

Traffic Patterns Global Specifications

Version: 1.8

Release Date: May 2019

Table of Contents

| | |
|------------------------------------------|----|
| Document Control | 3 |
| Introduction | 4 |
| Traffic Patterns Overview | 4 |
| Coverage | 4 |
| TMC-Referenced Flat Format..... | 5 |
| Product Variations Summary | 5 |
| Country | 5 |
| Day of Week | 6 |
| Time Granularity | 6 |
| Holiday Appendix | 9 |
| Holiday Appendix Visualisation | 11 |
| Metadata File | 11 |
| TMC-Referenced Relational Format..... | 13 |
| Product Variations Summary | 13 |
| Time Granularity | 13 |
| Unit of Measure | 14 |
| Country vs. Product Region | 14 |
| Speed Patterns Dictionary (SPD) | 14 |
| TMC Reference Tables | 17 |
| Holiday Appendix | 19 |
| Metadata File | 21 |
| Link-Referenced Relational Format..... | 23 |
| Product Variations Summary | 23 |
| Time Granularity | 23 |
| Unit of Measure | 24 |
| Speed Patterns Dictionary (SPD) | 24 |
| Link Reference Tables | 27 |
| Country Look-up Tables | 28 |
| Holiday Appendix | 29 |
| Appendix – Product Variations Tree | 32 |
| Revision History..... | 33 |
| From v1.6 to v1.7 | 33 |

| | |
|-------------------|----|
| From v1.5 to v1.6 | 33 |
| From v1.4 to v1.5 | 33 |
| From v1.3 to v1.4 | 33 |
| From v1.2 to v1.3 | 34 |
| From v1.1 to v1.2 | 34 |
| From v1.0 to v1.1 | 35 |

Document Control

| Version | Date |
|---------|------------------|
| 1.0 | 8 July 2010 |
| 1.1 | 6 December 2010 |
| 1.2 | 22 March 2011 |
| 1.3 | 14 December 2012 |
| 1.4 | 23 January 2013 |
| 1.5 | 25 July 2013 |
| 1.6 | 2 December 2016 |
| 1.7 | 16 March 2017 |
| 1.8 | 17 May 2019 |

Introduction

These Product Specifications describe the structure of Traffic Patterns (all product variations).

Traffic Patterns Overview

Traffic Patterns is a database of average traffic flow velocity for roadways geo-referenced to the HERE Map Content. Traffic Patterns provides the foundation for alternate route features and more accurate drive time estimates for logistics and navigation products.

More specifically, Traffic Patterns is:

- A set of look-aside tables in .CSV format.
- Delivered per product region (usually continent)
- Geo-referenced to the following features in the HERE Map Content:
 - Traffic Message Channel (TMC) location codes
 - Link IDs
- Designed to provide flow velocities in kilometers per hour or miles per hour, to one KPH / MPH increments (depending on unit of measurement per country).
- Comprised of models for the following days:
 - Monday
 - Tuesday
 - Wednesday
 - Thursday
 - Friday
 - Saturday
 - Sunday
- Any combination of the above
- Offered in two levels of granularity:
 - 60 minute (one speed value per hour)
 - 15 minute (one speed limit value per 15 minute period)
- Referenced to local time (no need to account for time zones or seasonal time changes).

Coverage

TMC-Referenced

Traffic Patterns covers all roads coded with TMC location codes in the HERE Map Content in included countries. See release notes for list of included countries and specific Location Table versions used.

Link-Referenced

Traffic Patterns covers all roads included in the HERE Map Content in included countries, unless otherwise stated in the release notes. See release notes for list of included countries / cities and specific map version used. A few specific kinds of links are not covered, because they are not navigable roadways: ferry links, rail links, and any link that is not marked as accessible by emergency vehicles.

TMC-Referenced Flat Format

Product Variations Summary

Each model is represented as a separate .CSV file and contains data for a combination of one of each of the following:

- Country
- Day of Week
- Time Granularity

Additionally, the following appendices may be available, depending on the Product Region.

- Holiday Appendix

Finally, each product release includes a metadata file.

Table 1

| Product Region | Daily Models | | Combined Models | | Granularity | | Appendices |
|----------------------|--------------|--------------------|-----------------|---------|-------------|--------|------------------|
| | Per Country | Per Product Region | Mon-Thur | Sat-Sun | 15 min | 60 min | Holiday Appendix |
| Asia Pacific | X | X | X | X | X | X | X* |
| Europe | X | X | X | X | X | X | X* |
| India | X | X | X | X | X | X | X |
| Oceania | X | X | X | X | X | X | X |
| Middle East & Africa | X | X | X | X | X | X | |
| North America | X | | X | X | X | X | X* |
| South America | X | X | X | X | X | X | |

* selected countries within Product Region. See Product Release Notes for details.

Country

Traffic Patterns Flat Format models are available as individual files per country. In all product regions except North America Flat Format models at the product region level are also available. These contain the combined information for all individual countries included in that particular product release.

Day of Week

Traffic Patterns models for the following days are provided:

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday
- Any combination of the above

Time Granularity

Traffic Patterns models with the following levels of time granularity are provided:

- 60 minute (one speed value per hour)
- 15 minute (one speed value per 15 minute period)

File Format (15 Minute Model)

Contains 96 speed values per TMC location (four per hour). Sample below shows 4 hour time period (10:00 – 14:00).

| Field Name | Type | Example | Description |
|------------|---------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TMC | Text | D01N04474 | Traffic Location code in the format of: CLLDTTTT Where: <ul style="list-style-type: none"> C is the Country Code (1 digit)* LL is the Location Table Number (2 digits)* D is the TMC path direction ('P' or 'N') <ul style="list-style-type: none"> - N refers to both 'N' and '-' coding - P refers to both 'P' and '+' coding TTTTT is the TMC location (5 digits) |
| H10_00 | Integer | 44 | Derived traffic velocities for the period 10:00:00 to 10:14:59, local time. This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on country*. |

