



# Project on Police-Citizen Contacts: Final Report, 2010

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This research was supported by funding from the Pennsylvania State Police (grant # SP 2010060001). The findings and recommendations expressed within this report are from the authors and do not necessarily represent the official positions of the Pennsylvania State Police. Please direct all questions and correspondence regarding this report to: Robin S. Engel, Ph.D., Director, Policing Institute, Division of Criminal Justice, University of Cincinnati, PO Box 210389, Cincinnati, OH 45221, email: robin.engel@uc.edu

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# 1. INTRODUCTION

## **OVERVIEW**

This report documents the findings from statistical analyses of data collected during all member-initiated traffic stops by the Pennsylvania State Police (PSP) from January 1, 2010 – December 31, 2010. These data represent the ninth year of data collection for the voluntarily-initiated Project on Police-Citizen Contacts. The remainder of Section 1 provides an overview of the current Year 9 (2010) Report.

# YEAR 9 (2010) REPORT OUTLINE

This report for data collected from January 1, 2010 through December 31, 2010 is divided into eight sections: 1) introduction, 2) traffic stop data collection methodology, 3) description of traffic stop data, 4) trend analyses of stops from 2002 through 2010, 5) trend analyses of stop outcomes from 2002 through 2010, 6) bivariate and multivariate analyses of 2010 post-stop outcomes, 7) searches and seizures, and 8) conclusions and policy recommendations. The general content of Sections 2 - 8 are described below.

### Section 2

Section 2 includes a description of the study's methodology, which focuses on the details regarding the collection of traffic stop data by the Pennsylvania State Police, including the new data fields included with the department's 2010 introduction of the TraCS electronic system. It briefly describes the final police stop dataset for 2010 that includes 371,182 member-initiated traffic stops by summarizing the percentage of stop data submitted by both the CDR X-press system and the TraCS system.

### Section 3

Section 3 provides descriptive statistics for the traffic stop data collected for the time period from January 1, 2010 through December 31, 2010. This description of data includes the number of stops, characteristics of the stops (e.g., time, day, month, roadway type, vehicle registration, number of passengers, length of the stop), the reason for the stop (e.g., speeding, moving violation, equipment or inspection violation, etc.), the characteristics of the drivers (e.g., gender, race, age, residency, driver behavior, impairment, and criminal history), and the percent of traffic stops resulting in various post-stop outcomes including warnings, citations, arrests, searches, and seizures. The averages for this information are reported in tables at the department, area, troop, and station levels.

### Section 4

Section 4 examines data collected over the nine years of the research project (i.e., May 2002 – December 2010) and documents the stopping trends of Black and Hispanic drivers by PSP Troopers across the department and troop levels during this time period. These temporal trends are assessed using a standard deviation methodology. In contrast to previous reports,

these trends are not provided at the area level, due to the reorganization that occurred within the PSP in 2008 that altered the composition of Areas I through V from previous years.

### Section 5

Section 5 reports the temporal trends for warnings, citations, arrests, searches, and seizures between 2002 and 2010. Using the standard deviation methodology described in Section 4, the 2010 rate of all traffic stop outcomes are compared to the eight-year average at the department and troop level. Thereafter, the rate of traffic stop outcomes is reported within racial/ethnic groups at the department and troop level. These trend analyses are not performed at the area level as they were in previous reports due to the department's reorganization in 2008.

### Section 6

The analyses of post-stop outcomes (e.g., warning, citation, arrest, and search) are documented in Section 6. Driver differences, based on race/ethnicity and gender, are examined for all post-stop outcomes. Following this, several hierarchical multivariate analyses that isolate factors associated with officer decision-making regarding traffic stop outcomes (e.g., warnings, citations, arrests, and searches) are presented. Specifically, Section 6 documents whether these outcomes differ significantly based on a multitude of factors, including: driver characteristics, vehicle characteristics, stop characteristics, legal variables, and Trooper characteristics.

### Section 7

Section 7 focuses specifically on search and seizure activity of the PSP. This focus is conducted due in part to the consistent findings of previous years' reports that the largest racial/ethnic disparities in outcomes occur as the result of searches. Section 7 documents the search rates for minority drivers compared to Whites, and further describes the racial/ethnic disparities in searches and seizures at multiple organizational levels. Comparisons of probable cause/reasonable suspicion search success rates are made, followed by analyses specifically of consent searches.

### Section 8

Section 8 summarizes the information presented and the research team's interpretations of the collected data. Note that the findings reported in this document must be interpreted cautiously. The data collected and presented in this report cannot be used to determine whether or not PSP Troopers have individually or collectively engaged in "racial profiling." In addition, the legality of prior or future individual traffic stops cannot be assessed with these data. This report is designed to give feedback to PSP administrators regarding the status of the ongoing data collection process, along with exploring trends and patterns in the data that may be utilized for training purposes.

