

**Wokingham LPU Strategic Masterplanning – High Level Viability Assessment**

**Development appraisal assumptions for Grazeley:**

1 Assumed mix of unity types, sizes, values, density and site preparation costs:

Grazeley		Unit types	25% of 2 bed need	75% of 2 bed need		75% of 4 bed + need	25% of 4 bed + need	Check
split	Unit numbers	1 bed	2 bed F	2 bed H	3 bed H	4 bed	5 bed	
<b>Total No</b>	<b>5,000, 7,000, 10,000 and 15,000 scenarios tested. Mix based on SHMA West Berks.</b>							
Private split		9.10%	7.23%	21.68%	42.30%	14.78%	4.9%	
Private 65%								
Affordable split		41.80%	8.58%	25.73%	22.00%	1.95%	0.7%	
Affordable 35%								
Social rented	70%							
Intermediate	30%							
Floorspace	GIA	50	70	79	93	115	125	
	Gross	59	82	83	98	121	132	
£/M2		£ 4,500	£ 4,285	£ 4,620	£ 4,570	£ 4,650	£ 4,680	£ 4,583
£/M2 affordable	50%	£ 2,250	£ 2,143	£ 2,310	£ 2,285	£ 2,325	£ 2,340	£ 2,272
£/M2 affordable I	65% omv	£ 2,925	£ 2,785	£ 3,003	£ 2,970	£ 3,023	£ 3,042	£ 2,953
Price market		£ 225,000	£ 300,000	£ 365,000	£ 425,000	£ 535,000	£ 585,000	
Price affordable S	70%	£ 112,500	£ 149,975	£ 182,490	£ 212,505	£ 267,375	£ 292,500	
Price affordable	30%	£ 146,250	£ 195,000	£ 237,250	£ 276,250	£ 347,750	£ 380,250	

Ground rents for all flats assumed at £250 per annum, valued at 5% YP in perpetuity

Site preparation costs – earth moving, general site works, allowance of £500,000 per hectare of developed land. Based on density of 55 dph = £9100 per unit, applicable to 10,000 and 15,000 unit scenarios. For lower density scenarios (5,000, 7,000) assumptions at 35 dph = £14,300 per unit.

## 2 Land acquisition Costs

- 4% stamp duty
- 1% agents fee
- 0.5% legal fee

## 3 Planning and site survey costs

- Planning £1,250,000 for 5000 units, £1,750,000 for 10000 units, £2,250,000 for 15,000 units
- Site survey £250,000 for 5000 units, £275,000 for 10000 units, £325,000 for 15,000 units

## 4 Construction costs – based on BCIS figures, average cost per M2 for various unit types

- Build costs £1,474 per M2
- Contingency 7.5%
- Developer's contingency 5%
- Open space layout:
  - 5,000 unit scheme: 5 phases £1,250,000 each
  - 7,000 unit scheme: 6 phases £1,250,000 each
  - 10,000 unit scheme: 8 phases £1,250,000 each
  - 15,000 unit scheme: 12 phases £1.250,000 each
- NHBC costs £1,000 per unit

## 5 CIL – Indexed to March 2018

- £450 per M2 for private units

## 6 Professional fees

- 5% for architect
- 5% for others including CDM etc

## 7 Marketing

- 2.5% of build costs for private units

### 8 Sales and Legal fees

- Sales fees 1.25%
- Legal fees 0.25%

### 9 Finance

- 7% on debt, 0% on credit

### 10 Developer's return per phase

- 18.5%

### **Phasing, delivery and infrastructure assumptions – 5,000 unit option**

The 5,000 unit option is assumed to be delivered as 5 strategic phases of 650, 1050, 1050, 1250 and 1000 units respectively delivered over a total circa 14.5 year period including lead in time. This is an ambitious timescale for a scheme of this magnitude, but reflects the approach that Wokingham takes to instigating the delivery of infrastructure.

The specific infrastructure which is **assumed to be a cost to the development** aside from that set out above amounts to some £80,536,867 and is as follows:

1. <u>Highways infrastructure (Costed by PBA)</u>	Total	£33,500,000
• Upgrade current A33 junction	£2,000,000	
• New A33 junction	£4,000,000	
• A33 upgrade	£5,000,000	
• Strategic Routes contained within the site	£15,000,000	
• New footways/cycleways	£7,500,000	
2. <u>Utility costs/Other</u>	Total	£25,220,200
• Electricity – onsite and offsite	£8,200,000	
• Gas – onsite and offsite	£3,752,800	
• Water – onsite and infrastructure charges	£3,710,560	
• Foul Water – onsite and infrastructure charges	£8,556,840	
• Allowance for strategic flood alleviation modelling	£1,000,000	
3. <u>Sustainable transport measures (Costed by PBA)</u>	Total	£12,400,000
• New Bus services	£7,000,000	
• Bus stop infrastructure	£400,000	
• My Journey Travel Plan contributions	£5,000,000	
4. <u>Open space allowances</u>	Total	£9,416,667
• SANG	£2,400,000	
• Open space management	£1,350,000	
• Children’s play	£4,666,667	
• Playing pitches	£1,000,000	

**Areas assumed to be delivered through CIL/alternative forms of funding/third parties (i.e. not included as a cost to the developer in the financial appraisals):**

• Improved access to and upgrades of Mortimer Station and Green Park Station	£15,000,000
• New linkages across the railway	£12,000,000
• Bridge works across M4	£16,000,000
• Mere oak park and ride extension	£6,000,000
• MRT enhancements and upgrades	£22,000,000
• 1000 space car park (assumed 3 <sup>rd</sup> party cost)	£7,500,000
• M4 improvements Junction 10 to Junction 12	£18,333,333
• Pending technical studies, upgrade of westbound vehicular routes	£1,000,000
• New bridge over Kennet and Avon Canal	£6,000,000
• Educational facilities: 3 x Primary (1 x 3fe, 2 x 2fe)	£24,000,000
• Construction costs for allotments (Land provided by developer)	£400,000
• Community facilities	£4,500,000
• Health facilities	£10,000,000
• Indoor leisure facilities	£2,250,000
<b>Total</b>	<b>£144,983,333 say £145,000,000</b>

See summary cost table overleaf.