| | | | |
|--------|---------|----|------------------------------------------------------------------------|
| | | | * see Metadata File section in Country Specific Appendices for values. |
| H10_15 | Integer | 44 | As above, 10:15:00 to 10:29:59 local time |
| H10_30 | Integer | 44 | As above, 10:30:00 to 10:44:59 local time |
| H10_45 | Integer | 44 | As above, 10:45:00 to 10:59:59 local time |
| H11_00 | Integer | 44 | As above, 11:00:00 to 11:14:59 local time |
| H11_15 | Integer | 42 | As above, 11:15:00 to 11:29:59 local time |
| H11_30 | Integer | 35 | As above, 11:30:00 to 11:44:59 local time |
| H11_45 | Integer | 35 | As above, 11:45:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:14:59 local time |
| H12_15 | Integer | 34 | As above, 12:15:00 to 12:29:59 local time |
| H12_30 | Integer | 34 | As above, 12:30:00 to 12:44:59 local time |
| H12_45 | Integer | 34 | As above, 12:45:00 to 12:59:59 local time |
| H13_00 | Integer | 34 | As above, 13:00:00 to 13:14:59 local time |
| H13_15 | Integer | 34 | As above, 13:15:00 to 13:29:59 local time |
| H13_30 | Integer | 34 | As above, 13:30:00 to 13:44:59 local time |
| H13_45 | Integer | 34 | As above, 13:45:00 to 13:59:59 local time |

File Format (60 Minute Model)

Contains 24 speed values per TMC location (one per hour).

| Field Name | Type | Example | Description |
|------------|---------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TMC | Text | D01N04474 | Traffic Location code in the format of: CLLDTTTT Where: <ul style="list-style-type: none"> C is the Country Code (1 digit)* LL is the Location Table Number (2 digits)* D is the TMC path direction ('P' or 'N') <ul style="list-style-type: none"> - N refers to both 'N' and '-' coding - P refers to both 'P' and '+' coding TTTTT is the TMC location (5 digits) |
| H00_00 | Integer | 44 | Derived traffic velocities for the period 00:00:00 to 00:59:59, local time. This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on country*. * see Metadata File section in Country Specific Appendices for values. |
| H01_00 | Integer | 44 | As above, 01:00:00 to 01:59:59 local time |
| H02_00 | Integer | 44 | As above, 02:00:00 to 02:59:59 local time |
| H03_00 | Integer | 44 | As above, 03:00:00 to 03:59:59 local time |
| H04_00 | Integer | 44 | As above, 04:00:00 to 04:59:59 local time |
| H05_00 | Integer | 42 | As above, 05:00:00 to 05:59:59 local time |
| H06_00 | Integer | 35 | As above, 06:00:00 to 06:59:59 local time |
| H07_00 | Integer | 35 | As above, 07:00:00 to 07:59:59 local time |
| H08_00 | Integer | 35 | As above, 08:00:00 to 08:59:59 local time |
| H09_00 | Integer | 35 | As above, 09:00:00 to 09:59:59 local time |
| H10_00 | Integer | 35 | As above, 10:00:00 to 10:59:59 local time |
| H11_00 | Integer | 35 | As above, 11:00:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:59:59 local time |
| H13_00 | Integer | 35 | As above, 13:00:00 to 13:59:59 local time |

| | | | |
|--------|---------|----|-------------------------------------------|
| H14_00 | Integer | 35 | As above, 14:00:00 to 14:59:59 local time |
| H15_00 | Integer | 35 | As above, 15:00:00 to 15:59:59 local time |
| H16_00 | Integer | 35 | As above, 16:00:00 to 16:59:59 local time |
| H17_00 | Integer | 35 | As above, 17:00:00 to 17:59:59 local time |
| H18_00 | Integer | 35 | As above, 18:00:00 to 18:59:59 local time |
| H19_00 | Integer | 35 | As above, 19:00:00 to 19:59:59 local time |
| H20_00 | Integer | 35 | As above, 20:00:00 to 20:59:59 local time |
| H21_00 | Integer | 35 | As above, 21:00:00 to 21:59:59 local time |
| H22_00 | Integer | 35 | As above, 22:00:00 to 22:59:59 local time |
| H23_00 | Integer | 35 | As above, 23:00:00 to 23:59:59 local time |

Model Visualisation

Sample below shows 60 minute model.

| TMC | H00_00 | H01_00 | H02_00 | H03_00 | H04_00 | H05_00 | H06_00 | H07_00 | H08_00 | H09_00 | H10_00 | H11_00 | H12_00 | H13_00 | H14_00 | H15_00 | H16_00 | H17_00 | H18_00 | H19_00 | H20_00 | H21_00 | H22_00 | H23_00 |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DOI104474 | 44 | 44 | 44 | 44 | 44 | 42 | 35 | 35 | 35 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 35 | 35 | 36 | 38 | 39 | 44 | 44 |
| DOI109730 | 36 | 36 | 36 | 36 | 36 | 35 | 34 | 33 | 30 | 30 | 29 | 29 | 29 | 29 | 29 | 28 | 27 | 27 | 28 | 29 | 31 | 34 | 36 | 36 |
| DOI110000 | 84 | 84 | 84 | 84 | 84 | 81 | 70 | 70 | 70 | 70 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 72 | 73 | 74 | 77 | 79 | 84 | 84 |
| DOI110002 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| DOI110003 | 107 | 107 | 107 | 107 | 107 | 107 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 98 | 98 | 98 | 100 | 101 | 102 | 107 |
| DOI110004 | 133 | 133 | 133 | 133 | 133 | 132 | 113 | 113 | 112 | 113 | 113 | 113 | 113 | 113 | 113 | 114 | 114 | 115 | 117 | 118 | 120 | 123 | 133 | 133 |
| DOI110005 | 136 | 136 | 136 | 136 | 136 | 135 | 115 | 115 | 115 | 115 | 115 | 115 | 116 | 116 | 116 | 117 | 117 | 117 | 118 | 119 | 120 | 122 | 124 | 136 |
| DOI110006 | 117 | 117 | 117 | 117 | 117 | 117 | 102 | 102 | 102 | 102 | 103 | 103 | 103 | 103 | 103 | 103 | 104 | 105 | 106 | 107 | 109 | 110 | 117 | 117 |
| DOI110007 | 134 | 134 | 134 | 134 | 134 | 133 | 112 | 112 | 112 | 112 | 113 | 113 | 113 | 113 | 113 | 114 | 114 | 115 | 117 | 119 | 121 | 123 | 134 | 134 |

Holiday Appendix

In addition to the models described in the previous sections, Traffic Patterns features Holiday Appendices for use on major holidays and surrounding days where the holiday has been observed to impact typical levels of traffic. This data accounts for:

- less traffic due to the absence of work-day commuting.
- more traffic due to recreational travel.

