

A Planning Application by
COMPLETE PLANT HIRE LIMITED

In respect of
**12 Southfields,
WELWYN GARDEN CITY**

Technical Note

April 2021



Document Management

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1 Introduction

1.1 Transport Planning Associates has been commissioned by Complete Plant Hire Limited to provide transport planning consultancy services in relation to a planning application to seek a retrospective change of use from a vehicle repair centre (use class B1c) to reflect its current usage (use class sui generis). The site is located at 12 Southfields, Welwyn Garden City as illustrated in **Figure 1.1**.

Figure 1.1 Site Location Plan



Source: © OpenStreetMap contributors

1.2 This Technical Note will compare the previous and current land uses in terms of trip attraction and will provide a swept path analysis to demonstrate that the current land use does not have a severe impact on the local highway network.

2 Analysis

Previous Land Use (Vehicle Repair Centre)

2.1 In order to consider the likely traffic generation associated with the former use of the site as a vehicle repair centre, reference has been made to the Trip Rate Information Computer System (TRICS) database, version 7.8.1. The parameters used to select suitable sites and surveys from the database are set out below:

- TRICS Land Use: 15 - Vehicle Services A - Vehicle Repair Garage (Slow Fit); and
- Located in England, but outside of Greater London.

2.2 The resultant vehicular trip rates and attraction of the previous land use (based on a site area of 0.23 hectares) is set out in Table 2.1, with the full TRICS report contained within **Appendix A**.

Table 2.1 Trip Attraction of Previous Land Use

Time Period	Arrivals		Departures		Two-way	
	Rate	Flow	Rate	Flow	Rate	Flow
08:00-09:00	36.111	8	22.222	5	58.333	13
17:00-18:00	2.778	1	11.111	3	13.889	3
06:00-18:00	251.389	58	255.555	59	506.944	117

Source: TRICS version 7.8.1

Notes: Trip rates shown per hectare

2.3 As shown in the above table, the previous land use could be expected to have generated a total of 117 two-way vehicular movements in a typical day.

2.4 With regard to the former land use, it is understood that the previous occupier would repair a wide variety of vehicles including cars, buses, and HGVs (including low loaders) within the yard of the site.

Proposed Land Use

2.5 Due to the absence of plant hire operations within the TRICS database, and given that the site has been operating as it is proposed to continue, the current vehicular movements for the site have been provided by the client as set out below.

- 2.6 It is understood that the site attracts between 30 and 40 vehicles per day (i.e. 60-80 two-way movements), which is 49% - 32% less than the former site use. The arrivals at the site comprise cars (for staff and customers), operational vehicles (primarily light goods vehicles), and delivery vehicles (generally HGVs, including the occasional low-loader and articulated vehicle).
- 2.7 Complete Plant Hire operates a small fleet of two box vans, two pick-ups, and two 26 ton rigid light goods vehicles (LGVs) that are used to deliver the majority of plant to its customers. All of the fleets vehicles park within the yard when not in use. Staff and customers are encouraged to park within the yard upon arrival.
- 2.8 It is understood that the occasional low-loader movements are associated with the delivery or removal of larger items of plant. This is in keeping with the previous land use (as set out above) and it is also understood that similar vehicles routinely access the neighbouring sites within the industrial estate.

Potential Impact

- 2.9 To reiterate the above, a comparison of daily trips between the previous land use (vehicle repair centre) and the proposed land use (plant hire) has been calculated based on the trip attraction set out above. The resultant analysis is summarised in Table 2.2.

Table 2.2 Daily Trip Attraction Comparison

	Arrivals	Departures	Total
Existing Land Use	58	59	117
Proposed Land Use (low estimate)	30	30	60
Proposed Land Use (high estimate)	40	40	80
Difference (low estimate)	-28	-29	-57
Difference (High estimate)	-18	-19	-37

- 2.10 As shown above, the proposed development is predicted to result in a reduction in total vehicular movements associated with the site across a typical day of 49% and 32%.

Swept Path Analysis

- 2.11 Notwithstanding that the site has been operating in its current form for five years, swept path analysis has been undertaken to illustrate that a 10 m rigid vehicle can readily access and egress the site in forward gear. This analysis is shown in **Appendix B**.
- 2.12 Actual manoeuvres within the site will be dependent on the operation of the yard and the vehicle in question. However the management of the site is such that vehicles are able to enter and exit the site in forward gear.