### Appendix

The appendix utilizes a series of tables reporting the stopping trends of Black and Hispanic drivers by PSP Troopers as well as the rates of post-stop outcomes at the troop and station level between 2002 and 2010. This information is intended to supplement the analyses presented in Sections 4 and 5.

# 2. TRAFFIC STOP DATA COLLECTION METHODOLOGY

## **OVERVIEW**

This section documents the methodology utilized for the data collection effort, including a brief description of the information collected during all trooper-initiated traffic stops through the CDR (Contact Data Report) X-press system or the TraCS (Traffic and Criminal Software) system, implemented in 2010. Table 2.1 reports the monthly number of traffic stops in the data set and the percent of data received from either the CDR X-press or TraCS system. The rate of information received through these two methods is also reported by month for the entire department.

# **DATA COLLECTION**

From January 1, 2010 – December 31, 2010, PSP personnel collected data on 371,182 trooper-initiated traffic stops. This information was primarily collected using the newly instituted TraCS system, with the remainder of the information collected using the CDR X-press system as it was phased out. Both data collection instruments gathered similar information regarding the traffic stop, although some new data fields (noted below) were collected exclusively with the TraCS system:

- The Traffic Stop
  - Date/Time [month, day, hour]
  - Location [county and municipality identifiers]
  - Type of Roadway [interstate/turnpike, state highway, county/local road, other]
  - Reason(s) for the Stop [speeding (including amount over the limit in mph), other moving violation, equipment/inspection, pre-existing information, registration, license, special traffic enforcement, other]
  - Duration [1-15 minutes, 16-30 minutes, 31-60 minutes, 61+ minutes]
    - Outcome [written warning, citation, arrest, search]
      - Consent Search Requested [Yes/No]
      - Citizen Granted Consent to Search [Yes/No]
      - Search Initiated [Yes/No]
      - Reason(s) for Search [odor of drugs/alcohol, plain view, incident to arrest, canine alert, inventory, probable cause, search warrant, officer safety/patdown (TraCS-only), and other]
      - Property seized during a search [cash, drugs, vehicle, weapons, stolen property, alcohol, other]
- The Driver

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- Gender [male, female]
- Age [in years]
- Race/Ethnicity [White, Black, White Hispanic, Black Hispanic, Native American, Middle Eastern, Asian/Pacific Islander, unknown]
- Zip Code of Residency
- Behavior [Compliant, Non-Compliant, Verbally Resistant, and/or Physically Resistant, check all that apply], TraCS-only data field
- Impairment [Alcohol, Drugs, Language Barrier, Mental Issue, and/or Sleep Deprivation, check all that apply], TraCS-only data field

- o Criminal History Run: [Yes/No], TraCS-only data field
- Type of Criminal History Detected [None, drug offense (possession), drug offense (trafficking), property offense (auto theft), property offense (burglary), property offense (other), violent offense (assault), violent offense (robbery), violent offense (other), and traffic/license offense, check all that apply].
- The Vehicle
  - State of Registration
  - Number of Passengers
  - Vehicle Condition [good, fair, or poor], TraCS-only data field
- The Trooper
  - Station Identifier
  - Employee Identifier

Table 2.1 reports the monthly number of traffic stops in the data set based on information received from the CDR X-press and TraCS systems. The rate of information received through these two methods is also reported by month for the entire department. Of the 371,182 stops recorded between January 1, 2010 and December 31, 2010, 87.5% of that information was transmitted using the TraCS system (n=324,619), while the remaining 12.5% was collected via the CDR X-press system (n=46,563).

In 2010, half of the months accounted for between 22,000 and 35,000 traffic stops each. March, April, May, June, and July accounted for the largest numbers of traffic stops, while the winter months showed the smallest numbers of traffic stops in the data set. Throughout 2010, the rate of traffic stops reported using the CDR X-press system decreased dramatically. In January, the overwhelming majority of stops were recorded using CDR X-press (84.3%), but by the next month, just over half of the stops were recorded in CDR X-press. The use of TraCS became more widespread in February and March; by April, the overwhelming majority of data regarding PSP traffic stops was reported via the TraCS system.