The Model referenced in the Holiday Appendix is designed to substitute the Daily Model (flat format) or Speed Pattern (relational models) that would normally apply on that day of the week.

For example, Memorial Day in the United States does not exhibit the same patterns of congestion as a typical Monday. If the Sunday model more accurately represents the patterns of traffic on Memorial Day, the Sunday model would be referenced in the Holiday Appendix.

Holiday Appendices are available for certain countries in each region. See Product Release Notes for details of the Countries with a Holiday Appendix and days included per Country.

File Format (Holiday Appendix)



| Field Name | Type | Example | Description |
|-------------------|---------|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| HOLIDAY | Text | LABOR DAY | The name of the holiday or affected day. |
| MONTH | Integer | 9 | The month in which the holiday falls, starting at 1 with January; e.g. 9 = September. |
| MIN_DAY | Integer | 1 | The earliest date the holiday can fall on in the given month.* This field is equal to MAX_DAY for fixed holidays. |
| MAX_DAY | Integer | 7 | The latest date the holiday can fall on in the given month.* This field is equal to MIN_DAY for fixed holidays. |
| DAY_OF_WEEK | Integer | 2 | The day of the week that the holiday falls on, starting at 1 with Sunday; e.g. 2 = Monday. |
| MODEL | Text | NTP_USA_15MIN_U_09400.csv | The file name of the traffic model to use for the holiday (relevant for TMC Flat Format product variation only). |
| DOW_SPEED_PATTERN | Text | U | The speed pattern to use for the holiday (relevant for Link Relational and TMC Relational product variations only). |

*This does not fluctuate for fixed holidays, i.e., those that fall on the exact same date each year (e.g., Independence Day).

Holiday Appendix Visualisation

The sample below shows a selection of days included in the United States Holiday Appendix. For a complete list per country see Product Release Notes.

| HOLIDAY | MONTH | MIN_DAY | MAX_DAY | DAY_OF_WEEK | MODEL | DOW_SPEED_PATTERN |
|----------------------------|-------|---------|---------|-------------|---------------------------|-------------------|
| INDEPENDENCE DAY | 7 | 4 | 4 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 3 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 4 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 6 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 3 | NTP_USA_15MIN_T_09400.csv | T |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 4 | NTP_USA_15MIN_W_09400.csv | W |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 5 | NTP_USA_15MIN_R_09400.csv | R |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| LABOR DAY | 9 | 1 | 7 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| THANKSGIVING DAY | 11 | 22 | 28 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER THANKSGIVING | 11 | 23 | 29 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| 2 DAYS AFTER THANKSGIVING | 11 | 24 | 30 | 7 | NTP_USA_15MIN_U_09400.csv | U |

Metadata File

One metadata file contains information relating to all included models. Specifically, the following information is provided:

- Reference to Traffic Patterns product release version
- Filename for each model
- Speed Value Measurement (KPH / MPH) for each model
- Country Name for each country
- Country Code for each country
- Location Table Number for each country

Metadata File Visualisation

The example below illustrates the layout of the file but does not necessarily reflect the content of the Traffic Patterns product delivered with this document.

| METADATA FOR TRAFFIC PATTERNS EUROPE V9.0 TMC 2012.4 | | | |
|------------------------------------------------------|--|-------------------------|------------|
| FILE_NAME | | SPEED_VALUE_MEASUREMENT | |
| NTP_DEU_60MIN_M_12400.csv | | KPH | |
| NTP_DEU_60MIN_T_12400.csv | | KPH | |
| NTP_DEU_60MIN_W_12400.csv | | KPH | |
| NTP_DEU_60MIN_R_12400.csv | | KPH | |
| | | | |
| COUNTRY | | COUNTRY_CODE | TABLE_CODE |
| GERMANY | | D | 1 |

TMC-Referenced Relational Format

Product Variations Summary

Each TMC-referenced Relational Format product release consists of:

- Four Speed Patterns Dictionary (SPD) files, each one representing a different combination of:
 - unit of measure (i.e. KPH/MPH)
 - time granularity (e.g. 15 minutes, 60 minutes)
- One TMC Reference Table per included Country / Product Region (see Table 2).
- One metadata file.

Additionally, the following appendices may be available, depending on the Product Region:

- Holiday Appendix

Table 2

| Product Region | TMC Reference Table | | SPD Variations | | | | Appendices |
|----------------------|---------------------|--------------------|----------------|------------|------------|------------|------------------|
| | Per Country | Per Product Region | 15 min KPH | 15 min MPH | 60 min KPH | 60 min MPH | Holiday Appendix |
| Asia Pacific | X | X | X | X | X | X | X* |
| Europe | X | X | X | X | X | X | X* |
| India | X | X | X | X | X | X | X |
| Oceania | X | X | X | X | X | X | X |
| Middle East & Africa | X | X | X | X | X | X | |
| North America | X | | X | X | X | X | X* |
| South America | X | X | X | X | X | X | |

*selected countries within Product Region. See Product Release Notes for details.

Time Granularity

SPDs with the following levels of time granularity are provided:

- 60 minute (one speed value per hour)
- 15 minute (one speed value per 15 minute period)

See File Format section for more details.

Unit of Measure

SPDs for the following units of measure are provided:

- KPH
- MPH

Country vs. Product Region

TMC Reference Tables are available as individual files per country. In Europe and Oceania TMC Reference Tables at the continent level are also available. These contain the combined information for all individual countries included in that particular product release.

Speed Patterns Dictionary (SPD)

Each SPD is represented as a.csv file (per product region) and contains data for a combination of one of each of the following:

- Time Granularity
- Unit of Measure

Speed Patterns in the SPD are numbered sequentially.

When a product contains multiple SPDs, the Speed Patterns reference numbers in each SPD represent the same speed patterns across all SPDs within that (version of the) Traffic Patterns product. For example, Speed Pattern 123 in a KPH file is equivalent to Speed Pattern 123 in the corresponding MPH file. Additionally, Speed Pattern 123 in a 15 minute file is equivalent to Speed Pattern 123 in the corresponding 60 minute file.

