



# **TRICS Consortium Limited**

## **Fast Food Drive-Through Trip Generation Analysis 2023**

January 2023

*Ian Coles*  
Project Manager

---



## Contents

|   |   |
|---|---|
| 1. Introduction .....                       | 2 |
| 2. Survey Samples & Method of Analysis..... | 2 |
| 3. Comparative Results .....                | 4 |
| 4. Observations .....                       | 7 |
| APPENDIX A .....                            | 9 |

## Tables

|   |   |
|---|---|
| Table 1: TRICS survey samples used in the technical analysis. ....                          | 3 |
| Table 2: <i>Weekday Total Vehicle trip rate comparisons (2000-2022)</i> .....               | 4 |
| Table 3: <i>Weekend Total Vehicle trip rate comparisons (2000-2022)</i> .....               | 5 |
| Table 4: <i>Weekday Total Vehicle trip rate comparisons (2000-2011)</i> .....               | 5 |
| Table 5: <i>Weekend Total Vehicle trip rate comparisons (2000-2011)</i> .....               | 5 |
| Table 6: <i>Weekday Total Vehicle trip rate comparisons (2012-2022)</i> .....               | 6 |
| Table 7: <i>Weekend Total Vehicle trip rate comparisons (2012-2022)</i> .....               | 6 |
| Table 8: <i>Weekday Total Vehicle trip rate comparisons (2000-2011 and 2012-2022)</i> ..... | 8 |
| Table 9: <i>Weekend Total Vehicle trip rate comparisons (2000-2011 and 2012-2022)</i> ..... | 8 |

## 1. Introduction

- 1.1. TRICS has been undertaking vehicle (and from 2000 onwards multi-modal) surveys at 06/D (Fast Food Drive-Through) developments for many years. In recent years, the results of our annual TRICS User Survey have shown that this development type remains popular amongst the TRICS Community. Because of this, we have continued undertaking surveys at these developments across the various TRICS regions.
- 1.2. Over the past couple of years TRICS has enhanced the supporting development data contained within this land use sub-category, including the introduction of several new data fields to provide greater context to individual sites as they are surveyed through our annual data collection programmes. These new data fields include drive-through lane vehicle capacities (and whether or not they are exceeded during a survey), numbers of specific pick-up bays, and whether a development undertakes home deliveries.
- 1.3. There are now sufficient surveys in the TRICS database to allow us to undertake a technical analysis which investigates trip generation for this development type, split by weekdays and weekends and by 2000-2011 and 2012-2022 time periods. Although the survey sample does not allow for more detailed breakdowns, the intention of this technical analysis was to provide some basic initial comparative information, which the survey sample is sufficient to achieve.
- 1.4. It was our original intention to also include the relatively new 06/J (Drive-Through Coffee Shop) TRICS sub-category in this analysis. However, we found that there was insufficient data available yet to be able to do this.
- 1.5. The aim of this technical note is not to provide any reasoning for any of the results obtained. Instead, the aim is to provide TRICS users and the wider transport planning community with clear, comparative trip rate data for the 06/D sites currently in our database, which is to be interpreted by practitioners using their own professional judgement. We offer no explanations or suggestions to explain any of the results, but we have provided detail on the survey selection criteria and the method used in the analysis.

## 2. Survey Samples & Method of Analysis

- 2.1. The official TRICS definition of the 06/D (Fast Food Drive-Through) land use sub-category is as follows.

### **06/D - Fast Food (Drive-Through)**

*Single fast food outlet with a drive-through facility, with or without restaurant facilities. May be within a retail/leisure park, but the site details and survey should only include the fast food outlet (both drive-through and other facilities). Trip rates are calculated by Gross Floor Area, Employees, or Parking Spaces.*

- 2.2. It was important from the outset that there were sufficient surveys within the TRICS database to allow a robust trip generation analysis to take place. This meant that the site selection process could not be overly broken down to the extent that the sample sizes would



render the results unreliable, but we still needed to provide enough variation to make the exercise worthwhile, and the database was sufficient in size to achieve this.

