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9th December 2016

FAO Karen Pell-Coggins
Planning & New Communities
South Cambridgeshire District Council
South Cambridgeshire Hall
Cambourne Business Park
Cambourne
Cambridge,
CB23 6EA

Dear Karen

Planning Application S1606/OL - Development off Oakington Road, Cottenham

Cottenham Parish Council has reviewed the recently-notified material provided on behalf of the above application and continues to strongly recommend refusal of this proposal.

We note the proposed changes to the site layout, additional information concerning the access path, drainage and traffic management with the following observations:

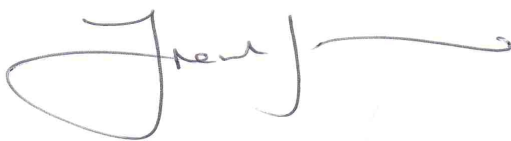
- a) There is an assertion that established access rights would enable the developer to upgrade the surface of the track to provide a shorter pedestrian-only access route between the site and the village core. We challenge this assertion, especially as it may compromise established vehicle access held by neighbours. We also doubt that the path can be suitably upgraded with footway lighting to keep it safe for use as a pedestrian access route to the village. These issues should be resolved before the route can be used in determining distances from the village core or any development permission considered.
- b) Linking the proposed development sites reinforces the potential for these developments to become an unsustainable "Little Cottenham", closely connected to one another but detached from the established settlement, more than 800 metres walking distance from most village facilities and more than 400 metres from the nearest bus stop with a frequent public transport service to Cambridge. In addition the linkage risks creating a "rat-run" as traffic attempts to by-pass the overloaded Oakington Road / Rampton Road roundabout.
- c) The proposed drainage system is sophisticated and may theoretically eliminate the risk of on-site flooding but we doubt its sustainability in the face of long-term deterioration due to difficulty of long-term maintenance and development control. Future residents will be tempted to make modest "improvements" that progressively undermine the infiltration by increasing the proportion of impermeable surface and increasing run-off which, in turn, increases the risk of overflow into the

Oakington roadside ditch and potential flooding of Oakington Road and beyond. This sustainability risk is likely to compromise adoption of the public roads on the site in much the same way as for Cottenham's Tenison Manor estate whose roads have not yet been adopted more than 12 years after construction was completed. This delay has compromised several property sales in recent years.

- d) The proposed "improvement" to the Oakington Road / Rampton Road roundabout may, considering this proposed development in isolation, be enough to reduce congestion at this overloaded roundabout however the traffic calculations made are not as robust as claimed and the proposed layout changes to the roundabout introduce planning and safety risks.
- a. The traffic data used and the subsequent modelling is not as robust as claimed and, as a result, there will be even more frequent overloading of this and subsequent roundabouts in the local road network. Understandably the traffic consultants have attempted to downplay the likely traffic levels and ignore the possible consequences of cumulative developments. Our own assessment of the traffic consequences of cumulative development (Appendix 1) show that even the more draconian solution to this roundabout proposed by Gladman's consultants is unlikely to cope with the traffic levels in a manner consistent with respect of the setting of the neighbouring listed buildings and the wider setting within a village.
 - b. The roundabout is within the setting of the Grade II listed Moreton almshouses and would bring heavy traffic closer to them with vibration and traffic likely to compromise these foundation-less buildings, while cyclists and residents, especially of the almshouses but also the properties that front directly onto the existing roundabout will be exposed more intimately to the threats posed, especially by larger vehicles manoeuvring around, and often across such a roundabout.

All other points we have previously raised continue to apply. Permission should be refused.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Frank Morris', with a long horizontal flourish extending to the right.

Frank Morris

Chair

Appendix 1: Traffic congestion at Oakington Road – Rampton Road roundabout

Summary

This report estimates the effects of several planning applications in Cottenham on the already congested Oakington Road – Rampton Road roundabout following independent measurements of traffic flows carried out by TSL Traffic Data Collection on 26th September 2016.

Oakington Road connects villages to the south-west of Cottenham via this roundabout to Cottenham and the network beyond via Rampton Road which runs north-west to Rampton, Willingham etc / south-east to Histon and Cambridge. Measurements of flows and queue lengths were taken on all legs of this roundabout.

Short queues develop in both the morning and afternoon rush hours with a longer queue present on the Oakington Road approach during the evening peak.

All four current planning applications will, unless the effects are mediated in some way, exacerbate these queues as they contribute additional traffic to Oakington Road and Rampton Road.

Unlike many studies in support of planning applications, the estimated trip rate generation is based on real measurements on the relatively new Brenda Gautrey Way estate in Cottenham. Measurements here slightly under-estimate vehicle flows on the planned development because Brenda Gautrey Way is physically closer to Cottenham village centre so a higher proportion of journeys can be walked. Nevertheless the expected number from these measurements – 0.76 vehicle trips per household in the rush hours - is generally higher than that predicted using TRICS data from unrepresentative sites in other parts of the country.

Traffic flows were also measured on the road into Cambridge – Histon Road – as a comparator with other available statistics and predictions.

This report also considers the likely effect of adding a “clean” left filter lane on each leg of the roundabout. To function effectively, this would require considerable widening of both the inner “lane” of the mini-roundabout and addition of an outer lane to minimise interference between the various flows on what is a relatively tight roundabout. Such a widening scheme has serious planning and safety issues as the roundabout is located in front of the Grade II listed “John Moreton 1853” almshouses and the driveways of several houses connect directly on to the roundabout.

It is unclear as to the degree to which the latest proposals for re-engineering this roundabout and its approaches will achieve the same alleviation as described here. The design, despite being draconian in scale and impact, does not create “clean left filters” and the basis of their modelling uses lower than realistic traffic flow and trip rates which are obscured by over-reliance on simulation.