However, Speed Patterns reference numbers are not permanent or unique across different versions of the Traffic Patterns product. For example, Speed Pattern 123 does not necessarily represent the same pattern in V3.0 as in V4.0. Speed Pattern 123 also does not necessarily represent the same pattern in two different product regions (e.g. Europe and North America), even if both have the same version number, are geo-referenced to the same version of the HERE Map Content, or are released within the same quarter.

The total number of Speed Patterns included in each version can also vary.

File Format (15 Minute Model)

Contains 96 speed values per identified Speed Pattern (four per hour). Sample below shows 4 hour time period (10:00 – 14:00).

| Field Name | Type | Example | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------|
| Speed Pattern | Number | 123 | Sequential number, unique within each SPD file. |
| H10_00 | Integer | 44 | Derived traffic velocities for the period 10:00:00 to 10:14:59, local time. |

| | | | |
|--------|---------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on SPD file. |
| H10_15 | Integer | 44 | As above, 10:15:00 to 10:29:59 local time |
| H10_30 | Integer | 44 | As above, 10:30:00 to 10:44:59 local time |
| H10_45 | Integer | 44 | As above, 10:45:00 to 10:59:59 local time |
| H11_00 | Integer | 44 | As above, 11:00:00 to 11:14:59 local time |
| H11_15 | Integer | 42 | As above, 11:15:00 to 11:29:59 local time |
| H11_30 | Integer | 35 | As above, 11:30:00 to 11:44:59 local time |
| H11_45 | Integer | 35 | As above, 11:45:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:14:59 local time |
| H12_15 | Integer | 34 | As above, 12:15:00 to 12:29:59 local time |
| H12_30 | Integer | 34 | As above, 12:30:00 to 12:44:59 local time |
| H12_45 | Integer | 34 | As above, 12:45:00 to 12:59:59 local time |
| H13_00 | Integer | 34 | As above, 13:00:00 to 13:14:59 local time |
| H13_15 | Integer | 34 | As above, 13:15:00 to 13:29:59 local time |
| H13_30 | Integer | 34 | As above, 13:30:00 to 13:44:59 local time |
| H13_45 | Integer | 34 | As above, 13:45:00 to 13:59:59 local time |

File Format (60 Minute Model)

Contains 24 speed values per identified Speed Pattern (one per hour).

| Field Name | Type | Example | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed Pattern | Number | 123 | Sequential number, unique within each SPD file. |
| H00_00 | Integer | 44 | Derived traffic velocities for the period 00:00:00 to 00:59:59, local time. This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on SPD file. |
| H01_00 | Integer | 44 | As above, 01:00:00 to 01:59:59 local time |
| H02_00 | Integer | 44 | As above, 02:00:00 to 02:59:59 local time |
| H03_00 | Integer | 44 | As above, 03:00:00 to 03:59:59 local time |
| H04_00 | Integer | 44 | As above, 04:00:00 to 04:59:59 local time |
| H05_00 | Integer | 42 | As above, 05:00:00 to 05:59:59 local time |
| H06_00 | Integer | 35 | As above, 06:00:00 to 06:59:59 local time |
| H07_00 | Integer | 35 | As above, 07:00:00 to 07:59:59 local time |
| H08_00 | Integer | 35 | As above, 08:00:00 to 08:59:59 local time |
| H09_00 | Integer | 35 | As above, 09:00:00 to 09:59:59 local time |
| H10_00 | Integer | 35 | As above, 10:00:00 to 10:59:59 local time |
| H11_00 | Integer | 35 | As above, 11:00:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:59:59 local time |
| H13_00 | Integer | 35 | As above, 13:00:00 to 13:59:59 local time |
| H14_00 | Integer | 35 | As above, 14:00:00 to 14:59:59 local time |
| H15_00 | Integer | 35 | As above, 15:00:00 to 15:59:59 local time |
| H16_00 | Integer | 35 | As above, 16:00:00 to 16:59:59 local time |
| H17_00 | Integer | 35 | As above, 17:00:00 to 17:59:59 local time |
| H18_00 | Integer | 35 | As above, 18:00:00 to 18:59:59 local time |
| H19_00 | Integer | 35 | As above, 19:00:00 to 19:59:59 local time |
| H20_00 | Integer | 35 | As above, 20:00:00 to 20:59:59 local time |
| H21_00 | Integer | 35 | As above, 21:00:00 to 21:59:59 local time |

| | | | |
|--------|---------|----|-------------------------------------------|
| H22_00 | Integer | 35 | As above, 22:00:00 to 22:59:59 local time |
| H23_00 | Integer | 35 | As above, 23:00:00 to 23:59:59 local time |

SPD Visualisation

Sample below shows one hour time period of a 15 minute SPD in KPH.

| | Time | | | |
|------------------|--------|--------|--------|--------|
| Speed Pattern ID | H08_00 | H08_15 | H08_30 | H08_45 |
| 1 | 105 | 106 | 106 | 105 |
| 2 | 99 | 99 | 98 | 98 |
| 3 | 58 | 58 | 58 | 59 |
| 4 | 104 | 106 | 106 | 106 |
| 5 | 43 | 43 | 42 | 42 |
| 6 | 39 | 38 | 37 | 36 |
| 7 | 94 | 102 | 102 | 102 |
| 8 | 83 | 84 | 85 | 85 |

TMC Reference Tables

Each TMC Reference Table is represented as a.csv file. TMC Reference Tables cover all roads coded with TMC in the HERE Map Content in included countries. See release notes for list of included countries and specific Location Table versions used.