2.3. An initial analysis of the availability and variation of surveys within the TRICS database meant that the survey selection criteria could consist of the following elements:

- (i) All included surveys would have been undertaken no earlier than 01/01/2000.
- (ii) Sets of analyses would be split between surveys undertaken during 2000-2011 and surveys undertaken during 2012-2022, with an additional analysis including all surveys regardless of their dates (so covering the overall 2000-2022 period). For central location types described in (iv) there could only be trip rates calculated for the overall 2000-2022 period, as there were insufficient surveys when split between the two time periods.
- (iii) Sets of analyses would also be split by weekday (Monday-Friday) and weekend (Saturday-Sunday) surveys. However, this would only be possible for the outer location types described in (iv), as there were insufficient weekend surveys available for central location types.
- (iv) The main TRICS location types of Suburban Area, Neighbourhood Centre (excluding those with the sub-type of Village) and Edge of Town, which are noted as the “outer” categories, would be selected for the weekday/weekend analysis over the two time periods. Although we could include the “central” location types of Town Centre and Edge of Town Centre, a much smaller survey sample meant that we could only undertake trip rate calculations once for this central grouping, a weekdays calculation for the full 2000-2022 period.

2.4. These selection criteria allowed us to obtain the survey samples shown in the following table. Note that the samples are first broken down by date range, followed by the number of surveys for Mondays to Fridays and then Saturdays to Sundays.

| TRICS Location Types      | 2000-2022   |                             | 2000-2011 |          | 2012-2022 |          |
|---------------------------|-------------|-----------------------------|-----------|----------|-----------|----------|
|                           | Mon-Fri     | Sat-Sun                     | Mon-Fri   | Sat-Sun  | Mon-Fri   | Sat-Sun  |
| Suburban Area             | 11          | 4                           | 7         | 1        | 5         | 3        |
| Neighbourhood Centre      | 4           | 4                           | 2         | 1        | 2         | 3        |
| Edge of Town              | 10          | 5                           | 3         | 2        | 7         | 3        |
| “Outer” Grouping Totals   | <b>25 #</b> | <b>13</b>                   | <b>12</b> | <b>4</b> | <b>14</b> | <b>9</b> |
| Town Centre               | 2           | Insufficient data available |           |          |           |          |
| Edge of Town Centre       | 7           |                             |           |          |           |          |
| “Central” Grouping Totals | <b>9</b>    |                             |           |          |           |          |

# Discrepancy (25 surveys does not equal the sum of 12 and 14 surveys) is due to TRICS survey inclusion rules for re-surveys and is not an error).

**Table 1: TRICS survey samples used in the technical analysis.**

- 2.5. It is recognised that there is one particularly small data set, that being 4 surveys for the Saturday-Sunday 2000-2011 entry in Table 1. However, given the range of the analysis and the overall average of sample sizes, this is not considered an anomaly significant enough to become an issue in the robustness of the results of this exercise. It is also not considered significant enough to exclude the various splits as obtained using the selection criteria outlined in 2.3.
- 2.6. Having undertaken the survey selection process and achieved workable survey samples, the numerous average (mean) trip rate calculations could then take place. It was decided that the following method would be used:
- (i) All trip rates would be calculated using the GFA option, meaning that all trip rate results would be presented per 100m<sup>2</sup> of Gross Floor Area.
  - (ii) All trip rates displayed would be Total Vehicles, so would include the 7 standard TRICS vehicle classifications combined (cars, taxis, motorcycles, light goods vehicles, public service vehicles, OGV1 (up to and including 3 axles) and OGV2 (over 3 axles)). Note that there were insufficient surveys for any multi-modal analysis to be undertaken.
  - (iii) Total two-way trip rates (combined arrivals and departures) would be presented for the 0700-2200 period for each set of calculations undertaken.
  - (iv) Trip rates for the peak arrivals period and trip rates for the peak departures period would also be presented for each data set, along with trip rates for the total two-way peak period.

### 3. Comparative Results

3.1. The first set of comparative trip generation results are for weekday trip rates covering the full 2000-2022 period, and these are shown in Table 2.

| Location Categories  | Survey Days (Mon-Fri) | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          | 2                     |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | 7                     | 376.648                           | 1200-1300            | 17.686                  | 1800-1900              | 17.915                    | 1800-1900               | 34.505                     |
| Suburban Area        | 11                    |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 4                     |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 10                    | 340.046                           | 1200-1300            | 15.250                  | 1300-1400              | 15.913                    | 1300-1400               | 31.134                     |

**Table 2: Weekday Total Vehicle trip rate comparisons (2000-2022)**  
(all trip rates displayed are per 100m<sup>2</sup> of GFA)

3.2. The second set of comparative trip generation results are for weekend trip rates covering the full 2000-2022 period, and these are shown in Table 3.

| Location Categories  | Survey Days (Sat-Sun)       | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          |                             |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | Insufficient data available |                                   |                      |                         |                        |                           |                         |                            |
| Suburban Area        | 4                           |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 4                           |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 5                           | 549.267                           | 1300-1400            | 27.003                  | 1300-1400              | 27.330                    | 1300-1400               | 54.333                     |