3 Summary and Conclusions

Summary

- 3.1 Transport Planning Associates has been commissioned by Complete Plant Hire Limited to provide transport planning consultancy services in relation to a retrospective planning application from a vehicle repair centre (use class B1c) to reflect its current usage (use class sui generis).
- 3.2 The site was previously used as vehicle repair centre servicing a wide variety of vehicles including cars, buses, and HGVs (including low loaders). The trip attraction of the previous land use has been calculated utilising trip rates obtained from the TRICS database. The resultant quantum of movements associated with the previous use equates to 117 two-way trips per day.
- 3.3 It is understood that the site has been operated by a plant hire company for the past five years without any adverse highways issues. Based on the information provided by the client, the plant hire company typically attracts approximately 60 to 80 two-way vehicular movements a day. This is 49% and 32% less traffic movements than the former use of the site
- 3.4 As demonstrated, vehicles are able to enter and exit the site in forward gear, with manoeuvres within the site, dependent on the operation of the yard.

Conclusion

- 3.5 The current use of the site by site by Complete Plant Hire has served to reduce the level of traffic generation and it is understood that the site use has not resulted in any adverse impacts on the adjacent highway. On that basis, there are no transport and highway reasons why this change of use application should not be allowed.

APPENDIX A

Filtering Summary

Land Use	15/A	VEHICLE SERVICES/VEHICLE REPAIR GARAGE (S
Selected Trip Rate Calculation Parameter Range	0.08-0.78 hect AREA	
Actual Trip Rate Calculation Parameter Range	0.12-0.24 hect AREA	
Date Range	Minimum: 01/01/13	Maximum: 28/06/19
Parking Spaces Range	All Surveys Included	
Days of the week selected	Friday	2
Main Location Types selected	Edge of Town	2
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	10,001 to 15,000	1
	15,001 to 20,000	1
Population <5 Mile ranges selected	125,001 to 250,000	1
	250,001 to 500,000	1
Car Ownership <5 Mile ranges selected	0.6 to 1.0	1
	1.1 to 1.5	1
PTAL Rating	No PTAL Present	2

Calculation Reference: AUDIT-219602-210421-0416

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 15 - VEHICLE SERVICES
 Category : A - VEHICLE REPAIR GARAGE (SLOW FIT)
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HF	HERTFORDSHIRE 1 days
09	NORTH	
	TW	TYNE & WEAR 1 days

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

Primary 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: Site area
 Actual Range: 0.12 to 0.24 (units: hect)
 Range Selected by User: 0.08 to 0.78 (units: hect)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 28/06/19

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 2 days

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

Selected survey types:

Manual count 2 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 undertaken using machines.

Selected Locations:

Edge of Town 2

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:

Industrial Zone 2

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:

Not Known 2 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 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	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
1.1 to 1.5	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	2 days
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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	2 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

Site(1):	HF-15-A-01	Site area:	0.12 hect
Development Name:	GARAGE	Gross floor area:	290 sqm
Location:	STEVENAGE	Parking spaces:	16
Postcode:	SG1 2BP	No of Employees:	3
Main Location Type:	Edge of Town	Survey Date:	28/06/19
Sub-Location Type:	Industrial Zone	Survey Day:	Friday
PTAL:	n/a		

Site(2):	TW-15-A-01	Site area:	0.24 hect
Development Name:	COMMERCIAL VEHICLE GARAGE	Gross floor area:	400 sqm
Location:	SUNDERLAND	Parking spaces:	20
Postcode:	SR1 2NF	No of Employees:	6
Main Location Type:	Edge of Town	Survey Date:	24/05/19
Sub-Location Type:	Industrial Zone	Survey Day:	Friday
PTAL:	n/a		

TRIP RATE for Land Use 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)

TOTAL VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	4.167	1	0.24	0.000	1	0.24	4.167
07:00 - 08:00	2	0.18	8.333	2	0.18	2.778	2	0.18	11.111
08:00 - 09:00	2	0.18	36.111	2	0.18	22.222	2	0.18	58.333
09:00 - 10:00	2	0.18	58.333	2	0.18	44.444	2	0.18	102.777
10:00 - 11:00	2	0.18	19.444	2	0.18	11.111	2	0.18	30.555
11:00 - 12:00	2	0.18	30.556	2	0.18	27.778	2	0.18	58.334
12:00 - 13:00	2	0.18	22.222	2	0.18	22.222	2	0.18	44.444
13:00 - 14:00	2	0.18	13.889	2	0.18	22.222	2	0.18	36.111
14:00 - 15:00	2	0.18	36.111	2	0.18	33.333	2	0.18	69.444
15:00 - 16:00	2	0.18	13.889	2	0.18	27.778	2	0.18	41.667
16:00 - 17:00	2	0.18	5.556	2	0.18	30.556	2	0.18	36.112
17:00 - 18:00	2	0.18	2.778	2	0.18	11.111	2	0.18	13.889
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			251.389			255.555			506.944