Infrastructure Item	Comparables / Notes	Length of Road (m)	Estimated Cost	Estimated Cost per Dwelling
<b>Strategic Transport</b>				
<b>Highway infrastructure</b>				
Look to Improve use and access and possible upgrades to Mortimer station or GreenPark	Green Park		£15,000,000	£3,000
New linkages across the railway	South Wokingham SDL		£12,000,000	£2,400
New bridge across M4	SERR		£16,000,000	£3,200
New Park and Ride	MereOak Extension		£6,000,000	£1,200
Mass Rapid Transit scheme enhancements and Upgrades	RBC South Reading MRT scheme		£44,000,000	£8,800
New bus services	Arborfield SDL		£7,000,000	£1,400
Bus stop infrastructure	Arborfield SDL		£400,000	£80
My Journey Travel Plan contribution	Current My Journey Travel Plan		£5,000,000	£1,000
Car parks 1000 spaces	Network Rail Figures	£2500 surface and £125000 per deck	£7,500,000	
M4 Junction Improvements (Jct 10 to 12)	(last up grade figure)		£18,333,333	£3,667
Upgrade Current A33 Junction	SERR		£2,000,000	£400
A33 Upgarde			£5,000,000	£1,000
Pending technical studies, upgrade of westbound vehicular routes	Needs modelling and to locate suitable route		£1,000,000	£200
New bridge over Kennet and Avon canal			£6,000,000	£1,200
Site contained strategic routes. Estimated 8km.	7.3m wide carriageway	8000	£15,000,000	£3,000
New footways / cycleways (adj. and non-adj to carriageway)			£7,500,000	£1,500
<b>Strategic Flood Alleviation</b>				
TBC (detailed flood modeling work required to determine interventions)			£1,000,000	£200
<b>Waste</b>				
Waste disposal			tbc	
Recycling			tbc	
<b>Utilities</b>				
Electricity onsite	Assumed 50% upfront and rest over dev period		£3,700,000	
Electricity offsite	Assumed 50% upfront and rest over dev period		£4,500,000	
Water onsite	Assumed 50% upfront and rest over dev period		£3,010,000	
Water infrastructure charge	Assumed 50% upfront and rest over dev period		£700,560	
Water offsite	Assumed 50% upfront and rest over dev period		£0	
Gas onsite	Assumed 50% upfront and rest over dev period		£3,502,800	
Gas offsite	Assumed 50% upfront and rest over dev period		£250,000	
Telecoms onsite	Assumed 50% upfront and rest over dev period		£0	
Telecoms offsite	Assumed 50% upfront and rest over dev period		£0	
FW onsite	Assumed 50% upfront and rest over dev period		£7,506,000	
FW infrastructure charge	Assumed 50% upfront and rest over dev period		£1,050,840	
FW offsite	Assumed 50% upfront and rest over dev period		£0	
<b>Education</b>				
Primary: 2x2FE and 1x3FE (including nursery class)			£24,000,000	£4,800
Secondary: 1x 6Fe			£32,000,000	£6,400
Further and Higher Education	Not provided or funded by WBC – no obvious infrastructure (even at a Berks level) to aim for. RU have consolidated activities onto the Whiteknights campus in recent years. The national agenda for FE is towards consolidation at the moment		TBC	
Lifelong learning (Courses are delivered from a variety of venues – college sites, libraries and community use centres)			£100,000	£20
Special Education Needs Provision (Approximately 1% of the child population need education in a Special School and these serve discrete need groups. No strategic need.)			£150,000	£30

<b>SANG</b>				
1.73-2.16ha / 1,000 people (416 dwellings @ 2.4 persons per dwelling). Schemes between 5-7km of Thames Heath Basin SPA (i.e. Grazeley) cost circa £1,500 per dwelling to mitigate.  Assuming 10,000 dwellings, up to 52ha SANG required, to be delivered by developer through s106 obligation. Commuted sum for maintenance up to £4.8million	The site falls between 5 and 7KM of the SPA.		£2,400,000	
<b>Public Open Space</b>				
<b>Allotments</b>				
0.52ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 5,000 dwellings, up to 6.25ha of land for allotments is required, although CIL receipt will cover construction costs.			£400,000	
<b>Public Parks/Amenity Open Space</b>				
2.08ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 5,000 dwellings, up to 25ha of Public Parks/Amenity Open Space are required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £1.35million (depending on actual area of POS delivered)	Childrens' play to be incorporated within parks - Amenity greenspace and civic hard surfaced spaces to be provided within development areas on a site by site basis.		£1,350,000	
<b>Children's Play</b>				
0.25ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 5,000 dwellings, up to 3ha of Children's Play space is required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £4.7million (depending on actual area and types of play facilities delivered)			£4,666,667	
<b>Playing pitches</b>				
1.66ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 5,000 dwellings, up to 20ha of land for playing pitches is required, although CIL receipt will cover construction costs ( the overall area can be reduced through the provision of high value ATPs.			£1,000,000	
<b>Community</b>				
<b>Community buildings</b>				
SONC suggests that facilities need to be delivered at 145m <sup>2</sup> /1000 people. Assuming 5,000 dwellings land for the delivery of a 3,335m <sup>2</sup> community building/s to be delivered by developer, although CIL receipt will cover construction costs.			-£4,500,000	
<b>Health provision</b>				
1 GP surgery Health Hub	Wokingham Clinical Commissioning Group have recently indicated that a threshold of 30,000 people applies to development requiring a dedicated new surgery.		£10,000,000	
<b>Indoor Leisure Facilities</b>				
MDD DPD standard is 8.26m <sup>2</sup> /1000 people. Assuming 10,000 dwellings, land for the delivery of a 200m <sup>2</sup> pool space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£250,000	
MDD DPD standard is 65.43m <sup>2</sup> /1000 people. Assuming 15,000 dwellings, land for the delivery of a 1600m <sup>2</sup> Sports hall activity space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£2,000,000	



