pitney bowes

StreetPro Traffic

Version 1.05.0

Product Guide

Table of Contents

1 - Introduction

In this section

StreetPro Traffic

StreetPro Traffic aligns probe data collected from mobile and navigation devices with StreetPro Navigation Premium's street segments to provide indicative traffic volumes by time of day and day of week and month. For customers wishing to understand the underlying road network attribution, StreetPro Traffic can also be joined to StreetPro Navigation Premium.

StreetPro Traffic utilizes Floating Car Data (FCD) to provide aggregate counts of the number of probe devices that were recorded on a road segment within the StreetPro road network during a specific hour of a weekday or weekend day. These are provided aggregated by month. For example, a count of 100 in the 1 am to 2 am weekday time group for January would indicate that a total of 100 probes were detected on a part of the road network traveling in one direction on weekdays during the hours of 1 am to 2 am in January

Potential data analysis scenarios include:

- Comparison with other parts of the network to indicate relative traffic levels across a region or country.
- Comparison with level counts at other times of the day to provide an indication of relative traffic levels on that road segment during the day.
- Combined with the attribution from StreetPro Navigation Premium to provide a detailed picture of the road network attribution, its historic traffic, and speeds for planning or assessing how the road network is affected by different factors.

Probe Data Collection

Floating Car Data (FCD) can be inconsistent due to the way it is collected and the habits of motorists.

This section details how the probe data is collected, some of the behaviors that may affect the way it is recorded, and is intended to assist in the interpretation of results.

Probe Data Sources

- The Probe Counts used in StreetPro Traffic come from a sample of vehicles. It does not represent the total and unbiased population of people driving on the road.
- Changes in absolute probe counts collected per road segment may be affected by probe volume changes which are not primarily traffic-related, such as higher/lower market share of the devices that are used to collect the data, introduction of new devices increasing coverage, etc.
- The majority of probes are collected from road traffic. Probes from public transportation, or pedestrian or bicyle traffic, are seldom seen.

Collection Delay

- Portion of the probe data is collected when a customer connects their navigation device to a computer in order to update it, which may be responsible for a time lag in data collection.
- This results in a data bias, with the most recent data supplied with each release having a lower overall count resulting from the time lag. It can be assumed that this lag will influence the data in a reasonably consistent way throughout the year.

Other Influences on Probe Data

- Trends in the usage of GPS devices and local circumstances can sometimes bias the probe counts between road segments. For example, it has been observed that people tend to use GPS devices more regularly around airports and recreational destinations than other places. Also, for fairly short trips, devices are used less frequently than for unknown destinations and long-distance travel.
- Differences in probe counts between segments, where there are a low number of absolute measurements, are not statistically significant. This can lead to inaccuracy as individual recurring users can influence the results.
- The probe count can also be influenced by the fact that there is a time lag between starting the GPS device and retrieving the GPS location (so called time-to-fix). Parking lots and GPS noise also influence results.
- Because trip data is derived from GPS devices, detail information about vehicle type or trip purpose is not available.
- Although the majority of data comes from devices which are sold to consumers, it should be recognized that trucks, buses, delivery vans and taxis can be part of this dataset.
- Irregular driving behavior (taxis zigzagging the city) and round trips (e.g. pick up and return from the airport) can occur and can lead to inaccuracy.

StreetPro Traffic Currency

StreetPro Traffic data is provided for the 12 months preceding the release date in order to capture seasonal changes in traffic volume. For simplicity, averages of this 12-month data are also provided.

> **Note:** In countries where a source of floating car data is newly available, StreetPro Traffic may contain less than 12 months' worth of data in the first release.

2 - Getting Started

In this section

Coverage

The StreetPro Traffic data contains probe counts for 56 countries worldwide. The **Coverage Table** on page 12 provides details of each country, including ISO country codes, and continent names.

Projection

The StreetPro Traffic data is provided in Longitude/Latitude WGS84.

Data Formats

The current data schema for StreetPro Traffic is found in the **Tables** section.

StreetPro Traffic data is supplied in three standard formats.

- MapInfo Extended Tab files (.tab)
- Text (.txt) with Well Known Text Geometries (WKT)
- ESRI Shape (.shp) (Files that exceed the 2GB size limit for the .shp format may also be packaged in geodatabase (.GDB) format)

These formats are packaged in a zip file.

Product Zip File Naming

Nationwide files for the above formats are named:

- The WKT version of the product is released as - XXX_TRAFFIC_MMYYYY_WKT.zip
- The TAB version of the product is released as - XXX_TRAFFIC_MMYYYY_TAB.zip
- The SHP version of the product is released as - XXX_TRAFFIC_MMYYYY_SHP.zip
- Files that exceed the 2GB size limit for the .shp format may also be packaged in geodatabase (.GDB) format and released as XXX_TRAFFIC_MMYYYY_GDB.zip

Data is also available for individual states/provinces in Australia, Canada, and the United States. These files are named XXX_XX_TRAFFIC_MMYYYY_<format>.ZIP, where XXX is the ISO country code, XX is the two-letter state/province abbreviation, and MMYYYY indicates the product vintage month and year.

A list of ISO country codes is available **here**. State/province codes are available **here**.

Zip File Contents

Within the product zip file are two folders a Data folder and a Documentation folder. Depending on the format downloaded, the data folder contains one of the following set of files:

MapInfo Pro® (.TAB) files

- Monthly files are named as - SP_TRAFFIC_XXX_YYYY_MM.TAB
  - Or SP_TRAFFIC_XXX_XX_YYYY_MM.TAB for countries with States/provinces
- Files with 12-month average values are named as - SP_TRAFFIC_XXX_YYYY_AVE.TAB
  - Or SP_TRAFFIC_XXX_XX_YYYY_AVE.TAB for countries with States/Provinces

> **Note:** For countries where state-level datasets are also available, this folder contains 13 seamless .TAB files (nation-wide) and a folder called **States** which has state/province specific .TAB files. The national-level seamless files are linked to state/province files).

For more info on seamless files please see **Working With Seamless Tables** section in Pitney Bowes's MapInfo Pro® product documentation.

