West Way and Westminster Way . These offer access to Abingdon, Carterton, Oxford, Swindon, Wantage and Witney.

Pedestrian routes through the site generally lack natural surveillance and are not well used beyond working hours, leading to personal security concerns and attracting anti-social behaviour.

The population of the Botley Core area places considerable reliance on car use with 35% of households owning 1 car/van and 55% of households owning 2 or more cars. The site frontage is vehicle dominated and presents a generally unfriendly pedestrian environment with the wide West Way carriageway, large car park, fenced footpaths, pedestrian guardrailing and elevated A34 road in close site proximity though access is circuitous and of variable quality. The West Way junctions are subject to congestion at peak times but generally operate satisfactorily.



Cyclists have the benefit of shared bus lane use eastbound on West Way though a short length of cycle lane is their only specific provision westwards. This east-west axis is though attractive offering access to most of Oxford city centre within 20 minutes cycle ride. The site is also therefore an attractive proposition for sustainable access on foot and cycle from the residential hinterland.

Strengths

Site Strengths

Public Transport

- Readily accessible by bus with stops on West Way and Westminster Way
- West Way buses – approx. 4 per hour during the week towards city centre
- Real time bus service information available on West Way stops – plus shelter and seating
- Oxford Rail Station 1.9km away - 25minutes walking distance
- Bus lane available between Elms Road and A420
- Inset bus laybys on West Way in both directions

Pedestrians

- Shopping area is pedestrianised
- Signalised crossings of West Way and Westminster Way/West Way junction

Cycling

- Cycle parking available and well used
- Cycle routes on West Way in both directions – shared use of bus lane eastbound (limited cycle lane w/b)

Roads and Key Junctions

- A34 offers connection to strategic road network
- West Way / B4044 offers direct connection to city centre
- West Way's carriageway and junctions offer physical capacity for improvements in pedestrian crossing facilities and vehicle movement

Parking

- Ample surface parking available - 380 spaces
- Parking is free for three hours and well utilised
- No clear evidence of persistent overspill parking



Issues

Issues

Public Transport

- No shelter for bus passengers on Westminster Way southbound
- No real time bus information on Westminster Way stops
- Insufficient room for waiting passengers on West Way eastbound – block footway

Pedestrians

- “Sheep pen” pedestrian crossing causes walking diversions – pedestrians often cross either side of it - hazardous
- No pedestrian crossing facility on Westminster Way/ West Way junction west arm causes pedestrian diversions (incl schoolchildren)
- Guardrailing increases severance and discourages pedestrian movement
- Pedestrian access via Arthray Road made through car park

Cycling

- Lack of bicycle parking means bikes often secured to railings
- Narrow and discontinuous cycle lane on West Way (westbound)

Roads and Key Junctions

- Wide West Way carriageway means considerable pedestrian crossing distances
- Circuitous vehicular access to / from A34
- Westminster Road, narrow and unsuitable for heavy 2-way flow - buses stop on the carriageway too as there are no inset bus laybys

Parking

- Parking demand is high pressurising access and site space usage
- Some parking on double yellow lines causing inconvenience to pedestrians and vehicle flows

Servicing

- Residential area to south means Arthray Road unsuited to servicing movements



Roads and Key Junctions

West Way - Pedestrian access from north of West Way is inconvenient and discouraging to visitors – the existing ‘sheep pen’ crossing exacerbates the considerable crossing distance. A higher quality single-stage crossing would be beneficial – along with a further crossing point west of Church Way.

Westminster Way - Westminster Way's road width is between 5.0 and 5.5m south of Arthray Road, narrow for a 2-way carriageway and largely unsuitable for HGV's accordingly. This limits its use for access in terms of; vehicle flow, vehicle type, real and perceived impact of adjacent properties and pedestrians.

Arthray Road - Although wider at 6.0m in comparison to Westminster Way, Arthray Road at 6.0m wide is best suited to residential rather than commercial traffic. The occurrence of on-street parking serves to further narrow the effective available width.

A34 Access - Access to this strategic route is circuitous limiting the site's attractiveness to motorists as a *destination* for those travelling on the north-south axis.

The east-west access is served more conveniently from West Way, either directly from West Way, and indirectly from Chapel Way and Arthray Road from the West Way traffic signal controlled junction. The access arrangements the site's attractiveness in terms of strategic access by road.

Constraints

Site Constraints

A34

- A34 dual carriageway limits east-west movement
- A34 access is circuitous and limits site's attractiveness for longer distance traffic

West Way

- Carries substantial traffic flows and prone to delays at peak times
- West Way width presents considerable crossing distances for pedestrians
- Limited left-turning capacity from West Way westbound to Westminster Way

Westminster Way

- Narrow south of Arthray Road – limits usability and convenience
- Short length of footway on eastern side – extends to bus stop only

Other

Residential nature of area to the south of the site – need to carefully manage site access, parking and servicing movements accordingly



Opportunities

Opportunities

Public Transport

- Inset bus lay-by on Westminster Way northbound
- Bus shelter and seating on Westminster Way southbound
- Real time bus service information on Westminster Way
- Address bus passenger waiting capacity on West Way eastbound
- Provide real time bus service information within site – timetabling information for bus, rail, walking and cycling too

Cycling

- Provide sufficient cycle parking to promote cycle use and growth
- Better integrate cycle movement with vehicular traffic on West Way