**Current exclusions for discussion:**

- Electric vehicle infrastructure
- Flood alleviation costs – provisional sum allowed only
- Waste/recycling costs
- Commercial development – indicative quantum yet to be determined

**Outcome of initial baseline viability assessment: 5,000 units**

Scheme generates the following:

1. The required level of developer's profit
2. The required level of CIL
3. The required level and mix of affordable housing
4. A land value above existing use value but below benchmark land value, thus rendering the option at risk of non-delivery, or delivery only in part, even if external funding is provided. The level of infrastructure costs required to be met off site exceeds the level of CIL generated by the development, therefore without other funding the option is highly unlikely to be deliverable.

### **Phasing, delivery and infrastructure assumptions – 7,000 unit option**

The 7,000 unit option is assumed to be delivered as 6 strategic phases of 850,1300,1350,1350, 1300 and 850 units respectively delivered over a total circa 17.5 year period including lead in time. As for the 5000 unit option, this is an ambitious timescale for a scheme of this magnitude, but reflects the approach that Wokingham takes to instigating the delivery of infrastructure. For a scheme of this size, the level of uncertainty in any viability appraisal carried out as a snapshot in time is necessarily increased.

The specific infrastructure which is **assumed to be a cost to the development** aside from that set out above amounts to some £113,458,633 and is as follows:

1. <u>Highways infrastructure (Costed by PBA)</u>	Total	£47,000,000
• Upgrade current A33 junction		£2,000,000
• New A33 junction		£4,000,000
• Additional new A33 junction		£4,000,000
• A33 upgrade		£10,000,000
• Strategic Routes contained within the site		£18,000,000
• New footways/cycleways		£9,000,000
2. <u>Utility costs/Other</u>	Total	£33,030,300
• Electricity – onsite and offsite		£9,700,000
• Gas – onsite and offsite		£5,154,200
• Water – onsite and infrastructure charges		£5,195,840
• Foul Water – onsite and infrastructure charges		£11,980,260
• Allowance for strategic flood alleviation modelling		£1,000,000
3. <u>Sustainable transport measures (Costed by PBA)</u>	Total	£20,425,000
• New Bus services		£9,500,000
• Bus stop infrastructure		£800,000
• My Journey Travel Plan contributions		£10,125,000
4. <u>Open space allowances</u>	Total	£13,183,333
• SANG		£3,360,000
• Open space management		£1,890,000
• Children’s play		£6,533,533
• Playing pitches		£1,400,000

**Areas assumed to be delivered through CIL/alternative forms of funding/third parties (i.e. not included as a cost to the developer in the financial appraisals):**

• Improved access to and upgrades of Mortimer Station and Green Park Station	£15,000,000
• New Station, car park and public transport interchange (Assumed 3 <sup>rd</sup> party cost)	£20,000,000
• New linkages across the railway	£24,000,000
• Bridge works across M4	£16,000,000
• Mere oak park and ride extension	£6,000,000
• New southern Park & Ride	£10,000,000
• MRT enhancements and upgrades	£44,000,000
• 1000 space car park (assumed 3 <sup>rd</sup> party cost)	£7,500,000
• M4 improvements Junction 10 to Junction 12	£36,666,667
• Pending technical studies, upgrade of westbound vehicular routes	£1,000,000
• New bridge over Kennet and Avon Canal	£6,000,000
• Educational facilities, 3 x Primary schools (1 x 3fe, 3 x 2fe), 1 x 8fe Secondary school	£64,000,000
• Construction costs for allotments (Land provided by developer)	£560,000
• Community facilities	£6,300,000
• Health facilities	£20,000,000
• Indoor leisure facilities	£4,500,000
<b>Total</b>	<b>£281,517,667</b>

See summary cost table overleaf.