**Table 3: Weekend Total Vehicle trip rate comparisons (2000-2022)**  
(all trip rates displayed are per 100m2 of GFA)

3.3. The third set of comparative trip generation results are for weekday trip rates covering the 2000-2011 period, and these are shown in Table 4.

| Location Categories  | Survey Days (Mon-Fri)       | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          |                             |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | Insufficient data available |                                   |                      |                         |                        |                           |                         |                            |
| Suburban Area        | 7                           |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 2                           |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 3                           | 274.204                           | 1200-1300            | 13.918                  | 1300-1400              | 13.599                    | 1300-1400               | 26.666                     |

**Table 4: Weekday Total Vehicle trip rate comparisons (2000-2011)**  
(all trip rates displayed are per 100m2 of GFA)

3.4. The fourth set of comparative trip generation results are for weekend trip rates covering the 2000-2011 period, and these are shown in Table 5.

| Location Categories  | Survey Days (Sat-Sun)       | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          |                             |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | Insufficient data available |                                   |                      |                         |                        |                           |                         |                            |
| Suburban Area        | 1                           |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 1                           |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 2                           | 401.815                           | 1300-1400            | 24.014                  | 1300-1400              | 23.521                    | 1300-1400               | 47.535                     |

**Table 5: Weekend Total Vehicle trip rate comparisons (2000-2011)**  
(all trip rates displayed are per 100m2 of GFA)

3.5. The fifth set of comparative trip generation results are for weekday trip rates covering the 2012-2022 period, and these are shown in Table 6.

| Location Categories  | Survey Days (Mon-Fri)       | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          |                             |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | Insufficient data available |                                   |                      |                         |                        |                           |                         |                            |
| Suburban Area        | 5                           |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 2                           |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 7                           | 374.602                           | 1300-1400            | 16.160                  | 1300-1400              | 16.843                    | 1300-1400               | 33.003                     |

**Table 6: Weekday Total Vehicle trip rate comparisons (2012-2022)**  
(all trip rates displayed are per 100m<sup>2</sup> of GFA)

3.6. The sixth set of comparative trip generation results are for weekend trip rates covering the 2012-2022 period, and these are shown in Table 7.

| Location Categories  | Survey Days (Sat-Sun)       | Total 2-Way Trip Rate (0700-2200) | Peak Arrivals Period | Peak Arrivals Trip Rate | Peak Departures Period | Peak Departures Trip Rate | Total 2-Way Peak Period | Total 2-Way Peak Trip Rate |
|----------------------|-----------------------------|-----------------------------------|----------------------|-------------------------|------------------------|---------------------------|-------------------------|----------------------------|
| Town Centre          |                             |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town Centre  | Insufficient data available |                                   |                      |                         |                        |                           |                         |                            |
| Suburban Area        | 3                           |                                   |                      |                         |                        |                           |                         |                            |
| Neighbourhood Centre | 3                           |                                   |                      |                         |                        |                           |                         |                            |
| Edge of Town         | 3                           | 659.811                           | 1300-1400            | 28.345                  | 1300-1400              | 29.041                    | 1300-1400               | 57.386                     |

**Table 7: Weekend Total Vehicle trip rate comparisons (2012-2022)**  
(all trip rates displayed are per 100m<sup>2</sup> of GFA)

