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Innovation Park Medway

Transport Assessment

For

INNOVATION PARK MEDWAY

Project No. 12841

February 2019

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EXECUTIVE SUMMARY

Campbell Reith Hill LLP (CampbellReith) has been instructed on behalf of Medway Council to prepare a Transport Assessment in support of the preparation of a masterplan for Innovation Park Medway at Rochester Airport.

The Innovation Park Medway Masterplan allows for the erection of up to 101,000m² of Business and General Industrial floor space (comprising science park, innovation uses incorporating manufacturing and engineering) with associated means of access, distributor and service roads, parking facilities, footpaths and cycle ways, and landscaping.

The trip generation of the proposed masterplan has been assessed and the associated vehicular traffic assigned to the local road network using an agreed traffic distribution based on journey to work Census data. Fore Consulting Limited has undertaken traffic modelling of the local road network. This assesses the operation of local junctions and suggests improvements at certain junctions to enhance the network.

The proposed development will generate in the region of 1,680 two-way people trips in the AM peak hour and 1,159 two-way people trips in the PM peak hour. It is anticipated that 1,092 will be vehicle trips in the AM peak hour and 753 will be vehicle trips in the PM peak hour.

The site can also be accessed by means other than the private car. The masterplan provides a means of access for bus services that will provide good connectivity between the site and the town centre and surrounding areas. The bus services also allow for onward journeys by train from Rochester and Chatham stations where there are direct train services to key destinations including London Victoria, London St Pancras International, Dover, Ramsgate, Faversham and Luton.

Pedestrians and cyclists are catered for currently by a reasonable network of footways and cycle facilities. The Innovation Park aims to improve accessibility by non-car modes of travel to provide better access to and from the site by cyclists and for pedestrians to walk to and from the site and local facilities.

1.0 INTRODUCTION

1.1. Campbell Reith Hill LLP (CampbellReith) has been instructed on behalf of Medway Council to prepare a Transport Assessment in support of the masterplan for Innovation Park Medway for a high quality innovation park, with flexible plots to encourage a wide range of high-value.

1.2. The Innovation Park Medway Masterplan allows for the erection of up to 101,000m² of Business and General Industrial floor space (science park and innovation uses) with associated means of access, distributor and service roads, parking facilities, footpaths and cycle ways, and landscaping.

1.3. Innovation Park Medway will be situated on land at Rochester Airport. The airport is owned by Medway Council and is currently leased to Rochester Airport Ltd. The site sits within the local authority boundaries of both Medway Council and Tonbridge & Malling Borough Council.

1.4. The Rochester Airport Masterplan SPD was adopted by Medway Council in January 2014. The SPD established the vision for the airport and key development principles. A masterplan have been developed that is adaptive, allowing for a wide range of buildings and spaces that can be delivered when there is demand.

1.5. The Transport Assessment is sub-divided into nine chapters; the chapters being:

- Chapter 1: Introduction;
- Chapter 2: Sets out the approach to the Transport Assessment;
- Chapter 3: Identifies the relevant planning policies;
- Chapter 4: Provides a description of the location and current use of the site;
- Chapter 5: Sets out the development proposals;
- Chapter 6: Sets out the trip generation and distribution;
- Chapter 7: Presents the impact of the development on the transport network;
- Chapter 8: Provides details on sustainability; and
- Chapter 9: Conclusions.

2.0 APPROACH TO THE TRANSPORT ASSESSMENT

2.1. Transport assessments are required to consider the development in relation to all transport modes and its ability to reduce the reliance on the private car and offer a choice in transport. This Transport Assessment has been written with reference to current Planning Practice Guidance. In preparing the Transport Assessment the following considerations are considered relevant:

- Reducing the need to travel, especially by car;
- The accessibility of the location;
- Environmental impact of travel;
- Measures that may assist in influencing travel behaviour; and
- Managing access to the highway network

2.2. With these considerations in mind the Transport Assessment has considered each of the key modes of transport that will be used by people travelling to and from the development. The key elements of the approach to the assessment of each mode are briefly described below.

Walking and Cycling

2.3. A qualitative assessment has been undertaken of the walking and cycling facilities available and the impact, if any, the development proposal will have on these facilities.

Public Transport

2.4. The accessibility to and the availability of public transport to site users of the new development has also been reviewed. This assessment has been used to identify any deficiencies in the public transport provision, and any benefits the development can bring in terms of improved quality and enhanced viability of local public transport.

Vehicular Impact

2.5. An assessment of the local road network has been carried out by Fore Consulting Limited. This Transport Assessment summarises key findings from their reporting.

3.0 RELEVANT PLANNING POLICIES

National Policy and Guidance

3.1. The 'National Planning Policy Framework' was first published in March 2012 and updated in July 2018. This is the current planning guidance document for England. This aims to encourage a more sustainable approach to transport that reduces the negative environmental impacts associated with the private car remains. It aims to balance the transport system in favour of sustainable transport modes and give people a choice about how they travel.

Local Planning Documents

3.2. The Local Plan for Medway currently covers Development Plan policies from a number of plans including the Medway Local Plan 2003. This sets out a vision for future development in Medway to ensure that the needs of the area are met through a number of policies and proposals. Medway Council are currently working on the new Local Plan, Future Medway, which will replace the 2003 Medway Local Plan and cover the period up to 2035. Subject to outcomes of the independent examination by a planning inspector, Medway's new Local Plan will be adopted in 2020 with the publication of the draft plan expected in Winter 2018/2019.

3.3. Tonbridge & Malling Borough Council have a suite of Development Plan Documents including Core Strategy, Development Land Allocations DPD and Managing Development and the Environment DPD along with saved policies from the Tonbridge and Malling Borough Local Plan. The Council will be producing a new Local Plan. This new Plan will have a time horizon up to 2031 and, once adopted, will form part of the Council's Development Plan and will replace the current suite of adopted local plans.

Planning Approach

3.4. The preferred approach for delivering Innovation Park Medway through the planning system is to use a Local Development Order (LDO). This is a planning mechanism that was introduced by the Planning and Compulsory Purchase Act 2004 which allows Local Planning Authorities to extend permitted development rights for certain specified forms of development. If this approach is taken forward both Medway Council and Tonbridge & Malling Borough Council will be adopting their own separate LDOs for the parts of Innovation Park Medway that lie within their respective authorities.

4.0 THE SITE AND EXISTING CONDITIONS

Site Location

4.1. The site is split into two separate areas, to the north and south of the existing airfield site.

4.2. The Northern Area consists of two parcels. The main parcel to the west comprises the airfield occupied by part of runway 16/34. The second parcel is currently occupied by BAE Systems and is used as a car parking area.

4.3. To the north of the Northern Area, the site is bounded by buildings occupied by BAE Systems. Rochester Airport Industrial Estate is located to the northwest and Laker Road Industrial Estate lies to the west. To the east is the retained Rochester Airport site.

4.4. The Southern Area also consists of two parcels. The eastern parcel is currently partly used as parking for the Innovation Centre. The western parcel is the site of Woolmans Wood Caravan Park with space for approximately 100-125 caravans.

4.5. To the north of the Southern Area is the existing Innovation Centre. The site is bounded by the B2097 to the west and the A229 to the east. The retained Rochester Airport site lies to the northwest and, to the south, the site is bounded by existing residential development.

Local Road Network

4.6. Rochester Airport is located between the A229 to the east and the B2097 to the west. These roads meet to the south at the Bridgewood roundabout interchange. The A229 continues over the roundabout to the south via a grade-separated flyover with the signalised roundabout giving access to the B2097 and the A2045 Walderslade Woods which runs to the south and east of the junction.

4.7. To the south of the Bridgewood roundabout is another grade-separated junction which connects the A229 to the link road leading east to the M2 motorway. The M2 grade-separated interchange also gives access to the A2045 to the east meaning that there is an element of route-choice available for drivers travelling between the A229, M2 and A2045.

4.8. From the Bridgewood junction, the A229 Maidstone Road continues north and meets the Horsted Gyratory where the A229 City Way continues north to Rochester town centre and the A230 Maidstone Road continues northeast to Chatham town centre.

4.9. To the west of the airport site, the B2097 Rochester Road gives access to Laker Road and Lankester Parker Road which serve the industrial estates. The B2097 Rochester Road becomes the B2097 Maidstone Road as it approaches Rochester town centre, further to the north.

4.10. The location of the site is shown in Figure 1.

Public Transport

4.11. The area is served by a number of bus routes, primarily Service 101 which runs via the A229 to Maidstone in one direction and Chatham and Gillingham in the other direction. On the western side of the site, Service 142 operates via Warren Wood between Blue Bell village and Rochester and Chatham. The frequency of bus services on these routes are summarised in Table 4.1 below. The timetables are appended to this report at Appendix 1.

Table 4.1: Local bus services

Service Number	Route	Service Interval					
		Monday - Friday		Saturday		Sunday	
		Daytime	Evening	Daytime	Evening	Daytime	Evening
101	Maidstone – Chatham – Gillingham	12 minutes	30 minutes	12 minutes	30 minutes	20 minutes	2 per hour
142	Chatham – Rochester – Blue Bell Hill	60 minutes	-	120 minutes	-	-	-

4.12. The nearest railway stations are Rochester and Chatham, both approximately 4km to the north of the site. There are direct services from these stations to key destinations including London Victoria, London St Pancras International, Dover, Ramsgate, Faversham and Luton.

Pedestrian and Cycle Facilities

4.13. The majority of the existing pedestrian and cycle facilities are found to the east of the airport with limited facilities in the vicinity of the B2097. There are no footways on a section of the B2097 to the south of Laker Road. Existing pedestrian facilities include a signalised crossing on the A229 providing access to the Davis Estate area and southbound bus stops on Maidstone Road. There is a cycle route along the A229 consisting of both on-street and off-street paths. This route connects the Walderslade area with Rochester town centre.

4.14. The areas that can be reached by walking and cycling 5, 10 and 15 minutes from the Northern Area are shown in Figures 2 and 3 respectively.

Historical Accident Data

4.15. Accident data for the five year period up to September 2017 has been reviewed for the area in the immediate vicinity of the site. There have been a number of 'slight' incidents, primarily located at junctions. There have been three 'serious' incidents on the A229 Maidstone Road section of road between Bridgewood roundabout and Shirley Avenue roundabout. The first incident occurred at the Bridgewood roundabout in May 2014 involving a car and motorcycle. The second incident occurred in icy conditions in December 2014 on the A229 slip road involving a motorcycle. The third incident occurred in July 2017 involving a car and pedestrian crossing at the signalised pedestrian crossing adjacent to Watson Avenue.

4.16. A summary of these accidents can be found at Appendix 2.

5.0 DEVELOPMENT PROPOSALS

5.1. The Innovation Park Medway Masterplan allows for the erection of up to 101,000m² of Business and General Industrial floor space (science park and innovation uses) with associated means of access, distributor and service roads, parking facilities, footpaths and cycle ways, and landscaping.

5.2. A number of new access points are proposed to connect the site to existing infrastructure. For the Northern Area, three points of access are proposed from Laker Road with the central access point planned to be a bus access and the northern and southern internal roads being used by all traffic to access the parking areas.

5.3. The Southern Area will be accessed by vehicles from the A229 via the Innovation Centre access. There is the potential for a future pedestrian / cycle link along the western boundary of the airport to connect the Northern and Southern Areas.

5.4. The 'Runway Park' green spine will form the core of the landscaping strategy for the Innovation Park and will provide a key route for pedestrians through the Northern Area.

5.5. Car parking for the development it to be provided in accordance with Medway Council's parking standards. It is noted that these parking standards are maximum and there may be potential to reduce the overall number of parking spaces for the Innovation Park based on a review of the anticipated parking accumulation.

5.6. Minimum requirements will be met for accessible spaces, cycle parking, delivery spaces and electric vehicle charging provision. Motorcycle parking will also be provided.

5.7. The development is expected to be delivered in phases with Phase 1 anticipated to comprise the north-western section of the Northern Area and the eastern section of the Southern Area, giving around 28,200m² GFA.

5.8. There is a long-term aspiration for a new link connecting the Northern Area to the existing road network in the vicinity of Horsted Gyratory in order to allow improved connections for pedestrians, cyclists and buses. This will improve accessibility between the site and areas to the north and east.

6.0 TRIP GENERATION AND DISTRIBUTION

Trip Generation

6.1. A series of technical notes have been written and circulated which review the trip generation currently allocated for the Rochester Airport site in Medway Council's traffic modelling assessment and compares this with the trip rates and traffic generation associated with an Innovation Park development using current trip rates from the TRICS database. The Technical Notes are appended to this report at Appendix 3.

6.2. A modified set of vehicle trip rates has been calculated by applying a mode share obtained by reviewing the journey to work data for the local workplace population to the total people trips rates in the TRICS database. This is considered to be representative for Innovation Park Medway.

6.3. The floor area has been calculated that would generate the equivalent amount of vehicle traffic as that expected for the B1/B2 employment site allocations in the Medway strategic traffic modelling. Technical Note 2 concludes that an Innovation Park of around 101,000m² will generate less traffic in each of the peak hours than the four employment allocation sites combined based on the trip rates presented in this note.

6.4. Taking the floor areas from the illustrative masterplan, Table 6.1 summarises the total people trip rates and number of predicted person trips from an Innovation Park development of 100,648m².

Table 6.1: Innovation Park total people rates (per 100m²) and peak hour person trips

	Trip Rate In	Trip Rate Out	Trip Rate Total	Predicted Trips In	Predicted Trips Out	Predicted Total Trips
AM Peak Hour	1.414	0.249	1.663	1,428	251	1,680
PM Peak Hour	0.118	1.030	1.148	119	1,040	1,159

6.5. The table above shows that it is anticipated the Innovation Park will generate in the region of 1,680 two-way person trips in the AM peak hour and 1,159 two-way person trips in the PM peak hour.

6.6. Table 6.2 summarises the vehicle trip rates and number of predicted vehicle trips from an Innovation Park development of 100,648m².