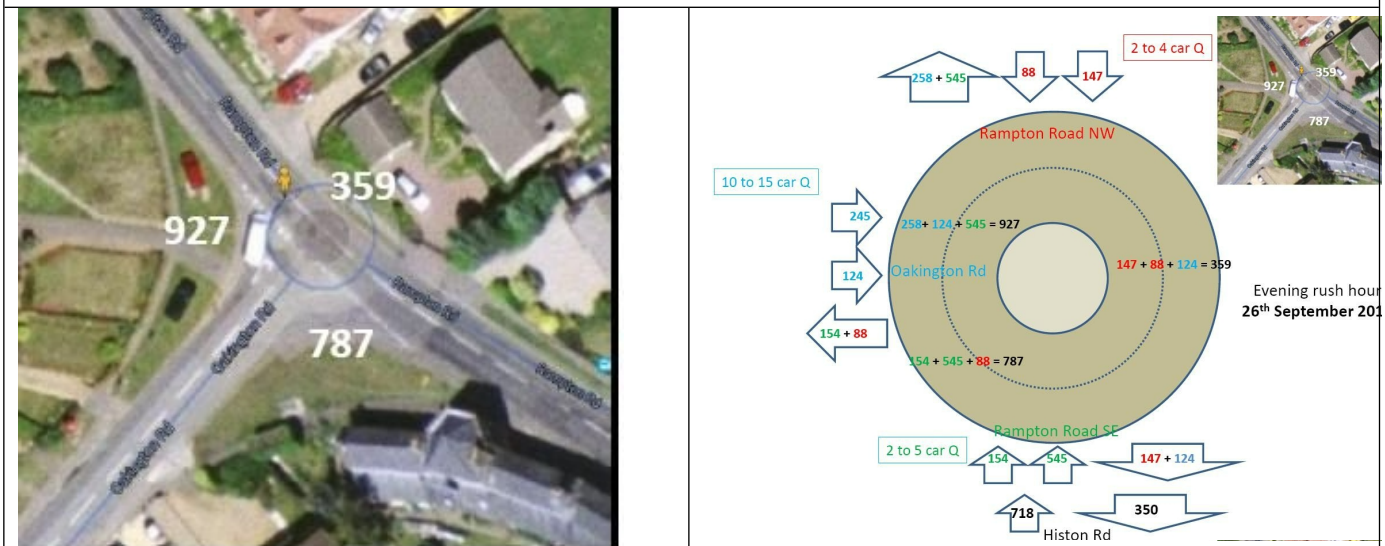
Flows on 26th September 2016

The schematics show traffic flows in the AM and PM peaks on 26th September 2016.



Inlet > exit	Peak hour	Peak hour flow
Oakington Rd > RRd North AM peak	9.00 to 10.00	46 vehicles, inc. 0 buses and 0 HGVs (G2015 - 57)
Oakington Rd > RRd South AM peak	8.00 to 9.00	180 vehicles, inc. 0 buses and 3 HGVs (G2015 - 147)
Rampton Rd N > RRd S AM peak	7.30 to 8.30	447 vehicles, inc. 2 buses and 3 HGVs (G2015 - 531)
Rampton Rd N > Oakington Rd AM peak	7.15 to 8.15	345 vehicles, inc. 3 buses and 0 HGVs (G2015 - 333)
Rampton Rd S > RRd N AM peak is with	8.00 to 9.00	124 vehicles, inc. 5 buses and 0 HGVs (G2015 - 140)
Rampton Rd S > Oakington Rd AM peak	8.00 to 9.00	218 vehicles, inc. 0 buses and 2 HGVs (G2015 - 186)

Morning peak hour flows - highest southbound; longest queue on Rampton Road inbound



Inlet > exit	Peak hour	Peak hour flow
Oakington Rd > RRd North PM peak	17.00 to 18.00	245 vehicles, inc. 0 buses and 0 HGVs (G2015 - 241)
Oakington Rd > RRd South PM peak	17.15 to 18.15	124 vehicles, inc. 0 buses and 1 HGVs (G2015 - 147)
Rampton Rd N > RRd S PM peak	16.00 to 17.00	147 vehicles, inc. 0 buses and 0 HGVs (G2015 - 137)
Rampton Rd N > Oakington Rd PM peak	17.15 to 18.15	88 vehicles, inc. 0 buses and 0 HGVs (G2015 - 97)
Rampton Rd S > RRd N PM peak	17.00 to 18.00	545 vehicles, inc. 3 buses and 1 HGVs (G2015 - 508)
Rampton Rd S > Oakington Rd PM peak	17.00 to 18.00	154 vehicles, inc. 0 buses and 1 HGVs (G2015 - 163)

Evening peak hour flows - highest northbound; longest queue (15) on Oakington Road inbound

Trip rate generation for new estates in Cottenham

Measurement at Brenda Gautrey Way (108 dwellings inc. Leopold Way etc) <> Beach Road

The traffic survey (26th September 2016) carried out for Cottenham Parish Council by 360TSL Traffic Data Collection on the sole vehicular entry/exit from Brenda Gautrey Way (including traffic from Paxton Close, Sovereign Way and Leopold Walk). These homes are typically only one third as far away from the village's facilities as those on the proposed Oakington Road or Rampton Road sites yet generate some **53 vehicle departures (0.5 per household) and 24 arrivals (0.26 per household) during the morning peak hour** or approximately **0.76 trips per household per hour**. The PM peak hour is a reversal of these two rates with 56 arrivals and 24 departures.