Infrastructure Item	Comparables / Notes	Length of Road (m)	Estimated Cost	Estimated Cost per Dwelling
<b>Strategic Transport</b>				
<b>Highway Infrastructure</b>				
Look to improve use and access and possible upgrades to Mortimer station or GreenPark	Green Park		£15,000,000	£2,143
New station car park & public transport interchange	Estimate based on Twyford station example		£20,000,000	£2,857
New linkages across the railway	South Wokingham SDL		£12,000,000	£1,714
New linkages across the railway	South Wokingham SDL		£12,000,000	£1,714
New bridge across M4	SERR		£16,000,000	£2,286
New Park and Ride	Mere oak Extension		£6,000,000	£857
New park and Ride	New Southern P&R		£10,000,000	£1,429
Mass Rapid Transit scheme enhancements and Upgrades	RBC South Reading MRT scheme		£44,000,000	£6,286
New bus services	Arborfield SDL		£9,500,000	£1,357
Bus stop infrastructure	Arborfield SDL		£800,000	£114
My Journey Travel Plan contribution	Current My Journey Travel Plan		£10,125,000	£1,446
Car parks 1000 spaces	Network Rail Figures	£2500 surface and £125000 per deck	£7,500,000	
M4 Junction Improvements (Jct 10 to 12)	(last up grade figure)		£36,666,667	£5,238
Upgrade Current A33 Junction	SERR		£2,000,000	£286
New A33 Jct			£4,000,000	£571
New A33 Jct			£4,000,000	£571
A33 Upgarde			£10,000,000	£1,429
Pending technical studies, upgrade of westbound vehicular routes	Needs modelling and to locate suitable route		£1,000,000	£143
New bridge over Kennet and Avon canal			£6,000,000	£857
Site contained strategic routes. Estimated 8km.	7.3m wide carriageway	8000	£18,000,000	£2,571
New footways / cycleways (adj. and non-adj to carriageway)			£9,000,000	£1,286
<b>Strategic Flood Alleviation</b>				
TBC (detailed flood modeling work required to determine interventions)			£1,000,000	£143
<b>Waste</b>				
Waste disposal			tbc	
Recycling			tbc	
<b>Utilities</b>				
Electricity onsite	Assumed 50% upfront and rest over dev period		£5,200,000	
Electricity offsite	Assumed 50% upfront and rest over dev period		£4,500,000	
Water onsite	Assumed 50% upfront and rest over dev period		£4,215,000	
Water infrastructure charge	Assumed 50% upfront and rest over dev period		£980,840	
Water offsite	Assumed 50% upfront and rest over dev period		£0	
Gas onsite	Assumed 50% upfront and rest over dev period		£4,904,200	
Gas offsite	Assumed 50% upfront and rest over dev period		£250,000	
Telecoms onsite	Assumed 50% upfront and rest over dev period		£0	
Telecoms offsite	Assumed 50% upfront and rest over dev period		£0	
FW onsite	Assumed 50% upfront and rest over dev period		£10,509,000	
FW infrastructure charge	Assumed 50% upfront and rest over dev period		£1,471,260	
FW offsite	Assumed 50% upfront and rest over dev period		£0	
<b>Education</b>				
Primary: 1x2FE and 3x3FE and 2x6Fe (including nursery class)			£27,000,000	£3,857
Secondary: 2x 6Fe			£64,000,000	£9,143
Further and Higher Education	Not provided or funded by WBC – no obvious infrastructure (even at a Berks level) to aim for. RU have consolidated activities onto the Whiteknights campus in recent years. The national agenda for FE is towards consolidation at the moment		TBC	
Lifelong learning (Courses are delivered from a variety of venues – college sites, libraries and community use centres)			£140,000	£20
Special Education Needs Provision (Approximately 1% of the child population need education in a Special School and these serve discrete need groups. No strategic need.)			£210,000	£30

<b>SANG</b>				
1.73-2.16ha / 1,000 people (416 dwellings @ 2.4 persons per dwelling). Schemes between 5-7km of Thames Heath Basin SPA (i.e. Grazeley) cost circa £1,500 per dwelling to mitigate.  Assuming 10,000 dwellings, up to 52ha SANG required, to be delivered by developer through s106 obligation. Commuted sum for maintenance upto £4.8million	The site falls between 5 and 7KM of the SPA.		£3,360,000	
<b>Public Open Space</b>				
<b>Allotments</b>				
0.52ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 12.5ha of land for allotments is required, although CIL receipt will cover construction costs.			£560,000	
<b>Public Parks/Amenity Open Space</b>				
2.08ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 50ha of Public Parks/Amenity Open Space are required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £2.7million (depending on actual area of POS delivered)	Childrens' play to be incorporated within parks - Amenity greenspace and civic hard surfaced spaces to be provided within development areas on a site by site basis.		£1,890,000	
<b>Children's Play</b>				
0.25ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 6ha of Children's Play space is required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £9.33million (depending on actual area and types of play facilities delivered)			£6,533,333	
<b>Playing pitches</b>				
1.66ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 40ha of land for playing pitches is required, although CIL receipt will cover construction costs ( the overall area can be reduced through the provision of high value ATPs.			£1,400,000	
<b>Community</b>				
<b>Community buildings</b>				
SONC suggests that facilities need to be delivered at 145m2/1000 people. Assuming 10,000 dwellings land for the delivery of a 3,335m2 community building/s to be delivered by developer, although CIL receipt will cover construction costs.			-£6,300,000	
<b>Health provision</b>				
1 GP surgery Health Hub (Allow for 1 extension)	Wokingham Clinical Commissioning Group have recently indicated that a threshold of 30,000 people applies to development requiring a dedicated new surgery.		£20,000,000	
<b>Indoor Leisure Facilities</b>				
MDD DPD standard is 8.26m2/1000 people. Assuming 10,000 dwellings, land for the delivery of a 200m2 pool space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£500,000	
MDD DPD standard is 65.43m2/1000 people. Assuming 15,000 dwellings, land for the delivery of a 1600m2 Sports hall activity space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£4,000,000	

**Current exclusions for discussion:**

- Electric vehicle infrastructure
- Flood alleviation costs – provisional sum allowed only
- Waste/recycling costs
- Commercial development – indicative quantum yet to be determined

**Outcome of initial baseline viability assessment: 7,000 units**

Scheme generates the following:

1. The required level of developer's profit
2. The required level of CIL
3. The required level and mix of affordable housing
4. A land value above existing use value but below benchmark land value, indicating that this scenario is at risk of non-delivery even if external funding is provided.
5. Where the 7,000 unit option forms the Wokingham District Council part of a larger 10,000 unit option, then it benefits from economies of scale and the impact of a higher density on the initial site preparation costs. In this scenario, the land value generated is improved, and appears viable but marginal, however the level of infrastructure costs required to be met off site exceeds the level of CIL generated by the development, therefore without other funding the option is unlikely to be deliverable.