Pedestrians

- Improve West Way crossing by removing 'sheep pen' diversion and guardrailing
- Provide convenient access for pedestrians from southern residential area
- Provide pedestrian crossing of West Way (west arm) at its Westminster Way junction - particularly to benefit primary school movements

Roads and Key Junctions

- Improve junctions for convenient pedestrian movement
- Possible reallocation of roadspace to help improve streetscape and pedestrian movement

Servicing

- Possible localised widening of Westminster Way (west side) to facilitate site access north of Arthray Road junction

Travel Plan

- Site-wide Travel Plan to rationalise movement to / from site, encourage travel by sustainable modes and minimise required on-site parking



Westminster Way



“Sheep pen” style pedestrian crossing



Sect 2: Movement Impact & Parking Assessment

Botley Central Area - Supplementary Planning Document (SPD)
Transport Review Note – for internal team and client group use only

July 2015

Trip Generation - Present site movement estimations

Present site movement estimations

This section summarises the estimation of movement impact generated by the development scenario options explored, along with the parking capacity required on-site. As described earlier it draws upon our site observations, desktop review, discussion with the wider project team and prior technical work undertaken by others (RPS Group consultants on behalf of Doric Properties Ltd), discussed and submitted to OCC as the local highway authority – suitably examined for robustness and applicability. Where that work has been referenced an asterisk (*) appears accordingly (see below).

Along with multi-modal movement, consideration is also given to the appropriate level of parking provision required to support each option. For movement and parking, consideration has been given to both option viability and the sustainable transport objectives.

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicles	262	191	453	283	341	624	318	330	648
Pedestrians	190	58	248	153	123	276	134	84	218
Cycle	17	16	33	30	21	51	22	15	37
Total	469	265	734	466	485	951	474	429	903

Current vehicle movements accessing/exiting the development site – traffic survey numbers

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicles	352	207	559	292	433	725	318	330	648
Pedestrians	213	61	274	155	137	292	134	84	218
Cycle	22	16	38	30	23	53	22	15	37
Total	587	284	871	477	593	1070	474	429	903

Current vehicle movements including trips calculated for the vacant office space using TRICS

Present Site Movements

The development site was surveyed for the previous Transport Assessment* to assess the current movements in and out of the site. That survey has been applied to provide a robust baseline in assessing the impact of the proposed development movements on the transport network.

On the current site there is a total of 3,908m² of vacant office space, which has been occupied previously. Thus trips for this office space were calculated by interrogating the TRIC database and then added to the surveyed movements to give a total for the entire site when its fully occupied. The resulting estimated total number of two way trips on a weekday in the AM peak is around 870 and 1070 in the PM peak. Meanwhile on a Saturday the total is around 900. This equates to around 600 arrivals and 600 departures in the AM and PM peak respectively. Of the total trips to the site, approximately 60-70% are by vehicle, highlighting the current reliance on private cars to access the site.



Trip Generation - Future Estimated Movements

Future Estimated Movements

Estimated future trips for all three options were estimated by interrogating the TRICS database. They have been calculated using the previous TA's* TRICS inputs. However, new TRICs outputs were obtained for two types of land uses which were not previously proposed:

1. Residential – privately owned flats
2. Foodstore – one or two small sized foodstores which is different to the previous large scale store that was proposed within the TA.

Option 2 has the lowest number of total trips for all three time periods when compared to the other two, with nearly 100 fewer vehicle trips in all three time periods.

In all three options the Saturday peak (12:00-13:00) shows the highest total number of trips, due to the mix of land uses proposed with a high proportion of retail and leisure use in addition to some residential and office space.

In the morning and evening peaks Option 4 has the highest predicted flows while Option 3 has similar flows for the morning period and more noticeably fewer for the evening.

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	131	109	240	220	231	451	272	258	530
Pedestrian	106	156	262	173	135	308	187	190	378
Cycle	5	2	7	4	3	7	2	2	3
Public Transport	13	22	36	38	34	72	45	32	76
OGV	2	2	3	1	1	2	1	1	2
Total	257	291	548	436	404	840	507	482	989

Option 2 movements accessing/exiting the development site

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	165	163	328	252	247	499	262	277	539
Pedestrian	80	102	182	115	96	211	125	147	272
Cycle	4	4	8	5	4	8	2	2	3
Public Transport	12	21	33	16	14	30	10	12	21
OGV	2	2	4	1	1	2	3	2	5
Total	263	291	554	390	361	751	401	440	840

Option 3 movements accessing/exiting the development site

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	166	149	315	287	286	573	381	367	748
Pedestrian	148	198	345	207	169	377	245	253	498
Cycle	5	3	8	5	4	9	2	2	4
Public Transport	11	23	34	40	34	74	45	32	78
OGV	3	2	5	1	1	2	1	1	2
Total	332	375	707	540	495	1035	674	655	1329

Option 4 movements accessing/exiting the development site



Trip Generation Net Future Estimated Movements – *with* office use added

Net Future Estimated Movements

– *with* office use added

The net future estimated movements are estimated using the current movements including the estimated movements for the vacant office space. They show a predicted drop in the number of vehicle trips (in green type, increases in red) to and from all three options for the site.

The site could see up to 300 fewer vehicle two-way trips in the morning and evening peaks in Option 2 and around 200 in Options 3 and 4.

However, there is one exception to this with a slight increase in vehicle trips in Options 4 for the Saturday peak. This is due to the increase in leisure and retail facilities on the site, which would anticipate a higher usage at the weekend.