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.*

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Parameter summary

Trip rate parameter range selected:	0.12 to 0.24 (units: hect)
Survey date range:	01/01/13 - 28/06/19
Number of weekdays (Monday-Friday):	2
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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)

TAXIS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	0.000	1	0.24	0.000	1	0.24	0.000
07:00 - 08:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
08:00 - 09:00	2	0.18	2.778	2	0.18	2.778	2	0.18	5.556
09:00 - 10:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
10:00 - 11:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
11:00 - 12:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
12:00 - 13:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
13:00 - 14:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
14:00 - 15:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
15:00 - 16:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
16:00 - 17:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
17:00 - 18:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.778			2.778			5.556

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 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)

OGVS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	0.000	1	0.24	0.000	1	0.24	0.000
07:00 - 08:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
08:00 - 09:00	2	0.18	2.778	2	0.18	2.778	2	0.18	5.556
09:00 - 10:00	2	0.18	5.556	2	0.18	5.556	2	0.18	11.112
10:00 - 11:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
11:00 - 12:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
12:00 - 13:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
13:00 - 14:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
14:00 - 15:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
15:00 - 16:00	2	0.18	2.778	2	0.18	2.778	2	0.18	5.556
16:00 - 17:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
17:00 - 18:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			11.112			11.112			22.224

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 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)

CYCLISTS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	0.000	1	0.24	0.000	1	0.24	0.000
07:00 - 08:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
08:00 - 09:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
09:00 - 10:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
10:00 - 11:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
11:00 - 12:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
12:00 - 13:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
13:00 - 14:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
14:00 - 15:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
15:00 - 16:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
16:00 - 17:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
17:00 - 18:00	2	0.18	2.778	2	0.18	2.778	2	0.18	5.556
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.778			2.778			5.556

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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 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)
CARS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	0.000	1	0.24	0.000	1	0.24	0.000
07:00 - 08:00	2	0.18	2.778	2	0.18	0.000	2	0.18	2.778
08:00 - 09:00	2	0.18	22.222	2	0.18	11.111	2	0.18	33.333
09:00 - 10:00	2	0.18	33.333	2	0.18	16.667	2	0.18	50.000
10:00 - 11:00	2	0.18	13.889	2	0.18	5.556	2	0.18	19.445
11:00 - 12:00	2	0.18	16.667	2	0.18	11.111	2	0.18	27.778
12:00 - 13:00	2	0.18	5.556	2	0.18	5.556	2	0.18	11.112
13:00 - 14:00	2	0.18	5.556	2	0.18	13.889	2	0.18	19.445
14:00 - 15:00	2	0.18	22.222	2	0.18	25.000	2	0.18	47.222
15:00 - 16:00	2	0.18	8.333	2	0.18	16.667	2	0.18	25.000
16:00 - 17:00	2	0.18	2.778	2	0.18	27.778	2	0.18	30.556
17:00 - 18:00	2	0.18	2.778	2	0.18	11.111	2	0.18	13.889
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			136.112			144.446			280.558

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 15 - VEHICLE SERVICES/A - VEHICLE REPAIR GARAGE (SLOW FIT)

LGVS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	0.24	4.167	1	0.24	0.000	1	0.24	4.167
07:00 - 08:00	2	0.18	5.556	2	0.18	2.778	2	0.18	8.334
08:00 - 09:00	2	0.18	8.333	2	0.18	5.556	2	0.18	13.889
09:00 - 10:00	2	0.18	19.444	2	0.18	22.222	2	0.18	41.666
10:00 - 11:00	2	0.18	5.556	2	0.18	5.556	2	0.18	11.112
11:00 - 12:00	2	0.18	13.889	2	0.18	16.667	2	0.18	30.556
12:00 - 13:00	2	0.18	16.667	2	0.18	16.667	2	0.18	33.334
13:00 - 14:00	2	0.18	8.333	2	0.18	8.333	2	0.18	16.666
14:00 - 15:00	2	0.18	13.889	2	0.18	8.333	2	0.18	22.222
15:00 - 16:00	2	0.18	2.778	2	0.18	8.333	2	0.18	11.111
16:00 - 17:00	2	0.18	2.778	2	0.18	2.778	2	0.18	5.556
17:00 - 18:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
18:00 - 19:00	2	0.18	0.000	2	0.18	0.000	2	0.18	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			101.390			97.223			198.613