### Phasing, delivery and infrastructure assumptions – 10,000 unit option

The 10,000 unit option is assumed to be delivered as 8 strategic phases of 850, 1300, 1300, 1350, 1350, 1350, 1350 and 1150 units respectively delivered over a total circa 23 year period including lead in time. As for the 5,000 and 7,000 unit options, this is an ambitious timescale for a scheme of this magnitude, but reflects the approach that Wokingham takes to instigating the delivery of infrastructure.

At this level of development and over this timescale, there can be little certainty over the rate of delivery or overall viability as this crosses a number of property cycles during which the market could and most probably will change significantly.

The specific infrastructure which is **assumed to be a cost to the development** aside from that set out above amounts to some £142,648,733 and is as follows:

1. <u>Highways infrastructure (Costed by PBA)</u>	Total	<u>£56,000,000</u>
• Upgrade current A33 junction		£2,000,000
• New A33 junction		£4,000,000
• Additional new A33 junction		£4,000,000
• A33 upgrade		£10,000,000
• Strategic Routes contained within the site		£24,000,000
• New footways/cycleways		£12,000,000
2. <u>Utility costs/Other</u>	Total	<u>£44,690,400</u>
• Electricity – onsite and offsite		£11,900,000
• Gas – onsite and offsite		£7,255,600
• Water – onsite and infrastructure charges		£7,421,120
• Foul Water – onsite and infrastructure charges		£17,113,680
• Allowance for strategic flood alleviation modelling		£1,000,000
3. <u>Sustainable transport measures (Costed by PBA)</u>	Total	<u>£23,125,000</u>
• New Bus services		£12,000,000
• Bus stop infrastructure		£1,000,000
• My Journey Travel Plan contributions		£10,125,000

4. <u>Open space allowances</u>	<u>Total</u> £18,833,333
• SANG	£4,800,000
• Open space management	£2,700,000
• Children's play	£9,333,333
• Playing pitches	£2,000,000

**Areas assumed to be delivered through CIL/alternative forms of funding/third parties (i.e. not included as a cost to the developer in the financial appraisals):**

• Improved access to and upgrades of Mortimer Station and Green Park Station	£15,000,000
• New Station, car park and public transport interchange (Assumed 3 <sup>rd</sup> party cost)	£20,000,000
• New linkages across the railway	£24,000,000
• Bridge works across M4	£16,000,000
• Mere oak park and ride extension	£6,000,000
• New southern Park & Ride	£10,000,000
• MRT enhancements and upgrades	£55,000,000
• 1000 space car park (assumed 3 <sup>rd</sup> party cost)	£7,500,000
• M4 improvements Junction 10 to Junction 12	£36,666,667
• Pending technical studies, upgrade of westbound vehicular routes	£1,000,000
• New bridge over Kennet and Avon Canal	£6,000,000
• Educational facilities, 5 x Primary schools (3 x 3fe, 2 x 2fe); 2 x Secondary schools (1 x 6fe; 1 x 8fe)	£116,000,000
• Construction costs for allotments (Land provided by developer)	£800,000
• Community facilities	£9,000,000
• Health facilities	£20,000,000
• Indoor leisure facilities	£4,500,000
	<u>Total</u> £347,466,667

See summary cost table overleaf.