Table 6.2: Innovation Park vehicle trip rates (per 100m²) and peak hour vehicle trips

	Trip Rate In	Trip Rate Out	Trip Rate Total	Predicted Trips In	Predicted Trips Out	Predicted Total Trips
AM Peak Hour	0.919	0.162	1.081	928	164	1,092
PM Peak Hour	0.077	0.670	0.746	77	676	753

6.7. The table above shows that it is anticipated the Innovation Park will generate in the region of 1,092 two-way vehicle trips in the AM peak hour and 753 two-way vehicle trips in the PM peak hour.

Trip Distribution

6.8. The journey to work data to employment in the local area has been used to distribute the proposed development traffic onto the local road network by assigning trips via the following key routes in the proportions shown:

- A229 N (from Rochester / Chatham) 5%
- A230 N (from Chatham / Gillingham) 27%
- A2045 (from Walderslade) 9%
- M2 E (from east Kent) 16%
- A229 S (from Maidstone / M20) 18%
- M2 N (from Gravesend / A2) 8%
- B2097 N (from Rochester) 17%

6.9. The comprehensive existing highway network will result in the proposed development traffic dispersing relatively quickly on the network. Figures 4 and 5 show the proposed development distribution for the Northern Area and Southern Area respectively. Figures 6 and 7 show the proposed development trips assigned to the road network in the AM and PM peak hours respectively based on the proposed distribution based on a total floor area of 84,048m² for the Northern Area and 16,600m² for the Southern Area.

Traffic Growth and Assessment Years

6.10. The impacts of the development on the local junctions will be assessed for the period of five years from the current base year. The junctions will therefore be assessed for 2018 and 2023. A growth factor has been applied to the base year in order to forecast the increase in background traffic by 2023. The growth factor has been obtained by using the TEMPRO/NTM database. The growth factors for the Medway area for 2018-2023 are 1.076 in both the AM peak period and PM peak period.

Impact on Local Road Junctions

6.11. The impact of the proposed development traffic on the local road junctions will be dependent, in part, on the proposed phasing and access arrangements. In Phase 1, the Northern Area will have the greatest impact on the Lankester Parker Road junction with Rochester Road due to the parcels expected to form Phase 1 being located at the northern end of the Northern Area. Traffic arriving and departing to and from the south is likely to make use of the Laker Road junction as an alternative to Lankester Parker Road. The quantum of traffic using Laker Road will increase as development of the Northern Area continues in future phases.

6.12. It is expected that junction capacity improvements will be required at both the Lankester Parker Road and Laker Road junctions with Rochester Road. The precise timescales for implementing junction improvements will be based on a quantum of development. Both junctions currently comprise a ghost island right turn layout. The level of turning traffic will increase with the introduction of proposed development traffic. Once the anticipated queue lengths for arriving traffic exceed the existing queuing provision at the junction it will either be necessary to extend the length of the right turn lane, or signalise the junction to control the turning movements more effectively. Signalisation will assist in allowing departing traffic in the PM peak period to exit the minor roads onto Rochester Road.

6.13. The proposed development traffic associated with the Southern Area will primarily have an impact at the Innovation Centre access and the Shirley Road roundabout to the north, as all development traffic departing the Southern Area will be required to use this junction with the existing road network layout. For later phases of the development it is proposed to investigate the introduction of an all-movement signalised junction at the Innovation Centre access which would remove the need for traffic arriving from the north and traffic departing to the south to have to u-turn at the adjacent roundabouts. The time of implementation for any proposed junction modification would be dependent on quantum and phasing.

Aimsun Modelling

6.14. Fore Consulting Limited (Fore) and Sweco are appointed by Medway Council to prepare the Strategic Transport Assessment (STA) for the Local Plan. Their commission has involved the assessment of the impact on the highway network of various Strategic Development Options using the Medway Aimsun Model. Medway Council has subsequently commissioned Fore to undertake microsimulation modelling of the traffic impacts of the proposed Innovation Park Medway development.

6.15. The base year (2016) model development, calibration and validation is set out in the 'Medway Aimsun Model: Model Validation Report' (June 2017). This has been reviewed by Medway Council and Highways England and the model is considered to be fit for purpose for assessing the Medway Local Plan and other proposed development. The microsimulation subnetwork has been extended to cover the development site and key local junctions.

6.16. Reference Case scenarios have been previously development by Fore as part of the current Local Plan modelling. The scenario includes all committed development and committed highway improvements (up to November 2017) that are expected to be in place by 2028 and 2035.

6.17. The traffic associated with the Innovation Park Medway has been assigned at subnetwork level only and does not take into account any wider reassignments within the Medway area that may occur as a result of the development. This presents a robust assessment. The impact of the development is assessed against the 2028 and 2035 Reference Cases. A 2028 'Do Something' scenario is also assessed which includes a range of mitigation measures aimed at negating the impact of the proposed development.

6.18. The modelling shows that overall network delay is likely to increase significantly as a result of background traffic growth by 2028 and be operating over capacity in the Reference Case scenario. Therefore, the addition of the Innovation Park Medway traffic onto an already congested highway network results in further increases in delay during both peak periods.

6.19. The operation of junctions on the B2097 and A229 are reported to be affected by the presence of congestion downstream at the Bridgewood Roundabout. It is noted that the Walderslade Woods approach is operating close to/over capacity and the B2097 approach is over capacity in the Reference Case scenarios.

6.20. Based on the model results a number of possible mitigation schemes have been identified by Fore and tested within the model. No assessment of engineering feasibility or deliverability has been undertaken.

6.21. As Bridgewood Roundabout is shown as causing congestion at adjacent junctions on the B2097 and A229 a number of capacity improvements have been identified:

- Lane allocation changes on the circulation lanes of the roundabout
- Two-lane exit to the B2097
- Widening of flare on the B2097 entry arm

6.22. Further capacity improvements are identified at the Lord Lees Roundabout to the south of the Bridgewood Roundabout:

- Lengthening three-lane flare on southbound approach
- Three lanes provided on the eastern circulatory carriageway
- Three-lane exit on the southbound exit

6.23. The modelling undertaken shows that with the Bridgewood Roundabout mitigation scheme in place, both delay and queuing would be reduced on the A229 approach. There are significant reductions in delay and queue length on the Walderslade Woods and B2097 approaches.

6.24. Capacity improvements have also been identified at the Rochester Airport Estate access. However, the proposed development is likely to see the majority of traffic using Laker Road and Lankester Parker Road to reach the site from the south. It is therefore suggested that any junction improvements that may be required on this section of the network be located at these junctions instead of the Rochester Airport Estate access. The modelling results show that the mitigation measures identified at the Bridgewood Roundabout would result in benefits in terms of delay and queuing at the Lankester Parker Road and Laker Road junctions.

7.0 SUSTAINABILITY

Public Transport

7.1. The area is served by a number of bus routes, primarily Service 101 which runs via the A229 to Maidstone in one direction and Chatham and Gillingham in the other direction.

7.2. The internal layout of the Northern Area has been designed to accommodate bus services. It is hoped that the Innovation Park will be served by new or re-routed bus services via B2097.

7.3. Modern public transport systems such as the ArrivaClick service will be explored as it is anticipated that this type of facility would fit in well with the Innovation Park Medway's ethos. This system is a flexible, on-demand app-based minibus service which takes multiple passengers heading in the same direction in a shared vehicle. Customers are guaranteed a seat on a luxury minibus which has wifi and charging points. The system currently operates in Kent around Sittingbourne and Kent Science Park and plans to expand its operation zone in the future.

Pedestrians and Cyclists

7.4. Pedestrians and cyclists are catered for by a reasonable network of footways and cycle facilities at present. The aspiration of Innovation Park Medway is to improve linkages for non-car modes of travel with new footpaths and routes suitable for cyclists. This will allow for easy access to and from the site by cyclists and for pedestrians to walk to and from the site and local facilities and bus stops. There is a long term aspiration to improve accessibility between the site and areas to the north and east.

Travel Plan

7.5. The Travel Plan will promote sustainable modes of transport for residents to encourage travel by means other than the private car.

8.0 CONCLUSIONS

8.1. This Transport Assessment has been prepared in support of the proposed Innovation Park Medway development.

8.2. The trip generation exercise estimates that the proposed development will generate in the region of 1,680 two-way people trips in the AM peak hour and 1,159 two-way people trips in the PM peak hour. Of these total trips it is anticipated that 1,092 will be vehicle trips in the AM peak hour and 753 will be vehicle trips in the PM peak hour.

8.3. This vehicle trip generation is less than the allocated employment sites are considered to potentially generate using the assumed B1/B2 land use mix. Modelling has been undertaken by Fore Consulting Limited to compare the operation of the road network of future Reference Case scenarios without the Innovation Park Medway development with the scenario including proposed development. Mitigation measures have been identified, notably at the Bridgewood Roundabout, that would result in significant reductions in delay and queue length on approaches to the Bridgewood roundabout.

8.4. The Innovation Park can be accessed by means other than the private car. The masterplan provides a means of access for bus services which will provide good connectivity between the site and the town centre and surrounding areas. The bus services also allow for onward journeys by train from Rochester and Chatham stations where there are direct train services to key destinations including London Victoria, London St Pancras International, Dover, Ramsgate, Faversham and Luton.

8.5. Pedestrians and cyclists are catered for currently by a reasonable network of footways and cycle facilities. The Innovation Park aims to improve accessibility by non-car modes of travel to provide better access to and from the site by cyclists and for pedestrians to walk to and from the site and local facilities.

Figures

Innovation Park, Medway

Client: Medway Council

Figure 1:
Site Location Plan

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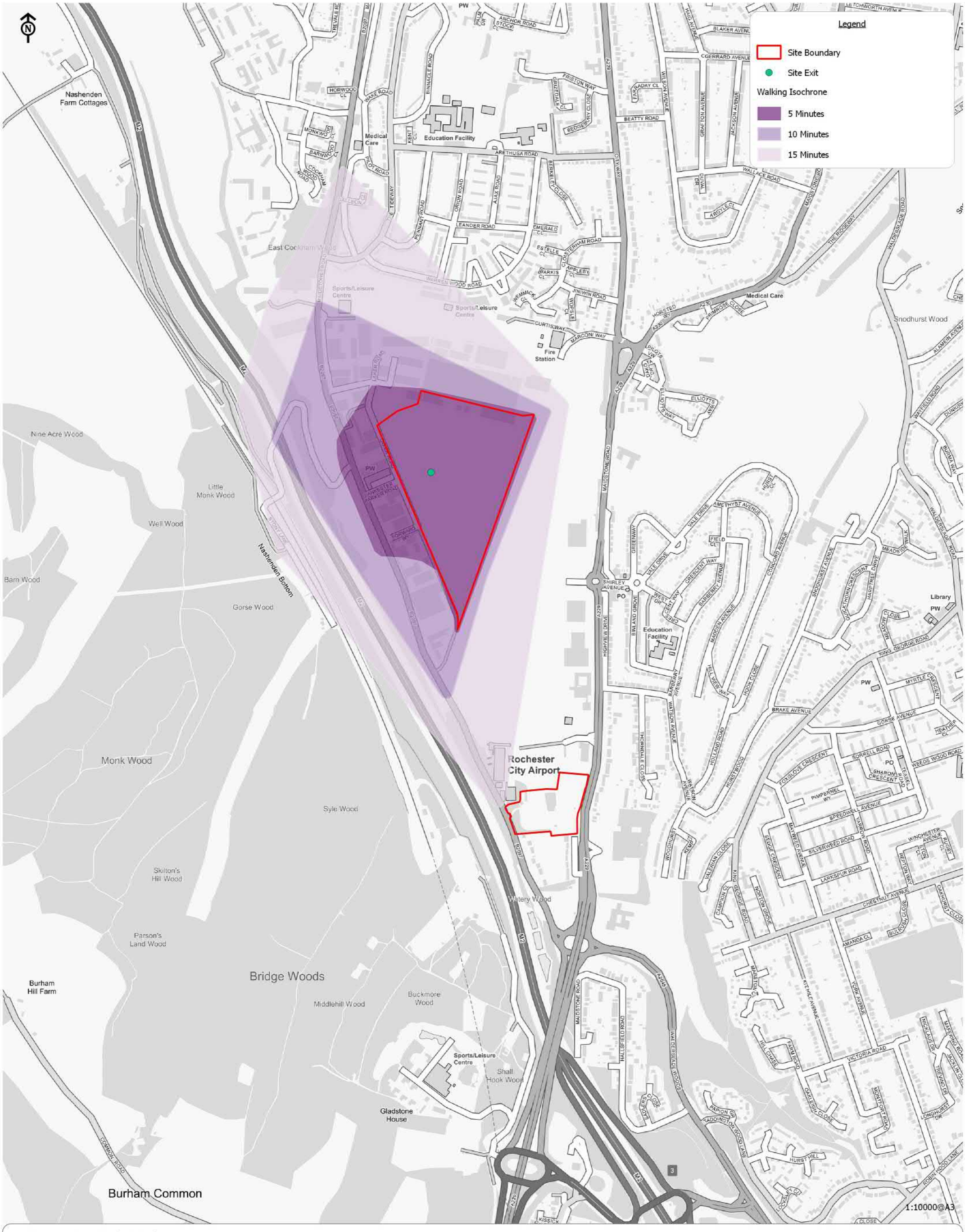