## 4. Observations

- 4.1. TRICS does not intend to provide any explanations, suggestions or reasoning behind the comparative results that have been obtained through this technical analysis. Therefore, any speculative conclusions to be drawn from the results presented in this technical note will be down to the professional judgement of practitioners, and none will be the opinion of TRICS Consortium Limited. However, we can provide some technical observations that may allow such a process to take place.
- 4.2. There was just a single comparison between the outer and central TRICS location type groupings, and this was a weekday (Monday-Friday) comparison for the overall 2000-2022 period. The total two-way trip rate for the 0700-2200 survey period for the outer grouping was 340.046 per 100m<sup>2</sup> of GFA, whilst for the central grouping the figure was 376.648 per 100m<sup>2</sup> of GFA, which is 10.8% higher than the outer grouping. The total two-way peak period for the outer grouping was 1300-1400 with a trip rate of 31.134 per 100m<sup>2</sup> of GFA, whilst the peak for the central grouping was 1800-1900 with a trip rate of 34.505, which again was 10.8% higher than the outer grouping peak.
- 4.3. All other comparisons were for the outer TRICS location type grouping only. For the overall 2000-2022 period weekdays can be compared to weekends. The total two-way trip rate for the 0700-2200 survey period for weekdays was 340.046 per 100m<sup>2</sup> GFA, whilst for weekends it was 549.267 per 100m<sup>2</sup> GFA, which is 61.5% greater than for weekdays. The total two-way peak period was the same for weekdays and weekends, this being 1300-1400. The trip rates for this period were 31.134 per 100m<sup>2</sup> GFA for weekdays and 54.333 per 100m<sup>2</sup> for weekends, which were 74.5% greater than for weekdays.
- 4.4. When comparing weekday and weekend trip rates for the outer grouping for the 2000-2011 period, trip rates were greater for weekends than for weekdays in every calculation. The total two-way trip rate for 0700-2200 at weekends was 401.815 per 100m<sup>2</sup> GFA, which was 46.5% greater than the corresponding weekday trip rate of 274.204 per 100m<sup>2</sup> GFA. The total two-way peak period was 1300-1400 in both cases, with the trip rate for weekends being 47.535 per 100m<sup>2</sup> GFA, which was 78.3% greater than the trip rate of 26.666 per 100m<sup>2</sup> GFA for weekdays.
- 4.5. When comparing weekday and weekend trip rates for the outer grouping for the 2012-2022 period, trip rates were greater for weekends than for weekdays in every calculation. The total two-way trip rate for 0700-2200 at weekends was 659.811 per 100m<sup>2</sup> GFA, which was 76.1% greater than the corresponding weekday trip rate of 374.602 per 100m<sup>2</sup> GFA. The total two-way peak period was 1300-1400 in both cases, with the trip rate for weekends being 57.386 per 100m<sup>2</sup> GFA, which was 73.9% greater than the trip rate of 33.003 per 100m<sup>2</sup> GFA for weekdays.
- 4.6. Table 8 displays the weekday outer grouping comparison for the 2000-2011 period compared to the 2012-2022 period, with trip rates for the overall 2000-2022 period also shown.



| Survey Dates<br>(for outer TRICS<br>Location categories only) | Survey<br>Days<br>(Mon-Fri) | Total 2-Way<br>Trip Rate<br>(0700-2200) | Peak<br>Arrivals<br>Period | Peak<br>Arrivals<br>Trip Rate | Peak<br>Departures<br>Period | Peak<br>Departures<br>Trip Rate | Total 2-Way<br>Peak<br>Period | Total 2-Way<br>Peak<br>Trip Rate |
|---|-----------------------------|---|----------------------------|-------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| All Dates (2000-2022)   | 25                          | 340.046                                 | 1200-1300                  | 15.250                        | 1300-1400                    | 15.913                          | 1300-1400                     | 31.134                           |
| Older Surveys (2000-2011)                                     | 12                          | 274.204                                 | 1200-1300                  | 13.918                        | 1300-1400                    | 13.599                          | 1300-1400                     | 26.666                           |
| Newer Surveys (2012-2022)                                     | 14                          | 374.602                                 | 1300-1400                  | 16.160                        | 1300-1400                    | 16.843                          | 1300-1400                     | 33.003                           |
| Increase over Time  |                             | 100.398                                 |                            | 2.242                         |                              | 3.244                           |                               | 6.337                            |
| Percentage Increase   |                             | 36.6                                    |                            | 16.1                          |                              | 23.9                            |                               | 23.8                             |

**Table 8: Weekday Total Vehicle trip rate comparisons (2000-2011 and 2012-2022)**  
(all trip rates displayed are per 100m2 of GFA)

- 4.7. Table 8 shows that the total two-way weekday trip rate for the 0700-2200 period has grown from 274.204 per 100m2 GFA during 2000-2011 to 374.602 per 100m2 during 2012-2022, an increase of 36.6%. There are also increases over time across all weekday peak period calculations, with the total two-way peak period trip rate increasing by 23.8%.
- 4.8. Table 9 displays the weekend outer grouping comparison for the 2000-2011 period compared to the 2012-2022 period, with trip rates for the overall 2000-2022 period also shown.

