

A.1 Traffic Database Overview

Traffic data and accompanying traffic statistics for each logical traffic segment for the parks included in the traffic monitoring study are included in the Traffic Database. Only data that passed the QC process and were retained based on some analytical basis are included in the database.

Traffic database file **Traffic_database.mdb**, included on the CD, is developed using Microsoft Access®. The data in the database are organized in the following tables:

- NPS_PERM_HOURLY_TRAFFIC
- NPS_COVERAGE_HOURLY_TRAFFIC
- NPS_TRAFFIC_SUMMARY
- Count_STA_Summary
- RIP_TRAFFIC_LINKS

The Traffic Database design provides means for linking with other NPS/FHWA databases, such as the Road Inventory Program (RIP) and Geographic Information System (GIS) databases. Database table description, structure, and individual data elements included in each table are discussed in details in the following sections.

A.2 Table NPS_PERM_HOURLY_TRAFFIC

This table is designed to house hourly traffic count data obtained from permanent ATR traffic stations and represents the lowest level of ATR traffic data storage. The data are used to establish seasonal traffic patterns and to compute traffic summary statistics.

NPS_PERM_HOURLY_TRAFFIC Table Design

| Field Name | Data Element Description |
|--------------|---|
| ALPHACODE | NPS assigned alphabetic code usually the first 4 letters of the park name with one word names and the first 2 letters of the first 2 words of the park name of those parks with more than one word names. |
| COUNT_STA | Identification number of the station where counts are taken |
| LANE_ID | Lane code |
| DIRECTION | Direction of traffic code: 0=North, 1=East, 2=South, 3=West |
| YEAR | Year of the count |
| MONTH | Calendar month of the count |
| DAY_OF_MONTH | Day of the week code: 0=Sunday, 1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday, 6=Saturday |
| DAY_OF_WEEK | Day of the month of the count |
| VOL_HOUR_0 | Traffic volume during hour from 0 AM to 1 AM |
| VOL_HOUR_1 | Traffic volume during hour from 1 AM to 2 AM |
| VOL_HOUR_2 | Traffic volume during hour from 2 AM to 3 AM |
| VOL_HOUR_3 | Traffic volume during hour from 3 AM to 4 AM |
| VOL_HOUR_4 | Traffic volume during hour from 4 AM to 5 AM |
| VOL_HOUR_5 | Traffic volume during hour from 5 AM to 6 AM |
| VOL_HOUR_6 | Traffic volume during hour from 6 AM to 7 AM |
| VOL_HOUR_7 | Traffic volume during hour from 7 AM to 8 AM |
| VOL_HOUR_8 | Traffic volume during hour from 8 AM to 9 AM |
| VOL_HOUR_9 | Traffic volume during hour from 9 AM to 10 AM |
| VOL_HOUR_10 | Traffic volume during hour from 10 AM to 11 AM |
| VOL_HOUR_11 | Traffic volume during hour from 11 AM to 12 PM |
| VOL_HOUR_12 | Traffic volume during hour from 12 PM to 1 PM |
| VOL_HOUR_13 | Traffic volume during hour from 1 PM to 2 PM |
| VOL_HOUR_14 | Traffic volume during hour from 2 PM to 3 PM |
| VOL_HOUR_15 | Traffic volume during hour from 3 PM to 4 PM |
| VOL_HOUR_16 | Traffic volume during hour from 4 PM to 5 PM |
| VOL_HOUR_17 | Traffic volume during hour from 5 PM to 6 PM |
| VOL_HOUR_18 | Traffic volume during hour from 6 PM to 7 PM |
| VOL_HOUR_19 | Traffic volume during hour from 7 PM to 8 PM |
| VOL_HOUR_20 | Traffic volume during hour from 8 PM to 9 PM |
| VOL_HOUR_21 | Traffic volume during hour from 9 PM to 10 PM |
| VOL_HOUR_22 | Traffic volume during hour from 10 PM to 11 PM |
| VOL_HOUR_23 | Traffic volume during hour from 11 PM to 0 AM |
| VOL_DAILY | Total daily traffic volume |

A.3 Table NPS_COVERAGE_HOURLY_TRAFFIC

This table is designed to house hourly traffic count data obtained from 48-hour coverage count studies. The data are used to compute traffic summary statistics based on short-duration counts and seasonal patterns established for the referenced permanent stations.