There is an increase in pedestrian flows particularly in Options 2 and 4 due to the large amount of student accommodation.

The predicted drop in vehicles accessing/exiting the site in the weekday peaks is due to the nature of the site changing with less office use and an increase in retail and leisure. Thus the site has the potential to have less impact on the road network in the peak hours as cinema trips are more likely to happen in the afternoon and evening periods.

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-221	-98	-319	-72	-202	-274	-46	-72	-118
Pedestrian	-107	95	-12	18	-2	16	53	106	160
Cycle	-17	-14	-31	-26	-20	-46	-20	-13	-34

Difference between option 2 estimated movements accessing/exiting the development site and current development site trips (including vacant office estimated trips)

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-187	-44	-231	-40	-186	-226	-56	-53	-109
Pedestrian	-133	41	-92	-40	-41	-81	-9	63	54
Cycle	-18	-12	-30	-25	-19	-45	-20	-13	-34

Difference between option 3 estimated movements accessing/exiting the development site and current development site trips (including vacant office estimated trips)

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-186	-58	-244	-5	-147	-152	63	37	100
Pedestrian	-65	137	71	52	32	85	111	169	280
Cycle	-17	-13	-30	-25	-19	-44	-20	-13	-33

Difference between option 4 estimated movements accessing/exiting the development site and current development site trips (including vacant office estimated trips)



Trip Generation Net Future Estimated Movements – *without* office use added

Net Future Estimated Movements

– *without* office use added

These net future estimated movements are calculated using the current movements in and out of the site as per the traffic survey carried out for the previous Transport Assessment.

This shows the estimated number of trips to and from the development site compared to the current conditions allowing the proposed sites to be compared against what is currently happening at the site. This only affects the weekday numbers as it was assumed there would be no office trips at the weekend.

It shows that with the change in land usage across the site the number of trips in the AM and PM peak is still predicted to fall when compared to the amount of trips today.

Option 2 shows the highest reduction in vehicles with a fall of over 200 2-way trips in both peak periods.

Option 4 shows a negligible increase in trips coming to the site in the PM peak with 4 more than the observed number of trips.

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-131	-82	-213	-63	-110	-173	-46	-72	-118
Pedestrian	-84	98	14	20	12	32	53	106	160
Cycle	-12	-14	-26	-26	-18	-44	-20	-13	-34

Difference between option 2 estimated movements accessing/exiting the development site and current development site trips

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-97	-28	-125	-31	-94	-125	-56	-53	-109
Pedestrian	-110	44	-66	-38	-27	-65	-9	63	54
Cycle	-13	-12	-25	-25	-17	-43	-20	-13	-34

Difference between option 3 estimated movements accessing/exiting the development site and current development site trips

Mode	Weekday AM Peak (07:45 – 08:45)			Weekday PM Peak (16:45 – 17:45)			Saturday Peak (12:00 – 13:00)		
	In	Out	2 Way	In	Out	2 Way	In	Out	2 Way
Vehicle	-96	-42	-138	4	-55	-51	63	37	100
Pedestrian	-42	140	97	54	46	101	111	169	280
Cycle	-12	-13	-25	-25	-17	-42	-20	-13	-33

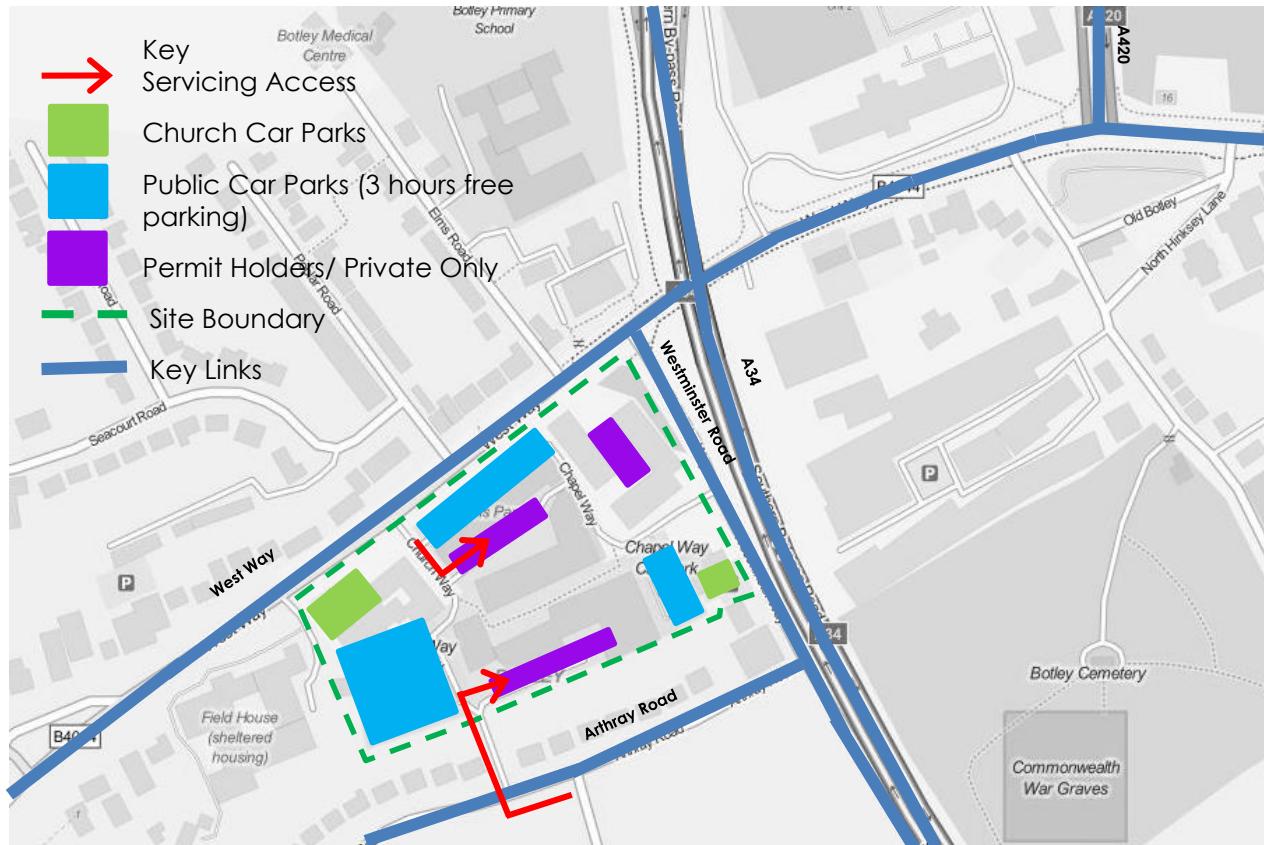
Difference between option 4 estimated movements accessing/exiting the development site and current development site trips