File Format (TMC Reference Table)

| Field Name | Type | Example | Description |
|------------|---------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TMC | Text | D01N04474 | Traffic Location code in the format of: CLLDTTTTT Where: <ul style="list-style-type: none"> C is the Country Code (1 digit)* LL is the Location Table Number (2 digits)* D is the TMC path direction ('P' or 'N') <ul style="list-style-type: none"> - N refers to both 'N' and '-' coding - P refers to both 'P' and '+' coding TTTTT is the TMC location (5 digits) |
| U | Integer | 14 | Defines the relevant Speed Pattern for Sundays. The reference number refers to a Speed Pattern contained in the SPD(s) belonging to the same Traffic Patterns product version as the TMC Reference Table. |
| M | Integer | 123 | As above, for Mondays |
| T | Integer | 560 | As above, for Tuesdays |
| W | Integer | 4 | As above, for Wednesdays |
| R | Integer | 72 | As above, for Thursdays |
| F | Integer | 94 | As above, for Fridays |
| S | Integer | 63 | As above, for Saturdays |

TMC Reference Table Visualisation

Sample below shows Germany.

| | Day of Week | | | | | | |
|-----------|-------------|-----|-----|-----|-----|-----|-----|
| TMC | U | M | T | W | R | F | S |
| D01N04098 | 415 | 415 | 415 | 415 | 82 | 483 | 415 |
| D01N04099 | 415 | 483 | 483 | 483 | 171 | 85 | 415 |
| D01N04100 | 415 | 171 | 85 | 85 | 198 | 292 | 415 |
| D01N04D01 | 415 | 415 | 415 | 415 | 82 | 171 | 415 |
| D01N04102 | 415 | 415 | 415 | 415 | 415 | 415 | 415 |
| D01N04103 | 415 | 415 | 415 | 415 | 415 | 415 | 415 |
| D01N04104 | 262 | 262 | 262 | 262 | 262 | 262 | 262 |
| D01N04105 | 262 | 288 | 288 | 261 | 261 | 261 | 262 |

Holiday Appendix

In addition to the models described in the previous sections, Traffic Patterns features Holiday Appendices for use on major holidays and surrounding days where the holiday has been observed to impact typical levels of traffic. This data accounts for:

- less traffic due to the absence of work-day commuting.
- more traffic due to recreational travel.

The Model referenced in the Holiday Appendix is designed to substitute the Daily Model (flat format) or Speed Pattern (relational models) that would normally apply on that day of the week.

For example, Memorial Day in the United States does not exhibit the same patterns of congestion as a typical Monday. If the Sunday model more accurately represents the patterns of traffic on Memorial Day, the Sunday model would be referenced in the Holiday Appendix.

Holiday Appendices are available for certain countries in each region. See Product Release Notes for details of the Countries with a Holiday Appendix and days included per Country.

File Format (Holiday Appendix)

| Field Name | Type | Example | Description |
|-------------------|---------|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| HOLIDAY | Text | LABOR DAY | The name of the holiday or affected day. |
| MONTH | Integer | 9 | The month in which the holiday falls, starting at 1 with January; e.g. 9 = September. |
| MIN_DAY | Integer | 1 | The earliest date the holiday can fall on in the given month.* This field is equal to MAX_DAY for fixed holidays. |
| MAX_DAY | Integer | 7 | The latest date the holiday can fall on in the given month.* This field is equal to MIN_DAY for fixed holidays. |
| DAY_OF_WEEK | Integer | 2 | The day of the week that the holiday falls on, starting at 1 with Sunday; e.g. 2 = Monday. |
| MODEL | Text | NTP_USA_15MIN_U_09400.csv | The file name of the traffic model to use for the holiday (relevant for TMC Flat Format product variation only). |
| DOW_SPEED_PATTERN | Text | U | The speed pattern to use for the holiday (relevant for Link Relational and TMC Relational product variations only). |

*This does not fluctuate for fixed holidays, i.e., those that fall on the exact same date each year (e.g., Independence Day).

Holiday Appendix Visualisation

The sample below shows a selection of days included in the United States Holiday Appendix. For a complete list per country see Product Release Notes.

| HOLIDAY | MONTH | MIN_DAY | MAX_DAY | DAY_OF_WEEK | MODEL | DOW_SPEED_PATTERN |
|----------------------------|-------|---------|---------|-------------|---------------------------|-------------------|
| INDEPENDENCE DAY | 7 | 4 | 4 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 3 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 4 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 6 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 3 | NTP_USA_15MIN_T_09400.csv | T |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 4 | NTP_USA_15MIN_W_09400.csv | W |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 5 | NTP_USA_15MIN_R_09400.csv | R |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| LABOR DAY | 9 | 1 | 7 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| THANKSGIVING DAY | 11 | 22 | 28 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER THANKSGIVING | 11 | 23 | 29 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| 2 DAYS AFTER THANKSGIVING | 11 | 24 | 30 | 7 | NTP_USA_15MIN_U_09400.csv | U |

Metadata File

One metadata file contains information relating to all included files. Specifically, the following information is provided:

- Reference to Traffic Patterns product release version
- Filename for each model
- Speed Value Measurement (KPH / MPH) for each model
- Country Name for each country
- Country Code for each country
- Location Table Number for each country

Metadata File Visualisation

The example below illustrates the layout of the file but does not necessarily reflect the content of the Traffic Patterns product delivered with this document.

| METADATA FOR TRAFFIC PATTERNS EUROPE V9.0 TMC 2012.4 | | | |
|------------------------------------------------------|-------------------------|------------|--|
| FILE_NAME | SPEED_VALUE_MEASUREMENT | | |
| NTP_REF_AUT_TMC_12400.csv | | | |
| NTP_REF_BEL_TMC_12400.csv | | | |
| NTP_REF_DEU_TMC_12400.csv | | | |
| NTP_REF_EU_TMC_12400.csv | | | |
| NTP_SPD_EU_15MIN_KPH_12400.csv | KPH | | |
| NTP_SPD_EU_15MIN_MPH_12400.csv | MPH | | |
| NTP_SPD_EU_60MIN_KPH_12400.csv | KPH | | |
| NTP_SPD_EU_60MIN_MPH_12400.csv | MPH | | |
| COUNTRY | COUNTRY_CODE | TABLE_CODE | |
| AUSTRIA | A | 1 | |
| BELGIUM | 6 | 1 | |
| GERMANY | D | 1 | |

Link-Referenced Relational Format

Product Variations Summary

Each Link-referenced Relational Format product release consists of:

- Four Speed Patterns Dictionary (SPD) files, each one representing a different combination of:
 - unit of measure (i.e. KPH/MPH)
 - time granularity (e.g. 15 minutes, 60 minutes)
- Two Link Reference Tables:
 - One covering Functional Classes 1-4 per Product Region
 - One covering Functional Class 5 per Product Region
- Two Country Look-up Tables:
 - One covering Functional Classes 1-4 per Product Region
 - One covering Functional Class 5 per Product Region

Additionally, the following appendices may be available, depending on the Product Region:

- Holiday Appendix

Table 3

| Product Region | Link Reference & Country Look-up Tables (x2 of each) | | SPD Variations | | | | Appendices |
|----------------------|------------------------------------------------------|--------------------|----------------|------------|------------|------------|------------------|
| | Per Country | Per Product Region | 15 min KPH | 15 min MPH | 60 min KPH | 60 min MPH | Holiday Appendix |
| Asia Pacific | | X | X | X | X | X | X* |
| Europe | | X | X | X | X | X | X* |
| India | | X | X | X | X | X | X |
| Oceania | | X | X | X | X | X | X |
| Middle East & Africa | | X | X | X | X | X | |
| North America | | X | X | X | X | X | X* |
| South America | | X | X | X | X | X | |

* selected countries within Product Region. See Product Release Notes for details.