This is consistent with earlier independent TSL surveys (22nd March - AM d55/a23 and PM d14/a42 and 22nd April AM -d53/a20 and PM d19/a42). It should also be noted that the Brenda Gautrey Way development has a footpath connecting it directly to the high street near a village shop, the secondary school and other amenities; this will have an impact on reducing car use from the Brenda Gautrey site when compared with the proposed developments. So **some uplift on the Cottenham Parish Council data** should be factored into traffic predictions for the Oakington Road and Rampton Road sites.

- Persimmon - Applying this real trip generation rate to the 126 home proposal by Persimmon indicates some 62 morning departures and 24 arrivals, **about 20% higher than claimed by RSK** in the Traffic Plan before taking account of the increased distance from the village core.
- Gladman - Applied to the 200 home / 70 residential place Gladman proposal indicates around 105 departures and 51 arrivals - similar to the 104/46 numbers used by Ashleyhelme in Table 8 of their Traffic report although their Travel Plan target of 0.546 additional trips per home appears ambitious.

Inlet > exit	Peak hour	Peak hour flow
Brenda Gautrey > BRd North AM peak	8.00 to 9.00	40 vehicles, inc. 0 buses and 0 HGVs
Brenda Gautrey > BRd South AM peak	7.00 to 8.00	13 vehicles, inc. 0 buses and 0 HGVs
Brenda Gautrey > BRd North PM peak	17.15 to 18.15	18 vehicles, inc. 0 buses and 0 HGVs
Brenda Gautrey > BRd South PM peak	17.00 to 18.00	6 vehicles, inc. 0 buses and 0 HGVs
Beach Rd N > BGW AM peak	8.15 to 9.15	14 vehicles, inc. 0 buses and 0 HGVs
Beach Rd S > BGW AM peak	8.00 to 9.00	3 vehicles, inc. 0 buses and 0 HGVs
Beach Rd N > BGW PM peak	16.00 to 17.00	40 vehicles, inc. 0 buses and 0 HGVs
Beach Rd S > BGW PM peak	17.00 to 18.00	16 vehicles, inc. 0 buses and 0 HGVs

Effects of development on the morning peak flows

The schematics show traffic flows supplemented by the likely effects of the Endurance, Gladman and Persimmon proposals.



Effect on Morning peak flows - highest southbound; longest queue on Rampton Road inbound

Oakington Road approach

Around 226 cars arrive in the morning peak hour today.

Oakington Rd already suffers congestion – with 2 to 6 stationary vehicles between 7am and 9.30am
Endurance (50) will add at least 35 trips to the morning load on Oakington Rd, **25 into** and 13 from

Approx. 13 will flow towards the roundabout

Gladman (210) will add at least 150 trips to the morning load on Rampton Road, 105 into and **45 from**

Approx. 33 will flow from the roundabout, **about 22 from Oakington Rd**, 11 from Rampton Rd S,

Persimmon (130) will add at least 90 trips to the morning load on Oakington Road, **65 into** and 33 from

Approx. 33 will flow towards the roundabout

This will **add 68 cars to the 226 that arrive there today**, an increase of 30% that **will extend queue lengths**

Rampton Road south-bound approach

Around 792 cars arrive in the morning peak hour today.

Rampton Rd NW already suffers congestion – with 3 to 6 stationary vehicles between 7am and 9.30am
Endurance (50) will add at least 35 trips to the morning load on Oakington Road, 25 into and **13 from**

Approx. 7 will flow from the roundabout; **about 5 from Rampton Rd N**, 2 from Rampton Rd S,

Gladman (210) will add at least 150 trips to the morning load on Rampton Road, **105 into** and 45 from

Approx. 70 will flow towards the roundabout

Persimmon (130) will add at least 90 trips to the morning load on Oakington Road, 65 into and **33 from**

Approx. 20 will flow from the roundabout; **about 14 from Rampton Rd N**, 6 from Rampton Rd S,

This will **add 95 to the 792 that arrive there today**, an increase of 13% that **will extend queue lengths**.

Rampton Road north-bound approach

Around 342 cars arrive in the morning peak hour today.

Rampton Rd NW already suffers congestion – with 3 to 4 stationary vehicles between 7am and 9.30am
Endurance (50) will add at least 35 trips to the morning load on Oakington Road, 25 into and **13 from**

Approx. 7 will flow from the roundabout; about 5 from Rampton Rd N, **2 from Rampton Rd S**,