Innovation Park, Medway

Client: Medway Council

Figure 2:
Walking Isochrone

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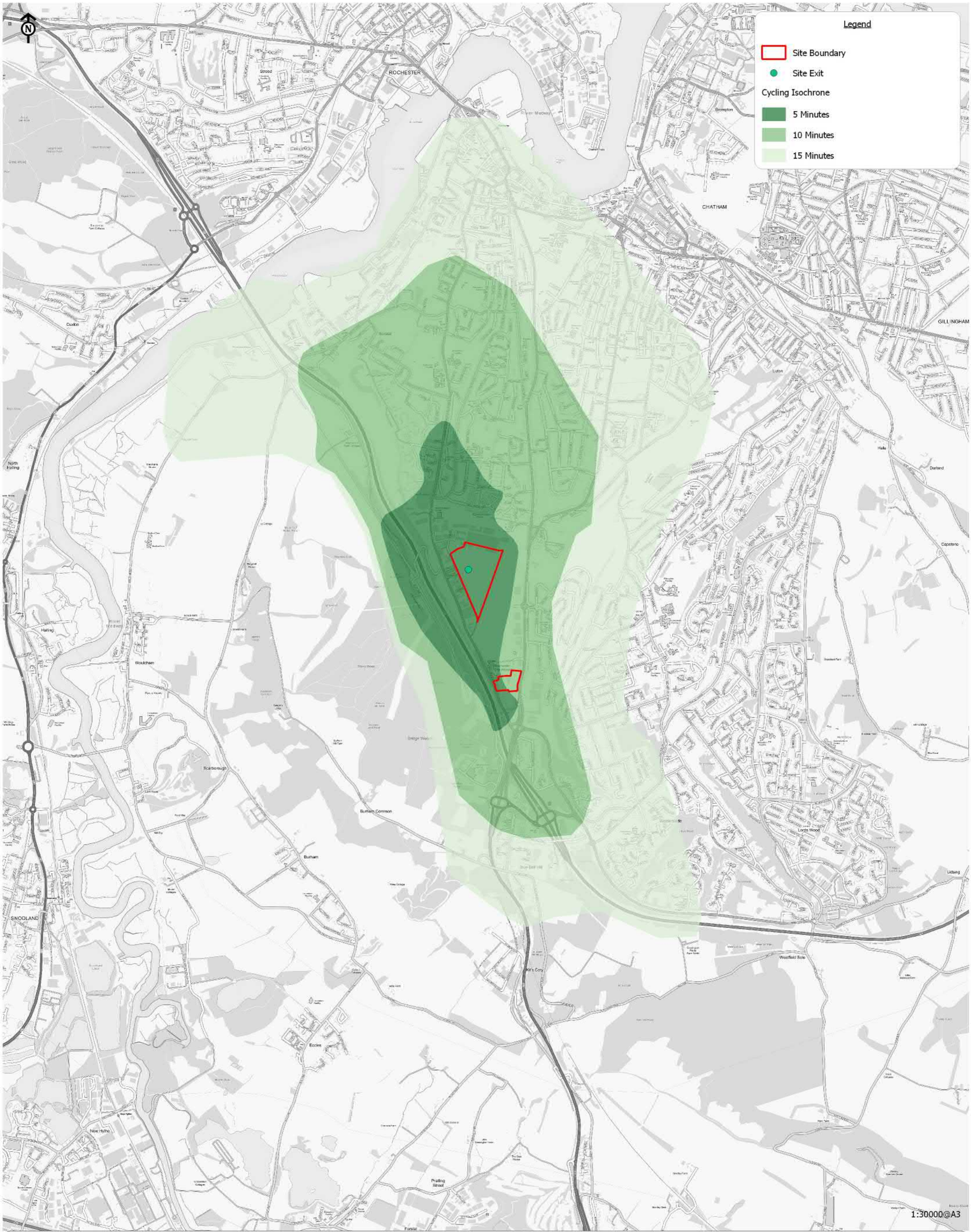

Innovation Park, Medway

Client: Medway Council

Figure 3:
Cycling Isochrone

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Figure 4 - Distribution of development traffic for Northern Area

Image provided courtesy of Google 2013 via Google Earth Professional. Image © 2013 Infoterra Ltd & Bluesky

Figure 5 - Distribution of development traffic for Southern Area

Figure 6 - Development trip generation - AM peak hour

Figure 7 - Development trip generation - PM peak hour

Appendix 1: Public Transport Information

traveline
public transport info

traveline.info/se

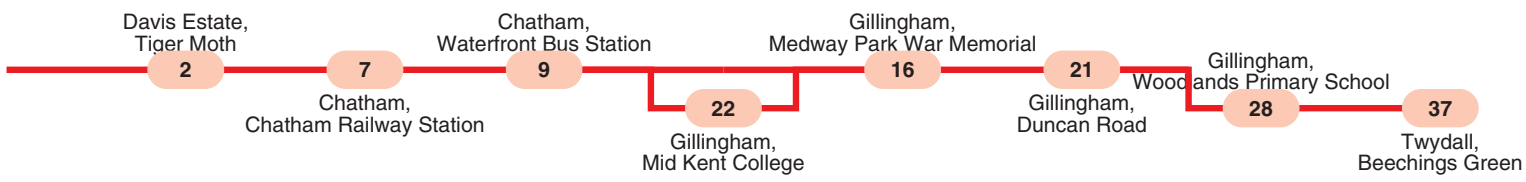
0871 200 22 33

Calls cost 12p per minute plus your phone company's access charge

Bus departures from this stop
Davis Estate
opp Watson Avenue

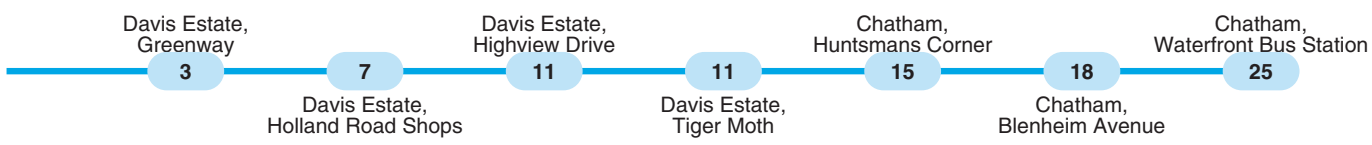
101 Maidstone - Chatham - Gillingham (- Twydall)

Arriva Kent & Surrey



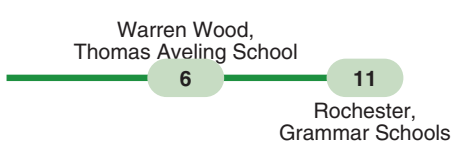
185 Kits Coty - Bluebell Hill - Davis Estate - Chatham

Nu-Venture



660 Walderslade - Rochester Grammar Schools

Arriva Kent & Surrey



The numbers circled indicate approximate timings in minutes from Davis Estate, Watson Avenue

Mondays to Fridays

Bus times as at 24th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0653	101		*0819*	101	1	*1019*	101		*1219*	101		*1419*	101		*1601*	101		*1805*	101	4	*2027*	101	4
0705	101		*0832*	101	1	*1031*	101		*1231*	101		*1431*	101		*1614*	101		*1817*	101	4	*2056*	101	2
0718	101		*0844*	101		*1043*	101		*1243*	101		*1443*	101		*1627*	101		*1829*	101		*2127*	101	4
0730	101		*0856*	101		*1055*	101		*1255*	101		*1455*	101		*1641*	101		*1840*	101	4	*2156*	101	2
0742	101		*0908*	101		*1107*	101		*1307*	101		*1507*	101	SHOL	*1654*	101		*1851*	101	4	*2227*	101	4
0749	660	SDO	*0920*	101		*1119*	101		*1319*	101		*1507*	101	SDO	*1708*	101		*1901*	101		*2256*	101	2
0754	101	1	*0931*	101		*1131*	101		*1331*	101		*1519*	101	SHOL	*1719*	101		*1913*	101		*2327*	101	
0754	660	SDO	*0943*	101		*1143*	101		*1343*	101		*1519*	101	SDO	*1731*	101		*1926*	101	4			
0805	185		*0955*	101		*1155*	101		*1355*	101		*1534*	101		*1743*	101		*1941*	101				
0807	101	1	*1007*	101		*1207*	101		*1407*	101		*1548*	101		*1755*	101	4	*1956*	101				

Saturdays

Bus times as at 25th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0027	101		*0931*	101		*1107*	101		*1243*	101		*1419*	101		*1555*	101		*1731*	101		*1956*	101	
0657	101		*0943*	101		*1119*	101		*1255*	101		*1431*	101		*1607*	101		*1743*	101	4	*2027*	101	4
0728	101		*0955*	101		*1131*	101		*1307*	101		*1443*	101		*1619*	101		*1754*	101	4	*2056*	101	2
0758	101		*1007*	101		*1143*	101		*1319*	101		*1455*	101		*1631*	101		*1806*	101		*2127*	101	4
0800	185	3	*1019*	101		*1155*	101		*1331*	101		*1507*	101		*1643*	101		*1826*	101	4	*2156*	101	2
0828	101		*1031*	101		*1207*	101		*1343*	101		*1519*	101		*1655*	101	4	*1846*	101		*2227*	101	4
0853	101		*1043*	101		*1219*	101		*1355*	101		*1531*	101		*1707*	101	4	*1906*	101	4	*2256*	101	2
0919	101		*1055*	101		*1231*	101		*1407*	101		*1543*	101		*1719*	101	4	*1926*	101	4	*2327*	101	

Sundays

Bus times as at 26th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0027	101		*1104*	101		*1214*	101	4	*1334*	101		*1434*	101	4	*1554*	101	4	*1724*	101	4	*2024*	101	
0924	101		*1114*	101	4	*1234*	101		*1334*	101	4	*1454*	101	4	*1604*	101		*1732*	101	4	*2032*	101	
0934	101	4	*1134*	101		*1234*	101	4	*1354*	101	4	*1504*	101		*1614*	101	4	*1824*	101	4			
1024	101		*1134*	101	4	*1254*	101	4	*1404*	101		*1514*	101	4	*1634*	101		*1832*	101	4			
1034	101	4	*1154*	101	4	*1304*	101		*1414*	101	4	*1534*	101		*1634*	101	4	*1924*	101				
1054	101	4	*1204*	101		*1314*	101	4	*1434*	101		*1534*	101	4	*1704*	101	4	*1932*	101				

Notes: **SHOL** - Operates during School Holidays
SDO - Schooldays only

1 - serves Gillingham, Mid Kent College
2 - terminates at Chatham, Waterfront Bus Station
3 - terminates at Davis Estate, Highview Drive
4 - terminates at Twydall, Beechings Green

Times shown in italics are approximate times

Next bus times on your phone

the code for this stop is **chagwjp**

Mobile internet: Use the QR code (left) if you can, or enter the stop code at www.nextbuses.mobi

By SMS: text the stop code to 84268. Add a space and service number for just that service.

Internet enquiries incur normal mobile internet charges. SMS messages cost 25p plus your normal text message charge.

Live Departure information will be given if available (eg 3 mins) - otherwise scheduled times will be shown as clock times (eg 1007).

server ds10045; date 24.08.2018 11:34:56; stop Davis Estate, Watson Avenue ; layout small; NAPTANID: 249000000667

traveline
public transport info

traveline.info/se

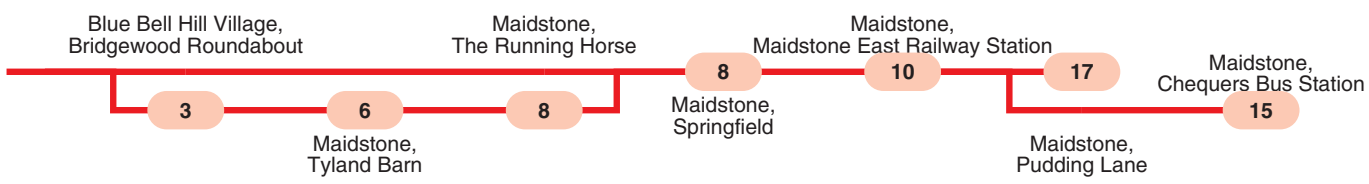
0871 200 22 33

Calls cost 12p per minute plus your phone company's access charge

Bus departures from this stop
Davis Estate
adj Watson Avenue

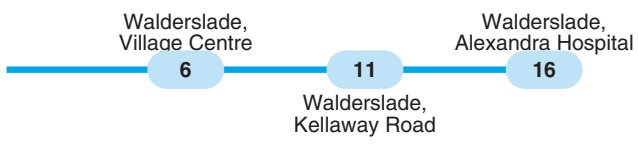
101 (Twydall -) Gillingham - Chatham - Maidstone

Arriva Kent & Surrey



660 Rochester Grammar Schools - Walderslade

Arriva Kent & Surrey



The numbers circled indicate approximate timings in minutes from Davis Estate, Watson Avenue

Mondays to Fridays

Bus times as at 24th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0614	101		*0804*	101		*1009*	101		*1209*	101		*1409*	101		*1600*	101		*1712*	101	SDO	*1900*	101	2
0626	101		*0816*	101		*1021*	101		*1221*	101		*1421*	101		*1610*	101		*1723*	101	SHOL	*1916*	101	2
0638	101		*0828*	101		*1033*	101		*1233*	101		*1433*	101		*1622*	101		*1726*	101	SDO	*1946*	101	2
0650	101		*0841*	101		*1045*	101		*1245*	101		*1445*	101		*1632*	101	SHOL	*1734*	101	SHOL	*2017*	101	1,2
0659	101		*0855*	101		*1057*	101		*1257*	101		*1457*	101		*1635*	101	SDO	*1738*	101	SDO	*2047*	101	1,2
0710	101		*0908*	101		*1109*	101		*1309*	101		*1509*	101		*1644*	101	SHOL	*1748*	101		*2116*	101	2
0722	101		*0921*	101		*1121*	101		*1321*	101		*1521*	101		*1647*	101	SDO	*1801*	101		*2147*	101	1,2
0731	101		*0933*	101		*1133*	101		*1333*	101		*1538*	101		*1656*	101	SHOL	*1813*	101		*2216*	101	2
0740	101		*0945*	101		*1145*	101		*1345*	101		*1541*	660	SDO	*1659*	101	SDO	*1829*	101		*2247*	101	1,2
0752	101		*0957*	101		*1157*	101		*1357*	101		*1550*	101		*1709*	101	SHOL	*1845*	101	2	*2347*	101	1,2,Fr