Parking – Existing site provision

Currently there are approximately 380 spaces across the development site - detailed below:

- Public Car park adjacent to Co-op – 42 spaces
- Car Park adjacent to West Way House – 24 private spaces and 75 public spaces
- Rear service area (from Arthray Road) – 20 spaces including informal parking
- Elms Parade – 36 public spaces
- Rear service area to West Way and Elms Parade – 27 spaces including informal parking
- Elms Court – 93 private spaces
- Community Hall – 6 spaces
- Baptist Church – 14 spaces
- Field House – 19 spaces
- Vale House – c. 21 spaces
- Vicarage – 3 spaces



Key Roads around the site with location of car parks and servicing access

Local Plan policy DC5

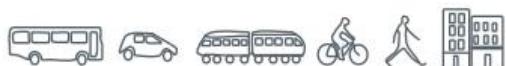
Parking Standards - Maximum Levels SUPPLEMENTARY PLANNING GUIDANCE

Accessibility Characteristic	Residential	Food Retail**	Non Food Retail**	B1 and A2	B2 - General Industry	B8 Warehousing	D2 Assembly and Leisure **	Cinema & Conference **	Hotel * and Guest House	Hospital	Higher Education	A3 - Restaurant/ pubs	Stadia *
Type 1	1 space per dwelling up to 2 bedrooms; 2 or more bedrooms - on merit	Operational Parking Only							on merit	on merit	operational need	operational need	N/A
Type 2	1 bedroom - 1 space; 2/3 bedrooms - 2 spaces; 4 bedrooms or more - on merit	1 space per 14sqm	1 space per 20sqm	1 space per 30sqm	1 space per 50sqm	1 space per 200sqm	1 space per 22sqm	1 space per 5 seats	1 space per 1 bedroom	on merit	1 space per 2 staff 1 space per 15 students	1 space per 5sqm of public space	on merits (guide 1 space per 15 seats)*
Application Threshold (gross floor area)	N/A	1000	1000	500	500	1000	1000	1000	30	N/A	2500	N/A	1500 seats

* Coach parking treated separately
 ** A sequential test as set out in PPS6 will apply to these land uses
 Type 1 - This standard is applicable to the Town Centre Policy Areas of Abingdon and Wantage. These are defined on the Local Plan Proposals Map.
 Type 2 - Other areas

Parking standards for new developments are set out in the Vale of Whitehorse Local Plan under policy DC5. This identifies the maximum number of car parking spaces required for each land use. The development site in Botley comes under Type 2 of the accessibility characteristics. It outlines that for residential units 1 space should be assigned to each flat if they are 1 bed roomed units, while a hotel should have 1 space assigned to each bedroom. The other land uses are based on spaces per floor area

It is important to note that this is the *maximum* number of car park spaces required as the proposals should aim to achieve a balance between promoting sustainable travel to the site by having a limited number of spaces, but not to few that parking overflows onto the surrounding residential streets.



Estimated Parking Provision

	No. of Spaces using Parking Accumulation Method - Weekday	No. of Spaces using Parking Accumulation Method - Saturday	No. of Spaces using the Maximum Parking Standards	Residential Parking Spaces
Option 2	242	165	661	37
Option 3	354	309	600	213
Option 4	236	174	726	23

Estimation of the number of parking spaces required using the parking accumulation method and parking standards outlined in policy DC5 – Linked trips **included**

Parking estimations have been carried out using two methods:

1. The maximum number of car parking spaces have been calculated using the parking standards outline in policy DC5.
2. Parking accumulation throughout the day has been calculated using daily trips rates output from the TRICS database for each land use.

Each method has been calculated using some linked trip assumptions which are:

- 1/3* of people using the restaurants/cafes and cinema are linked leisure trips*
- 41.4%* of food store trips are linked to other retail on the sit

Additionally, it was assumed that 50% of the floor area is open to the general public for the restaurants and cafes. It was also assumed for both methods that each residential unit will be assigned one parking space on the site.

It should be noted that the parking standards are a maximum number of parking spaces for each type of land use and less parking spaces can be provided on the site as long as a justification is given.