NPS_COVERAGE_HOURLY_TRAFFIC Table Design

| Field Name | Data Dictionary Description |
|--------------|---|
| ALPHACODE | NPS assigned alphabetic code usually the first 4 letters of the park name with one word names and the first 2 letters of the first 2 words of the park name of those parks with more than one word names. |
| COUNT_STA | Identification number of the station where counts are taken |
| DIRECTION | Direction of traffic code: 0=North, 1=East, 2=South, 3=West |
| START_TIME | Coverage count start time |
| START_DATE | Date when coverage count started |
| END_TIME | Coverage count end time |
| END_DATE | Date when coverage count ended |
| DAY_OF_WEEK | Day of the week code: 0=Sunday, 1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday, 6=Saturday |
| DAY_OF_MONTH | Day of the month of the count |
| MONTH | Calendar month of the count |
| YEAR | Year of the count |
| VOL_HOUR_0 | Traffic volume during hour from 0 AM to 1 AM |
| VOL_HOUR_1 | Traffic volume during hour from 1 AM to 2 AM |
| VOL_HOUR_2 | Traffic volume during hour from 2 AM to 3 AM |
| VOL_HOUR_3 | Traffic volume during hour from 3 AM to 4 AM |
| VOL_HOUR_4 | Traffic volume during hour from 4 AM to 5 AM |
| VOL_HOUR_5 | Traffic volume during hour from 5 AM to 6 AM |
| VOL_HOUR_6 | Traffic volume during hour from 6 AM to 7 AM |
| VOL_HOUR_7 | Traffic volume during hour from 7 AM to 8 AM |
| VOL_HOUR_8 | Traffic volume during hour from 8 AM to 9 AM |
| VOL_HOUR_9 | Traffic volume during hour from 9 AM to 10 AM |
| VOL_HOUR_10 | Traffic volume during hour from 10 AM to 11 AM |
| VOL_HOUR_11 | Traffic volume during hour from 11 AM to 12 PM |
| VOL_HOUR_12 | Traffic volume during hour from 12 PM to 1 PM |
| VOL_HOUR_13 | Traffic volume during hour from 1 PM to 2 PM |
| VOL_HOUR_14 | Traffic volume during hour from 2 PM to 3 PM |
| VOL_HOUR_15 | Traffic volume during hour from 3 PM to 4 PM |
| VOL_HOUR_16 | Traffic volume during hour from 4 PM to 5 PM |
| VOL_HOUR_17 | Traffic volume during hour from 5 PM to 6 PM |
| VOL_HOUR_18 | Traffic volume during hour from 6 PM to 7 PM |
| VOL_HOUR_19 | Traffic volume during hour from 7 PM to 8 PM |
| VOL_HOUR_20 | Traffic volume during hour from 8 PM to 9 PM |
| VOL_HOUR_21 | Traffic volume during hour from 9 PM to 10 PM |
| VOL_HOUR_22 | Traffic volume during hour from 10 PM to 11 PM |
| VOL_HOUR_23 | Traffic volume during hour from 11 PM to 0 AM |
| VOL_DAILY | Total daily traffic volume |

A.4 Table NPS_COUNT_STA_SUMMARY

This table contains the representative traffic statistics for each logical traffic segment for the park road network along with the traffic count station information. Note that the traffic statistics are provided on a “per route” link basis for all traffic lanes and directions combined. In cases where the RIP park routes had a unique number for each direction of traffic, (GWMP routes 1&2 and 6&7 and GATE routes 60&61), two-directional traffic statistics were adjusted to one-directional values based on the directional split distribution computed for 2-way traffic.