Infrastructure Item	Comparables / Notes	Length of Road (m)	Estimated Cost	Estimated Cost per Dwelling
<b>Strategic Transport</b>				
<b>Highway Infrastructure</b>				
Look to Improve use and access and possible upgrades to Mortimer station or GreenPark	Green Park		£15,000,000	£1,500
New station car park & public transport interchange	Estimate based on Twyford station example		£20,000,000	£2,000
New linkages across the railway	South Wokingham SDL		£12,000,000	£1,200
New linkages across the railway	South Wokingham SDL		£12,000,000	£1,200
New bridge across M4	SERR		£16,000,000	£1,600
New Park and Ride	Mere oak Extension		£6,000,000	£600
New park and Ride	New Southern P&R		£10,000,000	£1,000
Mass Rapid Transit scheme enhancements and Upgrades	RBC South Reading MRT scheme		£55,000,000	£5,500
New bus services	Arborfield SDL		£12,000,000	£1,200
Bus stop infrastructure	Arborfield SDL		£1,000,000	£100
My Journey Travel Plan contribution	Current My Journey Travel Plan		£10,125,000	£1,013
Car parks 1000 spaces	Network Rail Figures	£2500 surface and £125000 per deck	£7,500,000	
M4 Junction Improvements (Jct 10 to 12)	(last up grade figure)		£36,666,667	£3,667
Upgrade Current A33 Junction	SERR		£2,000,000	£200
New A33 Jct			£4,000,000	£400
New A33 Jct			£4,000,000	£400
A33 Upgrade			£10,000,000	£1,000
Pending technical studies, upgrade of westbound vehicular routes	Needs modelling and to locate suitable route		£1,000,000	£100
<b>New bridge over Kennet and Avon canal</b>				
Site contained strategic routes. Estimated 8km.	7.3m wide carriageway	8000	£24,000,000	£2,400
New footways / cycleways (adj. and non-adj to carriageway)			£12,000,000	£1,200
<b>Strategic Flood Alleviation</b>				
TBC (detailed flood modeling work required to determine interventions)			£1,000,000	£100
<b>Waste</b>				
Waste disposal			tbc	
Recycling			tbc	
<b>Utilities</b>				
Electricity onsite	Assumed 50% upfront and rest over dev period		£7,400,000	
Electricity offsite	Assumed 50% upfront and rest over dev period		£4,500,000	
Water onsite	Assumed 50% upfront and rest over dev period		£6,020,000	
Water infrastructure charge	Assumed 50% upfront and rest over dev period		£1,401,120	
Water offsite	Assumed 50% upfront and rest over dev period		£0	
Gas onsite	Assumed 50% upfront and rest over dev period		£7,005,600	
Gas offsite	Assumed 50% upfront and rest over dev period		£250,000	
Telecoms onsite	Assumed 50% upfront and rest over dev period		£0	
Telecoms offsite	Assumed 50% upfront and rest over dev period		£0	
FW onsite	Assumed 50% upfront and rest over dev period		£15,012,000	
FW infrastructure charge	Assumed 50% upfront and rest over dev period		£2,101,680	
FW offsite	Assumed 50% upfront and rest over dev period		£0	
<b>Education</b>				
Primary: 2x2FE and 2x3FE (including nursery class)			£44,000,000	£4,400
Secondary: 1x 6Fe and 1x8Fe			£72,000,000	£7,200
Further and Higher Education	Not provided or funded by WBC – no obvious infrastructure (even at a Berks level) to aim for. RU have consolidated activities onto the Whiteknights campus in recent years. The national agenda for FE is towards consolidation at the moment		TBC	
Lifelong learning (Courses are delivered from a variety of venues – college sites, libraries and community use centres)			£200,000	£20
Special Education Needs Provision (Approximately 1% of the child population need education in a Special School and these serve discrete need groups. No strategic need.)			£300,000	£30

<b>SANG</b>				
1.73-2.16ha / 1,000 people (416 dwellings @ 2.4 persons per dwelling). Schemes between 5-7km of Thames Heath Basin SPA (i.e. Grazeley) cost circa £1,500 per dwelling to mitigate).				
Assuming 10,000 dwellings, up to 52ha SANG required, to be delivered by developer through s106 obligation. Commuted sum for maintenance upto £4.8million	The site falls between 5 and 7KM of the SPA.		£4,800,000	
<b>Public Open Space</b>				
<b>Allotments</b>				
0.52ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 12.5ha of land for allotments is required, although CIL receipt will cover construction costs.			£800,000	
<b>Public Parks/Amenity Open Space</b>				
2.08ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 50ha of Public Parks/Amenity Open Space are required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £2.7million (depending on actual area of POS delivered)	Childrens' play to be incorporated within parks - Amenity greenspace and civic hard surfaced spaces to be provided within development areas on a site by site basis.		£2,700,000	
<b>Children's Play</b>				
0.25ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 6ha of Children's Play space is required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £9.33million (depending on actual area and types of play facilities delivered)			£9,333,333	
<b>Playing pitches</b>				
1.66ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 10,000 dwellings, up to 40ha of land for playing pitches is required, although CIL receipt will cover construction costs ( the overall area can be reduced through the provision of high value ATPs.			£2,000,000	
<b>Community</b>				
<b>Community buildings</b>				
SONC suggests that facilities need to be delivered at 145m <sup>2</sup> /1000 people. Assuming 10,000 dwellings land for the delivery of a 3,335m <sup>2</sup> community building/s to be delivered by developer, although CIL receipt will cover construction costs.			-£9,000,000	
<b>Health provision</b>				
1 GP surgery Health Hub (Allow for 1 extension)	Wokingham Clinical Commissioning Group have recently indicated that a threshold of 30,000 people applies to development requiring a dedicated new surgery.		£20,000,000	
<b>Indoor Leisure Facilities</b>				
MDD DPD standard is 8.26m <sup>2</sup> /1000 people. Assuming 10,000 dwellings, land for the delivery of a 200m <sup>2</sup> pool space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£500,000	
MDD DPD standard is 65.43m <sup>2</sup> /1000 people. Assuming 10,000 dwellings, land for the delivery of a 1600m <sup>2</sup> Sports hall activity space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£4,000,000	

**Current exclusions for discussion:**

- Electric vehicle infrastructure
- Flood alleviation costs – provisional sum allowed only
- Waste/recycling costs
- Commercial development – indicative quantum yet to be determined

**Outcome of initial baseline viability assessment: 10,000 units**

Scheme generates the following:

1. The required level of developer's profit
2. The required level of CIL
3. The required level and mix of affordable housing
4. A land value assuming third party funding in excess of existing use value but marginal in terms of benchmark land value. A more detailed examination of the appraisal indicates that the initial phase still makes a significant loss, largely due to the up-front utilities costs, and that the level of infrastructure costs required to be met off site exceeds the level of CIL generated by the development, therefore without other funding the option is unlikely to be deliverable.