| Survey Dates<br>(for outer TRICS<br>Location categories only) | Survey<br>Days<br>(Sat-Sun) | Total 2-Way<br>Trip Rate<br>(0700-2200) | Peak<br>Arrivals<br>Period | Peak<br>Arrivals<br>Trip Rate | Peak<br>Departures<br>Period | Peak<br>Departures<br>Trip Rate | Total 2-Way<br>Peak<br>Period | Total 2-Way<br>Peak<br>Trip Rate |
|---|-----------------------------|---|----------------------------|-------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| All Dates (2000-2022)   | 13                          | 549.267                                 | 1300-1400                  | 27.003                        | 1300-1400                    | 27.330                          | 1300-1400                     | 54.333                           |
| Older Surveys (2000-2011)                                     | 4                           | 401.815                                 | 1300-1400                  | 24.014                        | 1300-1400                    | 23.521                          | 1300-1400                     | 47.535                           |
| Newer Surveys (2012-2022)                                     | 9                           | 659.811                                 | 1300-1400                  | 28.345                        | 1300-1400                    | 29.041                          | 1300-1400                     | 57.386                           |
| Increase over Time  |                             | 257.996                                 |                            | 4.331                         |                              | 5.520                           |                               | 9.851                            |
| Percentage Increase   |                             | 64.2                                    |                            | 18.0                          |                              | 23.5                            |                               | 20.7                             |

**Table 9: Weekend Total Vehicle trip rate comparisons (2000-2011 and 2012-2022)**  
(all trip rates displayed are per 100m2 of GFA)

- 4.9. Table 9 shows that the total two-way weekend trip rate for the 0700-2200 period has grown from 401.815 per 100m2 GFA during 2000-2011 to 659.811 per 100m2 during 2012-2022, an increase of 64.2%. There are also increases over time across all weekend peak period calculations, with the total two-way peak period trip rate increasing by 20.7%.



APPENDIX A

Full TRICS Calculation Results Tables

| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 7        | 432      | 6.978          | 7        | 432      | 5.688          | 7        | 432      | 12.666         |
| 08:00-09:00              | 8        | 436      | 7.796          | 8        | 436      | 7.165          | 8        | 436      | 14.961         |
| 09:00-10:00              | 8        | 436      | 8.226          | 8        | 436      | 8.455          | 8        | 436      | 16.681         |
| 10:00-11:00              | 9        | 436      | 10.703         | 9        | 436      | 10.270         | 9        | 436      | 20.973         |
| 11:00-12:00              | 9        | 436      | 11.621         | 9        | 436      | 10.984         | 9        | 436      | 22.605         |
| 12:00-13:00              | 9        | 436      | 17.686         | 9        | 436      | 16.463         | 9        | 436      | 34.149         |
| 13:00-14:00              | 9        | 436      | 15.724         | 9        | 436      | 16.820         | 9        | 436      | 32.544         |
| 14:00-15:00              | 9        | 436      | 12.029         | 9        | 436      | 12.283         | 9        | 436      | 24.312         |
| 15:00-16:00              | 9        | 436      | 14.118         | 9        | 436      | 13.710         | 9        | 436      | 27.828         |
| 16:00-17:00              | 9        | 436      | 14.908         | 9        | 436      | 15.571         | 9        | 436      | 30.479         |
| 17:00-18:00              | 9        | 436      | 16.055         | 9        | 436      | 15.596         | 9        | 436      | 31.651         |
| 18:00-19:00              | 9        | 436      | 16.590         | 9        | 436      | 17.915         | 9        | 436      | 34.505         |
| 19:00-20:00              | 9        | 436      | 14.832         | 9        | 436      | 15.316         | 9        | 436      | 30.148         |
| 20:00-21:00              | 9        | 436      | 11.723         | 9        | 436      | 12.513         | 9        | 436      | 24.236         |
| 21:00-22:00              | 9        | 436      | 9.251          | 9        | 436      | 9.659          | 9        | 436      | 18.910         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Total Trip Rates:</b> |          |          | <b>188.240</b> |          |          | <b>188.408</b> |          |          | <b>376.648</b> |

Table A1: Trip rates for Central location types grouping (Weekday: 2000-2022)

| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 15       | 453      | 8.130          | 15       | 453      | 7.040          | 15       | 453      | 15.170         |
| 08:00-09:00              | 16       | 453      | 10.318         | 16       | 453      | 9.599          | 16       | 453      | 19.917         |
| 09:00-10:00              | 17       | 441      | 9.987          | 17       | 441      | 9.973          | 17       | 441      | 19.960         |
| 10:00-11:00              | 24       | 418      | 8.536          | 24       | 418      | 8.396          | 24       | 418      | 16.932         |
| 11:00-12:00              | 25       | 416      | 9.567          | 25       | 416      | 8.644          | 25       | 416      | 18.211         |
| 12:00-13:00              | 25       | 416      | 15.250         | 25       | 416      | 14.029         | 25       | 416      | 29.279         |
| 13:00-14:00              | 25       | 416      | 15.221         | 25       | 416      | 15.913         | 25       | 416      | 31.134         |
| 14:00-15:00              | 25       | 416      | 11.260         | 25       | 416      | 12.115         | 25       | 416      | 23.375         |
| 15:00-16:00              | 25       | 416      | 12.673         | 25       | 416      | 11.913         | 25       | 416      | 24.586         |
| 16:00-17:00              | 25       | 416      | 12.827         | 25       | 416      | 12.433         | 25       | 416      | 25.260         |
| 17:00-18:00              | 25       | 416      | 14.135         | 25       | 416      | 13.875         | 25       | 416      | 28.010         |
| 18:00-19:00              | 25       | 416      | 14.663         | 25       | 416      | 14.904         | 25       | 416      | 29.567         |
| 19:00-20:00              | 24       | 422      | 11.476         | 24       | 422      | 12.860         | 24       | 422      | 24.336         |
| 20:00-21:00              | 24       | 422      | 9.469          | 24       | 422      | 10.230         | 24       | 422      | 19.699         |
| 21:00-22:00              | 24       | 422      | 7.137          | 24       | 422      | 7.473          | 24       | 422      | 14.610         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Total Trip Rates:</b> |          |          | <b>170.649</b> |          |          | <b>169.397</b> |          |          | <b>340.046</b> |

Table A2: Trip rates for Outer location types grouping (Weekday: 2000-2022)



| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 10       | 355      | 7.095          | 10       | 355      | 6.616          | 10       | 355      | 13.711         |
| 08:00-09:00              | 12       | 352      | 10.666         | 12       | 352      | 9.173          | 12       | 352      | 19.839         |
| 09:00-10:00              | 13       | 352      | 15.499         | 13       | 352      | 13.971         | 13       | 352      | 29.470         |
| 10:00-11:00              | 13       | 352      | 14.124         | 13       | 352      | 15.717         | 13       | 352      | 29.841         |
| 11:00-12:00              | 13       | 352      | 17.354         | 13       | 352      | 14.844         | 13       | 352      | 32.198         |
| 12:00-13:00              | 13       | 352      | 26.151         | 13       | 352      | 24.143         | 13       | 352      | 50.294         |
| 13:00-14:00              | 13       | 352      | 27.003         | 13       | 352      | 27.330         | 13       | 352      | 54.333         |
| 14:00-15:00              | 13       | 352      | 24.121         | 13       | 352      | 24.667         | 13       | 352      | 48.788         |
| 15:00-16:00              | 13       | 352      | 21.589         | 13       | 352      | 21.655         | 13       | 352      | 43.244         |
| 16:00-17:00              | 13       | 352      | 21.502         | 13       | 352      | 22.659         | 13       | 352      | 44.161         |
| 17:00-18:00              | 13       | 352      | 22.855         | 13       | 352      | 22.637         | 13       | 352      | 45.492         |
| 18:00-19:00              | 13       | 352      | 22.921         | 13       | 352      | 22.943         | 13       | 352      | 45.864         |
| 19:00-20:00              | 13       | 352      | 19.013         | 13       | 352      | 21.131         | 13       | 352      | 40.144         |
| 20:00-21:00              | 13       | 352      | 13.949         | 13       | 352      | 14.407         | 13       | 352      | 28.356         |
| 21:00-22:00              | 13       | 352      | 11.417         | 13       | 352      | 12.115         | 13       | 352      | 23.532         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Total Trip Rates:</b> |          |          | <b>275.259</b> |          |          | <b>274.008</b> |          |          | <b>549.267</b> |