ESRI Shape or ESRI Geodatabase files (.Shp) files

- Monthly files are named as - SP_TRAFFIC_XXX_YYYY_MM.SHP or .GDB
  - Or SP_TRAFFIC_XXX_XX_YYYY_MM.SHP or .GDB for countries with States/provinces
- Files with 12 monthly average values are named as - SP_TRAFFIC_XXX_YYYY_AVE.SHP or .GDB
  - Or SP_TRAFFIC_XXX_XX_YYYY_AVE.SHP or .GDB for countries with States/provinces

Well Known Text (.TXT) files

- File carrying all monthly values - SP_TRAFFIC_XXX_YYYY_ALL.TXT
  - Or SP_TRAFFIC_XXX_XX_YYYY_MM_ALL.TXT for countries with States/provinces
- Files with 12 monthly average values are named as - SP_TRAFFIC_XXX_YYYY_AVE.TXT
  - Or SP_TRAFFIC_XXX_XX_YYYY_AVE.TXT for countries with States/provinces

> **Note:**
>
> - Where 12 month average files (*_AVE.*) are supplied, the probe count values (**wd_1** to **we_24**) represent the average value of the probe counts over the 12 month time period not the sum of the values.
> - A value of -1 for attributes **wd_1** to **we_24** indicates that probe count information is not available. These values should be omitted when performing any sort of calculations.

Data Sources

Pitney Bowes partners with TomTom to take anonymous feeds from billions of positioning devices within vehicles. These floating car data (FCD) feeds come from probes (smart phones, satellite navigation devices, and other in-car devices). FCD probes provide the speed, time and direction of travel data which is used in the StreetPro product family.

Probe Data Collection

FCD probe count feeds are collected from a range of sources and suppliers, ranging from navigation systems, fleet management/telematics tracking devices, to mobile navigation systems and taxi services. Only suppliers with high-quality data and regular update frequencies for their data are utilized to ensure the data is as accurate and consistent as it can be.

Product Variants

StreetPro Display

StreetPro Display (1:10,000 scale) combines the most comprehensive national road network in the world with a large-scale digital map base. Street networks are chained for fast rendering with no loss of detail and split by road classification layers to enhance map display. Multiple layers of information including railways, international and administrative boundaries, urban areas, comprehensive geographical points of interest, coastlines, waterbodies, land cover and gazetteers provide a foundation for map production and enable fast display of background reference maps. Equal maintenance of both metropolitan and regional areas ensures consistent coverage on a national scale. StreetPro Display enables complete, country-wide mapping for more than 100 countries.

Visit **https://www.pitneybowes.com/us/data/street-data/contextual-map-data.html** for more information.

StreetPro Classic

StreetPro Classic (1:10,000 scale), combines all the **StreetPro Display** features with authoritative address ranges on each segment, providing a foundation for:

- Map production
- Routing (where absolute route accuracy is not required)
- Low volume geocoding
- Low resolution reverse geocoding

- Business analysis and more

Visit **https://www.pitneybowes.com/us/data/street-data/address-data.html** for more information.

StreetPro Navigation Premium

StreetPro Navigation Premium (1:10,000 scale) combines all the **StreetPro Classic** features with premium navigational information that adds the ability to calculate the most precise, efficient route between points on a road network, taking average *speed profiles* for time of day and *vehicle height, width, and weight restrictions* into account.

Visit **https://www.pitneybowes.com/us/data/street-data/road-travel-data.html** for more information.

StreetPro Traffic

StreetPro Traffic (1:10,000 scale) aligns probe data collected from mobile and navigation devices with StreetPro street segments to provide indicative traffic volumes by time of day, day of week and month. This add-on pack is compatible with **StreetPro Navigation Premium**.

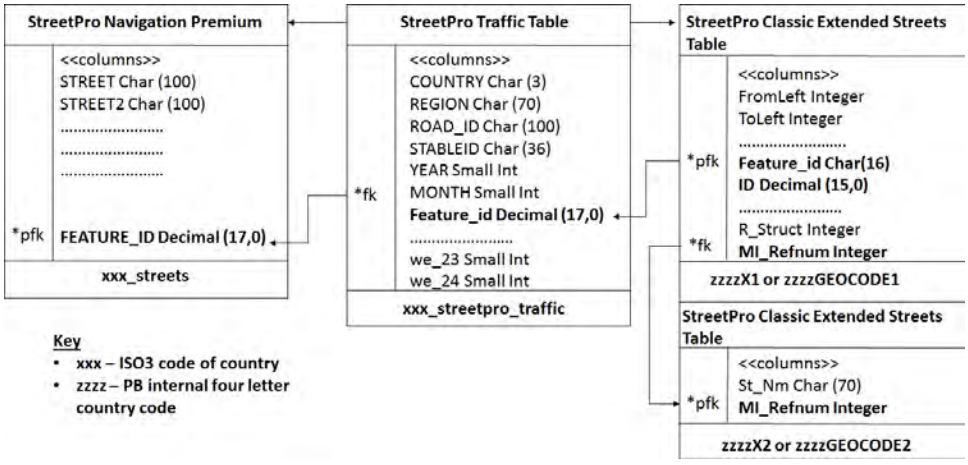
Visit **https://www.pitneybowes.com/us/data/street-data/traffic-data.html** for more information.

StreetPro Family Relational Diagram

This section contains a high level database schema diagram to show how the products of the StreetPro family (StreetPro Classic, StreetPro Navigation Premium, and StreetPro Traffic can be connected together.

For more information about these products please refer to the **StreetPro Navigation Premium** Product Guide and the **StreetPro Classic** Product Guide available on the Pitney Bowes product support website.

> **Note:** The extended streets table in StreetPro Classic do not contain the entire street network, only streets with address information. StreetPro Traffic contains all available street data including streets where there is no address information. The StreetPro Traffic data will return optimal results when joined with StreetPro Navigation Premium streets dataset.