Time Granularity

SPDs with the following levels of time granularity are provided:

- 60 minute (one speed value per hour)
- 15 minute (one speed value per 15 minute period)

See *File Format* section for more details.

Unit of Measure

SPDs for the following units of measure are provided:

- KPH
- MPH

Speed Patterns Dictionary (SPD)

Each SPD is represented as a.csv file (per product region) and contains data for a combination of one of each of the following:

- Time Granularity
- Unit of Measure

Speed Patterns in the SPD are numbered sequentially.

When a product contains multiple SPDs, the Speed Patterns reference numbers in each SPD represent the same speed patterns across all SPDs within that (version of the) Traffic Patterns product. For example, Speed Pattern 123 in a KPH file is equivalent to Speed Pattern 123 in the corresponding MPH file. Additionally, Speed Pattern 123 in a 15 minute file is equivalent to Speed Pattern 123 in the corresponding 60 minute file.

However, Speed Patterns reference numbers are not permanent or unique across different versions of the Traffic Patterns product. For example, Speed Pattern 123 does not necessarily represent the same pattern in V3.0 as in V4.0. Speed Pattern 123 also does not necessarily represent the same pattern in two different product regions (e.g. Europe and North America), even if both have the same version number, are geo-referenced to the same version of the HERE Map Content, or are released within the same quarter.

The total number of Speed Patterns included in each version can also vary.

File Format (15 Minute Model)

Contains 96 speed values per identified Speed Pattern (four per hour). Sample below shows 4 hour time period (10:00 – 14:00).

| Field Name | Type | Example | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed Pattern | Number | 123 | Sequential number, unique within each SPD file. |
| H10_00 | Integer | 44 | Derived traffic velocities for the period 10:00:00 to 10:14:59, local time. This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on SPD file. |
| H10_15 | Integer | 44 | As above, 10:15:00 to 10:29:59 local time |
| H10_30 | Integer | 44 | As above, 10:30:00 to 10:44:59 local time |
| H10_45 | Integer | 44 | As above, 10:45:00 to 10:59:59 local time |
| H11_00 | Integer | 44 | As above, 11:00:00 to 11:14:59 local time |
| H11_15 | Integer | 42 | As above, 11:15:00 to 11:29:59 local time |
| H11_30 | Integer | 35 | As above, 11:30:00 to 11:44:59 local time |
| H11_45 | Integer | 35 | As above, 11:45:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:14:59 local time |
| H12_15 | Integer | 34 | As above, 12:15:00 to 12:29:59 local time |
| H12_30 | Integer | 34 | As above, 12:30:00 to 12:44:59 local time |
| H12_45 | Integer | 34 | As above, 12:45:00 to 12:59:59 local time |
| H13_00 | Integer | 34 | As above, 13:00:00 to 13:14:59 local time |
| H13_15 | Integer | 34 | As above, 13:15:00 to 13:29:59 local time |
| H13_30 | Integer | 34 | As above, 13:30:00 to 13:44:59 local time |
| H13_45 | Integer | 34 | As above, 13:45:00 to 13:59:59 local time |

File Format (60 Minute Model)

Contains 24 speed values per identified Speed Pattern (one per hour).

| Field Name | Type | Example | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed Pattern | Number | 123 | Sequential number, unique within each SPD file. |
| H00_00 | Integer | 44 | Derived traffic velocities for the period 00:00:00 to 00:59:59, local time. This value represents the average flow velocity value for a particular TMC, to 1 KPH / MPH. Value is in kilometers / miles per hour, depending on SPD file. |
| H01_00 | Integer | 44 | As above, 01:00:00 to 01:59:59 local time |
| H02_00 | Integer | 44 | As above, 02:00:00 to 02:59:59 local time |
| H03_00 | Integer | 44 | As above, 03:00:00 to 03:59:59 local time |
| H04_00 | Integer | 44 | As above, 04:00:00 to 04:59:59 local time |
| H05_00 | Integer | 42 | As above, 05:00:00 to 05:59:59 local time |
| H06_00 | Integer | 35 | As above, 06:00:00 to 06:59:59 local time |
| H07_00 | Integer | 35 | As above, 07:00:00 to 07:59:59 local time |
| H08_00 | Integer | 35 | As above, 08:00:00 to 08:59:59 local time |
| H09_00 | Integer | 35 | As above, 09:00:00 to 09:59:59 local time |
| H10_00 | Integer | 35 | As above, 10:00:00 to 10:59:59 local time |
| H11_00 | Integer | 35 | As above, 11:00:00 to 11:59:59 local time |
| H12_00 | Integer | 35 | As above, 12:00:00 to 12:59:59 local time |
| H13_00 | Integer | 35 | As above, 13:00:00 to 13:59:59 local time |
| H14_00 | Integer | 35 | As above, 14:00:00 to 14:59:59 local time |
| H15_00 | Integer | 35 | As above, 15:00:00 to 15:59:59 local time |
| H16_00 | Integer | 35 | As above, 16:00:00 to 16:59:59 local time |
| H17_00 | Integer | 35 | As above, 17:00:00 to 17:59:59 local time |
| H18_00 | Integer | 35 | As above, 18:00:00 to 18:59:59 local time |
| H19_00 | Integer | 35 | As above, 19:00:00 to 19:59:59 local time |
| H20_00 | Integer | 35 | As above, 20:00:00 to 20:59:59 local time |

| | | | |
|--------|---------|----|-------------------------------------------|
| H21_00 | Integer | 35 | As above, 21:00:00 to 21:59:59 local time |
| H22_00 | Integer | 35 | As above, 22:00:00 to 22:59:59 local time |
| H23_00 | Integer | 35 | As above, 23:00:00 to 23:59:59 local time |