**Table A3: Trip rates for Outer location types grouping (Weekend: 2000-2022)**

| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 7        | 434      | 4.867          | 7        | 434      | 3.716          | 7        | 434      | 8.583          |
| 08:00-09:00              | 8        | 436      | 7.648          | 8        | 436      | 6.273          | 8        | 436      | 13.921         |
| 09:00-10:00              | 9        | 416      | 6.950          | 9        | 416      | 6.977          | 9        | 416      | 13.927         |
| 10:00-11:00              | 11       | 394      | 6.822          | 11       | 394      | 6.822          | 11       | 394      | 13.644         |
| 11:00-12:00              | 12       | 392      | 7.257          | 12       | 392      | 6.427          | 12       | 392      | 13.684         |
| 12:00-13:00              | 12       | 392      | 13.918         | 12       | 392      | 12.258         | 12       | 392      | 26.176         |
| 13:00-14:00              | 12       | 392      | 13.067         | 12       | 392      | 13.599         | 12       | 392      | 26.666         |
| 14:00-15:00              | 12       | 392      | 9.279          | 12       | 392      | 10.704         | 12       | 392      | 19.983         |
| 15:00-16:00              | 12       | 392      | 10.619         | 12       | 392      | 9.704          | 12       | 392      | 20.323         |
| 16:00-17:00              | 12       | 392      | 10.960         | 12       | 392      | 10.406         | 12       | 392      | 21.366         |
| 17:00-18:00              | 12       | 392      | 11.619         | 12       | 392      | 11.215         | 12       | 392      | 22.834         |
| 18:00-19:00              | 12       | 392      | 12.066         | 12       | 392      | 13.024         | 12       | 392      | 25.090         |
| 19:00-20:00              | 11       | 401      | 9.420          | 11       | 401      | 10.802         | 11       | 401      | 20.222         |
| 20:00-21:00              | 11       | 401      | 7.631          | 11       | 401      | 8.401          | 11       | 401      | 16.032         |
| 21:00-22:00              | 11       | 401      | 5.729          | 11       | 401      | 6.024          | 11       | 401      | 11.753         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Total Trip Rates:</b> |          |          | <b>137.852</b> |          |          | <b>136.352</b> |          |          | <b>274.204</b> |

**Table A4: Trip rates for Outer location types grouping (Weekday 2000-2011)**



| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 2        | 377      | 0.133          | 2        | 377      | 0.133          | 2        | 377      | 0.266          |
| 08:00-09:00              | 4        | 355      | 6.479          | 4        | 355      | 4.577          | 4        | 355      | 11.056         |
| 09:00-10:00              | 4        | 355      | 10.282         | 4        | 355      | 8.451          | 4        | 355      | 18.733         |
| 10:00-11:00              | 4        | 355      | 8.662          | 4        | 355      | 10.563         | 4        | 355      | 19.225         |
| 11:00-12:00              | 4        | 355      | 13.803         | 4        | 355      | 11.479         | 4        | 355      | 25.282         |
| 12:00-13:00              | 4        | 355      | 22.606         | 4        | 355      | 18.732         | 4        | 355      | 41.338         |
| 13:00-14:00              | 4        | 355      | 24.014         | 4        | 355      | 23.521         | 4        | 355      | 47.535         |
| 14:00-15:00              | 4        | 355      | 20.141         | 4        | 355      | 21.268         | 4        | 355      | 41.409         |
| 15:00-16:00              | 4        | 355      | 17.606         | 4        | 355      | 17.394         | 4        | 355      | 35.000         |
| 16:00-17:00              | 4        | 355      | 16.690         | 4        | 355      | 19.296         | 4        | 355      | 35.986         |
| 17:00-18:00              | 4        | 355      | 18.732         | 4        | 355      | 18.732         | 4        | 355      | 37.464         |
| 18:00-19:00              | 4        | 355      | 17.958         | 4        | 355      | 18.169         | 4        | 355      | 36.127         |
| 19:00-20:00              | 4        | 355      | 11.901         | 4        | 355      | 13.380         | 4        | 355      | 25.281         |
| 20:00-21:00              | 4        | 355      | 6.549          | 4        | 355      | 8.099          | 4        | 355      | 14.648         |
| 21:00-22:00              | 4        | 355      | 5.775          | 4        | 355      | 6.690          | 4        | 355      | 12.465         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Total Trip Rates:</b> |          |          | <b>201.331</b> |          |          | <b>200.484</b> |          |          | <b>401.815</b> |