	No. of Spaces using Parking Accumulation Method - Weekday	No. of Spaces using Parking Accumulation Method - Saturday	No. of Spaces using the Parking Standards – No Linked Trips	Residential Parking Spaces
Option 2	330	210	841	37
Option 3	412	352	709	213
Option 4	323	226	921	23

Estimation of number of parking spaces required using the parking accumulation method and parking standards outlined in policy DC5 – Linked trips **not included**

In terms of the parking accumulation calculation it shows that Option 2 requires the least amount of parking spaces on site with 242 required during a typical weekday while Option 3 requires the most at 354 spaces.

The parking standards identify a significantly larger maximum number of spaces on the site with Option 4 at 726 spaces while Option 2 is at 661. However, the peak times for the different land uses in terms of parking are different and will allow some sharing across the site. For example the cinemas peak will be in the evenings while the food stores will be throughout the day. Thus more weight should be given to the parking accumulation method as it takes the hourly trip rates into account. This would mean that the site would need to accommodate around 250 spaces for both Option 2 and 4 and around 350 spaces for Options 3.

The number of spaces required on a Saturday is lower for all three options than on a Weekday, meaning the number of visitors will be easily accommodated at the weekend by using the weekday numbers.

Currently all calculations assume 1 space for each residential unit on the site which means Option 3 has a high number of residential spaces, 213 across the site. This could be reduced if measures were introduced to maximise the use of sustainable travel methods for the residents on the site thus minimising the number of cars owned.

As stated linked trips have been taken into account as visitors will use the site for more than one of its land uses. This means a reduction of approximately 100 spaces when compared to the number of spaces required if no linked trips were to happen.