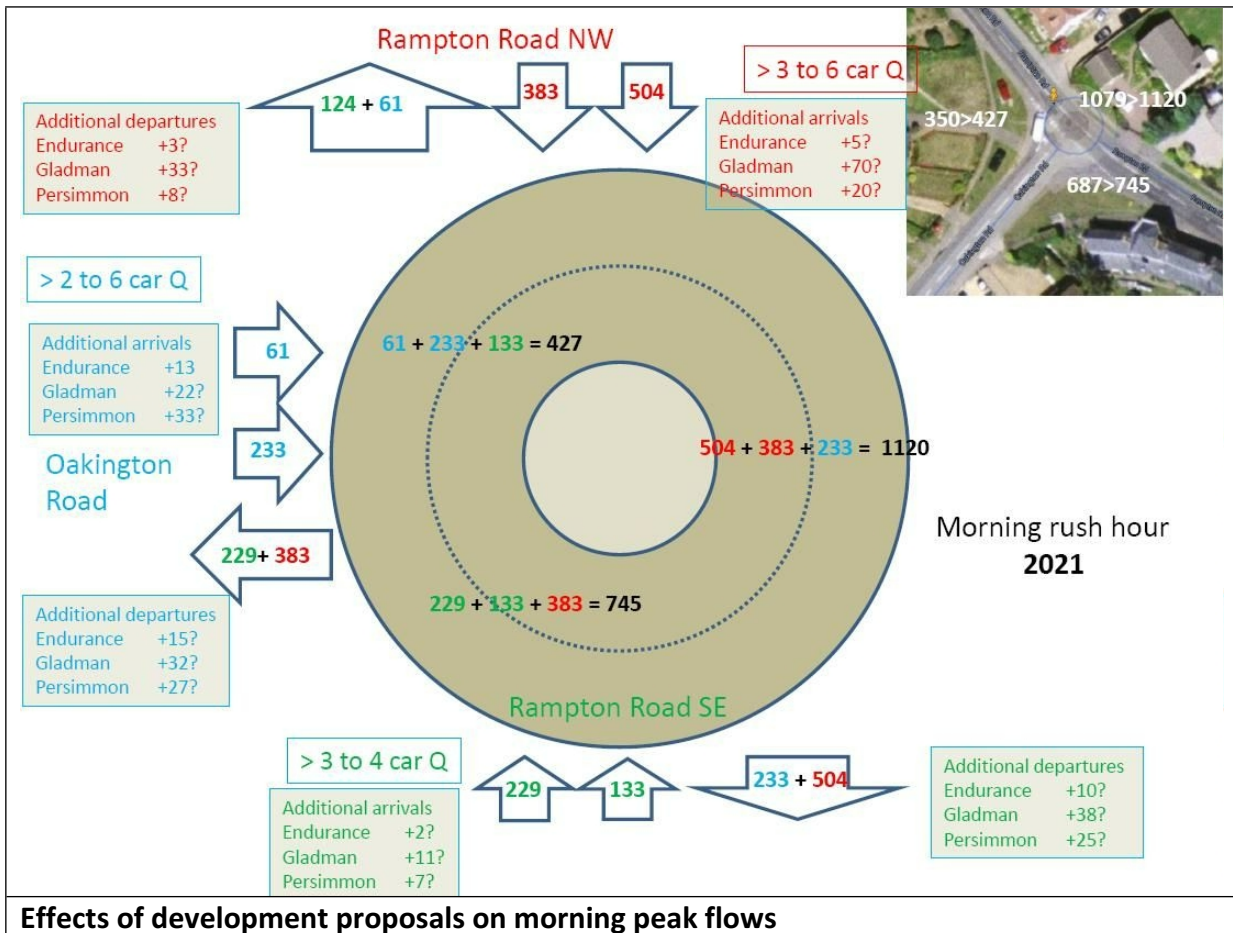
Gladman (210) will add at least 150 trips to the morning load on Rampton Road, 105 into and **45 from**

Approx. 33 will flow from the roundabout, about 22 from Oakington Rd, **11 from Rampton Rd S**,

Persimmon (130) will add at least 90 trips to the morning load on Oakington Road, 65 into and **33 from**

Approx. 20 will flow from the roundabout; about 13 from Rampton Rd N, **7 from Rampton Rd S**,

This will **add 20 to the 342 that arrive there today**, an increase of 6% that **will extend queue lengths**.



Effects of development on the evening peak flows

The schematics show traffic flows supplemented by the likely effects of the Endurance, Gladman and Persimmon proposals.



Evening peak hour flows - highest northbound; longest queue on Oakington Road inbound

Oakington Road approach

Around 369 cars arrive in the afternoon peak hour today.

Oakington Rd already suffers congestion – with 10 to 15 stationary vehicles between 5pm and 5.25pm
Endurance (50) will add at least 35 trips to the afternoon load on Oakington Rd, **13 into** and 25 from

Approx. 7 will flow towards the roundabout

Gladman (210) will add at least 150 trips to the afternoon load on Rampton Road, 45 into and **105 from**

Approx. 70 will flow from the roundabout, **about 23 from Oakington Rd**, 47 from Rampton Rd S,

Persimmon (130) will add at least 90 trips to the afternoon load on Oakington Road, **33 into** and 45 from

Approx. 16 will flow towards the roundabout

This will **add 46 cars to the 369 that arrive there today**, an increase of **12%** that **will extend queue lengths**

Rampton Road south-bound approach

Around 235 cars arrive in the afternoon peak hour

Rampton Rd NW already suffers congestion – with up to 4 stationary vehicles between 5pm and 7pm

Endurance (50) will add at least 35 trips to the afternoon load on Oakington Road, 13 into and **25 from**

Approx. 15 will flow from the roundabout; **about 5 from Rampton Rd N**, 5 from Rampton Rd S,

Gladman (210) will add at least 150 trips to the afternoon load on Rampton Road, **45 into** and 105 from

Approx. 30 will flow towards the roundabout

Persimmon (130) will add at least 90 trips to the afternoon load on Oakington Road, 33 into and **65 from**

Approx. 40 will flow from the roundabout; **about 14 from Rampton Rd N**, 26 from Rampton Rd S,

This will **add 49 to the 235 that arrive there today**, an increase of **6%** that **will extend queue lengths**.

Rampton Road north-bound approach

Around 342 cars arrive in the afternoon peak hour today.