NPS_COUNT_STA_SUMMARY Table Design

| Field Name | Data Element Description |
|--------------|---|
| ALPHACODE | NPS assigned alphabetic code usually the first 4 letters of the park name with one word names and the first 2 letters of the first 2 words of the park name of those parks with more than one word names. |
| COUNT_STA | Identification number of the station where counts are taken |
| RTE_NO | The six character Route Number (9999AA). The letters at the end enables a unique Route Number to be assigned to those routes with the same numeric portion of the Route Number. |
| AADT | Annual Average Daily Traffic |
| SADT | Seasonal Average Daily Traffic |
| AAWDT | Annual Average Weekday Traffic |
| AAWET | Annual Average Week-end Traffic |
| ADT_DATE | Year data was collected (If data were collected during several years, year with the highest number of "high" season months) |
| PEAK_MONTH | Month of Highest Traffic Counts |
| DHV | Design Hourly Volume |
| DIR_SPLIT | PDS, the percentage of the design hour traffic traveling in the peak direction |
| V_CLASS_1 | Percentage of ADT in Vehicle Class 1 (Motorcycles) |
| V_CLASS_2 | Percentage of ADT in Vehicle Class 2 (Passenger Cars) |
| V_CLASS_3 | Percentage of ADT in Vehicle Class 3 (Recreational Vehicles / RV) |
| V_CLASS_4 | Percentage of ADT in Vehicle Class 4 (Vehicles Pulling Trailers, RV) |
| V_CLASS_5 | Percentage of ADT in Vehicle Class 5 (Transit Buses) |
| V_CLASS_6 | Percentage of ADT in Vehicle Class 6 (Tour Buses) |
| V_CLASS_7 | Percentage of ADT in Vehicle Class 7 (Light-Duty Trucks) |
| V_CLASS_8 | Percentage of ADT in Vehicle Class 8 (Heavy-Duty Trucks) |
| O_CLASS_1 | Percentage of Vehicles in Vehicle Occupancy Class 1 (1 Single Occupant) |
| O_CLASS_2 | Percentage of Vehicles in Vehicle Occupancy Class 2 (2 Occupants) |
| O_CLASS_3 | Percentage of Vehicles in Vehicle Occupancy Class 3 (3-6 Car Load) |
| O_CLASS_4 | Percentage of Vehicles in Vehicle Occupancy Class 4 (More than six non-Bus vehicle load) |
| O_CLASS_5 | Percentage of Vehicles in Vehicle Occupancy Class 5 (No Passenger Bus) |
| O_CLASS_6 | Percentage of Vehicles in Vehicle Occupancy Class 6 (Few Passenger Bus) |
| O_CLASS_7 | Percentage of Vehicles in Vehicle Occupancy Class 7 (Semi-Loaded Passenger Bus) |
| O_CLASS_8 | Percentage of Vehicles in Vehicle Occupancy Class 8 (Fully Loaded Passenger Bus) |
| COUNT_TYPE | Count type: P= FOITSC permanent count station, S= factored sample count |
| REFERNCE_STA | Identification number of the station used to expand short-duration counts |
| COUNT_DUR | Duration of count Cycle in days (Hours/24) |

| Field Name | Data Element Description |
|------------|--|
| GPS_LAT | Count station latitude |
| GPS_LONG | Count station longitude |
| GPS_ELEV | Count station elevation (this item is not collected as a part of NPS Traffic project but keep field for future use.) |
| GPS_MODE | Mode of GPS device |
| COMMENT | General Comments |

A.5 Table NPS_TRAFFIC_SUMMARY

This table contains the representative traffic statistical values for each 0.02 mi segments obtained from PMS_20 table for the park roads included in the traffic monitoring study.