Parking – Estimated Parking Provision Profiles

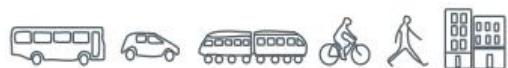
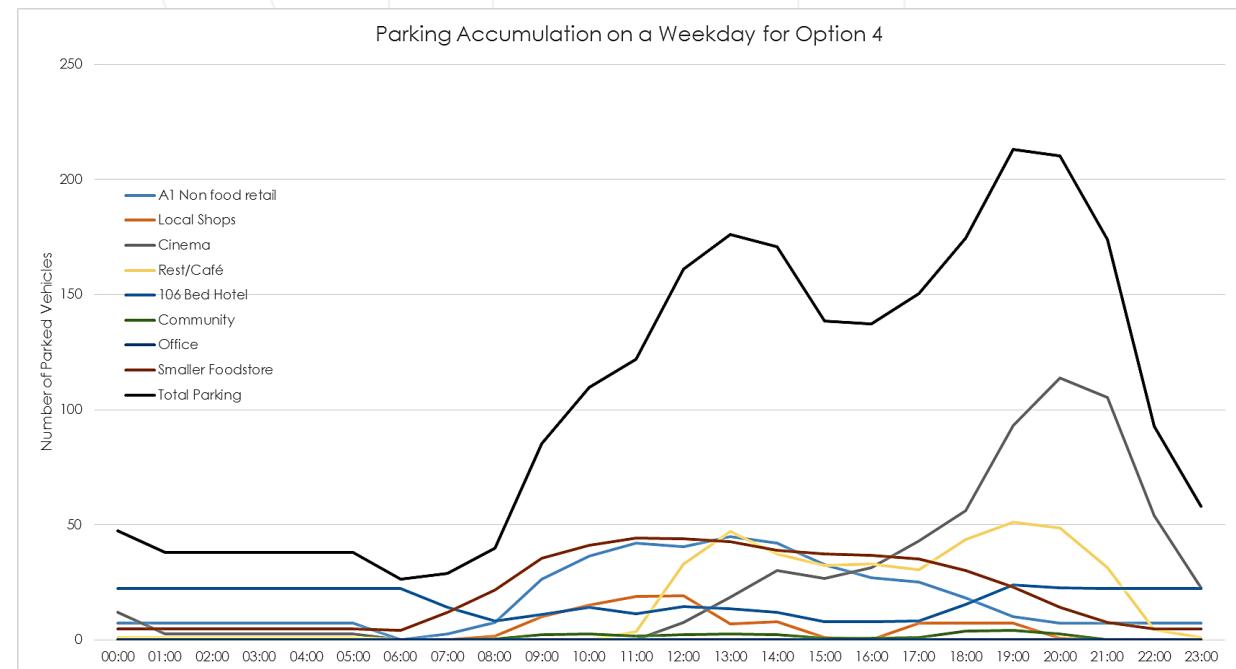
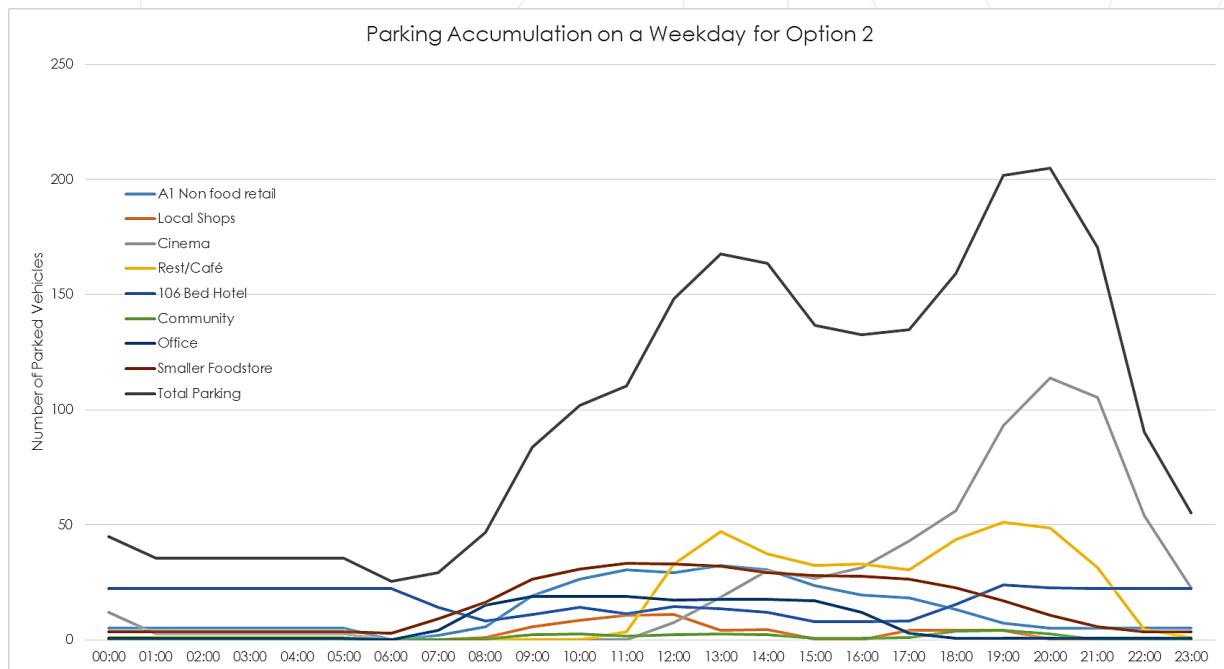
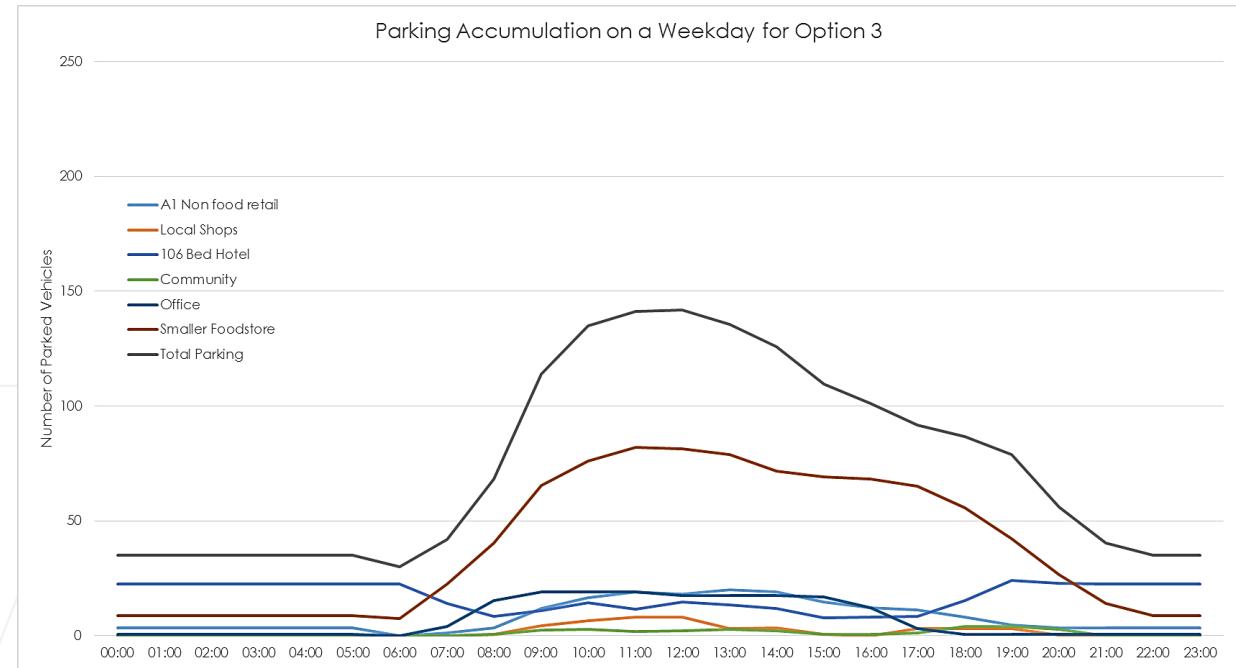
The parking accumulation profiles show the peaks predicted on the site in terms of the number of cars parked over an hour for a typical weekday. Note - these graphs do not include residential parking as it is assumed that these are provided for residents separately.

The peak is highly dependant on the mixture of uses located on the site, with Option 2 and 4 peaking at around 8pm while Option 3 peaks in the middle of the day.

The land use that generates the most parked cars in Option 3 is the food stores, while in Option 2 and 4 it is more evenly spread through all the land uses during the day with the cinema creating the most amount of parked vehicles in the evening.

Option 3 could have some scope to share parking between residential and retail/employment as the amount of parked vehicles drops substantially in the evening peak when you would expect residents to be returning home.

The highest number of parked cars for Option 3 comes from the food store, while in Option 2 and 4 the food store is similar to the other land uses due to it being a smaller size in these options. The cinema accounts for the highest proportion of the parked cars in the evening for both Options 2 and 4.