Rampton Rd SE already suffers congestion – with up to 5 stationary vehicles between 4pm and 5.30pm

Endurance (50) will add at least 35 trips to the afternoon load on Oakington Road, 13 into and **25 from**

Approx. 13 will flow from the roundabout; about 4 from Rampton Rd N, **9 from Rampton Rd S**,

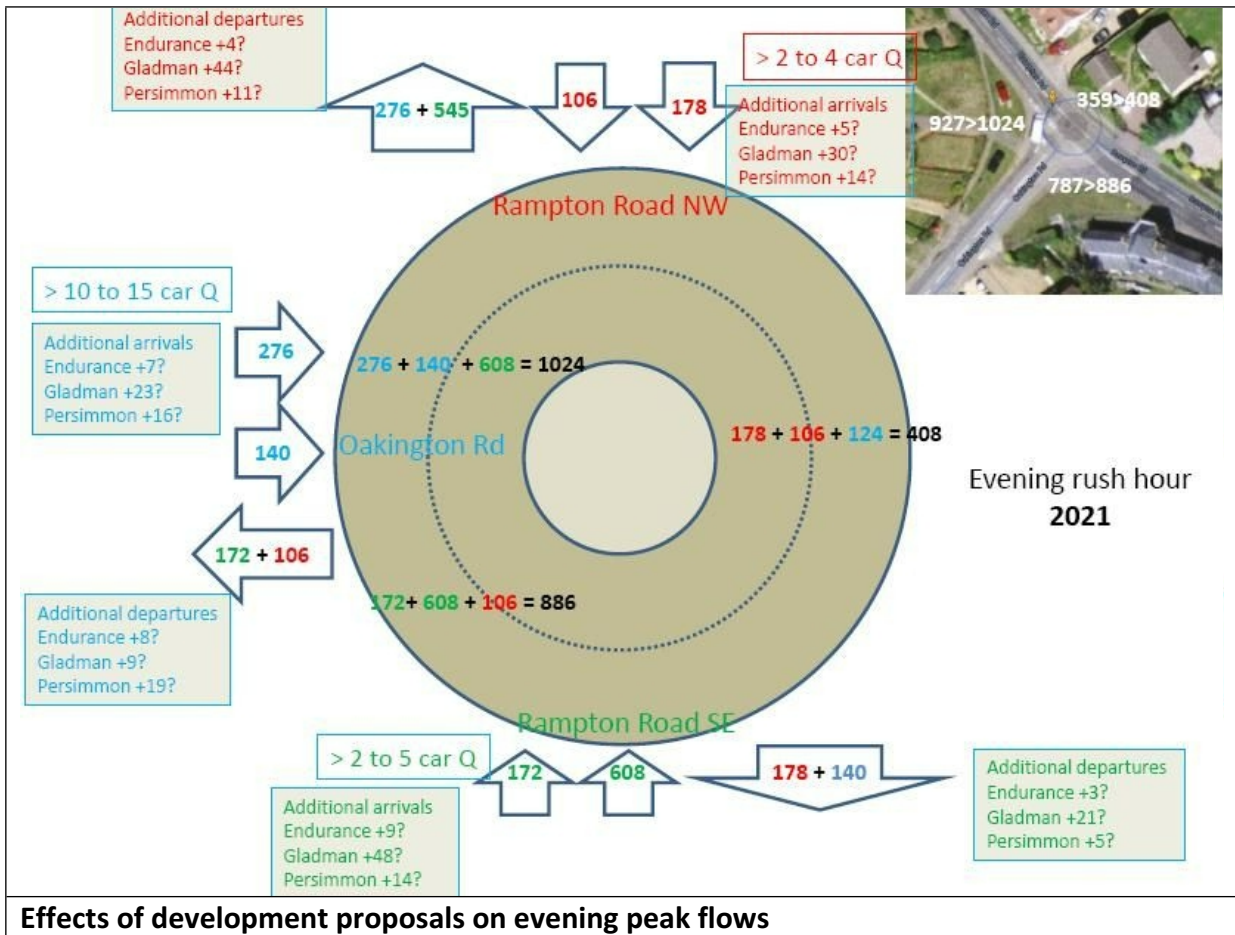
Gladman (210) will add at least 150 trips to the afternoon load on Rampton Road, 45 into and **105 from**

Approx. 70 will flow from the roundabout, about 22 from Oakington Rd, **48 from Rampton Rd S**,

Persimmon (130) will add at least 90 trips to the afternoon load on Oakington Road, 33 into and **65 from**

Approx. 20 will flow from the roundabout; about 6 from Rampton Rd N, **14 from Rampton Rd S**,

This will **add 71 to the 709 that arrive there today**, an increase of **10%** that **will extend queue lengths**.



Possible mitigations

Oakington Road approach

Around 226 cars arrive in the morning peak hour

A full "left-filter" lane could remove some 46 cars from today's and 61 from "tomorrow's traffic

As 233 cars would be arriving **queue lengths will remain about the same even with a "clean" filter lane.**

Rampton Road south-bound approach

Around 801 cars arrive in the morning peak hour

A full "left-filter" lane could remove some 447 cars from today's and 504 from "tomorrow's traffic

As "only" ~383 cars would be arriving queues would disappear.

Rampton Road north-bound approach

Around 342 cars arrive in the morning peak hour

A full "left-filter" lane could remove some 218 cars from today's and 229 from "tomorrow's traffic

As "only" ~133 cars would be arriving queue lengths would disappear.

Oakington Road approach

Around 369 cars arrive today in the afternoon peak hour

A full "left-filter" lane could remove some 245 cars from today's and 276 from "tomorrow's traffic

As "only" 140 cars would be arriving queues would disappear

Rampton Road south-bound approach

Around 235 cars arrive in the afternoon peak hour

A full "left-filter" lane could remove some 147 cars from today's and 178 from "tomorrow's traffic

As "only" 106 cars would be arriving queues would disappear.

Rampton Road north-bound approach

Around 699 cars arrive in the afternoon peak hour

A full "left-filter" lane could remove some 154 cars from today's and 172 from "tomorrow's traffic

As only 608 cars would still be arriving **queue lengths would drop slightly.**

Conclusion

Either of the major developments (Gladman or Persimmon) would add significant traffic to this marginally overloaded roundabout, extending queue lengths, especially along Oakington Road in the morning on which even a "clean" left filter would only stabilise queues and along Rampton Road northbound in the evening. Anything less than a "clean" left filter will not cope with the additional traffic.