Saturdays

Bus times as at 25th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0617	101		*0909*	101		*1045*	101		*1221*	101		*1357*	101		*1533*	101		*1709*	101		*2017*	101	1,2
0647	101		*0921*	101		*1057*	101		*1233*	101		*1409*	101		*1545*	101		*1721*	101		*2047*	101	1,2
0717	101		*0933*	101		*1109*	101		*1245*	101		*1421*	101		*1557*	101		*1740*	101		*2116*	101	2
0747	101		*0945*	101		*1121*	101		*1257*	101		*1433*	101		*1609*	101		*1800*	101		*2147*	101	1,2
0811	101		*0957*	101		*1133*	101		*1309*	101		*1445*	101		*1621*	101		*1825*	101		*2216*	101	2
0833	101		*1009*	101		*1145*	101		*1321*	101		*1457*	101		*1633*	101		*1850*	101	2	*2247*	101	1,2
0845	101		*1021*	101		*1157*	101		*1333*	101		*1509*	101		*1645*	101		*1920*	101	2	*2347*	101	1,2
0857	101		*1033*	101		*1209*	101		*1345*	101		*1521*	101		*1657*	101		*1950*	101	2			

Sundays

Bus times as at 26th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0838	101		*1022*	101		*1142*	101		*1248*	101		*1402*	101		*1518*	101		*1643*	101		*1952*	101	
0843	101		*1042*	101		*1148*	101		*1302*	101		*1418*	101		*1522*	101		*1742*	101				
0938	101		*1048*	101		*1202*	101		*1318*	101		*1422*	101		*1542*	101		*1743*	101				
0943	101		*1102*	101		*1218*	101		*1322*	101		*1442*	101		*1548*	101		*1843*	101	2			
1002	101		*1118*	101		*1222*	101		*1342*	101		*1448*	101		*1602*	101		*1852*	101				
1018	101		*1122*	101		*1242*	101		*1348*	101		*1502*	101		*1642*	101		*1943*	101	2			

Notes: **SHOL** - Operates during School Holidays
Fr - Operates only on Fridays
SDO - Schooldays only
Times shown in italics are approximate times

1 - serves also from Blue Bell Hill Village, Bridgewood Roundabout to Maidstone, The Running Horse
2 - terminates at Maidstone, Chequers Bus Station

Next bus times on your phone

the code for this stop is **chagwjm**

Mobile internet: Use the QR code (left) if you can, or enter the stop code at www.nextbuses.mobi
By SMS: text the stop code to 84268. Add a space and service number for just that service.
Internet enquiries incur normal mobile internet charges. SMS messages cost 25p plus your normal text message charge.
Live Departure information will be given if available (eg 3 mins) - otherwise scheduled times will be shown as clock times (eg 1007).

server ds10045; date 24.08.2018 11:36:11; stop Davis Estate, Watson Avenue ; layout small; NAPTANID: 249000000666

traveline
public transport info

traveline.info/se

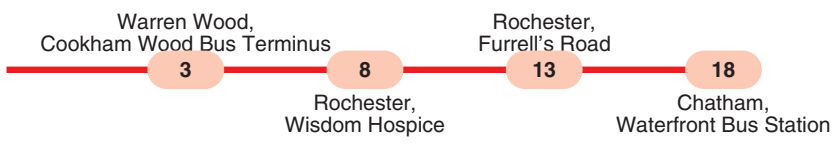
0871 200 22 33
Calls cost 12p per minute plus your phone company's access charge

Bus departures from this stop
Warren Wood
adj Rochester Airport Industrial Estate

142 Kits Coty - Blue Bell Hill - Rochester - Chatham

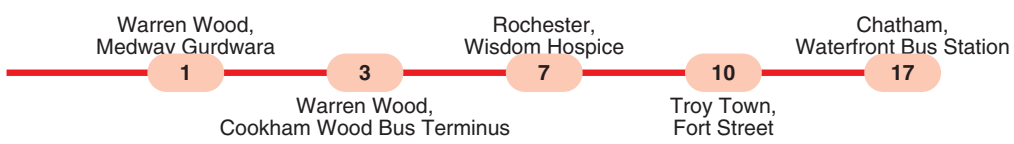
Arriva Kent & Surrey

arriva a DB company



142 Blue Bell Hill - Rochester - Chatham

Nu-Venture



The numbers circled indicate approximate timings in minutes from Warren Wood, Rochester Airport Industrial Estate

Mondays to Fridays

Bus times as at 24th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0909	142	AK	1115	142	NV	1315	142	NV	1515	142	NV	1750	142	NV
1015	142	NV	1215	142	NV	1415	142	NV	1630	142	NV			

Saturdays

Bus times as at 25th August 2018

Time	Service	Note	Time	Service	Note	Time	Service	Note	Time	Service	Note
0915	142	NV	1115	142	NV	1315	142	NV	1515	142	NV

Sundays

No Service

Notes: **AK** - Arriva Kent & Surrey **NV** - Nu-Venture

Next bus times on your phone

the code for this stop is **chamamd**

Mobile internet: Use the QR code (left) if you can, or enter the stop code at www.nextbuses.mobi
By SMS: text the stop code to 84268. Add a space and service number for just that service.
Internet enquiries incur normal mobile internet charges. SMS messages cost 25p plus your normal text message charge.
Live Departure information will be given if available (eg 3 mins) - otherwise scheduled times will be shown as clock times (eg 1007).

traveline
public transport info

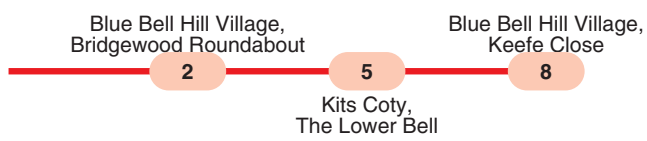
traveline.info/se

0871 200 22 33
Calls cost 12p per minute plus your phone company's access charge

Bus departures from this stop
Warren Wood
opp Rochester Airport Industrial Estate

142 Chatham - Rochester - Kits Coty - Blue Bell Hill

Nu-Venture



The numbers circled indicate approximate timings in minutes from Warren Wood, Rochester Airport Industrial Estate

Mondays to Fridays

Bus times as at 24th August 2018

Time Service Note	Time Service Note	Time Service Note	Time Service Note	Time Service Note	Time Service Note	Time Service Note
0743 142	0958 142	1058 142	1158 142	1258 142	1358 142	1458 142

Saturdays

Bus times as at 25th August 2018

Time Service Note	Time Service Note	Time Service Note
1058 142	1258 142	1458 142

Sundays

No Service

Next bus times on your phone

the code for this stop is **chajmjm**

Mobile internet: Use the QR code (left) if you can, or enter the stop code at www.nextbuses.mobi
By SMS: text the stop code to 84268. Add a space and service number for just that service.
Internet enquiries incur normal mobile internet charges. SMS messages cost 25p plus your normal text message charge.
Live Departure information will be given if available (eg 3 mins) - otherwise scheduled times will be shown as clock times (eg 1007).

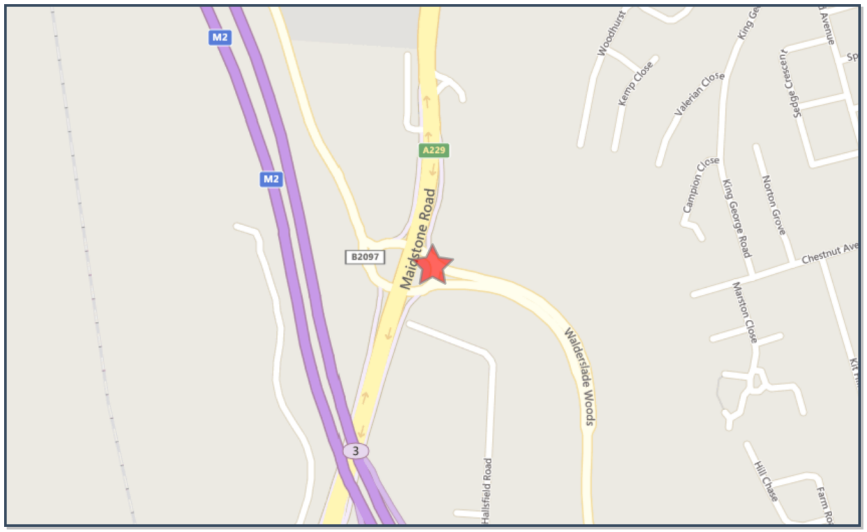
server ds10045; date 24.08.2018 11:37:38; stop Warren Wood, Rochester Airport Industrial Estate ; layout small; NAPTANID: 249000000874

Appendix 2: Accident Data

crashmap.co.uk

Crash Date:	Friday, May 02, 2014	**Time of Crash:**	5:35:00 AM	**Crash Reference:**	**2014460241405**

Highest Injury Severity:	Serious	**Road Number:**	A2045	**Number of Casualties:**	1
Highway Authority:	Kent exc Medway Towns			**Number of Vehicles:**	2
Local Authority:	Tonbridge and Malling District (B)			**OS Grid Reference:**	574730 163360
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present but unlit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	7	Male	26 - 35	Vehicle is moving off	Front	Journey as part of work	None	None
2	Motorcycle over 125cc and up to 500cc	18	Male	26 - 35	Vehicle is moving off	Nearside	Other	None	None

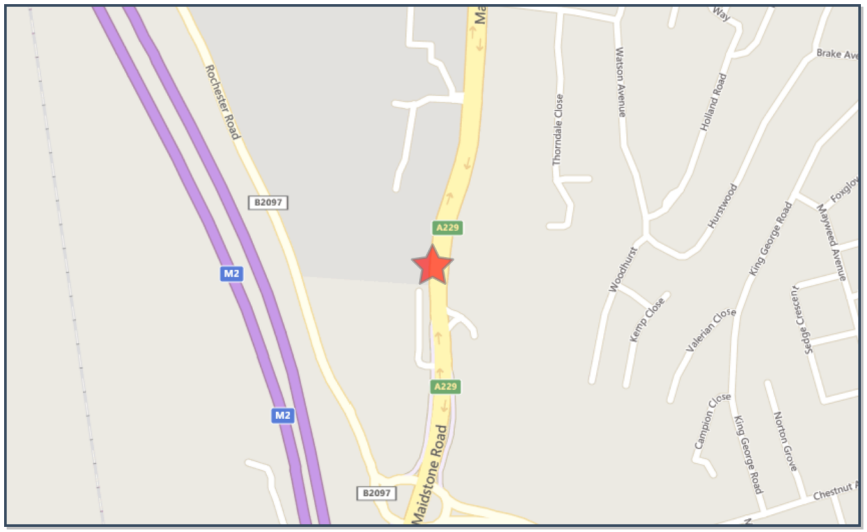
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

crashmap.co.uk

Crash Date:	Sunday, December 14, 2014	**Time of Crash:**	5:00:00 AM	**Crash Reference:**	**2014460250810**

Highest Injury Severity:	Serious	**Road Number:**	A229	**Number of Casualties:**	1
Highway Authority:	Medway Towns			**Number of Vehicles:**	1
Local Authority:	Medway			**OS Grid Reference:**	574700 163710
Weather Description:	Fine without high winds				
Road Surface Description:	Frost or Ice				
Speed Limit:	40				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Slip road				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 125cc and up to 500cc	4	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Commuting to/from work	None	None

Casualties

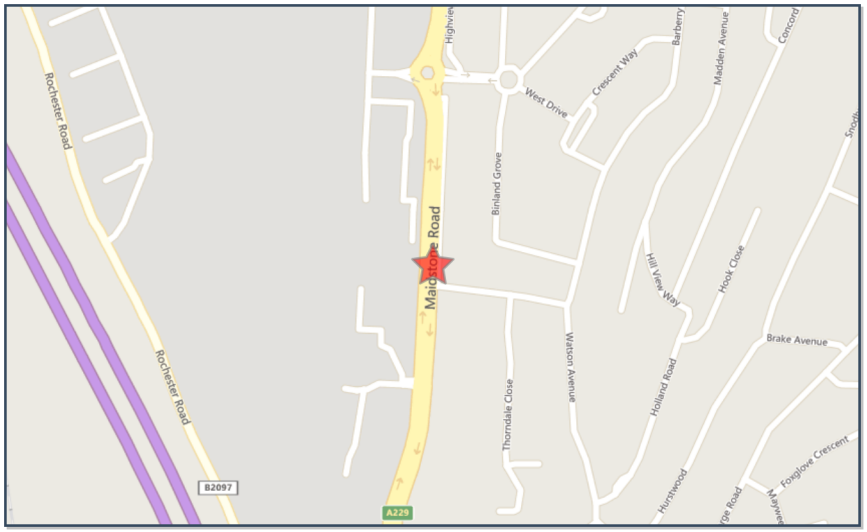
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other

crashmap.co.uk

2017 data is provisional and is subject to change

Crash Date:	Friday, July 14, 2017	**Time of Crash:**	3:20:00 PM	**Crash Reference:**	**2017460200665**

Highest Injury Severity:	Serious	**Road Number:**	A229	**Number of Casualties:**	1
Highway Authority:	Medway Towns			**Number of Vehicles:**	1
Local Authority:	Medway			**OS Grid Reference:**	574763 164128
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	Pelican, puffin, toucan or similar non-junction pedestrian light crossing				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

2017 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	65-74	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Female	75-84	In carriageway, crossing on pedestrian crossing facility	Crossing from driver's offside

Appendix 3: Technical Notes

Raven House
29 Linkfield Lane
Redhill
RH1 1SS

T: +44 (0)1737 784 500
E: transport@campbellreith.com

CampbellReith
consulting engineers

Technical Note T1

Project: Innovation Park Medway

From: Neal Murphy

File Ref: NMnm12841-220618-TN1.docx **Pages:** 6 **Date:** 22/06/2018

Subject Trip Rates and Traffic Generation Comparison

1.0 Executive Summary

1.1. This technical note presents a review of the trip generation currently allocated for the Rochester Airport site in Medway Council's traffic modelling assessment and compares this with the trip rates and traffic generation associated with an Innovation Park development, as currently proposed, using current trip rates from the TRICS database. This shows that the trip rates observed at Cambridge Science Park are less than those assumed for the B1/B2/B8 development. By applying a mode share obtained by reviewing the journey to work data for the local workplace population a modified set of trip rates has been calculated which is considered to be representative for Innovation Park Medway.