3 - Tables

In this section

Coverage Table

Country	ISO3	ISO2	Continent
Argentina	ARG	AR	Americas
Australia	AUS	AU	Asia Pacific
Austria	AUT	AT	Europe
Bahrain	BHR	BH	Middle East & Africa
Belgium - Luxembourg	BEL	BE	Europe
Brazil	BRA	BR	Americas
Canada	CAN	CA	Americas
Croatia	HRV	HR	Europe
Czech Republic	CZE	CZ	Europe
Denmark	DNK	DK	Europe
Egypt	EGY	EG	Middle East & Africa
Finland	FIN	FI	Europe
France	FRA	FR	Europe
Germany	DEU	DE	Europe
Greece	GRC	GR	Europe
Hong Kong	HKG	HK	Asia Pacific

Country	ISO3	ISO2	Continent
Hungary	HUN	HU	Europe
India	IND	IN	Asia Pacific
Indonesia	IDN	ID	Asia Pacific
Ireland	IRL	IE	Europe
Italy	ITA	IT	Europe
Jordan	JOR	JO	Middle East & Africa
Kenya	KEN	KE	Middle East & Africa
Kuwait	KWT	KW	Middle East & Africa
Lebanon	LBN	LB	Middle East & Africa
Macau	MAC	MO	Asia Pacific
Malaysia	MYS	MY	Asia Pacific
Mexico	MEX	MX	Americas
Morocco	MAR	MA	Middle East & Africa
Netherlands	NLD	NL	Europe
Nigeria	NGR	NG	Middle East & Africa
Norway	NOR	NO	Europe
Oman	OMN	OM	Middle East & Africa
Philippines	PHL	PH	Asia Pacific
Poland	POL	PL	Europe
Qatar	QAT	QA	Middle East & Africa

Country	ISO3	ISO2	Continent
Saudi Arabia	SAU	SA	Middle East & Africa
Singapore	SGP	SG	Asia Pacific
Slovakia	SVK	SK	Europe
Slovenia	SVN	SI	Europe
South Africa	ZAF	ZA	Middle East & Africa
Spain	ESP	ES	Europe
Sweden	SWE	SW	Europe
Switzerland - Liechtenstein	CHE	CH	Europe
Taiwan	TWN	TW	Asia Pacific
Tanzania	TZA	TZ	Middle East & Africa
Thailand	THA	TH	Asia Pacific
Turkey	TUR	TR	Europe
United Arab Emirates	ARE	AE	Middle East & Africa
United Kingdom	GBR	GB	Europe
United States	USA	US	Americas
Vietnam	VNM	VN	Asia Pacific

Schema

The table below shows the StreetPro Traffic v1.5.0 data schema:

Table 1: Table Schema for MapInfo Pro® Tab Files

Field	Type (Width)	Description
country	char (3)	3- letter ISO Country Code **Note:** For more details refer to the **Coverage** on page 7.
region	char (70)	Name of the first Admin level subdivision OR ***Sea*** - in the instance of ferry lines
road_id	char (100)	Road identifier - Either road name or road number
stableid	char (36)	Provided as an independent unique and persistent ID for the segment to which this record relates. Null/blank - probe counts not available for this road segment
month	smallint	The month that the data was collected. For example, January will be represented by 1 and December 12. (Where a 12 monthly average is supplied this value will be set to 0)
year	smallint	The year that the data was collected. For example, 2017. Please note, this value will be set to the year of the product release for the 12 monthly average values.

Field	Type (Width)	Description
featureid	decimal (17,0) Index 1	Road Network Feature Identifier of the road segment that the probe counts were recorded on. **Note:** `featureid` is a field that is indexed. `featureid decimal (17, 0) Index 1 ;`
traffic_dir	char (2)	Direction of traffic flow: N, NW, NE, S, SE, SW, W, E
val_dir	smallint	Travel Direction of the recorded probes -1 or 1 - probe counts not available for this road segment 2 - positive direction 3 - negative direction **Note:** In the previously released Traffic 2018.09 datasets for US and CA, a value of "1" has been provided instead of the value "-1" for cases where probe counts are not available.
line_dir	char (5)	Direction of the road segment from start node to end node (N,NW,W, SW, S etc.)
wd_1	smallint	Total number of probe counts recorded on weekdays from 12 am to 1 am
wd_2	smallint	Total number of probe counts recorded on weekdays from 1am to 2am
wd_3	smallint	Total number of probe counts recorded on weekdays from 2 am to 3 am
wd_4	smallint	Total number of probe counts recorded on weekdays from 3 am to 4 am

Field	Type (Width)	Description
wd_5	smallint	Total number of probe counts recorded on weekdays from 4 am to 5 am
wd_6	smallint	Total number of probe counts recorded on weekdays from 5am to 6am
wd_7	smallint	Total number of probe counts recorded on weekdays from 6 am to 7 am
wd_8	smallint	Total number of probe counts recorded on weekdays from 7 am to 8 am
wd_9	smallint	Total number of probe counts recorded on weekdays from 8 am to 9 am
wd_10	smallint	Total number of probe counts recorded on weekdays from 9am to 10am
wd_11	smallint	Total number of probe counts recorded on weekdays from 10 am to 11 am
wd_12	smallint	Total number of probe counts recorded on weekdays from 11 am to 12 pm
wd_13	smallint	Total number of probe counts recorded on weekdays from 12pm to 1pm
wd_14	smallint	Total number of probe counts recorded on weekdays from 1 pm to 2 pm
wd_15	smallint	Total number of probe counts recorded on weekdays from 2 pm to 3 pm

Field	Type (Width)	Description
wd_16	smallint	Total number of probe counts recorded on weekdays from 3 pm to 4 pm
wd_17	smallint	Total number of probe counts recorded on weekdays from 4 pm to 5 pm
wd_18	smallint	Total number of probe counts recorded on weekdays from 5 pm to 6 pm
wd_19	smallint	Total number of probe counts recorded on weekdays from 6 pm to 7 pm
wd_20	smallint	Total number of probe counts recorded on weekdays from 7 pm to 8 pm
wd_21	smallint	Total number of probe counts recorded on weekdays from 8 pm to 9 pm
wd_22	smallint	Total number of probe counts recorded on weekdays from 9 pm to 10 pm
wd_23	smallint	Total number of probe counts recorded on weekdays from 10 pm to 11 pm
wd_24	smallint	Total number of probe counts recorded on weekdays from 11 pm to 12 am
we_1	smallint	Total number of probe counts recorded on weekends from 12 am to 1 am
we_2	smallint	Total number of probe counts recorded on weekends from 1 am to 2 am