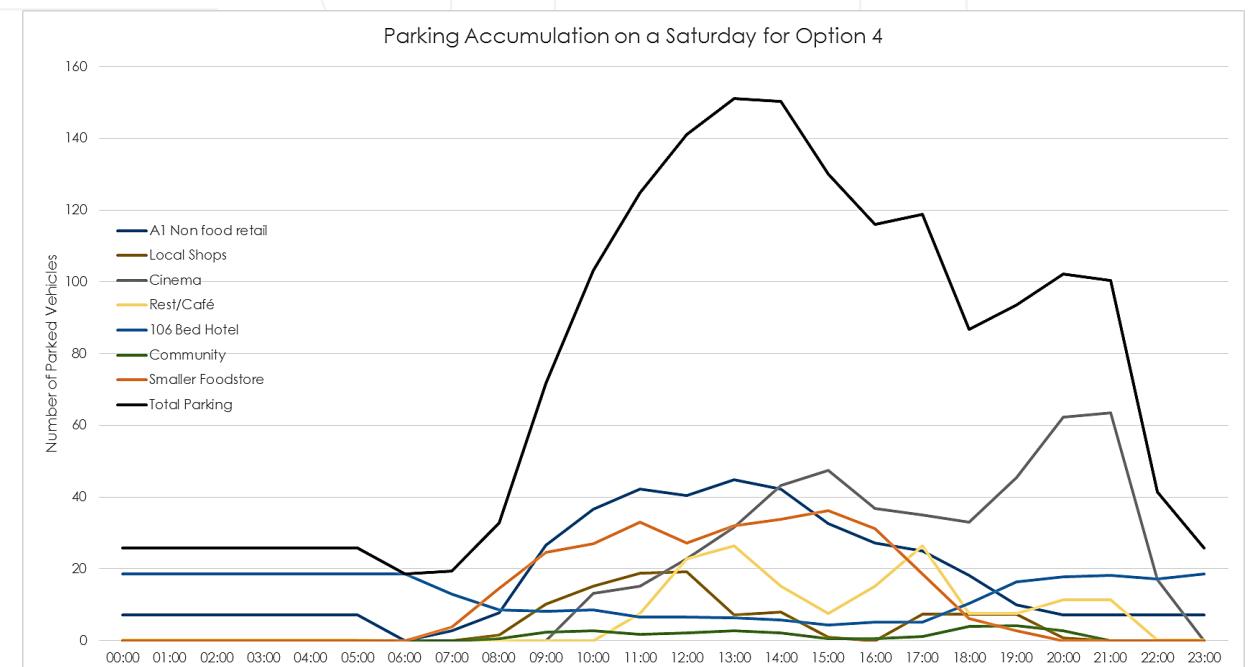
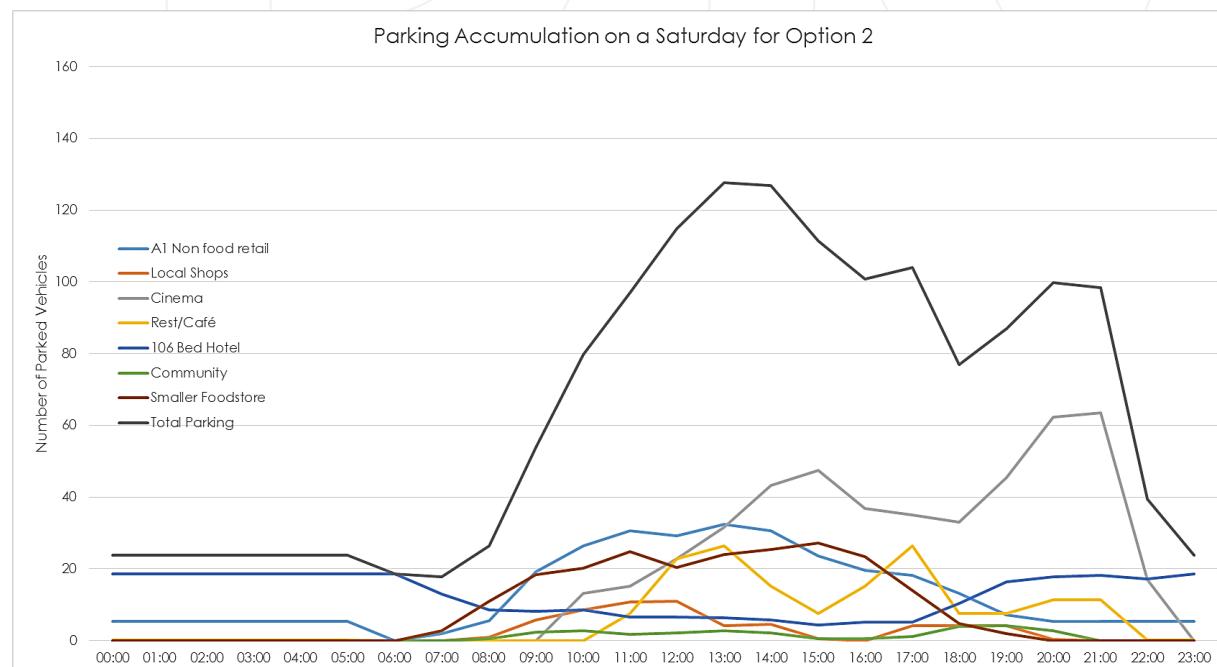
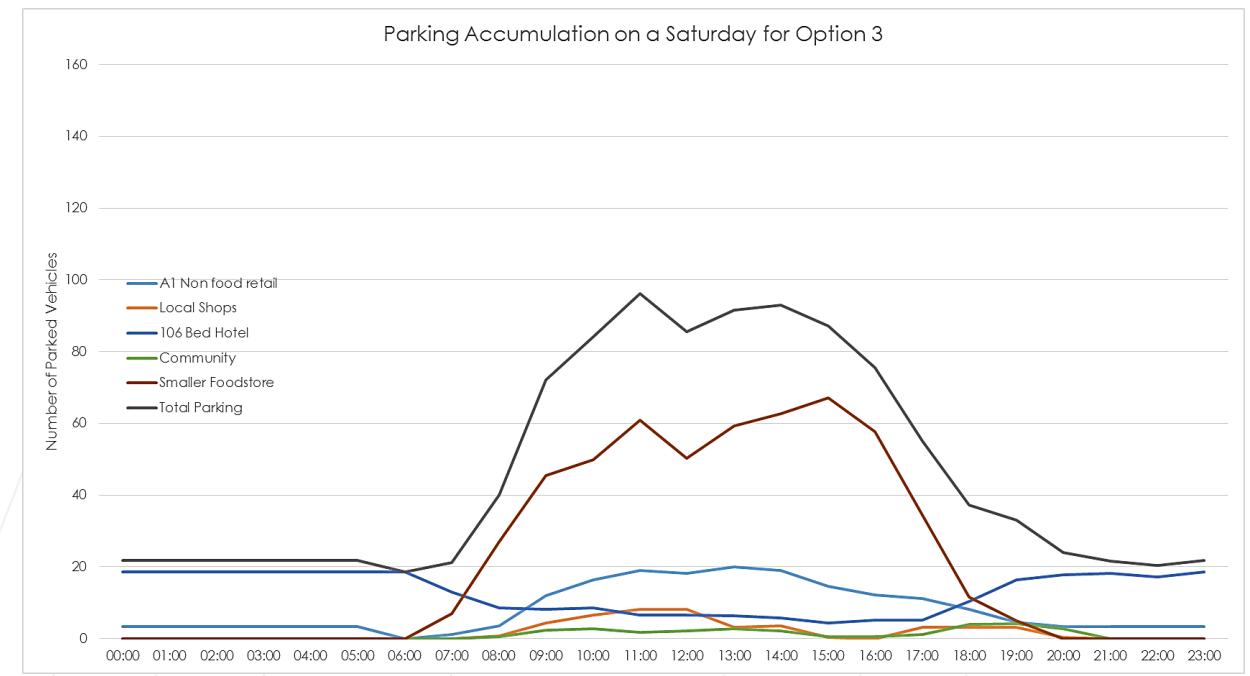
Parking – Estimated Parking Provision Profiles