Appendix 2: Measurements taken by TSL Traffic Management on 26th September 2016
 Roundabout approach – Rampton Road North

TIME	Ahead to Rampton Road (South)				Right to Oakington Road			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	90	1	0	91	69	0	1	70
0715 - 0730	98	2	0	100	73	0	1	74
0730 - 0745	118	1	0	119	87	0	0	87
0745 - 0800	102	1	0	103	99	0	1	100
Hourly Total	408	5	0	413	328	0	3	331
0800 - 0815	112	1	2	115	83	0	1	84
0815 - 0830	107	0	2	109	68	0	0	68
0830 - 0845	98	0	1	99	59	0	0	59
0845 - 0900	88	1	0	89	46	0	0	46
Hourly Total	405	2	5	412	256	0	1	257
0900 - 0915	75	1	0	76	38	1	0	39
0915 - 0930	69	0	0	69	31	0	0	31
0930 - 0945	33	1	0	34	22	0	1	23
0945 - 1000	29	0	0	29	17	0	0	17
Hourly Total	206	2	0	208	108	1	1	110

Session Total	1019	9	5	1033	692	1	5	698
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1600 - 1615	35	0	0	35	19	0	0	19
1615 - 1630	44	0	0	44	23	0	0	23
1630 - 1645	41	0	0	41	24	0	0	24
1645 - 1700	27	0	0	27	13	0	0	13
Hourly Total	147	0	0	147	79	0	0	79
1700 - 1715	29	0	0	29	24	0	0	24
1715 - 1730	28	0	0	28	16	0	0	16
1730 - 1745	32	0	0	32	20	0	0	20
1745 - 1800	27	0	0	27	24	0	0	24
Hourly Total	116	0	0	116	84	0	0	84
1800 - 1815	20	0	0	20	28	0	0	28
1815 - 1830	34	0	0	34	14	0	0	14
1830 - 1845	26	0	0	26	17	0	0	17
1845 - 1900	23	0	0	23	13	0	0	13
Hourly Total	103	0	0	103	72	0	0	72

Session Total	366	0	0	366	235	0	0	235
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Roundabout approach – Rampton Road South

TIME	Left to Oakington Road				Ahead to Rampton Road (North)			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	24	2	0	26	9	0	0	9
0715 - 0730	31	4	0	35	11	0	1	12
0730 - 0745	33	2	0	35	23	0	0	23
0745 - 0800	57	1	0	58	20	1	1	22
Hourly Total	145	9	0	154	63	1	2	66
0800 - 0815	55	0	0	55	26	0	1	27
0815 - 0830	54	1	0	55	31	0	1	32
0830 - 0845	57	1	0	58	30	0	0	30
0845 - 0900	50	0	0	50	29	0	3	32
Hourly Total	216	2	0	218	116	0	5	121
0900 - 0915	32	1	0	33	23	0	1	24
0915 - 0930	30	0	0	30	20	1	1	22
0930 - 0945	16	1	0	17	23	1	1	25
0945 - 1000	13	0	0	13	19	1	0	20
Hourly Total	91	2	0	93	85	3	3	91

Session Total	452	13	0	465	264	4	10	278
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1600 - 1615	40	1	0	41	85	1	0	86
1615 - 1630	36	0	0	36	99	0	1	100
1630 - 1645	32	0	0	32	103	0	1	104
1645 - 1700	35	1	0	36	114	0	1	115
Hourly Total	143	2	0	145	401	1	3	405
1700 - 1715	43	0	0	43	127	0	1	128
1715 - 1730	41	1	0	42	156	0	0	156
1730 - 1745	33	0	0	33	141	1	1	143
1745 - 1800	36	0	0	36	117	0	1	118
Hourly Total	153	1	0	154	541	1	3	545
1800 - 1815	32	1	0	33	103	2	1	106
1815 - 1830	12	0	0	12	85	0	1	86
1830 - 1845	10	0	0	10	80	0	0	80
1845 - 1900	9	0	0	9	71	1	1	73
Hourly Total	63	1	0	64	339	3	3	345

Session Total	359	4	0	363	1281	5	9	1295
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Roundabout approach – Oakington Road

TIME	Left to Rampton Road (North)				Right to Rampton Road (South)			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	9	0	0	9	17	0	0	17
0715 - 0730	10	0	0	10	17	0	0	17
0730 - 0745	13	0	0	13	26	1	0	27
0745 - 0800	6	0	0	6	27	0	0	27
Hourly Total	38	0	0	38	87	1	0	88
0800 - 0815	9	0	0	9	40	1	0	41
0815 - 0830	8	0	0	8	51	0	0	51
0830 - 0845	7	0	0	7	46	2	0	48
0845 - 0900	6	0	1	7	40	0	0	40
Hourly Total	30	0	1	31	177	3	0	180
0900 - 0915	12	0	0	12	24	1	1	26
0915 - 0930	10	0	0	10	20	2	0	22
0930 - 0945	14	0	0	14	20	0	0	20
0945 - 1000	10	0	0	10	16	1	0	17
Hourly Total	46	0	0	46	80	4	1	85

Session Total	114	0	1	115	344	8	1	353
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1600 - 1615	30	0	0	30	18	1	0	19
1615 - 1630	38	0	0	38	21	1	0	22
1630 - 1645	40	0	1	41	25	1	0	26
1645 - 1700	46	0	0	46	27	1	0	28
Hourly Total	154	0	1	155	91	4	0	95
1700 - 1715	62	0	0	62	33	1	0	34
1715 - 1730	70	0	0	70	26	0	0	26
1730 - 1745	60	0	0	60	30	1	0	31
1745 - 1800	53	0	0	53	32	0	0	32
Hourly Total	245	0	0	245	121	2	0	123
1800 - 1815	49	0	0	49	35	0	0	35
1815 - 1830	53	0	0	53	17	1	0	18
1830 - 1845	46	0	0	46	23	0	0	23
1845 - 1900	42	0	0	42	16	1	0	17
Hourly Total	190	0	0	190	91	2	0	93