**Table A5: Trip rates for Outer location types grouping (Weekend: 2000-2011)**

| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              |          |          |                |          |          |                |          |          |                |
| 07:00-08:00              | 9        | 467      | 10.002         | 9        | 467      | 8.907          | 9        | 467      | 18.909         |
| 08:00-09:00              | 9        | 467      | 11.789         | 9        | 467      | 11.622         | 9        | 467      | 23.411         |
| 09:00-10:00              | 9        | 467      | 12.027         | 9        | 467      | 11.979         | 9        | 467      | 24.006         |
| 10:00-11:00              | 14       | 439      | 9.478          | 14       | 439      | 9.234          | 14       | 439      | 18.712         |
| 11:00-12:00              | 14       | 439      | 10.990         | 14       | 439      | 10.145         | 14       | 439      | 21.135         |
| 12:00-13:00              | 14       | 439      | 15.396         | 14       | 439      | 14.599         | 14       | 439      | 29.995         |
| 13:00-14:00              | 14       | 439      | 16.160         | 14       | 439      | 16.843         | 14       | 439      | 33.003         |
| 14:00-15:00              | 14       | 439      | 12.209         | 14       | 439      | 12.681         | 14       | 439      | 24.890         |
| 15:00-16:00              | 14       | 439      | 13.803         | 14       | 439      | 13.120         | 14       | 439      | 26.923         |
| 16:00-17:00              | 14       | 439      | 13.754         | 14       | 439      | 13.559         | 14       | 439      | 27.313         |
| 17:00-18:00              | 14       | 439      | 15.510         | 14       | 439      | 15.331         | 14       | 439      | 30.841         |
| 18:00-19:00              | 14       | 439      | 16.095         | 14       | 439      | 15.802         | 14       | 439      | 31.897         |
| 19:00-20:00              | 14       | 439      | 12.437         | 14       | 439      | 13.738         | 14       | 439      | 26.175         |
| 20:00-21:00              | 14       | 439      | 10.356         | 14       | 439      | 11.104         | 14       | 439      | 21.460         |
| 21:00-22:00              | 14       | 439      | 7.771          | 14       | 439      | 8.161          | 14       | 439      | 15.932         |
| 22:00-23:00              |          |          |                |          |          |                |          |          |                |
| 23:00-24:00              |          |          |                |          |          |                |          |          |                |
| <b>Daily Trip Rates:</b> |          |          | <b>187.777</b> |          |          | <b>186.825</b> |          |          | <b>374.602</b> |

**Table A6: Trip rates for Outer location types grouping (Weekday: 2012-2022)**



| Time Range               | ARR.     |          |                | DEP.     |          |                | TOT.     |          |                |
|--------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
|                          | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | Trip Rate      | No. Days | Ave. GFA | 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              | 1        | 350      | 1.429          | 1        | 350      | 0.857          | 1        | 350      | 2.286          |
| 06:00-07:00              | 5        | 332      | 5.361          | 5        | 332      | 4.277          | 5        | 332      | 9.638          |
| 07:00-08:00              | 8        | 350      | 8.967          | 8        | 350      | 8.360          | 8        | 350      | 17.327         |
| 08:00-09:00              | 8        | 350      | 12.790         | 8        | 350      | 11.504         | 8        | 350      | 24.294         |
| 09:00-10:00              | 9        | 351      | 17.842         | 9        | 351      | 16.450         | 9        | 351      | 34.292         |
| 10:00-11:00              | 9        | 351      | 16.577         | 9        | 351      | 18.032         | 9        | 351      | 34.609         |
| 11:00-12:00              | 9        | 351      | 18.950         | 9        | 351      | 16.356         | 9        | 351      | 35.306         |
| 12:00-13:00              | 9        | 351      | 27.744         | 9        | 351      | 26.574         | 9        | 351      | 54.318         |
| 13:00-14:00              | 9        | 351      | 28.345         | 9        | 351      | 29.041         | 9        | 351      | 57.386         |
| 14:00-15:00              | 9        | 351      | 25.910         | 9        | 351      | 26.194         | 9        | 351      | 52.104         |
| 15:00-16:00              | 9        | 351      | 23.379         | 9        | 351      | 23.568         | 9        | 351      | 46.947         |
| 16:00-17:00              | 9        | 351      | 23.663         | 9        | 351      | 24.170         | 9        | 351      | 47.833         |
| 17:00-18:00              | 9        | 351      | 24.707         | 9        | 351      | 24.391         | 9        | 351      | 49.098         |
| 18:00-19:00              | 9        | 351      | 25.150         | 9        | 351      | 25.087         | 9        | 351      | 50.237         |
| 19:00-20:00              | 9        | 351      | 22.208         | 9        | 351      | 24.612         | 9        | 351      | 46.820         |
| 20:00-21:00              | 9        | 351      | 17.273         | 9        | 351      | 17.241         | 9        | 351      | 34.514         |
| 21:00-22:00              | 9        | 351      | 13.951         | 9        | 351      | 14.552         | 9        | 351      | 28.503         |
| 22:00-23:00              | 7        | 345      | 9.693          | 7        | 345      | 10.439         | 7        | 345      | 20.132         |
| 23:00-24:00              | 7        | 345      | 6.752          | 7        | 345      | 7.415          | 7        | 345      | 14.167         |
| <b>Total Trip Rates:</b> |          |          | <b>330.691</b> |          |          | <b>329.120</b> |          |          | <b>659.811</b> |

**Table A7: Trip rates for Outer location types grouping (Weekend: 2012-2022)**