NPS_TRAFFIC_SUMMARY Table Design

| Field Name | Data Element Description |
|------------|---|
| ALPHACODE | NPS assigned alphabetic code usually the first 4 letters of the park name with one word names and the first 2 letters of the first 2 words of the park name of those parks with more than one word names. |
| ELEM_ID | Alpha Code + RTE_NO + Lane Number + Mileage (e.g., ACAD-9999AA-1-999.99). Lane Number indicates which lane the data refers to. Lane 1 being the far left lane, usually. |
| RTE_NO | The six character Route Number (9999AA). The letters at the end enables a unique Route Number to be assigned to those routes with the same numeric portion of the Route Number. |
| AADT | Annual Average Daily Traffic |
| SADT | Seasonal Average Daily Traffic |
| AAWDT | Annual Average Weekday Traffic |
| AAWET | Annual Average Week-end Traffic |
| ADT_DATE | Year data was collected (If data were collected during several years, year with the highest number of "high" season months) |
| PEAK_MONTH | Month of Highest Traffic Counts |
| DHV | Design Hourly Volume |
| DIR_SPLIT | PDS, the percentage of the design hour traffic traveling in the peak direction |
| V_CLASS_1 | Percentage of ADT in Vehicle Class 1 (Motorcycles) |
| V_CLASS_2 | Percentage of ADT in Vehicle Class 2 (Passenger Cars) |
| V_CLASS_3 | Percentage of ADT in Vehicle Class 3 (Recreational Vehicles / RV) |
| V_CLASS_4 | Percentage of ADT in Vehicle Class 4 (Vehicles Pulling Trailers, RV) |
| V_CLASS_5 | Percentage of ADT in Vehicle Class 5 (Transit Buses) |
| V_CLASS_6 | Percentage of ADT in Vehicle Class 6 (Tour Buses) |
| V_CLASS_7 | Percentage of ADT in Vehicle Class 7 (Light-Duty Trucks) |
| V_CLASS_8 | Percentage of ADT in Vehicle Class 8 (Heavy-Duty Trucks) |
| O_CLASS_1 | Percentage of Vehicles in Vehicle Occupancy Class 1 (1 Single Occupant) |
| O_CLASS_2 | Percentage of Vehicles in Vehicle Occupancy Class 2 (2 Occupants) |
| O_CLASS_3 | Percentage of Vehicles in Vehicle Occupancy Class 3 (3-6 Car load) |
| O_CLASS_4 | Percentage of Vehicles in Vehicle Occupancy Class 4 (More than six non-Bus vehicle load) |
| O_CLASS_5 | Percentage of Vehicles in Vehicle Occupancy Class 5 (No Passenger Bus) |

| | |
|--------------|--|
| O_CLASS_6 | Percentage of Vehicles in Vehicle Occupancy Class 6 (Few Passenger Bus) |
| O_CLASS_7 | Percentage of Vehicles in Vehicle Occupancy Class 7 (Semi-Loaded Passenger Bus) |
| O_CLASS_8 | Percentage of Vehicles in Vehicle Occupancy Class 8 (Fully Loaded Passenger Bus) |
| COUNT_TYPE | Count type: P= FOTSC permanent count station, S= factored sample count |
| COUNT_STA | Identification number of the station where counts are taken |
| REFERNCE_STA | Identification number of the station used to expand short-duration counts |
| COUNT_DUR | Duration of count Cycle in days (Hours/24) |
| GPS_LAT | Count station latitude |
| GPS_LONG | Count station longitude |
| GPS_ELEV | Count station elevation (this item is not collected as a part of NPS Traffic project but keep field for future use.) |
| GPS_MODE | Mode of GPS device |
| COMMENT | General Comments |

A.6 Table RIP_TRAFFIC_LINKS

The purpose of this table is to correlate the RIP road segments with the traffic count stations. Using this table, the RIP road segments could be linked with the traffic counter station ID and corresponding traffic information included in the traffic database tables. The linkage is based on ROUTE_IDENT, BEG_MP, and END_MP fields that uniquely identify traffic segments.

RIP_TRAFFIC_LINKS Table Design

| Field Name | Data Dictionary Description |
|-------------|---|
| PARK_ALPHA | NPS assigned alphabetic code usually the first 4 letters of the park name with one word names and the first 2 letters of the first 2 words of the park name of those parks with more than one word names. |
| RIP_CYCLE | The number associated with the Cycle Number in which the data was collected. |
| COUNT_STA | Identification number of the station where counts are taken. |
| RTE_NO | The six character Route Number (9999AA). The letters at the end enables a unique Route Number to be assigned to those routes with the same numeric portion of the Route Number. |
| ROUTE_IDENT | The Park's Alpha Code + "-" + RTE_NO |
| RTE_NAME | The Route's official name from the Route ID list. |
| BEG_MP | Traffic Link beginning milepost. |
| END_MP | Traffic Link ending milepost. |
| FROM_DESC | Traffic Link beginning description. |
| TO_DESC | Traffic Link ending description. |
| COMMENT | General comments. |

**Traffic database CD is not provided
with this copy of the report.**

**For further information please contact
Park Operation and Education
Facility Management Division**