Session Total	589	0	1	590	303	8	0	311
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Roundabout – queuing AM

TIME	Queue Lengths (Vehicles)					
	Rampton Road (SB)		Rampton Road (NB)		Oakington Road	
	Stationary	Rolling	Stationary	Rolling	Stationary	Rolling
700	0	0	0	0	0	0
705	0	0	0	0	0	0
710	3	0	2	0	0	0
715	2	0	0	0	0	0
720	4	0	3	0	3	0
725	3	0	0	0	3	0
730	5	0	2	0	2	0
735	5	0	4	0	2	0
740	6	0	3	0	2	0
745	5	0	4	0	2	0
750	4	0	3	0	2	0
755	5	0	3	0	3	0
800	4	0	3	0	3	0
805	4	0	3	0	2	0
810	4	0	3	0	3	0
815	4	0	0	0	2	0
820	5	0	4	0	2	0
825	4	0	3	0	2	0
830	3	0	4	0	0	0
835	4	0	3	0	2	0
840	3	0	0	0	2	0
845	4	0	3	0	0	0
850	4	0	0	0	0	0
855	4	0	3	0	0	0
900	0	0	0	0	0	0
905	0	0	0	0	0	0
910	0	0	0	0	2	0
915	0	0	0	0	0	0
920	2	0	0	0	0	0
925	0	0	0	0	0	0
930	0	0	0	0	0	0
935	0	0	0	0	5	0
940	3	0	0	0	0	0
945	0	0	0	0	2	0
950	0	0	0	0	0	0
955	0	0	0	0	0	0

Roundabout approach – queuing PM

TIME	Queue Lengths (Vehicles)					
	Rampton Road (SB)		Rampton Road (NB)		Oakington Road	
	Stationary	Rolling	Stationary	Rolling	Stationary	Rolling
1600	0	0	0	0	3	0
1605	0	0	0	0	4	0
1610	0	0	0	0	3	0
1615	0	0	0	0	3	0
1620	0	0	0	0	3	0
1625	0	0	0	0	8	0
1630	2	0	2	0	5	0
1635	0	0	0	0	5	0
1640	2	0	0	0	5	0
1645	3	0	4	0	6	0
1650	2	0	0	0	5	0
1655	0	0	5	0	6	0
1700	0	0	2	0	10	2
1705	3	0	0	0	10	0
1710	0	0	3	0	10	0
1715	2	0	0	0	15	4
1720	0	0	2	0	12	2
1725	2	0	0	0	10	2
1730	2	0	2	0	8	0
1735	3	0	0	0	8	2
1740	3	0	2	0	8	2
1745	3	0	2	0	6	0
1750	2	0	2	0	7	0
1755	4	0	2	0	4	0
1800	0	0	0	0	6	2
1805	2	0	0	0	6	0
1810	3	0	0	0	7	0
1815	2	0	0	0	4	0
1820	3	0	2	0	4	0
1825	0	0	0	0	3	0
1830	2	0	0	0	4	0
1835	2	0	0	0	4	0
1840	3	0	0	0	3	0
1845	0	0	0	0	3	0
1850	0	0	0	0	4	0
1855	0	0	0	0	3	0

Beach Road approach North

TIME	Ahead to Beach Road (South)				Right to Brenda Guatrey Way			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	61	0	0	61	2	0	0	2
0715 - 0730	67	2	0	69	1	0	0	1
0730 - 0745	83	1	0	84	1	0	0	1
0745 - 0800	96	0	0	96	3	0	0	3
Hourly Total	307	3	0	310	7	0	0	7
0800 - 0815	92	2	0	94	3	0	0	3
0815 - 0830	93	1	0	94	2	0	0	2
0830 - 0845	81	0	2	83	4	0	0	4
0845 - 0900	72	2	0	74	2	0	0	2
Hourly Total	338	5	2	345	11	0	0	11
0900 - 0915	54	0	1	55	6	0	0	6
0915 - 0930	43	0	0	43	4	0	0	4
0930 - 0945	35	3	0	38	3	0	0	3
0945 - 1000	36	0	0	36	3	0	0	3
Hourly Total	168	3	1	172	16	0	0	16

Session Total	813	11	3	827	34	0	0	34
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1600 - 1615	32	1	0	33	2	0	0	2
1615 - 1630	31	2	0	33	5	0	0	5
1630 - 1645	35	0	0	35	6	0	0	6
1645 - 1700	26	0	1	27	5	0	0	5
Hourly Total	124	3	1	128	18	0	0	18
1700 - 1715	36	0	0	36	5	0	0	5
1715 - 1730	27	0	0	27	7	0	0	7
1730 - 1745	31	1	0	32	8	0	0	8
1745 - 1800	29	0	0	29	11	0	0	11
Hourly Total	123	1	0	124	31	0	0	31
1800 - 1815	30	2	0	32	14	0	0	14
1815 - 1830	26	1	0	27	6	0	0	6
1830 - 1845	24	0	0	24	3	0	0	3
1845 - 1900	23	0	0	23	5	0	0	5
Hourly Total	103	3	0	106	28	0	0	28

Session Total	350	7	1	358	77	0	0	77
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Beach Road approach South