### Phasing, delivery and infrastructure assumptions – 15,000 unit option

The 15,000 unit option is assumed to be delivered as 12 strategic phases of 850, 1300, 1300, 1350, 1350, 1350, 1350 1350, 1350, 1350, 1350 and 750 units respectively delivered over a total circa 35 year period including lead in time. As for the 10,000 unit options, this is a very ambitious timescale for a scheme of this magnitude, particularly as it assumes a significant scale of delivery year on year over what will inevitably be a fluctuating market, but again reflects the approach that Wokingham takes to instigating the delivery of infrastructure, and the imperative for new housebuilding nationally. It is also anticipated that during the delivery period modern methods of housebuilding will become more established such that construction times can be shortened, if the market can bear the volume.

At this level of development and over this timescale, there can be no certainty over the rate of delivery or overall viability as this crosses a number of property cycles during which the market could and will change significantly.

The specific infrastructure which is **assumed to be a cost to the development** aside from that set out above amounts to some £170,535,600 and is as follows:

1. <u>Highways infrastructure (Costed by PBA)</u>	<u>Total</u>	<u>£56,000,000</u>
• Upgrade current A33 junction		£2,000,000
• New A33 junction		£4,000,000
• Additional new A33 junction		£4,000,000
• A33 upgrade		£10,000,000
• Strategic Routes contained within the site		£24,000,000
• New footways/cycleways		£12,000,000
2. <u>Utility costs/Other</u>	<u>Total</u>	<u>£63,160,600</u>
• Electricity – onsite and offsite		£14,600,000
• Gas – onsite and offsite		£10,758,400
• Water – onsite and infrastructure charges		£11,131,680
• Foul Water – onsite and infrastructure charges		£25,670,520
• Allowance for strategic flood alleviation modelling		£1,000,000
3. <u>Sustainable transport measures (Costed by PBA)</u>	<u>Total</u>	<u>£23,125,000</u>
• New Bus services		£12,000,000
• Bus stop infrastructure		£1,000,000
• My Journey Travel Plan contributions		£10,125,000

4. <u>Open space allowances</u>	<u>Total</u> £28,250,000
• SANG	£7,200,000
• Open space management	£4,050,000
• Children's play	£14,000,000
• Playing pitches	£3,000,000

**Areas assumed to be delivered through CIL/alternative forms of funding/third parties (i.e. not included as a cost to the developer in the financial appraisals):**

• Improved access to and upgrades of Mortimer Station and Green Park Station	£15,000,000
• New Station, car park and public transport interchange (Assumed 3 <sup>rd</sup> party cost)	£20,000,000
• New linkages across the railway	£24,000,000
• Bridge works across M4	£16,000,000
• Mere oak park and ride extension	£6,000,000
• New southern Park & Ride	£10,000,000
• MRT enhancements and upgrades	£55,000,000
• 1000 space car park (assumed 3 <sup>rd</sup> party cost)	£7,500,000
• M4 improvements Junction 10 to Junction 12	£55,000,000
• Pending technical studies, upgrade of westbound vehicular routes	£1,000,000
• New bridge over Kennet and Avon Canal	£6,000,000
• Educational facilities, 7 x Primary schools (4 x 3fe, 3 x 2fe); 2 x 8fe Secondary schools	£141,000,000
• Construction costs for allotments (Land provided by developer)	£1,200,000
• Community facilities	£13,500,000
• Health facilities	£30,000,000
• Indoor leisure facilities	£6,750,000
	<u>Total</u> £407,950,000

See summary cost table overleaf.

Infrastructure Item	Comparables / Notes	Length of Road (m)	Estimated Cost	Estimated Cost per Dwelling
<b>Strategic Transport</b>				
<b>Highway Infrastructure</b>				
Look to Improve use and access and possible upgrades to Mortimer station or GreenPark	Green Park		£15,000,000	£1,000
New station car park & public transport interchange	Estimate based on Twyford station example		£20,000,000	£1,333
New linkages across the railway	South Wokingham SDL		£12,000,000	£800
New linkages across the railway	South Wokingham SDL		£12,000,000	£800
New bridge across M4	SERR		£16,000,000	£1,067
New Park and Ride	Mere oak Extension		£6,000,000	£400
New park and Ride	New Southern P&R		£10,000,000	£667
Mass Rapid Transit scheme enhancements and Upgrades	RBC South Reading MRT scheme		£55,000,000	£3,667
New bus services	Arborfield SDL		£12,000,000	£800
Bus stop infrastructure	Arborfield SDL		£1,000,000	£67
My Journey Travel Plan contribution	Current My Journey Travel Plan		£10,125,000	£675
Car parks 1000 spaces	Network Rail Figures	£2500 surface and £125000 per deck	£7,500,000	£500
M4 Junction Improvements (Jct 10 to 12)	(last up grade figure)		£55,000,000	£3,667
Upgrade Current A33 Junction	SERR		£2,000,000	£133
New A33 Jct			£4,000,000	£267
New A33 Jct			£4,000,000	£267
A33 Upgrade			£10,000,000	£667
Pending technical studies, upgrade of westbound vehicular routes	Needs modelling and to locate suitable route		£1,000,000	£67
New bridge over Kennet and Avon canal			£6,000,000	£400
Site contained strategic routes. Estimated 8km.	7.3m wide carriageway	8000	£24,000,000	£1,600
New footways / cycleways (adj. and non-adj to carriageway)			£12,000,000	£800
<b>Strategic Flood Alleviation</b>				
TBC (detailed flood modeling work required to determine interventions)			£1,000,000	£67
<b>Waste</b>				
Waste disposal			tbc	
Recycling			tbc	
<b>Utilities</b>				
Electricity onsite	Assumed 50% upfront and rest over dev period		£11,100,000	
Electricity offsite	Assumed 50% upfront and rest over dev period		£4,500,000	
Water onsite	Assumed 50% upfront and rest over dev period		£9,030,000	
Water infrastructure charge	Assumed 50% upfront and rest over dev period		£2,101,680	
Water offsite	Assumed 50% upfront and rest over dev period		£0	
Gas onsite	Assumed 50% upfront and rest over dev period		£10,508,400	
Gas offsite	Assumed 50% upfront and rest over dev period		£250,000	
Telecoms onsite	Assumed 50% upfront and rest over dev period		£0	
Telecoms offsite	Assumed 50% upfront and rest over dev period		£0	
FW onsite	Assumed 50% upfront and rest over dev period		£22,518,000	
FW infrastructure charge	Assumed 50% upfront and rest over dev period		£3,152,520	
FW offsite	Assumed 50% upfront and rest over dev period		£0	
<b>Education</b>				
Primary: 3x2FE and 3x3FE (including nursery class) £15,000,000 per school			£61,000,000	£4,067
Secondary: 2x 8Fe			£80,000,000	£5,333
Further and Higher Education	Not provided or funded by WBC – no obvious infrastructure (even at a Berks level) to aim for. RU have consolidated activities onto the Whiteknights campus in recent years. The national agenda for FE is towards consolidation at the moment		TBC	
Lifelong learning (Courses are delivered from a variety of venues – college sites, libraries and community use centres)			£200,000	£13
Special Education Needs Provision (Approximately 1% of the child population need education in a Special School and these serve discrete need groups. No strategic need.)			£300,000	£20