1.2. The floor area that would generate the equivalent amount of vehicle traffic as that allocated for the B1/B2/B8 development in the Medway traffic modelling has been calculated. This shows that an Innovation Park of 101,688m² floorspace is predicted to generate the same volume of vehicular traffic in the combined AM and PM peak hours as the 76,000m² B1/B2/B8 mix development.

2.0 Medway Trip Rates

2.1. It is understood that the current traffic modelling incorporates a development of 76,000m² floorspace that is split equally between use classes B1, B2 and B8. The two-way trips in the AM peak hour and PM peak hour have been provided and are summarised in Table 2.1.

Table 2.1 – Medway Council Traffic Modelling Trips

Use Class	Floorspace	Two-way trips AM peak hour	Two-way trips PM peak hour	Two-way trips AM+PM peak hour
B1	25,333m²	645	575	1,220
B2	25,333m²	312	221	533
B8	25,333m²	53	52	105
Total	76,000m²	**1,010**	**848**	**1,858**

2.2. Table 2.2 converts the two-way trips for each use class from Table 1 into a trip rate per 100m² of land use.

Table 2.2 – Medway Council Traffic Modelling Trip Rates

Use Class	Two-way trip rate AM peak hour	Two-way trip rate PM peak hour	Two-way trip rate AM+PM peak hour
B1	2.546	2.270	4.816
B2	1.232	0.872	2.104
B8	0.209	0.205	0.414
Combined	**1.329**	**1.116**	2.445

3.0 TRICS Database Trip Rates

3.1. The proposed development in for innovation uses. Given the specific nature of the development, which may include laboratory space etc., the employment density is expected to be lower than for conventional office use. The current version of the TRICS database (v7.5.1) has therefore been interrogated to obtain representative trip rates for an Innovation Park.

3.2. The following criteria have been used when selecting appropriate sites from the database for the residential units:

- Land Use 02/B – Employment – Business Park
- Suburban, Edge of Town, Neighbourhood Centre sites over 50,000m²
- Multi-modal weekday surveys from 2010 onwards
- Only latest surveys included where a site has been re-surveyed

3.3. The database matched one site, CA-02-B-03 Cambridge Science Park. The Person Trip Rates and Vehicle Trip Rates for this site are summarised in Table 3.1 with the full output presented at the end of this technical note.

Table 3.1 – Cambridge Science Park Trip Rates from the TRICS Database

Per 100m²	AM peak hour			PM peak hour		
	Trip Rate In	Trip Rate Out	Two-way Trip Rate	Two-way Trip Rate	Trip Rate Out	Two-way Trip Rate
Person Trip Rate	1.414	0.249	1.663	0.118	1.030	1.148
Vehicle Trip Rate	0.903	0.112	**1.015**	0.036	0.590	**0.626**

3.4. A comparison of the two-way vehicle trip rates presented in Tables 2.2 and 3.1 shows that the Cambridge Science Park trip rates are lower than the combined uses class trip rate currently used for the Rochester Airport site. However, the relative accessibility of the sites via non-car modes of transport should be considered in order to provide greater confidence in the calculated trip rates.

4.0 Modal Split

4.1. The vast majority of the trip generation of the Innovation Park in the AM and PM peak hours will be related to staff journeys to and from work. The Journey to Work data from Census 2011 has therefore been used to determine the likely modal split for the Innovation Park in the peak hours.

4.2. The Mid Layer Super Output Areas used for this assessment are Medway 026, Medway 033 and Tonbridge and Malling 001. The areas covered are shown in Figure 4.1. The modal split for these areas are shown in Figures 4.2 to 4.4 respectively.

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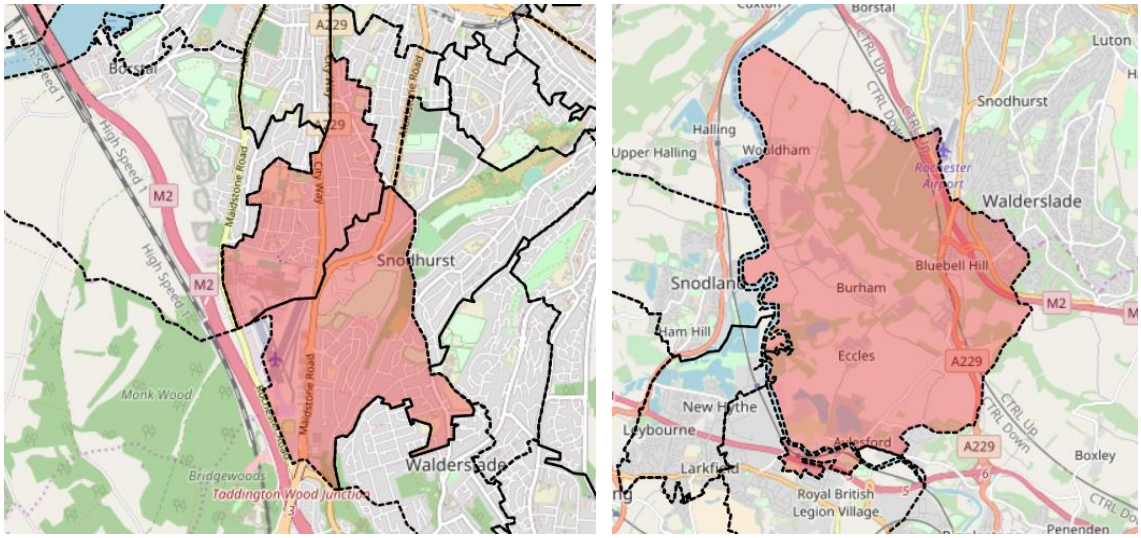

Figure 4.1 – Medway 026, Medway 033, and Tonbridge and Malling 001 Areas.

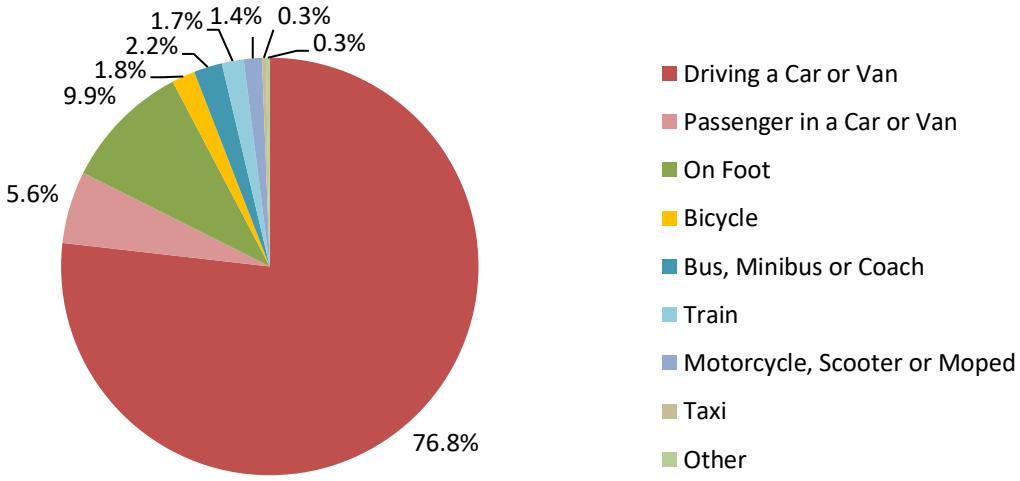

Figure 4.2 – Modal split of journeys to work (Workday population) for 'Medway 026'

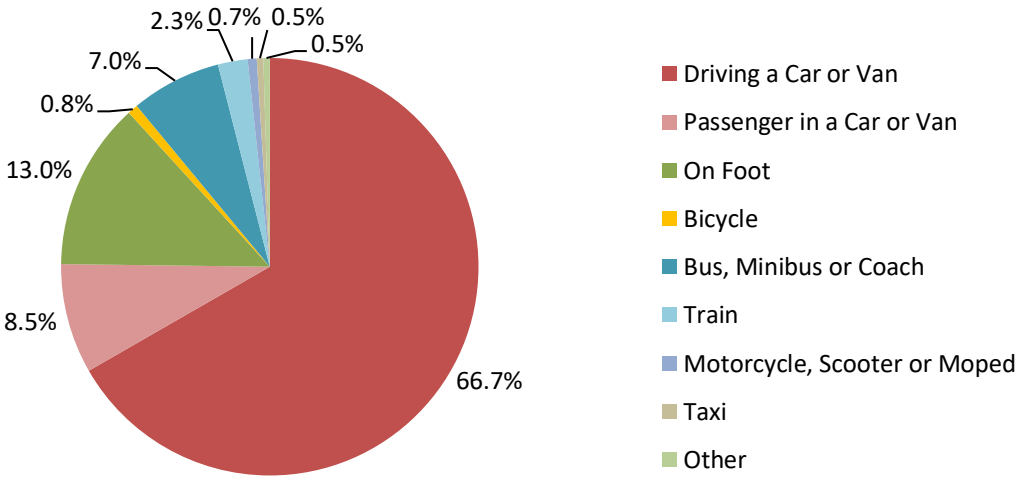

Figure 4.3 – Modal split of journeys to work (Workday population) for 'Medway 033'

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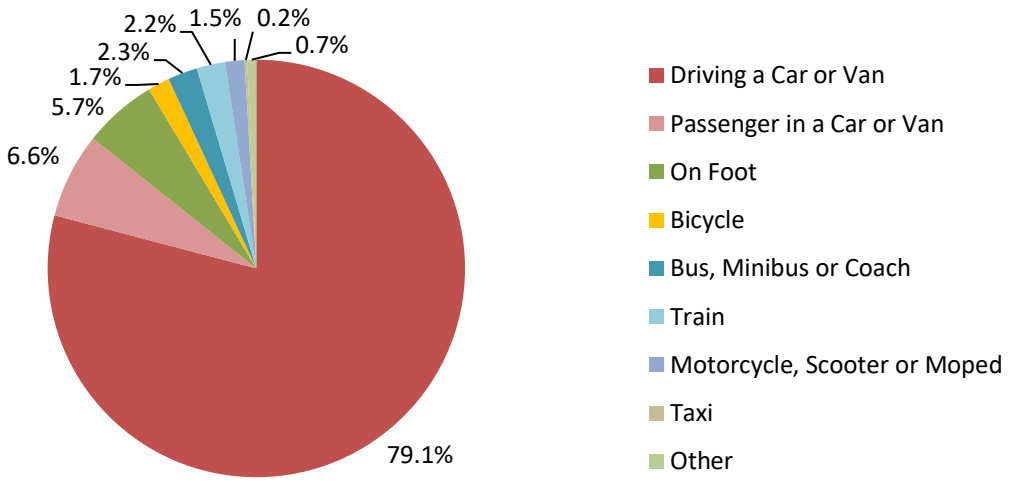

Figure 4.4 – Modal split of journeys to work (Workday population) for 'Tonbridge and Malling 001'

4.3. The Medway 033 area covers the existing Innovation Centre and commercial premises along Maidstone Road. This area has a higher proportion of journeys to work by bus, reflecting the presence of a frequent bus service along Maidstone Road. This area also has the lowest proportion of journeys to work by driving a car or van of the three areas considered.

4.4. For the purposes of establishing a mode share for trips to and from the Innovation Park in the peak hours it is considered appropriate to apply the modal split in Table 4.1. This assumes that journeys where the main mode of travel is by train will be completed by taxi or by a regular bus route serving the site. The implementation of a Travel Plan for the site will aim to further reduce the proportion of trips made by car.

Table 4.1 – Proposed modal split

Mode of Travel	Mode Share	Comments
Driving a car or van	64%	Based on 2011 Medway 033 share with allowance for mode shift to walking / cycling / bus
Passenger	8%	Based on 2011 Medway 033 share
On foot	13%	Based on Medway 033, plus allowance for potential increase due to new housing locally to the site
Bicycle	2%	Allowance for potential increase in existing mode share due to new housing locally
Bus, minibus or coach	11%	Based on Medway 033 share with allowance for potential service improvements and assumes completion of journeys where train is the main mode share
Motorcycle, scooter or moped	1%	Based on 2011 Medway share
Taxi	1%	Allowance for completion of journeys where train is the main mode share

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5.0 Modified Innovation Park Trip Rates

5.1. The mode share for 'driving a car or van' and 'taxi' presented in Table 4.1 have been combined, in order to present a robust assessment, and a factor of 0.65 applied to the Science Park Person Trip Rates presented in Table 3.1 to obtain a modified Vehicle Trip Rate, as shown in Table 5.1. This trip rate is considered appropriate for the type of development proposed. The vehicle trip rates obtained are higher than the vehicle trip rates observed at Cambridge Science Park.

Table 5.1 – Modified Vehicle Trip Rates based on modal split

Per 100m²	AM peak hour			PM peak hour		
	Trip Rate In	Trip Rate Out	Two-way Trip Rate	Two-way Trip Rate	Trip Rate Out	Two-way Trip Rate
Vehicle Trip Rate	0.919	0.162	1.081	0.077	0.670	0.746

6.0 Comparison of Vehicle Traffic Generation

6.1. Table 6.1 compares the peak hour traffic generation of a 76,000m² development using the Medway trip rates and the modified trip rates presented in Table 5.1.