Field	Type (Width)	Description
we_3	smallint	Total number of probe counts recorded on weekends from 2 am to 3 am
we_4	smallint	Total number of probe counts recorded on weekends from 3am to 4 am
we_5	smallint	Total number of probe counts recorded on weekends from 4 am to 5 am
we_6	smallint	Total number of probe counts recorded on weekends from 5 am to 6 am
we_7	smallint	Total number of probe counts recorded on weekends from 6 am to 7 am
we_8	smallint	Total number of probe counts recorded on weekends from 7 am to 8 am
we_9	smallint	Total number of probe counts recorded on weekends from 8 am to 9 am
we_10	smallint	Total number of probe counts recorded on weekends from 9 am to 10 am
we_11	smallint	Total number of probe counts recorded on weekends from 10 am to 11 am
we_12	smallint	Total number of probe counts recorded on weekends from 11 am to 12 pm
we_13	smallint	Total number of probe counts recorded on weekends from 12 pm to 1 pm

Field	Type (Width)	Description
we_14	smallint	Total number of probe counts recorded on weekends from 1 pm to 2 pm
we_15	smallint	Total number of probe counts recorded on weekends from 2 pm to 3 pm
we_16	smallint	Total number of probe counts recorded on weekends from 3 pm to 4 pm
we_17	smallint	Total number of probe counts recorded on weekends from 4 pm to 5 pm
we_18	smallint	Total number of probe counts recorded on weekends from 5 pm to 6 pm
we_19	smallint	Total number of probe counts recorded on weekends from 6 pm to 7 pm
we_20	smallint	Total number of probe counts recorded on weekends from 7 pm to 8 pm
we_21	smallint	Total number of probe counts recorded on weekends from 8 pm to 9 pm
we_22	smallint	Total number of probe counts recorded on weekends from 9 pm to 10 pm
we_23	smallint	Total number of probe counts recorded on weekends from 10 pm to 11 pm
we_24	smallint	Total number of probe counts recorded on weekends from 11 pm to 12 am

Table 2: ESRI Shape File Table Schema

Column Name	Data Type	Description
country	Text	3- letter ISO Country Code **Note:** For more details refer to the **Coverage** on page 7.
region	Text	Name of the first Admin level subdivision OR ***Sea*** - in the instance of ferry lines
road_id	Text	Road identifier - Either road name or road number
stableid	Text	Provided as an independent unique and persistent ID for the segment to which this record relates. Null/blank - probe counts not available for this road segment
month	Long Integer	The month that the data was collected. For example, January will be represented by 1 and December 12. (Where a 12 monthly average is supplied this value will be set to 0)
year	Long Integer	The year that the data was collected. For example, 2017. Please note, this value will be set to the year of the product release for the 12 monthly average values.
featureid	Double	Road Network Feature Identifier of the road segment that the probe counts were recorded on. **Note:** `featureid` is a field that is indexed. `featureid decimal (17, 0) Index 1 ;`

Column Name	Data Type	Description
traffic_dir	Text	Direction of traffic flow: N, NW, NE, S, SE, SW, W, E
val_dir	Long Integer	Travel Direction of the recorded probes -1 or 1 - probe counts not available for this road segment 2 - positive direction 3 - negative direction **Note:** In the previously released Traffic 2018.09 datasets for US and CA, a value of "1" has been provided instead of the value "-1" for cases where probe counts are not available.
line_dir	Text	Direction of the road segment from start node to end node (N,NW,W, SW, S etc.)
wd_1	Long Integer	Total number of probe counts recorded on weekdays from 12 am to 1 am
wd_2	Long Integer	Total number of probe counts recorded on weekdays from 1am to 2am
wd_3	Long Integer	Total number of probe counts recorded on weekdays from 2 am to 3 am
wd_4	Long Integer	Total number of probe counts recorded on weekdays from 3 am to 4 am
wd_5	Long Integer	Total number of probe counts recorded on weekdays from 4 am to 5 am
wd_6	Long Integer	Total number of probe counts recorded on weekdays from 5am to 6am

Column Name	Data Type	Description
wd_7	Long Integer	Total number of probe counts recorded on weekdays from 6 am to 7 am
wd_8	Long Integer	Total number of probe counts recorded on weekdays from 7 am to 8 am
wd_9	Long Integer	Total number of probe counts recorded on weekdays from 8 am to 9 am
wd_10	Long Integer	Total number of probe counts recorded on weekdays from 9am to 10am
wd_11	Long Integer	Total number of probe counts recorded on weekdays from 10 am to 11 am
wd_12	Long Integer	Total number of probe counts recorded on weekdays from 11 am to 12 pm
wd_13	Long Integer	Total number of probe counts recorded on weekdays from 12pm to 1pm
wd_14	Long Integer	Total number of probe counts recorded on weekdays from 1 pm to 2 pm
wd_15	Long Integer	Total number of probe counts recorded on weekdays from 2 pm to 3 pm
wd_16	Long Integer	Total number of probe counts recorded on weekdays from 3 pm to 4 pm
wd_17	Long Integer	Total number of probe counts recorded on weekdays from 4 pm to 5 pm

Column Name	Data Type	Description
wd_18	Long Integer	Total number of probe counts recorded on weekdays from 5 pm to 6 pm
wd_19	Long Integer	Total number of probe counts recorded on weekdays from 6 pm to 7 pm
wd_20	Long Integer	Total number of probe counts recorded on weekdays from 7 pm to 8 pm
wd_21	Long Integer	Total number of probe counts recorded on weekdays from 8 pm to 9 pm
wd_22	Long Integer	Total number of probe counts recorded on weekdays from 9 pm to 10 pm
wd_23	Long Integer	Total number of probe counts recorded on weekdays from 10 pm to 11 pm
wd_24	Long Integer	Total number of probe counts recorded on weekdays from 11 pm to 12 am
we_1	Long Integer	Total number of probe counts recorded on weekends from 12 am to 1 am
we_2	Long Integer	Total number of probe counts recorded on weekends from 1 am to 2 am
we_3	Long Integer	Total number of probe counts recorded on weekends from 2 am to 3 am
we_4	Long Integer	Total number of probe counts recorded on weekends from 3am to 4 am