SPD Visualisation

Sample below shows one hour time period of a 15 minute SPD in KPH.

| | Time | | | |
|------------------|--------|--------|--------|--------|
| Speed Pattern ID | H08_00 | H08_15 | H08_30 | H08_45 |
| 1 | 105 | 106 | 106 | 105 |
| 2 | 99 | 99 | 98 | 98 |
| 3 | 58 | 58 | 58 | 59 |
| 4 | 104 | 106 | 106 | 106 |
| 5 | 43 | 43 | 42 | 42 |
| 6 | 39 | 38 | 37 | 36 |
| 7 | 94 | 102 | 102 | 102 |
| 8 | 83 | 84 | 85 | 85 |

Link Reference Tables

Each Link Reference Table is represented as a.csv file. Link Reference Tables cover the complete road network included in the HERE Map Content (including the TMC coded network) in included countries. See release notes for list of included countries and specific map version used.

File Format (Link Reference Table)

| Field Name | Type | Example | Description |
|------------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Link ID | Number | 54132742 | Based on LINK_PVID |
| Travel Direction | Text | T | Travel Direction from the Link ID is the Link direction ('T' or 'F'). T refers to towards reference node F refers to from reference node |
| U | Integer | 14 | Defines the relevant Speed Pattern for Sundays. The reference number refers to a Speed Pattern contained in the SPD(s) belonging to the same Traffic Patterns product version as the Link Reference Table. |
| M | Integer | 123 | As above, for Mondays |
| T | Integer | 560 | As above, for Tuesdays |
| W | Integer | 4 | As above, for Wednesdays |
| R | Integer | 72 | As above, for Thursdays |
| F | Integer | 94 | As above, for Fridays |
| S | Integer | 63 | As above, for Saturdays |

Link Reference Table Visualisation

| LINK_PVID | TRAVEL_DIRECTION | U | M | T | W | R | F | S |
|-----------|------------------|----|-----|-----|-----|-----|-----|----|
| 54132742 | F | 14 | 14 | 14 | 14 | 123 | 354 | 14 |
| 54132743 | F | 14 | 354 | 354 | 354 | 8 | 96 | 14 |
| 54132743 | T | 14 | 8 | 96 | 96 | 3 | 178 | 14 |
| 54132744 | T | 14 | 14 | 14 | 14 | 123 | 450 | 14 |
| 54132759 | F | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| 54132759 | T | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| 54132760 | T | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 54132761 | T | 6 | 10 | 10 | 293 | 293 | 293 | 6 |

Country Look-up Tables

Each Country Look-up Table is represented as a.csv file. A Country Look-up Table provides a cross-reference

between each Link ID contained in the corresponding Link Reference Table and the country the link is contained in.

File Format (Country Look-up Table)

| Field Name | Type | Example | Description |
|--------------|--------|----------|-------------------------------|
| Link ID | Number | 54132742 | Based on LINK_PVID |
| Country Code | Text | FRA | Three-digit ISO Country Code. |

Country Look-up Table Visualisation

| LINK_PVID | COUNTRY_CODE |
|-----------|--------------|
| 54132742 | DEU |
| 54132743 | DEU |
| 54132744 | DEU |
| 54132759 | DEU |
| 54132760 | DEU |
| 54132761 | DEU |

Holiday Appendix

In addition to the models described in the previous sections, Traffic Patterns features Holiday Appendices for use on major holidays and surrounding days where the holiday has been observed to impact typical levels of traffic. This data accounts for:

- less traffic due to the absence of work-day commuting.
- more traffic due to recreational travel.

The Model referenced in the Holiday Appendix is designed to substitute the Daily Model (flat format) or Speed Pattern (relational models) that would normally apply on that day of the week.

For example, Memorial Day in the United States does not exhibit the same patterns of congestion as a typical Monday. If the Sunday model more accurately represents the patterns of traffic on Memorial Day, the Sunday model would be referenced in the Holiday Appendix.

Holiday Appendices are available for certain countries in each region. See Product Release Notes for details of the Countries with a Holiday Appendix and days included per Country.

File Format (Holiday Appendix)

| Field Name | Type | Example | Description |
|------------|------|-----------|----------------------------|
| HOLIDAY | Text | LABOR DAY | The name of the holiday or |

| | | | |
|-------------------|---------|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| | | | affected day. |
| MONTH | Integer | 9 | The month in which the holiday falls, starting at 1 with January; e.g. 9 = September. |
| MIN_DAY | Integer | 1 | The earliest date the holiday can fall on in the given month.* This field is equal to MAX_DAY for fixed holidays. |
| MAX_DAY | Integer | 7 | The latest date the holiday can fall on in the given month.* This field is equal to MIN_DAY for fixed holidays. |
| DAY_OF_WEEK | Integer | 2 | The day of the week that the holiday falls on, starting at 1 with Sunday; e.g. 2 = Monday. |
| MODEL | Text | NTP_USA_15MIN_U_09400.csv | The file name of the traffic model to use for the holiday (relevant for TMC Flat Format product variation only). |
| DOW_SPEED_PATTERN | Text | U | The speed pattern to use for the holiday (relevant for Link Relational and TMC Relational product variations only). |

*This does not fluctuate for fixed holidays, i.e., those that fall on the exact same date each year (e.g., Independence Day).