Table 6.1 – Comparison of Vehicle Trips traffic generation

76,000m²	AM peak hour			PM peak hour			Both peak hours two-way trips
	Trips In	Trips Out	Two-way	Trips In	Trips Out	Two-way	
Medway Trip Rates			**1,010**			848	**1,858**
Innovation Park Trip Rates	699	123	**822**	58	509	567	**1,389**

6.2. The Innovation Park is predicted to generate fewer trips for the same floor area than the B1/B2/B8 development assumption made as part of the Medway transport modelling.

6.3. Based on the Innovation Park trip rates presented in Table 5.1, Table 6.2 presents the amount of Innovation Park floorspace that would generate the equivalent volume of vehicle trips allocated in the Medway transport model for both the combined peak hours and for solely the AM peak hour.

Table 6.2 – Equivalent development traffic generation

Equivalent floorspace	AM peak hour			PM peak hour			Both peak hours two-way trips
	Trips In	Trips Out	Two-way	Trips In	Trips Out	Two-way	
101,688m²	935	165	1,099	78	681	759	**1,858**
93,436m²	859	151	**1,010**	72	626	697	1,707

6.4. An Innovation Park of 101,688m² floorspace is predicted to generate the same volume of vehicular traffic in the combined AM and PM peak hours as the 76,000m² B1/B2/B8 mix development. Similarly, an Innovation Park of 93,436m² floorspace is predicted to generate the same volume of vehicular traffic in the AM peak hour as the 76,000m² B1/B2/B8 mix development.

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7.0 Next Steps

7.1. The trip rates proposed will be required to be agreed with the relevant highway authorities, along with the suitability of applying the vehicle traffic equivalent calculations to obtain the appropriate quantum of floorspace for the Innovation Park.

7.2. The proposed development traffic can then be distributed onto the local road network using an agreed traffic distribution. The impact of the proposed development's vehicular traffic can then be considered for the junctions to be analysed as part of the Transport Assessment.

Calculation Reference: AUDIT-426201-180621-0632

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL VEHICLES

Selected regions and areas:
04 EAST ANGLIA
CA CAMBRIDGESHIRE 1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 132084 to 132084 (units: sqm)
Range Selected by User: 50000 to 132084 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 06/10/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:
Friday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Edge of Town 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:
No Sub Category 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:
B1 1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:
10,001 to 15,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Secondary Filtering selection (Cont.):

Population within 5 miles:
125,001 to 250,000 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:
0.6 to 1.0 1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:
No 1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:
No PTAL Present 1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CA-02-B-03 SCIENCE PARK CAMBRIDGESHIRE
MILTON ROAD

CAMBRIDGE
Edge of Town
No Sub Category
Total Gross floor area: 142687 sqm
Survey date: FRIDAY *06/10/17* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.167	1	132084	0.033	1	132084	0.200
07:30 - 08:00	1	132084	0.364	1	132084	0.061	1	132084	0.425
08:00 - 08:30	1	132084	0.531	1	132084	0.072	1	132084	0.603
08:30 - 09:00	1	132084	0.372	1	132084	0.040	1	132084	0.412
09:00 - 09:30	1	132084	0.142	1	132084	0.023	1	132084	0.165
09:30 - 10:00	1	132084	0.032	1	132084	0.023	1	132084	0.055
10:00 - 10:30	1	132084	0.033	1	132084	0.017	1	132084	0.050
10:30 - 11:00	1	132084	0.026	1	132084	0.014	1	132084	0.040
11:00 - 11:30	1	132084	0.030	1	132084	0.018	1	132084	0.048
11:30 - 12:00	1	132084	0.035	1	132084	0.022	1	132084	0.057
12:00 - 12:30	1	132084	0.033	1	132084	0.040	1	132084	0.073
12:30 - 13:00	1	132084	0.028	1	132084	0.038	1	132084	0.066
13:00 - 13:30	1	132084	0.045	1	132084	0.023	1	132084	0.068
13:30 - 14:00	1	132084	0.030	1	132084	0.022	1	132084	0.052
14:00 - 14:30	1	132084	0.029	1	132084	0.032	1	132084	0.061
14:30 - 15:00	1	132084	0.020	1	132084	0.033	1	132084	0.053
15:00 - 15:30	1	132084	0.024	1	132084	0.047	1	132084	0.071
15:30 - 16:00	1	132084	0.023	1	132084	0.056	1	132084	0.079
16:00 - 16:30	1	132084	0.020	1	132084	0.065	1	132084	0.085
16:30 - 17:00	1	132084	0.015	1	132084	0.095	1	132084	0.110
17:00 - 17:30	1	132084	0.019	1	132084	0.271	1	132084	0.290
17:30 - 18:00	1	132084	0.017	1	132084	0.319	1	132084	0.336
18:00 - 18:30	1	132084	0.010	1	132084	0.330	1	132084	0.340
18:30 - 19:00	1	132084	0.011	1	132084	0.290	1	132084	0.301
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.056			1.984			4.040

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
07:30 - 08:00	1	132084	0.003	1	132084	0.003	1	132084	0.006
08:00 - 08:30	1	132084	0.002	1	132084	0.002	1	132084	0.004
08:30 - 09:00	1	132084	0.004	1	132084	0.002	1	132084	0.006
09:00 - 09:30	1	132084	0.001	1	132084	0.001	1	132084	0.002
09:30 - 10:00	1	132084	0.001	1	132084	0.001	1	132084	0.002
10:00 - 10:30	1	132084	0.000	1	132084	0.001	1	132084	0.001
10:30 - 11:00	1	132084	0.002	1	132084	0.002	1	132084	0.004
11:00 - 11:30	1	132084	0.001	1	132084	0.001	1	132084	0.002
11:30 - 12:00	1	132084	0.001	1	132084	0.001	1	132084	0.002
12:00 - 12:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
12:30 - 13:00	1	132084	0.000	1	132084	0.001	1	132084	0.001
13:00 - 13:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
13:30 - 14:00	1	132084	0.001	1	132084	0.000	1	132084	0.001
14:00 - 14:30	1	132084	0.002	1	132084	0.002	1	132084	0.004
14:30 - 15:00	1	132084	0.001	1	132084	0.001	1	132084	0.002
15:00 - 15:30	1	132084	0.001	1	132084	0.001	1	132084	0.002
15:30 - 16:00	1	132084	0.000	1	132084	0.001	1	132084	0.001
16:00 - 16:30	1	132084	0.001	1	132084	0.001	1	132084	0.002
16:30 - 17:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:00 - 17:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:30 - 18:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
18:00 - 18:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
18:30 - 19:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.021			0.021			0.042

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.003	1	132084	0.002	1	132084	0.005
07:30 - 08:00	1	132084	0.003	1	132084	0.004	1	132084	0.007
08:00 - 08:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
08:30 - 09:00	1	132084	0.001	1	132084	0.000	1	132084	0.001
09:00 - 09:30	1	132084	0.002	1	132084	0.000	1	132084	0.002
09:30 - 10:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
10:00 - 10:30	1	132084	0.001	1	132084	0.001	1	132084	0.002
10:30 - 11:00	1	132084	0.001	1	132084	0.000	1	132084	0.001
11:00 - 11:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
11:30 - 12:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
12:00 - 12:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
12:30 - 13:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
13:00 - 13:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
13:30 - 14:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
14:00 - 14:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
14:30 - 15:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
15:00 - 15:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
15:30 - 16:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
16:00 - 16:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
16:30 - 17:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:00 - 17:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:30 - 18:00	1	132084	0.000	1	132084	0.001	1	132084	0.001
18:00 - 18:30	1	132084	0.000	1	132084	0.002	1	132084	0.002
18:30 - 19:00	1	132084	0.000	1	132084	0.001	1	132084	0.001
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.014			0.011			0.025

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
07:30 - 08:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
08:00 - 08:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
08:30 - 09:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
09:00 - 09:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
09:30 - 10:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
10:00 - 10:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
10:30 - 11:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
11:00 - 11:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
11:30 - 12:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
12:00 - 12:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
12:30 - 13:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
13:00 - 13:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
13:30 - 14:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
14:00 - 14:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
14:30 - 15:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
15:00 - 15:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
15:30 - 16:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
16:00 - 16:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
16:30 - 17:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:00 - 17:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:30 - 18:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
18:00 - 18:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
18:30 - 19:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.023	1	132084	0.005	1	132084	0.028
07:30 - 08:00	1	132084	0.047	1	132084	0.010	1	132084	0.057
08:00 - 08:30	1	132084	0.091	1	132084	0.015	1	132084	0.106
08:30 - 09:00	1	132084	0.101	1	132084	0.011	1	132084	0.112
09:00 - 09:30	1	132084	0.073	1	132084	0.011	1	132084	0.084
09:30 - 10:00	1	132084	0.056	1	132084	0.015	1	132084	0.071
10:00 - 10:30	1	132084	0.028	1	132084	0.015	1	132084	0.043
10:30 - 11:00	1	132084	0.031	1	132084	0.012	1	132084	0.043
11:00 - 11:30	1	132084	0.017	1	132084	0.008	1	132084	0.025
11:30 - 12:00	1	132084	0.017	1	132084	0.014	1	132084	0.031
12:00 - 12:30	1	132084	0.022	1	132084	0.021	1	132084	0.043
12:30 - 13:00	1	132084	0.018	1	132084	0.021	1	132084	0.039
13:00 - 13:30	1	132084	0.027	1	132084	0.022	1	132084	0.049
13:30 - 14:00	1	132084	0.017	1	132084	0.015	1	132084	0.032
14:00 - 14:30	1	132084	0.013	1	132084	0.012	1	132084	0.025
14:30 - 15:00	1	132084	0.012	1	132084	0.019	1	132084	0.031
15:00 - 15:30	1	132084	0.023	1	132084	0.034	1	132084	0.057
15:30 - 16:00	1	132084	0.014	1	132084	0.023	1	132084	0.037
16:00 - 16:30	1	132084	0.017	1	132084	0.042	1	132084	0.059
16:30 - 17:00	1	132084	0.020	1	132084	0.061	1	132084	0.081
17:00 - 17:30	1	132084	0.019	1	132084	0.067	1	132084	0.086
17:30 - 18:00	1	132084	0.014	1	132084	0.075	1	132084	0.089
18:00 - 18:30	1	132084	0.019	1	132084	0.061	1	132084	0.080
18:30 - 19:00	1	132084	0.009	1	132084	0.041	1	132084	0.050
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.728			0.630			1.358

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.178	1	132084	0.037	1	132084	0.215
07:30 - 08:00	1	132084	0.401	1	132084	0.067	1	132084	0.468
08:00 - 08:30	1	132084	0.557	1	132084	0.079	1	132084	0.636
08:30 - 09:00	1	132084	0.427	1	132084	0.045	1	132084	0.472
09:00 - 09:30	1	132084	0.175	1	132084	0.030	1	132084	0.205
09:30 - 10:00	1	132084	0.045	1	132084	0.030	1	132084	0.075
10:00 - 10:30	1	132084	0.045	1	132084	0.022	1	132084	0.067
10:30 - 11:00	1	132084	0.036	1	132084	0.019	1	132084	0.055
11:00 - 11:30	1	132084	0.045	1	132084	0.024	1	132084	0.069
11:30 - 12:00	1	132084	0.048	1	132084	0.030	1	132084	0.078
12:00 - 12:30	1	132084	0.045	1	132084	0.056	1	132084	0.101
12:30 - 13:00	1	132084	0.036	1	132084	0.050	1	132084	0.086
13:00 - 13:30	1	132084	0.061	1	132084	0.029	1	132084	0.090
13:30 - 14:00	1	132084	0.039	1	132084	0.029	1	132084	0.068
14:00 - 14:30	1	132084	0.039	1	132084	0.046	1	132084	0.085
14:30 - 15:00	1	132084	0.030	1	132084	0.043	1	132084	0.073
15:00 - 15:30	1	132084	0.032	1	132084	0.059	1	132084	0.091
15:30 - 16:00	1	132084	0.030	1	132084	0.079	1	132084	0.109
16:00 - 16:30	1	132084	0.028	1	132084	0.087	1	132084	0.115
16:30 - 17:00	1	132084	0.020	1	132084	0.126	1	132084	0.146
17:00 - 17:30	1	132084	0.026	1	132084	0.319	1	132084	0.345
17:30 - 18:00	1	132084	0.023	1	132084	0.363	1	132084	0.386
18:00 - 18:30	1	132084	0.014	1	132084	0.370	1	132084	0.384
18:30 - 19:00	1	132084	0.014	1	132084	0.318	1	132084	0.332
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.394			2.357			4.751

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.018	1	132084	0.003	1	132084	0.021
07:30 - 08:00	1	132084	0.036	1	132084	0.004	1	132084	0.040
08:00 - 08:30	1	132084	0.080	1	132084	0.020	1	132084	0.100
08:30 - 09:00	1	132084	0.055	1	132084	0.010	1	132084	0.065
09:00 - 09:30	1	132084	0.036	1	132084	0.008	1	132084	0.044
09:30 - 10:00	1	132084	0.030	1	132084	0.016	1	132084	0.046
10:00 - 10:30	1	132084	0.025	1	132084	0.014	1	132084	0.039
10:30 - 11:00	1	132084	0.019	1	132084	0.011	1	132084	0.030
11:00 - 11:30	1	132084	0.019	1	132084	0.004	1	132084	0.023
11:30 - 12:00	1	132084	0.015	1	132084	0.017	1	132084	0.032
12:00 - 12:30	1	132084	0.030	1	132084	0.040	1	132084	0.070
12:30 - 13:00	1	132084	0.042	1	132084	0.033	1	132084	0.075
13:00 - 13:30	1	132084	0.036	1	132084	0.048	1	132084	0.084
13:30 - 14:00	1	132084	0.036	1	132084	0.012	1	132084	0.048
14:00 - 14:30	1	132084	0.020	1	132084	0.009	1	132084	0.029
14:30 - 15:00	1	132084	0.008	1	132084	0.008	1	132084	0.016
15:00 - 15:30	1	132084	0.011	1	132084	0.011	1	132084	0.022
15:30 - 16:00	1	132084	0.014	1	132084	0.017	1	132084	0.031
16:00 - 16:30	1	132084	0.021	1	132084	0.034	1	132084	0.055
16:30 - 17:00	1	132084	0.016	1	132084	0.042	1	132084	0.058
17:00 - 17:30	1	132084	0.020	1	132084	0.073	1	132084	0.093
17:30 - 18:00	1	132084	0.012	1	132084	0.079	1	132084	0.091
18:00 - 18:30	1	132084	0.010	1	132084	0.036	1	132084	0.046
18:30 - 19:00	1	132084	0.002	1	132084	0.023	1	132084	0.025
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.611			0.572			1.183