Column Name	Data Type	Description
we_5	Long Integer	Total number of probe counts recorded on weekends from 4 am to 5 am
we_6	Long Integer	Total number of probe counts recorded on weekends from 5 am to 6 am
we_7	Long Integer	Total number of probe counts recorded on weekends from 6 am to 7 am
we_8	Long Integer	Total number of probe counts recorded on weekends from 7 am to 8 am
we_9	Long Integer	Total number of probe counts recorded on weekends from 8 am to 9 am
we_10	Long Integer	Total number of probe counts recorded on weekends from 9 am to 10 am
we_11	Long Integer	Total number of probe counts recorded on weekends from 10 am to 11 am
we_12	Long Integer	Total number of probe counts recorded on weekends from 11 am to 12 pm
we_13	Long Integer	Total number of probe counts recorded on weekends from 12 pm to 1 pm
we_14	Long Integer	Total number of probe counts recorded on weekends from 1 pm to 2 pm
we_15	Long Integer	Total number of probe counts recorded on weekends from 2 pm to 3 pm

Column Name	Data Type	Description
we_16	Long Integer	Total number of probe counts recorded on weekends from 3 pm to 4 pm
we_17	Long Integer	Total number of probe counts recorded on weekends from 4 pm to 5 pm
we_18	Long Integer	Total number of probe counts recorded on weekends from 5 pm to 6 pm
we_19	Long Integer	Total number of probe counts recorded on weekends from 6 pm to 7 pm
we_20	Long Integer	Total number of probe counts recorded on weekends from 7 pm to 8 pm
we_21	Long Integer	Total number of probe counts recorded on weekends from 8 pm to 9 pm
we_22	Long Integer	Total number of probe counts recorded on weekends from 9 pm to 10 pm
we_23	Long Integer	Total number of probe counts recorded on weekends from 10 pm to 11 pm
we_24	Long Integer	Total number of probe counts recorded on weekends from 11 pm to 12 am

Table 3: Pipe Delimited Text File With WKT Geometries Table Schema

Column Name	Data Type	Description
country	text	3- letter ISO Country Code **Note:** For more details refer to the **Coverage** on page 7.
region	text	Name of the first Admin level subdivision OR ***Sea*** - in the instance of ferry lines
road_id	text	Road identifier - Either road name or road number
stableid	text	Provided as an independent unique and persistent ID for the segment to which this record relates. Null/blank - probe counts not available for this road segment
month	integer	The month that the data was collected. For example, January will be represented by 1 and December 12. (Where a 12 monthly average is supplied this value will be set to 0)
year	integer	The year that the data was collected. For example, 2017. Please note, this value will be set to the year of the product release for the 12 monthly average values.
featureid	big integer	Road Network Feature Identifier of the road segment that the probe counts were recorded on. **Note:** `featureid` is a field that is indexed. `featureid decimal (17, 0) Index 1 ;`

Column Name	Data Type	Description
traffic_dir	text	Direction of traffic flow: N, NW, NE, S, SE, SW, W, E
val_dir	integer	Travel Direction of the recorded probes -1 or 1 - probe counts not available for this road segment 2 - positive direction 3 - negative direction **Note:** In the previously released Traffic 2018.09 datasets for US and CA, a value of "1" has been provided instead of the value "-1" for cases where probe counts are not available.
line_dir	text	Direction of the road segment from start node to end node (N,NW,W, SW, S etc.)
wd_1	decimal	Total number of probe counts recorded on weekdays from 12 am to 1 am
wd_2	decimal	Total number of probe counts recorded on weekdays from 1am to 2am
wd_3	decimal	Total number of probe counts recorded on weekdays from 2 am to 3 am
wd_4	decimal	Total number of probe counts recorded on weekdays from 3 am to 4 am
wd_5	decimal	Total number of probe counts recorded on weekdays from 4 am to 5 am
wd_6	decimal	Total number of probe counts recorded on weekdays from 5am to 6am

Column Name	Data Type	Description
wd_7	decimal	Total number of probe counts recorded on weekdays from 6 am to 7 am
wd_8	decimal	Total number of probe counts recorded on weekdays from 7 am to 8 am
wd_9	decimal	Total number of probe counts recorded on weekdays from 8 am to 9 am
wd_10	decimal	Total number of probe counts recorded on weekdays from 9am to 10am
wd_11	decimal	Total number of probe counts recorded on weekdays from 10 am to 11 am
wd_12	decimal	Total number of probe counts recorded on weekdays from 11 am to 12 pm
wd_13	decimal	Total number of probe counts recorded on weekdays from 12pm to 1pm
wd_14	decimal	Total number of probe counts recorded on weekdays from 1 pm to 2 pm
wd_15	decimal	Total number of probe counts recorded on weekdays from 2 pm to 3 pm
wd_16	decimal	Total number of probe counts recorded on weekdays from 3 pm to 4 pm
wd_17	decimal	Total number of probe counts recorded on weekdays from 4 pm to 5 pm

Column Name	Data Type	Description
wd_18	decimal	Total number of probe counts recorded on weekdays from 5 pm to 6 pm
wd_19	decimal	Total number of probe counts recorded on weekdays from 6 pm to 7 pm
wd_20	decimal	Total number of probe counts recorded on weekdays from 7 pm to 8 pm
wd_21	decimal	Total number of probe counts recorded on weekdays from 8 pm to 9 pm
wd_22	decimal	Total number of probe counts recorded on weekdays from 9 pm to 10 pm
wd_23	decimal	Total number of probe counts recorded on weekdays from 10 pm to 11 pm
wd_24	decimal	Total number of probe counts recorded on weekdays from 11 pm to 12 am
we_1	decimal	Total number of probe counts recorded on weekends from 12 am to 1 am
we_2	decimal	Total number of probe counts recorded on weekends from 1 am to 2 am
we_3	decimal	Total number of probe counts recorded on weekends from 2 am to 3 am
we_4	decimal	Total number of probe counts recorded on weekends from 3am to 4 am