TIME	Left to Brenda Guatrey Way				Ahead to Beach Road (North)			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	0	0	0	0	17	1	0	18
0715 - 0730	0	0	0	0	25	1	0	26
0730 - 0745	0	0	0	0	33	0	0	33
0745 - 0800	1	0	0	1	32	2	0	34
Hourly Total	1	0	0	1	107	4	0	111
0800 - 0815	0	0	0	0	43	1	0	44
0815 - 0830	0	0	0	0	35	2	0	37
0830 - 0845	2	0	0	2	44	0	2	46
0845 - 0900	1	0	0	1	39	0	0	39
Hourly Total	3	0	0	3	161	3	2	166
0900 - 0915	0	0	0	0	31	1	0	32
0915 - 0930	0	0	0	0	29	0	0	29
0930 - 0945	1	0	0	1	30	2	0	32
0945 - 1000	1	0	0	1	23	1	0	24
Hourly Total	2	0	0	2	113	4	0	117

Session Total	6	0	0	6	381	11	2	394
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1600 - 1615	2	0	0	2	57	1	0	58
1615 - 1630	3	0	0	3	69	0	1	70
1630 - 1645	3	0	0	3	89	3	0	92
1645 - 1700	5	0	0	5	129	1	0	130
Hourly Total	13	0	0	13	344	5	1	350
1700 - 1715	5	0	0	5	134	0	1	135
1715 - 1730	2	0	0	2	131	1	0	132
1730 - 1745	3	0	0	3	150	1	0	151
1745 - 1800	6	0	0	6	144	1	0	145
Hourly Total	16	0	0	16	559	3	1	563
1800 - 1815	3	0	0	3	129	0	0	129
1815 - 1830	5	0	0	5	81	1	0	82
1830 - 1845	1	0	0	1	77	1	0	78
1845 - 1900	2	0	0	2	71	0	0	71
Hourly Total	11	0	0	11	358	2	0	360

Session Total	40	0	0	40	1261	10	2	1273
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Beach Road approach – Brenda Gautrey Way

TIME	Left to Beach Road (North)				Right to Beach Road (South)			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	7	0	0	7	2	0	0	2
0715 - 0730	1	0	0	1	2	0	0	2
0730 - 0745	6	0	0	6	2	0	0	2
0745 - 0800	6	0	0	6	7	0	0	7
Hourly Total	20	0	0	20	13	0	0	13
0800 - 0815	11	0	0	11	1	0	0	1
0815 - 0830	5	0	0	5	3	0	0	3
0830 - 0845	13	0	0	13	1	0	0	1
0845 - 0900	11	0	0	11	1	0	0	1
Hourly Total	40	0	0	40	6	0	0	6
0900 - 0915	7	0	0	7	3	0	0	3
0915 - 0930	3	0	0	3	1	0	0	1
0930 - 0945	2	0	0	2	2	0	0	2
0945 - 1000	2	0	0	2	1	0	0	1
Hourly Total	14	0	0	14	7	0	0	7

Session Total	74	0	0	74	26	0	0	26
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1600 - 1615	4	0	0	4	0	0	0	0
1615 - 1630	6	0	0	6	1	0	0	1
1630 - 1645	1	0	0	1	2	0	0	2
1645 - 1700	6	0	0	6	0	0	0	0
Hourly Total	17	0	0	17	3	0	0	3
1700 - 1715	5	0	0	5	1	0	0	1
1715 - 1730	2	0	0	2	1	0	0	1
1730 - 1745	3	0	0	3	0	0	0	0
1745 - 1800	7	0	0	7	4	0	0	4
Hourly Total	17	0	0	17	6	0	0	6
1800 - 1815	6	0	0	6	0	0	0	0
1815 - 1830	5	0	0	5	2	0	0	2
1830 - 1845	4	0	0	4	0	0	0	0
1845 - 1900	2	0	0	2	0	0	0	0
Hourly Total	17	0	0	17	2	0	0	2

Session Total	51	0	0	51	11	0	0	11
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Histon Road 26th September 2016

TIME	Northbound				Southbound			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	75	1	0	76	85	0	0	85
0715 - 0730	77	2	2	81	103	2	2	107
0730 - 0745	85	1	1	87	112	2	2	116
0745 - 0800	89	1	2	92	136	1	0	137
Hourly Total	326	5	5	336	436	5	4	445
0800 - 0815	103	3	2	108	167	2	3	172
0815 - 0830	106	1	1	108	162	3	1	166
0830 - 0845	109	0	0	109	186	1	0	187
0845 - 0900	121	1	1	123	194	5	1	200
Hourly Total	439	5	4	448	709	11	5	725
0900 - 0915	96	2	1	99	179	2	2	183
0915 - 0930	85	2	1	88	155	3	2	160
0930 - 0945	81	0	0	81	138	0	0	138
0945 - 1000	67	1	2	70	121	1	1	123
Hourly Total	329	5	4	338	593	6	5	604

Session Total	1094	15	13	1122	1738	22	14	1774
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1600 - 1615	120	1	2	123	67	1	1	69
1615 - 1630	116	1	1	118	69	1	1	71
1630 - 1645	136	2	2	140	77	0	0	77
1645 - 1700	149	0	1	150	78	1	2	81
Hourly Total	521	4	6	531	291	3	4	298
1700 - 1715	167	2	2	171	72	0	0	72
1715 - 1730	182	1	3	186	93	0	2	95
1730 - 1745	177	0	3	180	89	1	1	91
1745 - 1800	179	1	1	181	90	2	0	92
Hourly Total	705	4	9	718	344	3	3	350
1800 - 1815	151	0	2	153	77	2	2	81
1815 - 1830	133	0	0	133	75	0	2	77
1830 - 1845	119	1	1	121	58	2	0	60
1845 - 1900	102	0	2	104	56	1	0	57
Hourly Total	505	1	5	511	266	5	4	275

Session Total	1731	9	20	1760	901	11	11	923
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