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.022	1	132084	0.002	1	132084	0.024
07:30 - 08:00	1	132084	0.036	1	132084	0.002	1	132084	0.038
08:00 - 08:30	1	132084	0.061	1	132084	0.055	1	132084	0.116
08:30 - 09:00	1	132084	0.043	1	132084	0.013	1	132084	0.056
09:00 - 09:30	1	132084	0.025	1	132084	0.004	1	132084	0.029
09:30 - 10:00	1	132084	0.014	1	132084	0.002	1	132084	0.016
10:00 - 10:30	1	132084	0.005	1	132084	0.004	1	132084	0.009
10:30 - 11:00	1	132084	0.007	1	132084	0.002	1	132084	0.009
11:00 - 11:30	1	132084	0.005	1	132084	0.003	1	132084	0.008
11:30 - 12:00	1	132084	0.004	1	132084	0.016	1	132084	0.020
12:00 - 12:30	1	132084	0.002	1	132084	0.005	1	132084	0.007
12:30 - 13:00	1	132084	0.003	1	132084	0.003	1	132084	0.006
13:00 - 13:30	1	132084	0.004	1	132084	0.005	1	132084	0.009
13:30 - 14:00	1	132084	0.030	1	132084	0.005	1	132084	0.035
14:00 - 14:30	1	132084	0.002	1	132084	0.004	1	132084	0.006
14:30 - 15:00	1	132084	0.011	1	132084	0.008	1	132084	0.019
15:00 - 15:30	1	132084	0.002	1	132084	0.010	1	132084	0.012
15:30 - 16:00	1	132084	0.003	1	132084	0.005	1	132084	0.008
16:00 - 16:30	1	132084	0.005	1	132084	0.023	1	132084	0.028
16:30 - 17:00	1	132084	0.003	1	132084	0.021	1	132084	0.024
17:00 - 17:30	1	132084	0.002	1	132084	0.024	1	132084	0.026
17:30 - 18:00	1	132084	0.002	1	132084	0.029	1	132084	0.031
18:00 - 18:30	1	132084	0.002	1	132084	0.008	1	132084	0.010
18:30 - 19:00	1	132084	0.004	1	132084	0.015	1	132084	0.019
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.297			0.268			0.565

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.242	1	132084	0.046	1	132084	0.288
07:30 - 08:00	1	132084	0.519	1	132084	0.083	1	132084	0.602
08:00 - 08:30	1	132084	0.789	1	132084	0.170	1	132084	0.959
08:30 - 09:00	1	132084	0.625	1	132084	0.079	1	132084	0.704
09:00 - 09:30	1	132084	0.308	1	132084	0.054	1	132084	0.362
09:30 - 10:00	1	132084	0.145	1	132084	0.063	1	132084	0.208
10:00 - 10:30	1	132084	0.103	1	132084	0.055	1	132084	0.158
10:30 - 11:00	1	132084	0.093	1	132084	0.045	1	132084	0.138
11:00 - 11:30	1	132084	0.086	1	132084	0.039	1	132084	0.125
11:30 - 12:00	1	132084	0.084	1	132084	0.077	1	132084	0.161
12:00 - 12:30	1	132084	0.100	1	132084	0.123	1	132084	0.223
12:30 - 13:00	1	132084	0.100	1	132084	0.107	1	132084	0.207
13:00 - 13:30	1	132084	0.129	1	132084	0.103	1	132084	0.232
13:30 - 14:00	1	132084	0.123	1	132084	0.061	1	132084	0.184
14:00 - 14:30	1	132084	0.074	1	132084	0.071	1	132084	0.145
14:30 - 15:00	1	132084	0.060	1	132084	0.079	1	132084	0.139
15:00 - 15:30	1	132084	0.067	1	132084	0.114	1	132084	0.181
15:30 - 16:00	1	132084	0.062	1	132084	0.125	1	132084	0.187
16:00 - 16:30	1	132084	0.070	1	132084	0.185	1	132084	0.255
16:30 - 17:00	1	132084	0.059	1	132084	0.250	1	132084	0.309
17:00 - 17:30	1	132084	0.067	1	132084	0.484	1	132084	0.551
17:30 - 18:00	1	132084	0.051	1	132084	0.546	1	132084	0.597
18:00 - 18:30	1	132084	0.045	1	132084	0.475	1	132084	0.520
18:30 - 19:00	1	132084	0.029	1	132084	0.397	1	132084	0.426
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			4.030			3.831			7.861

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL CARS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.152	1	132084	0.025	1	132084	0.177
07:30 - 08:00	1	132084	0.346	1	132084	0.049	1	132084	0.395
08:00 - 08:30	1	132084	0.518	1	132084	0.063	1	132084	0.581
08:30 - 09:00	1	132084	0.364	1	132084	0.035	1	132084	0.399
09:00 - 09:30	1	132084	0.135	1	132084	0.020	1	132084	0.155
09:30 - 10:00	1	132084	0.026	1	132084	0.018	1	132084	0.044
10:00 - 10:30	1	132084	0.028	1	132084	0.012	1	132084	0.040
10:30 - 11:00	1	132084	0.021	1	132084	0.013	1	132084	0.034
11:00 - 11:30	1	132084	0.023	1	132084	0.017	1	132084	0.040
11:30 - 12:00	1	132084	0.030	1	132084	0.018	1	132084	0.048
12:00 - 12:30	1	132084	0.029	1	132084	0.038	1	132084	0.067
12:30 - 13:00	1	132084	0.022	1	132084	0.034	1	132084	0.056
13:00 - 13:30	1	132084	0.039	1	132084	0.020	1	132084	0.059
13:30 - 14:00	1	132084	0.026	1	132084	0.017	1	132084	0.043
14:00 - 14:30	1	132084	0.024	1	132084	0.030	1	132084	0.054
14:30 - 15:00	1	132084	0.015	1	132084	0.027	1	132084	0.042
15:00 - 15:30	1	132084	0.017	1	132084	0.042	1	132084	0.059
15:30 - 16:00	1	132084	0.020	1	132084	0.052	1	132084	0.072
16:00 - 16:30	1	132084	0.015	1	132084	0.059	1	132084	0.074
16:30 - 17:00	1	132084	0.014	1	132084	0.089	1	132084	0.103
17:00 - 17:30	1	132084	0.016	1	132084	0.263	1	132084	0.279
17:30 - 18:00	1	132084	0.014	1	132084	0.310	1	132084	0.324
18:00 - 18:30	1	132084	0.010	1	132084	0.324	1	132084	0.334
18:30 - 19:00	1	132084	0.010	1	132084	0.285	1	132084	0.295
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.914			1.860			3.774

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL LGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.008	1	132084	0.005	1	132084	0.013
07:30 - 08:00	1	132084	0.008	1	132084	0.002	1	132084	0.010
08:00 - 08:30	1	132084	0.007	1	132084	0.005	1	132084	0.012
08:30 - 09:00	1	132084	0.004	1	132084	0.003	1	132084	0.007
09:00 - 09:30	1	132084	0.003	1	132084	0.002	1	132084	0.005
09:30 - 10:00	1	132084	0.005	1	132084	0.003	1	132084	0.008
10:00 - 10:30	1	132084	0.002	1	132084	0.003	1	132084	0.005
10:30 - 11:00	1	132084	0.002	1	132084	0.000	1	132084	0.002
11:00 - 11:30	1	132084	0.005	1	132084	0.001	1	132084	0.006
11:30 - 12:00	1	132084	0.002	1	132084	0.001	1	132084	0.003
12:00 - 12:30	1	132084	0.004	1	132084	0.002	1	132084	0.006
12:30 - 13:00	1	132084	0.005	1	132084	0.002	1	132084	0.007
13:00 - 13:30	1	132084	0.004	1	132084	0.002	1	132084	0.006
13:30 - 14:00	1	132084	0.003	1	132084	0.004	1	132084	0.007
14:00 - 14:30	1	132084	0.002	1	132084	0.001	1	132084	0.003
14:30 - 15:00	1	132084	0.003	1	132084	0.005	1	132084	0.008
15:00 - 15:30	1	132084	0.003	1	132084	0.003	1	132084	0.006
15:30 - 16:00	1	132084	0.002	1	132084	0.002	1	132084	0.004
16:00 - 16:30	1	132084	0.002	1	132084	0.004	1	132084	0.006
16:30 - 17:00	1	132084	0.001	1	132084	0.006	1	132084	0.007
17:00 - 17:30	1	132084	0.002	1	132084	0.002	1	132084	0.004
17:30 - 18:00	1	132084	0.004	1	132084	0.005	1	132084	0.009
18:00 - 18:30	1	132084	0.000	1	132084	0.005	1	132084	0.005
18:30 - 19:00	1	132084	0.000	1	132084	0.004	1	132084	0.004
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.081			0.072			0.153

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL MOTOR CYCLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	1	132084	0.004	1	132084	0.001	1	132084	0.005
07:30 - 08:00	1	132084	0.004	1	132084	0.002	1	132084	0.006
08:00 - 08:30	1	132084	0.005	1	132084	0.002	1	132084	0.007
08:30 - 09:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
09:00 - 09:30	1	132084	0.002	1	132084	0.001	1	132084	0.003
09:30 - 10:00	1	132084	0.001	1	132084	0.001	1	132084	0.002
10:00 - 10:30	1	132084	0.002	1	132084	0.000	1	132084	0.002
10:30 - 11:00	1	132084	0.001	1	132084	0.000	1	132084	0.001
11:00 - 11:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
11:30 - 12:00	1	132084	0.002	1	132084	0.002	1	132084	0.004
12:00 - 12:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
12:30 - 13:00	1	132084	0.002	1	132084	0.001	1	132084	0.003
13:00 - 13:30	1	132084	0.002	1	132084	0.001	1	132084	0.003
13:30 - 14:00	1	132084	0.000	1	132084	0.001	1	132084	0.001
14:00 - 14:30	1	132084	0.001	1	132084	0.000	1	132084	0.001
14:30 - 15:00	1	132084	0.002	1	132084	0.001	1	132084	0.003
15:00 - 15:30	1	132084	0.002	1	132084	0.002	1	132084	0.004
15:30 - 16:00	1	132084	0.001	1	132084	0.001	1	132084	0.002
16:00 - 16:30	1	132084	0.001	1	132084	0.002	1	132084	0.003
16:30 - 17:00	1	132084	0.000	1	132084	0.000	1	132084	0.000
17:00 - 17:30	1	132084	0.002	1	132084	0.006	1	132084	0.008
17:30 - 18:00	1	132084	0.000	1	132084	0.003	1	132084	0.003
18:00 - 18:30	1	132084	0.000	1	132084	0.000	1	132084	0.000
18:30 - 19:00	1	132084	0.001	1	132084	0.000	1	132084	0.001
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.037			0.027			0.064

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	132084 - 132084 (units: sqm)
Survey date date range:	01/01/10 - 06/10/17
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Technical Note T2

Project: Innovation Park Medway

From: Neal Murphy

File Ref: NMnm12841-170718-TN2.docx **Pages:** 6 **Date:** 17/07/2018

Subject Updated Traffic Generation Comparison

1.0 Executive Summary

1.1. This technical note presents an update to Technical Note T1 and a review of the trip generation associated with the latest floor area expectations provided by Medway Council and compares this with the trip rates and traffic generation associated with an Innovation Park development, as currently proposed, using current trip rates from the TRICS database.

1.2. This shows that the trip rates observed at Cambridge Science Park are less than those assumed for the B1/B2 development. A modified set of trip rates has been calculated by applying a mode share obtained by reviewing the journey to work data for the local workplace population. This is considered to be representative for Innovation Park Medway.

1.3. The floor area that would generate the equivalent amount of vehicle traffic as that expected for the B1/B2 employment site allocations in the Medway strategic traffic modelling has been calculated. The technical note concludes that an Innovation Park of 101,000m² will generate less traffic in each of the peak hours than the four employment allocation sites combined based on the trip rates presented in this note.

2.0 Medway Trip Rates

2.1. Details of the revised quantum and use class for the potential employment land allocations comprising site reference numbers 0378, 0724, 0804 and 0845 have been provided by Medway Council. It is understood that this quantum will be used in the STA modelling exercise. The four sites collectively comprise the following floor areas:

- B1(a) - 5,350m²
- B1(b) - 5,350m²
- B1(c) - 28,520m²
- B2 - 28,520m²

2.2. In the absence of the number of trips associated with the individual B1 use classes, the trip rates in Table 2.2 of Technical Note T1 have been used to calculate the two-way trips in the AM peak hour and PM peak hour and are summarised in Table 2.1.

Table 2.1 – Medway Council potential employment allocation site trips

Use Class	Floorspace	Two-way trips AM peak hour	Two-way trips PM peak hour	Two-way trips AM+PM peak hour
B1	39,220m²	999	890	1,889
B2	28,520m²	351	249	600
Total	67,740m²	**1,350**	**1,139**	**2,489**

2.3. Table 2.2 confirms the trip rates that have been used and provides a combined trip rate for the employment land allocations based on the provided B1/B2 split.