Column Name	Data Type	Description
we_5	decimal	Total number of probe counts recorded on weekends from 4 am to 5 am
we_6	decimal	Total number of probe counts recorded on weekends from 5 am to 6 am
we_7	decimal	Total number of probe counts recorded on weekends from 6 am to 7 am
we_8	decimal	Total number of probe counts recorded on weekends from 7 am to 8 am
we_9	decimal	Total number of probe counts recorded on weekends from 8 am to 9 am
we_10	decimal	Total number of probe counts recorded on weekends from 9 am to 10 am
we_11	decimal	Total number of probe counts recorded on weekends from 10 am to 11 am
we_12	decimal	Total number of probe counts recorded on weekends from 11 am to 12 pm
we_13	decimal	Total number of probe counts recorded on weekends from 12 pm to 1 pm
we_14	decimal	Total number of probe counts recorded on weekends from 1 pm to 2 pm
we_15	decimal	Total number of probe counts recorded on weekends from 2 pm to 3 pm

Column Name	Data Type	Description
we_16	decimal	Total number of probe counts recorded on weekends from 3 pm to 4 pm
we_17	decimal	Total number of probe counts recorded on weekends from 4 pm to 5 pm
we_18	decimal	Total number of probe counts recorded on weekends from 5 pm to 6 pm
we_19	decimal	Total number of probe counts recorded on weekends from 6 pm to 7 pm
we_20	decimal	Total number of probe counts recorded on weekends from 7 pm to 8 pm
we_21	decimal	Total number of probe counts recorded on weekends from 8 pm to 9 pm
we_22	decimal	Total number of probe counts recorded on weekends from 9 pm to 10 pm
we_23	decimal	Total number of probe counts recorded on weekends from 10 pm to 11 pm
we_24	decimal	Total number of probe counts recorded on weekends from 11 pm to 12 am
geom	Geometry	Line geometry

State/Province Abbreviation List

State Abbreviations for USA

Province	Code
ALABAMA	AL
ALASKA	AK
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
D.C.	DC
FLORIDA	FL
GEORGIA	GA
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN

Province	Code
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC

Province	Code
NORTH DAKOTA	ND
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX
UTAH	UT
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WA
WEST VIRGINIA	WV
WISCONSIN	WI
WYOMING	WY

Province/Territory Abbreviations for Canada

Province	Code
ALBERTA	AB
BRITISH COLUMBIA	BC
MANITOBA	MB
NEW BRUNSWICK	NB
NEWFOUNDLAND and LABRADOR	NL
NORTHWEST TERRITORIES	NT
NOVA SCOTIA	NS
NUNAVUT	NU
ONTARIO	ON
PRINCE EDWARD ISLAND	PE
QUEBEC	QC
SASKATCHEWAN	SK
YUKON	YT

State/Territory Abbreviations for Australia

Province	Code
Queensland	QLD
New South Wales	NSW
Victoria	VIC
Western Australia	WA
Tasmania	TAS
Northern Territory	NT
Australian Capital Territory	ACT
South Australia	SA

4 - How to Obtain the Product

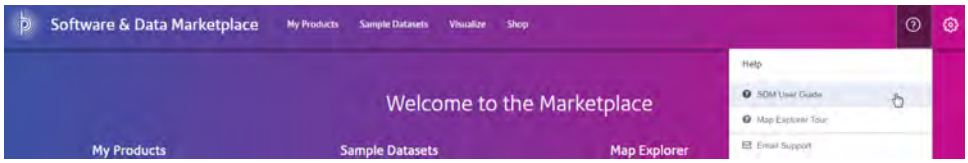
In this section

Downloading the StreetPro Traffic Data

This section explains the procedure to obtain and install StreePro Traffic.

StreetPro Traffic data is supplied as pipe delimited text files (.TXT), Shape files (.SHP), File Geodatabase (.GDB), and MapInfo Extended files (.TAB). Please navigate to the "My Products" section of the Pitney Bowes Software and Data Marketplace to access and download the data products you have licensed. The URL for the Software and Data Marketplace is **https://pbs-access.pitneybowes.com**.

Users wishing to automate their product downloads from the Software and Data Marketplace may utilize the SDK available within the software and data marketplace. For detailed instruction on downloading products using the software and data marketplace please see the user guide within the help menu.



Installing StreetPro Traffic

To install StreetPro Traffic:

1. Download the delivery file to a directory on your computer.
2. Unzip the delivery file.
3. Once unzipped, the data can be loaded into a database or opened directly into MapInfo Professional or other applications/databases depending on the format you have chosen.

   Note: If you intend to load StreetPro Traffic data into a database for further analysis, we recommend downloading the dataset in .Txt (Well Known Text) format.

Importing/Opening the StreetPro Traffic Data

Preface

This section presents hints and tips to get up and running using StreetPro Traffic. Some instances of this dataset are multiple gigabytes in size. For optimal performance with the data, it is recommended that you check your software/database user guide for advice.

Data Characteristics

- Typical volume sizes: > 2GB
- Format: Flat text file
- Delimiter: Pipe (|) delimited
- Separator None
- Header: Yes
- Encoding: UTF 8
- Line Feed: Linux

Some country datasets such as the United States and Canada, are very large and will require a significant amount of memory when used with MapInfo Pro®. For ease of use, you may wish to extract the state/province or category of information you want and use the extracted file within MapInfo Pro®.

Note: The StreetPro Traffic dataset is compatible with MapInfo Pro® v16.0 and above.

Opening StreetPro Traffic TAB files in MapInfo Pro®

StreetPro Traffic is available in TAB format for use in MapInfo Pro®.

To open StreetPro Traffic in MapInfo Pro®, double-click the TAB file.

For information on MapInfo Pro®, click this **link**.

The screen shot above shows the StreetPro Traffic data displayed in MapInfo Pro®

More tutorial and references on MapInfo Pro®:

http://www.pitneybowes.com/us/location-intelligence/geographic-information-systems/mapinfo-pro.html

https://www.youtube.com/user/mapinfo

https://www.youtube.com/watch?v=tovr-g1FHNE

https://www.youtube.com/watch?v=_FMDRcdu2Xo

Opening StreetPro Traffic SHP Files in MapInfo Pro®

Click **here** for instructions on opening the StreetPro Traffic SHP file in MapInfo Pro.