Holiday Appendix Visualisation

The sample below shows a selection of days included in the United States Holiday Appendix. For a complete list per country see Product Release Notes.

| HOLIDAY | MONTH | MIN_DAY | MAX_DAY | DAY_OF_WEEK | MODEL | DOW_SPEED_PATTERN |
|----------------------------|-------|---------|---------|-------------|---------------------------|-------------------|
| INDEPENDENCE DAY | 7 | 4 | 4 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 3 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 4 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 6 | NTP_USA_15MIN_U_09400.csv | U |
| INDEPENDENCE DAY | 7 | 4 | 4 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 1 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 3 | NTP_USA_15MIN_T_09400.csv | T |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 4 | NTP_USA_15MIN_W_09400.csv | W |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 5 | NTP_USA_15MIN_R_09400.csv | R |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| DAY AFTER INDEPENDENCE DAY | 7 | 5 | 5 | 7 | NTP_USA_15MIN_U_09400.csv | U |
| LABOR DAY | 9 | 1 | 7 | 2 | NTP_USA_15MIN_U_09400.csv | U |
| THANKSGIVING DAY | 11 | 22 | 28 | 5 | NTP_USA_15MIN_U_09400.csv | U |
| DAY AFTER THANKSGIVING | 11 | 23 | 29 | 6 | NTP_USA_15MIN_S_09400.csv | S |
| 2 DAYS AFTER THANKSGIVING | 11 | 24 | 30 | 7 | NTP_USA_15MIN_U_09400.csv | U |

Appendix – Product Variations Tree

This table combines the information contained in the product variations summaries in each section, to give a complete overview of the options available. Working through the series of options from left to right will indicate which variation of Traffic Patterns to use.

| Option 1 | Option 2 | Option 3 | Option 4 | Option 5 | # Product Variations |
|--------------------------------------------------------------|-------------------------------------------------------------------|-----------------|-----------------------|----------|----------------------|
| Link Referenced (relational format) (per continent) | 60 minute granularity | KPH | | | 1 |
| | | MPH | | | 2 |
| | 15 minute granularity | KPH | | | 3 |
| | | MPH | | | 4 |
| TMC Referenced | Flat Format (per country) (per relevant unit of measure) | Daily Models | 60 minute granularity | | 5 |
| | | | 15 minute granularity | | 6 |
| | | Combined Models | 60 minute granularity | | 7 |
| | | | 15 minute granularity | | 8 |
| | Relational Format (daily models) | Per Continent | 60 minute granularity | KPH | 9 |
| | | | | MPH | 10 |
| | | | 15 minute granularity | KPH | 11 |
| | | | | MPH | 12 |
| | | Per Country | 60 minute granularity | KPH | 13 |
| | | | | MPH | 14 |
| | | | 15 minute granularity | KPH | 15 |
| | | | | MPH | 16 |

Revision History

From v1.7 to v1.8

| Page | Edit |
|------|-------------------------------------------------------------------------|
| 4 | Clarified that a few kinds of map links are not covered by the product. |

From v1.6 to v1.7

| Page | Edit |
|------|-----------------------------------------------------------------------|
| All | References to “South East Asia” changed to “Asia Pacific” throughout. |

From v1.5 to v1.6

| Page | Edit |
|------|------------------------------------------------------|
| All | Changed fonts and graphics to latest HERE templates. |

From v1.4 to v1.5

| Page | Edit |
|------|-------------------------------------------------------------------------------|
| All | Transferred content onto new HERE template. |
| All | References to “Traffic Patterns™” changed to “Traffic Patterns” throughout. |
| All | References to “NAVTEQ Map Database” changed to “HERE Map Content” throughout. |

From v1.3 to v1.4

| Page | Edit |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| All | References to “NAVTEQ Traffic Patterns” changed to “Traffic Patterns” throughout. |
| All | The following text was removed throughout; “* see Appendix Europe for details.” (This appendix does not exist). |
| 6 | Taiwan removed from Table 1. |
| 11 | Table 2 modified to indicate that a Holiday Appendix is provided for the TMC-referenced Relational product variation in Europe and North America. |

| | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 | Taiwan removed from Table 2. |
| 19 | Table 3 modified to indicate that a Holiday Appendix is provided for the Link-referenced Relational product variation in Europe and North America. |
| 19 | Taiwan removed from Table 3. |

From v1.2 to v1.3

| Page | Edit |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All | References to “Asia Pacific” changed to “South East Asia” throughout. |
| 6 | <i>Table 1</i> edited to include Holiday Appendix for South East Asia, India, and Oceania (TMC-Referenced Flat Format). |
| 9 | <i>Section 2.5 Holiday Appendix</i> – minor edits to accommodate the inclusion of Holiday Appendices in additional Product Regions, and for additional Product Variations. |
| 9 | <i>Section 2.5.1</i> – additional field (DOW_SPEED_PATTERN) added. Description for the MODEL field adjusted to specify that it is only relevant for the TMC Flat Format Product Variation. |
| 10 | <i>Section 2.5.2</i> – additional field (DOW_SPEED_PATTERN) added to example. |
| 11 | <i>Section 3.1</i> - added the following text; “Additionally, the following appendices may be available, depending on the Product Region: * Holiday Appendix” |
| 11 | <i>Table 2</i> modified to include additional column for Holiday Appendix. |
| 15-18 | <i>Section 3.7 Holiday Appendix</i> added (TMC-Referenced Relational Format). |
| 19 | <i>Section 4.1</i> - added the following text; “Additionally, the following appendices may be available, depending on the Product Region: * Holiday Appendix” |
| 19 | <i>Table 3</i> modified to include additional column for Holiday Appendix. |
| 23-25 | <i>Section 4.7 Holiday Appendix</i> added (Link-Referenced Relational Format). |

From v1.1 to v1.2

| Page | Edit |
|------|---------------------------------------------------------------|
| 6 | <i>Table 1</i> edited to include Holiday Appendix for Europe. |

| | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Footnote added to <i>Table 1</i> to clarify that Holiday Appendix is included for certain countries within a Product Region. |
| 9 | Last paragraph of section 2.5 modified to read “Holiday Appendices are available for certain countries in North America and Europe only. See Product Release Notes for details of the Countries with a Holiday Appendix and days included per Country.” |
| 10 | Changed reference from “Appendix - Holiday Appendices” to “Product Release Notes”. |
| 22 | Section 5 <i>Appendix – Holiday Appendices</i> removed (details will be contained in the Product Release Notes going forward). |

From v1.0 to v1.1

| Page | Edit |
|------|------------------------------------------------------------------------------------------------------------|
| All | “Western Europe” changed to “Europe” throughout. |
| All | Changed “continent” to “product region” throughout. |
| 6 | Asia Pacific, India, Middle East & Africa, Taiwan, and South America added to <i>Table 1</i> . |
| 11 | Asia Pacific, India, Middle East & Africa, Taiwan, and South America added to <i>Table 2</i> . |
| 15 | Meta data file visualisation image updated. |
| 16 | Detail relating to Country Look-up tables added to text above <i>Table 3</i> , and within <i>Table 3</i> . |