Table 2.2 – Medway Council Traffic Modelling Trip Rates (per 100m²)

Use Class	Two-way trip rate AM peak hour	Two-way trip rate PM peak hour	Two-way trip rate AM+PM peak hour
B1	2.546	2.270	4.816
B2	1.232	0.872	2.104
Combined	**1.993**	**1.681**	**3.674**

3.0 TRICS Database Trip Rates

3.1. The proposed development in for innovation uses. Given the specific nature of the development, which may include laboratory space etc., the employment density is expected to be lower than for conventional office use. The current version of the TRICS database (v7.5.1) has therefore been interrogated to obtain representative trip rates for an Innovation Park.

3.2. The following criteria have been used when selecting appropriate sites from the database for the residential units:

- Land Use 02/B – Employment – Business Park
- Suburban, Edge of Town, Neighbourhood Centre sites over 50,000m²
- Multi-modal weekday surveys from 2010 onwards
- Only latest surveys included where a site has been re-surveyed

3.3. The database matched one site, CA-02-B-03 Cambridge Science Park. The Person Trip Rates and Vehicle Trip Rates for this site are summarised in Table 3.1 with the full output presented at the end of this technical note.

Table 3.1 – Cambridge Science Park Trip Rates from the TRICS Database

Per 100m²	AM peak hour			PM peak hour		
	Trip Rate In	Trip Rate Out	Two-way Trip Rate	Two-way Trip Rate	Trip Rate Out	Two-way Trip Rate
Person Trip Rate	1.414	0.249	1.663	0.118	1.030	1.148
Vehicle Trip Rate	0.903	0.112	**1.015**	0.036	0.590	**0.626**

3.4. A comparison of the two-way vehicle trip rates presented in Tables 2.2 and 3.1 shows that the Cambridge Science Park trip rates are lower than the combined uses class trip rate for the employment site allocations. However, the relative accessibility of the sites via non-car modes of transport should be considered in order to provide greater confidence in the calculated trip rates.

4.0 Modal Split

4.1. The vast majority of the trip generation of the Innovation Park in the AM and PM peak hours will be related to staff journeys to and from work. The Journey to Work data from Census 2011 has therefore been used to determine the likely modal split for the Innovation Park in the peak hours.

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4.2. The Mid Layer Super Output Areas used for this assessment are Medway 026, Medway 033 and Tonbridge and Malling 001. The areas covered are shown in Figure 4.1. The modal split for these areas are shown in Figures 4.2 to 4.4 respectively.

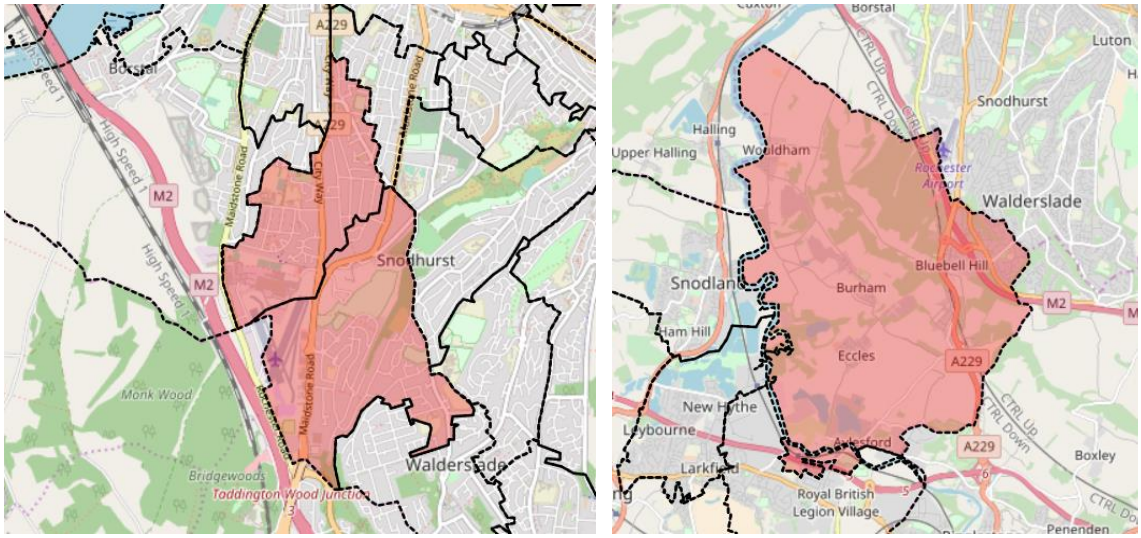

Figure 4.1 – Medway 026, Medway 033, and Tonbridge and Malling 001 Areas.

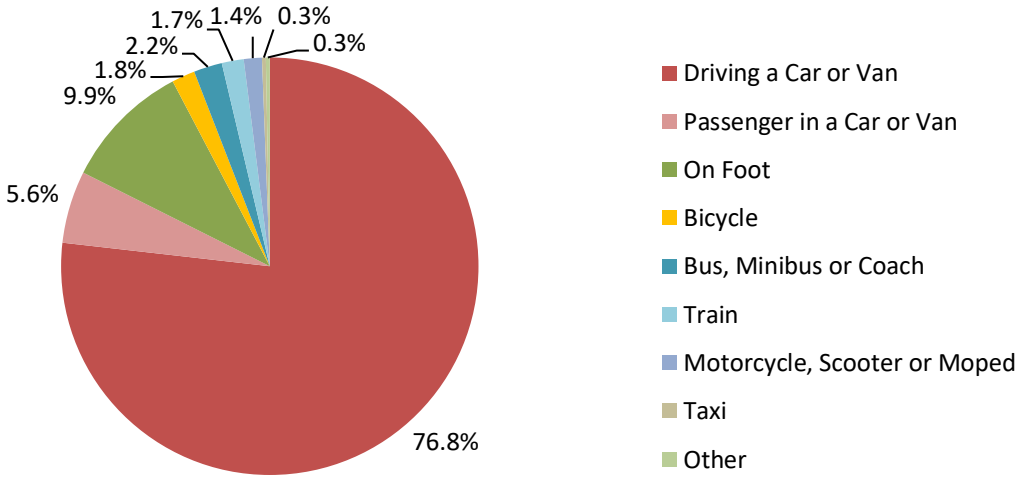

Figure 4.2 – Modal split of journeys to work (Workday population) for 'Medway 026'

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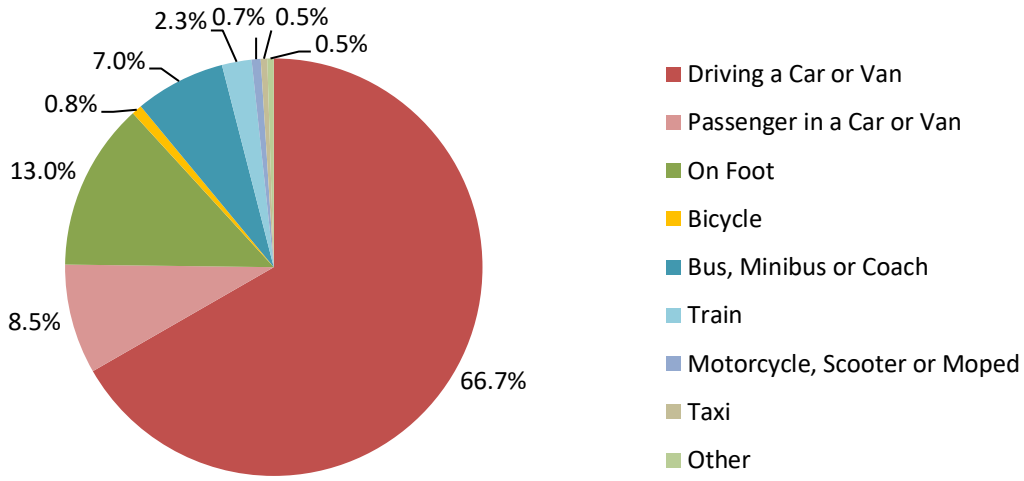

Figure 4.3 – Modal split of journeys to work (Workday population) for 'Medway 033'

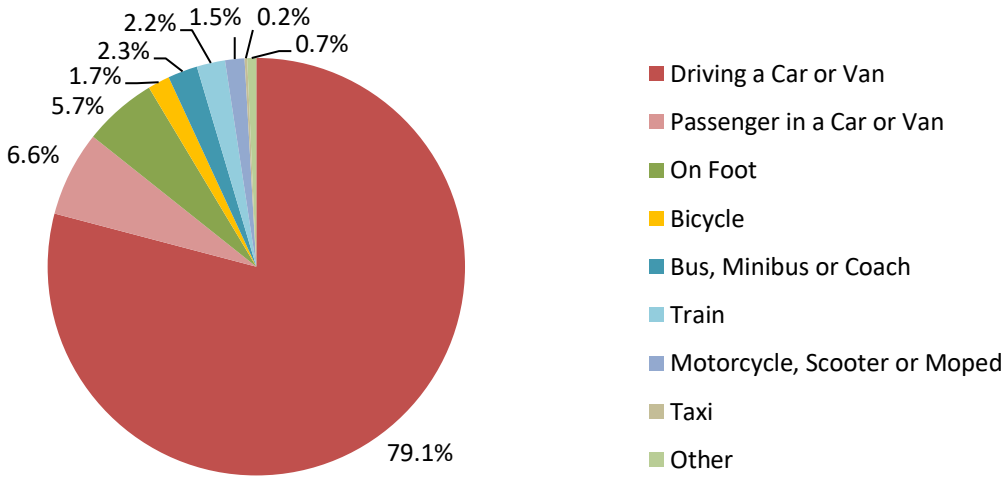

Figure 4.4 – Modal split of journeys to work (Workday population) for 'Tonbridge and Malling 001'

4.3. The Medway 033 area covers the existing Innovation Centre and commercial premises along Maidstone Road. This area has a higher proportion of journeys to work by bus, reflecting the presence of a frequent bus service along Maidstone Road. This area also has the lowest proportion of journeys to work by driving a car or van of the three areas considered.

4.4. For the purposes of establishing a mode share for trips to and from the Innovation Park in the peak hours it is considered appropriate to apply the modal split in Table 4.1. This assumes that journeys where the main mode of travel is by train will be completed by taxi or by a regular bus route serving the site. The implementation of a Travel Plan for the site will aim to further reduce the proportion of trips made by car.

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Table 4.1 – Proposed modal split

Mode of Travel	Mode Share	Comments
Driving a car or van	64%	Based on 2011 Medway 033 share with allowance for mode shift to walking / cycling / bus
Passenger	8%	Based on 2011 Medway 033 share
On foot	13%	Based on Medway 033, plus allowance for potential increase due to new housing locally to the site
Bicycle	2%	Allowance for potential increase in existing mode share due to new housing locally
Bus, minibus or coach	11%	Based on Medway 033 share with allowance for potential service improvements and assumes completion of journeys where train is the main mode share
Motorcycle, scooter or moped	1%	Based on 2011 Medway share
Taxi	1%	Allowance for completion of journeys where train is the main mode share

5.0 Modified Innovation Park Trip Rates

5.1. The mode share for 'driving a car or van' and 'taxi' presented in Table 4.1 have been combined, in order to present a robust assessment, and a factor of 0.65 applied to the Science Park Person Trip Rates presented in Table 3.1 to obtain a modified Vehicle Trip Rate, as shown in Table 5.1. This trip rate is considered appropriate for the type of development proposed. The vehicle trip rates obtained are higher than the vehicle trip rates observed at Cambridge Science Park but lower than the trip rates applied to the B1/B2 employment site allocations.

Table 5.1 – Modified Vehicle Trip Rates based on modal split

Per 100m²	AM peak hour			PM peak hour		
	Trip Rate In	Trip Rate Out	Two-way Trip Rate	Two-way Trip Rate	Trip Rate Out	Two-way Trip Rate
Vehicle Trip Rate	0.919	0.162	1.081	0.077	0.670	0.746

6.0 Comparison of Vehicle Traffic Generation

6.1. Based on the employment allocation site trip rates presented in Table 2.2 and the Innovation Park trip rates presented in Table 5.1; Table 6.1 presents the amount of Innovation Park floorspace that would generate the equivalent volume of vehicle trips generated by the employment site allocations for combined peak hours and for solely the AM peak hour.

Table 6.1 – Equivalent development traffic generation

Equivalent floorspace	AM peak hour			PM peak hour			Both peak hours two-way trips
	Trips In	Trips Out	Two-way	Trips In	Trips Out	Two-way	
136,223m² (based on AM/PM peak)	1,252	220	1,473	104	912	1,016	**2,489**
124,890m² (based on AM peak)	1,148	202	**1,350**	96	836	932	2,282

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6.2. An Innovation Park of 136,223m² floorspace is predicted to generate the same volume of vehicular traffic in the combined AM and PM peak hours as the B1/B2 employment site allocations using the given trip rates. Similarly, an Innovation Park of 124,890m² floorspace is predicted to generate the same volume of vehicular traffic in the AM peak hour as the B1/B2 employment site allocations.

6.3. This means that an Innovation Park of 101,000m² will generate less traffic than the combined 67,740m² B1/B2 employment allocation sites, as shown in Table 6.2. Comparing the calculated employment allocation sites' two-way traffic generation using the B1/B2 trip rates with that of a 101,000m² Innovation Park, the Innovation Park is estimated to generate 258 fewer two-way trips in the AM peak hour and 385 fewer two-way trips in the PM peak hour.

Table 6.2 – Development traffic generation comparison

Floorspace	AM peak hour			PM peak hour			Both peak hours two-way trips
	Trips In	Trips Out	Two-way	Trips In	Trips Out	Two-way	
67,740m² B1/B2 allocation			1,350			1,139	2,489
101,000m² Innovation Park	928	163	1,092	77	676	754	1,845
Difference			-258			-385	-643

7.0 Next Steps

7.1. The proposed trip rates are subject to agreement by Medway Council. The proposed development traffic from Innovation Park Medway will then be distributed onto the local road network using a traffic distribution based on Journey to Work Census data, to be agreed. The impact of the proposed development's vehicular traffic can then be considered for the junctions to be analysed as part of the Transport Assessment.

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