Importing StreetPro Traffic TXT Files in PostgreSQL

Prerequisites

To load StreetPro Traffic TXT files into PostgreSQL, you will need PostgreSQL version 9.2 or higher. PostgreSQL can be downloaded from **https://www.postgresql.org/download/**.

At the end of the PostgreSQL installation process, install StackBuilder when prompted, then click **Yes** to create a spatial database. The table name should be SP_TRAFFIC_XXX_YYYY_ALL, where XXX is the three-letter ISO country code and YYYY is the data vintage year.

Loading Data Using the SQL Script

1. Create the table structure in the database by executing the SQL file given below in the SQL panel of Postgres. A template create table script can be found in the **TRAFFIC_CREATE_TABLE POSTGRESQL file.** Change the <TableName> to the template to the country, Vintage, All/State/Average that you want to load. For example, <TableName> : SP_TRAFFIC_AUT_2018_ALL (If using the Austria All data of 2018).
2. Once the table structure is created, please copy the data using a PostgreSQL Copy command in the SQL Panel. E.g. copy "SP_TRAFFIC_<Country>_<Year>_ALL" from <path to txt file> delimiter '|' csv header;
   - |SP_TRAFFIC| - Name of created table using the 'Create table script'
   - |Path to txt file| - Path to data location
   - Delimiter – Pipe (|)
   - CSV header- Ignores the first line as it has headers.

Indexing the Data

Add primary key, if required by using the **link** (use the appropriate data source).

Loading the Data in Other RDBMS Databases/Tools

Please refer to the links below for instructions on loading StreetPro Traffic data into other relational databases or GIS applications.

- Loading StreetPro Traffic Data (.Txt) File in **Oracle**

- Loading StreetPro Traffic Data (.Txt) File in **SQL Server**
- Loading StreetPro Traffic Data (.Shp) File in **QGIS**
- MapInfo Pro (Working with Data in a **DBMS**)

5 - Appendices

In this section

Oracle

Prerequisites

You will need the following to use StreetPro Traffic data in Oracle:

- Oracle client
- SQL loader tool (packaged with Oracle client)
- Create Table SQL file
- Oracle CTL template file
- Indexes and spatial script file.

Procedure

1. Create the table structure in the database by executing the SQL file given below in the SQL panel of Postgres. A template create table script can be found in the **TRAFFIC_CREATE_TABLE ORACLESQL file**. Make sure to change the TableName in the template to the SP_TRAFFIC_XXX_YYYY_ALL, where XXX is the three-letter country code and YYYY is the data vintage year.
2. Once the table structure is created you will need to take a copy of the Oracle CTL template **TRAFFIC_ORACLE_CTL_TEMPLATE.CTL** and add it to the same directory as your StreetPro Traffic data file. Open the CTL file in a text editor and add in the name of the StreetPro Traffic text file and Oracle destination table by replacing the country, Vintage, All/State/Average that you want to load
3. Now open command prompt (type cmd in start menu search bar). Run the Command

```
Command: sqlldr
userid=<username>/<password>@//host_name:port_number/sid_name
control=<ctl file path>
log=<logfile path>
Example: sqlldr userid=scott/tiger@//abc:1521/xyz control=<ctl file
path> log=<log file path>
```

   Here you will see the statement: ‘Load completed – Logical record count 10’. This states that the Traffic.txt file has been imported into the database table and it contains 10 records

Indexing the Data

Add primary key, if required by using the **link** (use the appropriate data source)

SQL Server

There are two ways to load the data into SQL server using Import and Export wizard or Bulk Insert utility.

Import using Bulk Insert Utility

1. Create the table structure in the database by executing the SQL file given below in the SQL panel of Postgres. A template create table script can be found in the **TRAFFIC_CREATE_TABLE SQL file.** Make sure to change the <TableName> in the template to the country, Vintage, All/State/Average that you want to load
2. Now create a .fmt file. To do this open command prompt (type cmd in start menu search bar) and run the following command:

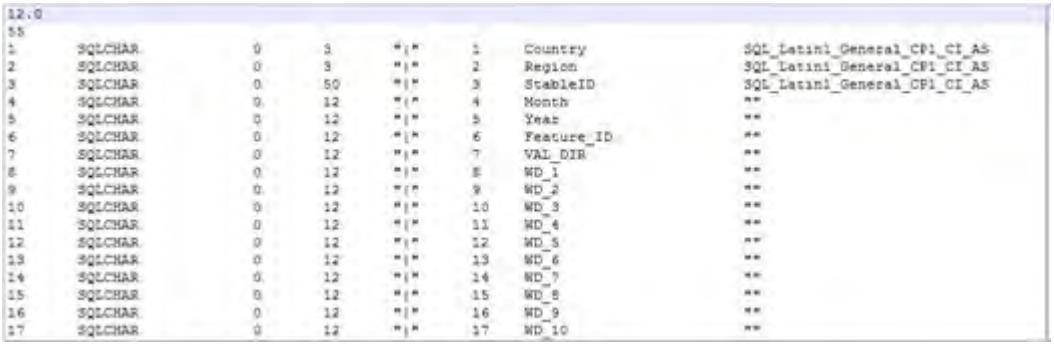
```
Command:
bcp [database_name.dbo.table_name] format nul -c -f path\abc.fmt-S
<server_name> -t delimiter -T

Example:
bcp poc.dbo.usa format nul -c -f C:\Users\NE003PR\Desktop\us1.fmt-S
<server_name> -t "|" -T
```

This will create an us1.fmt file in your specified location. You can open it in any text editor and it will look as given below in the image:

Note:

1. Remove geom column from the .fmt file (as this is a calculated column)
2. Now in the last line, Add \n in the delimiter position i.e. "|" to "\n"
3. Modify the second line to represent the actual number of rows i.e. 59 if the number of rows is 59



```
12.0
55
1       SQLCHAR       0       3       "|"     1     Country                SQL_Latin1_General_CP1_CI_AS
2       SQLCHAR       0       3       "|"     2     Region                 SQL_Latin1_General_CP1_CI_AS
3       SQLCHAR       0       50      "|"     3     StableID               SQL_Latin1_General_CP1_CI_AS
4       SQLCHAR       0       12      "|"     4     Month                  ""
5       SQLCHAR       0       12      "|"     5     Year                   ""
6       SQLCHAR       0       12      "|"     6     Feature_ID             ""
7       SQLCHAR       0       12      "|"     7     VAL_DIR                ""
8       SQLCHAR       0       12      "|"     8     WD_1                   ""
9       SQLCHAR       0       12      "|"     9     WD_2                   ""
10      SQLCHAR       0       12      "|"     10    WD_3                   ""
11      SQLCHAR       0       12      "|"     11    WD_4                   ""
12      SQLCHAR       0       12      "|"     12    WD_5                   ""
13      SQLCHAR       0       12      "|"     13    WD_6                   ""
14      SQLCHAR       0       12      "|"     14    WD_7                   ""
15      SQLCHAR       0       12      "|"     15    WD_8                   ""
16      SQLCHAR       0       12      "|"     16    WD_9                   ""
17      SQLCHAR       0       12      "|"     17    WD_10                  ""
```

For more details on how to create a .fmt file visit
https://docs.microsoft.com/en-us/sql/relational-databases/import-export/create-a-format-file-sql-server

3. Now use the bulk insert command:

```
Command: BULK INSERT
[ database_name]. [ schema_name ] . [ table_name ] FROM 'data_file'
WITH (FORMATFILE = '*.Fmt', FIRSTROW = 2,
BATCHSIZE = 1000000,
ROWS_PER_BATCH = 500000,
ERRORFILE = 'path\Error_Log3.log', MAXERRORS = 5000000)

Example: BULK INSERT [POC].[dbo].[usa]
FROM 'C:\Users\NE003PR\Desktop\usa.txt' WITH (
FORMATFILE = C:\Users\NE003PR\Desktop\us1.fmt', FIRSTROW = 2,
BATCHSIZE = 1000000,
ROWS_PER_BATCH = 500000,
ERRORFILE = 'C:\Users\NE003PR\Desktop\log.txt', MAXERRORS = 5000000)
```

Indexing the Data

Add primary key, if required by using the **link** (use the appropriate data source).

Opening SHP file in QGIS

Click **here** for instructions on opening the StreetPro Traffic Data SHP file in QGIS.

Opening Database files in MapInfo Pro®

This section addresses the special circumstances that surround accessing data from a SQL Server, Oracle Spatial, or PostgreSQL with PostGIS database for use with MapInfo Pro®, which requires setting up a database connection. For database versions that MapInfo Pro® supports, see the MapInfo Pro® Install Guide

For more information on MapInfo Pro® see **here**

For step-by-step guide on how to access the data from a database can be found in the MapInfo User Guide.

See the **Working with Data in a DBMS** section of the User Guide for full details.

- Working with SQL Server Tables
- Working with PostGIS Tables
- Working with Oracle Spatial Tables

Basic Statements

SQLite and PostgreSQL statements

SELECT Statement

Definition: Select data from a database.

```
Command: SELECT column1, column2, ... FROM table_name;
Example: SELECT country, region, stableid FROM probe_count;
```

SELECT WHERE statement

Definition: Used to extract only those records that fulfill a specified condition.

```
Command: SELECT column1, column2, ... FROM table_name WHERECondition;
Example: SELECT country, region, stableid FROM probe_count WHERE month
 = '1';
```

SELECT COUNT statements

Definition: COUNT() function returns the number of rows that matches a specified criteria.

```
Command: SELECT COUNT(column_name) FROM table_name;
Example: SELECT COUNT(stableid) FROM probe_count;
```

SELECT AVERAGE statement

Definition: AVG() function returns the average value of a numeric column.

```
Command: SELECT AVG(column_name) FROM table_name;
Example: SELECT AVG(WD_1) FROM probe_count;
```

SELECT TOP statement

Definition: Specify the number of records to return.

```
Command: SELECT column_name(s) FROM table_name LIMIT number;
Example: SELECT FEATURE_ID FROM probe_count LIMIT 10;
```

SELECT DISTINCT statement

Definition: Used to return only distinct (different) values.

```
Command: SELECT DISTINCT column1, column2, ... FROM table_name;
Example: SELECT DISTINCT Month FROM probe_count
```

SQL and Oracle statements

SELECT Statement

Definition: Select data from a database.

```
Command: SELECT column1, column2,... FROM dbname.table_name;
Example: SELECT country, region FROM poc.dbo.usa_streetpro_traffic;
```

SELECT WHERE statement

Definition: Used to extract only those records that fulfill a specified condition.

```
Command: SELECT column1, column2,... FROM dbname.table_name WHERE
condition;
Example: SELECT country, region from poc.dbo.usa_streetpro_traffic where
 month = '10';
```

SELECT COUNT statements

Definition: COUNT() function returns the number of rows that matches a specified criteria.

```
Command: SELECT COUNT(column_name) FROM dbname.table_name; Example:
SELECT COUNT(stableid)FROM poc.dbo.usa_streetpro_traffic
```

SELECT AVERAGE statement

Definition: AVG() function returns the average value of a numeric column.

```
Command: SELECT AVG(column_name) FROM dbname.table_name;
Example: SELECT AVG(WD_1) FROM poc.dbo.usa_streetpro_traffic
```

SELECT TOP statement

Definition: Specify the number of records to return.

```
Command: SELECT TOP count(column_name(s)) FROM dbname.table_name;
Example: SELECT TOP 100(country) FROM poc.dbo.usa_streetpro_traffic
```

Note: Oracle does not support the limit/top clause. Instead it uses ROWNUM.

```
Command: SELECT column1,column2,… FROM table_name where rownum<=x;
Example: SELECT month FROM probecount where rownum<=5;
```

SELECT DISTINCT statement

Definition: Used to return only distinct (different) values.

```
Command: SELECT DISTINCT column1, column2,... FROM dbname.table_name;
Example: SELECT DISTINCT Month FROM poc.dbo.usa_streetpro_traffic;
```

6 - Notices

In this section

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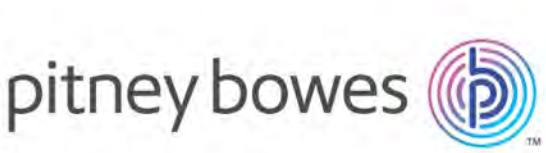

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