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.*

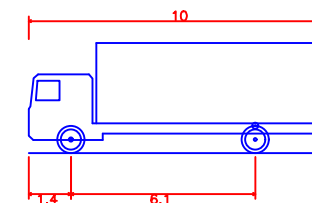
APPENDIX B

A3

ORIGINAL PLOT SIZE

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NOTES:



FTA Design HG Rigid Vehicle (1998)
 Overall Length 10.000m
 Overall Width 2.500m
 Overall Body Height 3.645m
 Min Body Ground Clearance 0.440m
 Track Width 2.470m
 Lock to lock time 3.00s
 Kerb to Kerb Turning Radius 11.000m

Rev	Date	Details	Drawn by	Checked by	Approved by
-	-	-	-	-	-

Bristol
 Cambridge
 London
 Manchester
 Oxford
 Welwyn Garden City



90 High Holborn
 London
 WC1V 6LJ
 020 7119 1155
www.tpa.uk.com

CLIENT:



PROJECT:

12 SOUTHFIELDS
 WELWYN GARDEN CITY

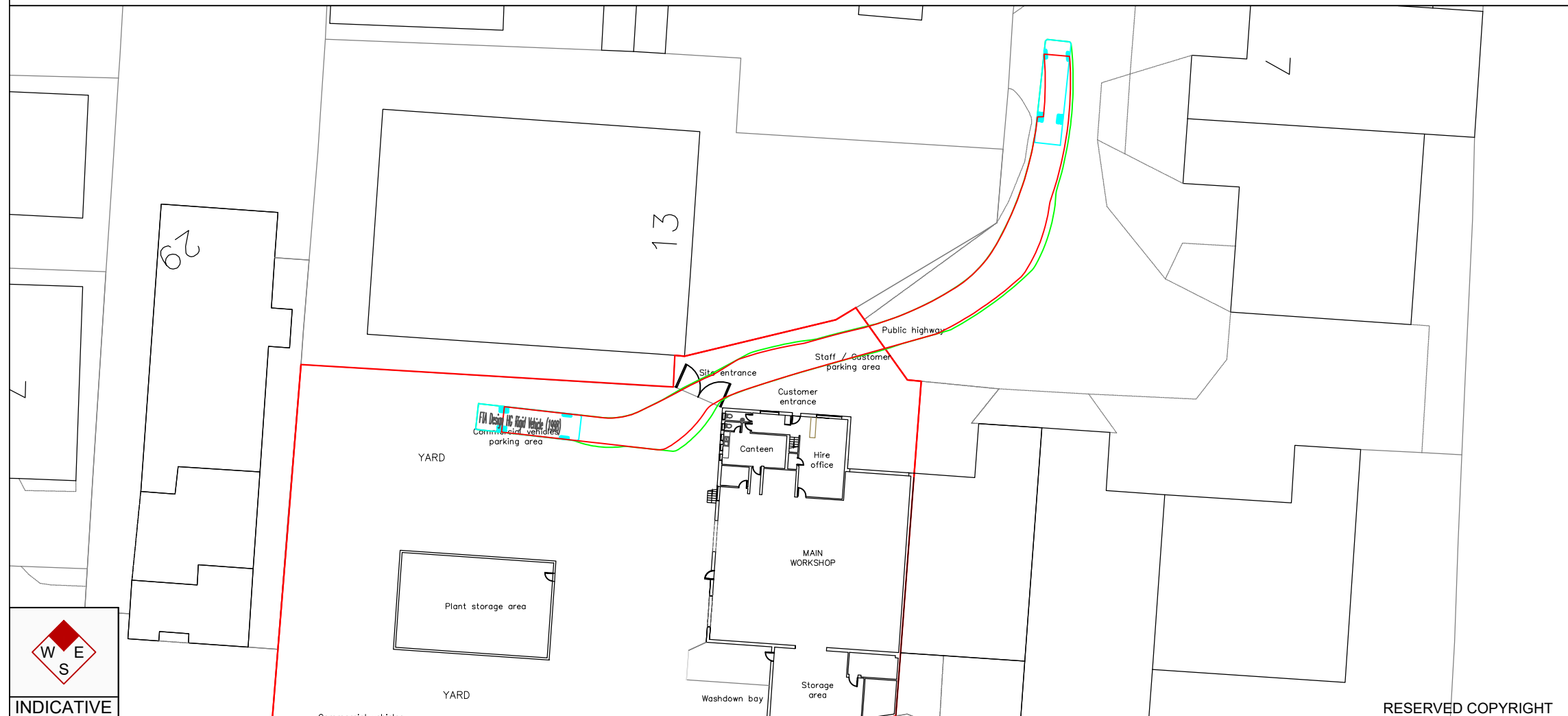
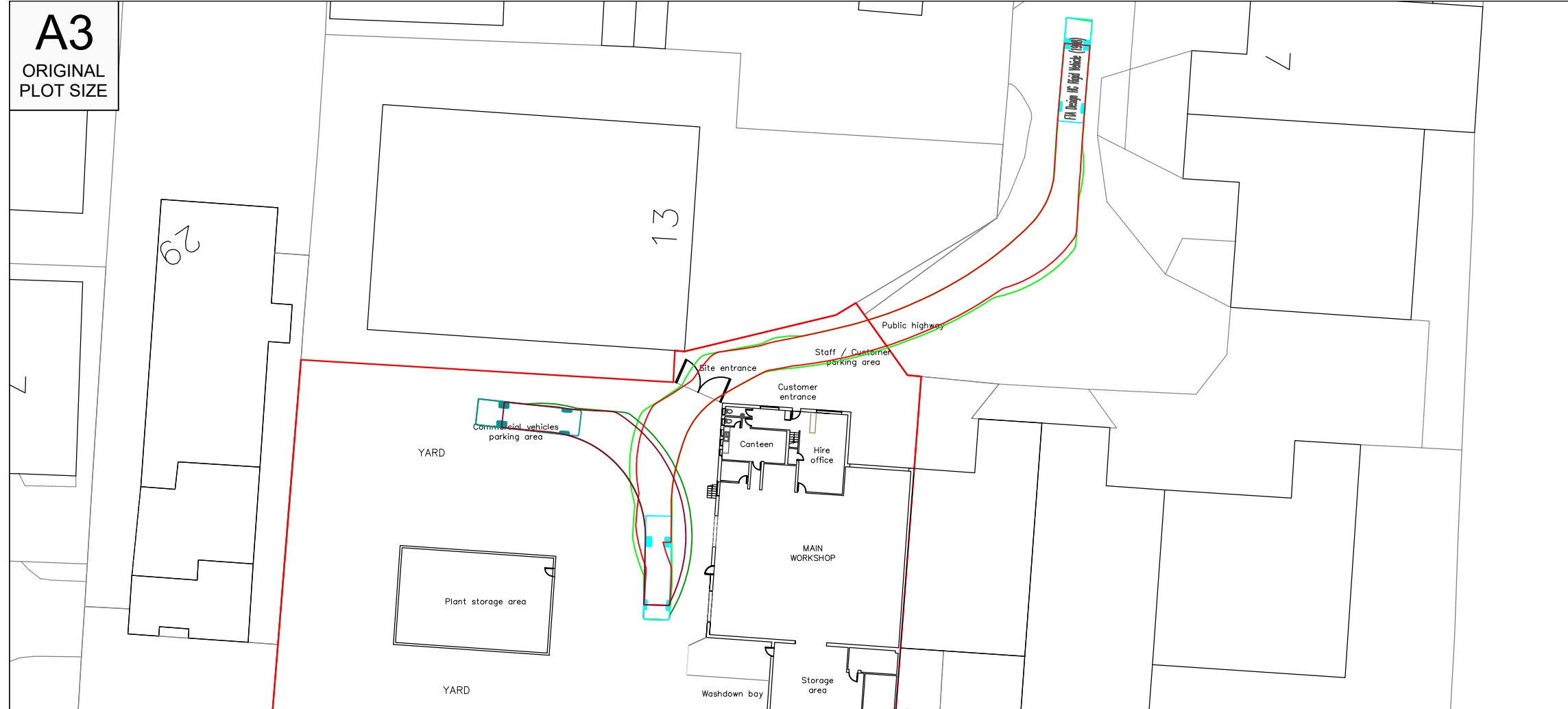
TITLE:

SWEPT PATH ANALYSIS OF
 A 10M RIGID VEHICLE

STATUS:

FOR INFORMATION

SCALE: 1:500	DATE: 27/04/21	DRAWN: SMK	CHECKED: RJM	APPROVED: RJM
JOB NO: 2104-021	DRAWING NO: SP01	REVISION:		



INDICATIVE

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