The parking accumulation profiles show the peaks that are predicted on the development site in terms of the number of cars parked over an hour for a typical Saturday. Note - these graphs do not include residential parking as it is assumed that these are provided for residents separately.

The Saturday profiles show similar pattern to the weekday profiles with Option 3's peak being skewed towards the middle of the day by visitors to the food stores.

However, Option 2 and 4 show a fairly constant peak across the afternoon, which is due to the mixture of land uses lending itself to trips happening in the afternoon but also people visiting the cinema, hotel and restaurants in the evening. This constant level of parking different to the weekday profile where it builds steadily throughout the afternoon peaking in the evening.

The highest number of parked vehicles from a particular land use comes from the cinema in Options 2 and 4 while the food store accounts for the most vehicles in Option 3.



Visitation and Parking Provision Summary

Even though the Options increase the number of uses across the site; cinema / hotel / residential / student accommodation, the number of trips during the peak hour is estimated to reduce slightly in comparison to present movements for the reasons identified below. These also affect the resultant parking accumulation and parking requirement for the Options – again meaning it is in broad terms similar to present levels.

Multiple Visitation

- All options allow for trips of multiple purposes, however option 2 and 4 have a mixture of leisure land uses which allows for a higher number of linked trips for leisure purposes
- In Option 3 the food store is double the size that is presently on the site, however this is made up of two smaller food stores and there will be some usage of both in a trip

Trip Arrival / Departure Profiles

- Due to the mixture of land uses across the site the trips occur across the day, with the cinema and cafes/restaurants building steadily through the afternoon/evening rather than in the "normal" peak hours
- The parking accumulation showed that the peak of Options 2 & 4 in terms of parking occurred at 8PM while Option 3 occurred in the middle of the day, highlighting the spread of trips across the day rather than in the peak hours

Land Use Blend

- The current site has a high proportion of office use which as a land use is liable to produce more peak hour trips than the mixture of land uses proposed for the site
- The amount of leisure and retail facilities proposed for the site means that a high number of trips will occur on the weekend, which is why Saturday for Option 4 shows a small increase in the number of trips when compared to the current situation
- Option 3 requires the least amount of parking space throughout the day, when residential spaces are not occupied. However it also has the highest number of residential units proposed. Meanwhile Option 4 has a high number of residential units and the highest parking accumulation from the other land uses.



Quality Control	
Primary Author	Sam Thrower
Contact Details	T: +44 (0) 20 7566 3470
	E: sam@urban-flow.co.uk
Other Authors	John Emslie
Reviewer	John Emslie

Document Control		
Version	Recipient	Date
1.0	Client and BDP team Status: for internal team and client group use only	24/07/2015