<b>SANG</b>				
1.73-2.16ha / 1,000 people (416 dwellings @ 2.4 persons per dwelling). Schemes between 5-7km of Thames Heath Basin SPA (i.e. Grazeley) cost circa £1,500 per dwelling to mitigate.  Assuming 10,000 dwellings, up to 52ha SANG required, to be delivered by developer through s106 obligation. Commuted sum for maintenance upto £4.8million	The site falls between 5 and 7KM of the SPA.		£7,200,000	
<b>Public Open Space</b>				
<b>Allotments</b>				
0.52ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 15,000 dwellings, up to 18.75ha of land for allotments is required, although CIL receipt will cover construction costs.			£1,200,000	
<b>Public Parks/Amenity Open Space</b>				
2.08ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 15,000 dwellings, up to 75ha of Public Parks/Amenity Open Space are required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £4.05 million (depending on actual area of POS delivered)	Childrens' play to be incorporated within parks - Amenity greenspace and civic hard surfaced spaces to be provided within development areas on a site by site basis.		£4,050,000	
<b>Children's Play</b>				
0.25ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 15,000 dwellings, up to 9ha of Children's Play space is required, to be delivered by developer through s106 obligation. Commuted sum for maintenance at least £14million (depending on actual area and types of play facilities delivered)			£14,000,000	
<b>Playing pitches</b>				
1.66ha /1000 people (416 dwellings @ 2.4 persons per dwelling). Assuming 15,000 dwellings, up to 60ha of land for playing pitches is required, although CIL receipt will cover construction costs ( the overall area can be reduced through the provision of high value ATPs.			£3,000,000	
<b>Community</b>				
<b>Community buildings</b>				
SONC suggests that facilities need to be delivered at 145m <sup>2</sup> /1000 people. Assuming 15,000 dwellings land for the delivery of a 3,335m <sup>2</sup> community building/s to be delivered by developer, although CIL receipt will cover construction costs.			£13,500,000	
<b>Health provision</b>				
1 GP surgery Health Hub (Allow for 2 extension)	Wokingham Clinical Commissioning Group have recently indicated that a threshold of 30,000 people applies to development requiring a dedicated new surgery.		£30,000,000	
<b>Indoor Leisure Facilities</b>				
MDD DPD standard is 8.26m <sup>2</sup> /1000 people. Assuming 15,000 dwellings, land for the delivery of a 300m <sup>2</sup> pool space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£750,000	
MDD DPD standard is 65.43m <sup>2</sup> /1000 people. Assuming 15,000 dwellings, land for the delivery of a 2400m <sup>2</sup> Sports hall activity space to be delivered by developer, although CIL receipt will cover construction costs. Possibly to be delivered at Arborfield Garrison site - USE COMMUNITY BUILDING ASSUMPTIONS			-£6,000,000	

**Current exclusions for discussion:**

- Electric vehicle infrastructure
- Flood alleviation costs – provisional sum allowed only
- Waste/recycling costs
- Commercial development – indicative quantum yet to be determined

**Outcome of initial baseline viability assessment: 15,000 units**

Scheme generates the following:

1. The required level of developer's profit
2. The required level of CIL
3. The required level and mix of affordable housing
4. A land value in excess of existing use value and benchmark land value is generated where it is assumed that offsite costs will be met through CIL or third-party funding, therefore indicating viability, but a more detailed examination of the appraisal indicates that the initial phase makes a loss.  
Overall the proposal indicates that with the required up front infrastructure support, the location has the potential to be viable for a very significant housing development, however the level of infrastructure costs required to be met off site exceeds the level of CIL generated by the development, therefore without other funding the option is only likely to be deliverable on the basis of an optimistic view of value growth.