Time Period	Total # in Dataset	% CDR X-press	% TraCS
2010 Total	371,182	12.5	87.5
January	22,938	84.3	15.7
February	17,861	52.4	47.6
March	38,469	23.8	76.2
April	36,449	10.0	90.0
May	43,956	4.2	95.8
June	34,066	3.8	96.2
July	36,863	2.1	97.9
August	29,074	0.4	99.6
September	33,001	0.4	99.6
October	24,362	0.4	99.6
November	33,037	1.1	98.9
December	20,818	1.9	98.1

 Table 2.1: 2010 Traffic Stops by Month (CDR X-press vs. TraCS)

# **3. DESCRIPTION OF TRAFFIC STOP DATA**

## **OVERVIEW**

All trooper-initiated traffic stops reported with valid outcomes conducted between January 1, 2010 and December 31, 2010 are examined in this section (n=371,182). All descriptive statistics are reported at multiple organizational levels. First, the characteristics of traffic stops are reported, including the total number of stops, percentage of stops by weekday, daytime hours, work shift, roadway type, Pennsylvania registration, number of passengers, and duration of the stop. Table 3.1 reports these characteristics at the department, area, and troop level, while Table 3.2 summarizes this information at the station level. Table 3.3 reports the percent of traffic stops by month for all organizational units. Tables 3.4 & 3.5 report the reasons for traffic stops at the area, troop, and station level. Second, the characteristics of drivers involved in trooper-initiated traffic stops are reported, including drivers' age, gender, race/ethnicity, and residency. Tables 3.6 & 3.7 report this information at the department, area, troop, and station levels. New information regarding driver behavior, impairment, and criminal histories is reported for the data collected via TraCS in Tables 3.8 and 3.9. Finally, the percentage of stops resulting in warning, citations, arrests, and searches are reported across all organizational units in Tables 3.10 - 3.12.

# **TRAFFIC STOP AND VEHICLE CHARACTERISTICS**

A variety of traffic stop and vehicle characteristics are summarized in Tables 3.1 and 3.2 below, including total number of stops, percent of stops occurring on weekdays, percent of stops occurring during daytime hours, percent of stops by shift, percent of stops by roadway type, percent of traffic stops by their duration, percent of Pennsylvania registered vehicles, average number of passengers per vehicle, and percent of vehicles stopped in poor condition. Table 3.3 reports the monthly percentages of traffic stops both "prior to" and "subsequent to" the stop are reported. These reasons include: 1) speeding, 2) other moving violations, 3) equipment violations, 4) pre-existing information, 5) registration violations, 6) license violations, 7) special traffic enforcement programs, and 8) "other" reasons not previously indicated. The average speed over the limit observed for traffic stops initiated for a speeding violation is also reported across all organizational levels.

## **Traffic Stop Descriptives**

In 2010, PSP personnel collected valid information during 371,182 member-initiated traffic stops throughout the entire state. At the department level, the majority of traffic stops were initiated on a weekday (70.9%) and during the daytime (74.2%). The day shift (7:00 am – 3:00 pm) accounted for the highest percent of traffic stops (51.0%). State highway traffic stops accounted for 45.7%, while 44% occurred on interstates. Nearly ninety percent (84.8%) of the traffic stops were completed within 15 minutes. More than three-fourths of the vehicles stopped (77.0%) were registered in Pennsylvania and, on average, contained 0.6 passengers (the majority of vehicles stopped were single occupants). Overall, (4.4%) of stopped vehicles were in poor condition compared to vehicles in good or fair condition. Table 3.1 reports these characteristics at the department, area, and troop level, while Table 3.2 summarizes this information at the station level.

	Total #	0/0	% Davtime		<u>Shift</u> % 7.3 % 3.11 % 11.7 %			Roadwa	у Туре		Durat	tion of S	top (miı	nutes)	Regist	Avg #	% Vehicles
	of Stops	Weekday	Stops	% 7-3	<u>~ 3-11</u>	% 11-7	% Inter	% State	% Local	% Other	% 1-15	% 16-30	% 31-60	% 61+	% PA	Passengers Per Vehicle	in Poor Condition
PSP Dept.	371,182	70.9	74.2	51.0	40.2	8.8	43.9	45.7	7.5	2.9	84.8	13.3	1.2	0.7	77.0	0.6	4.4
AREA I	76.711	71.6	67.7	47.1	38.4	14.4	35.5	50.2	9.3	5.0	79.3	17.4	2.2	1.2	86.0	0.6	5.6
Troop J	14,694	72.0	66.6	47.3	39.2	13.5	2.1	76.0	16.4	5.4	82.3	13.7	2.0	2.1	91.4	0.5	5.6
Troop K	23,047	73.0	69.1	47.4	36.2	16.3	57.0	31.3	5.3	6.5	80.1	16.8	2.1	1.10	88.4	0.5	5.7
Troop L	15,718	73.4	73.2	50.4	40.3	9.3	33.7	52.6	9.3	4.4	82.6	15.0	1.5	0.9	80.8	0.6	4.4
Troop M	23,252	68.7	63.2	44.5	38.9	16.6	36.4	51.1	8.7	3.7	74.3	21.9	2.9	1.0	83.6	0.6	6.3
AREA II	54,465	68.4	77.4	54.7	37.6	7.7	30.6	58.2	9.1	2.1	80.4	17.6	1.4	0.6	73.4	0.7	4.7
Troop F	23,948	68.1	77.9	54.3	38.9	6.7	22.9	66.4	9.1	1.6	86.0	12.3	1.1	0.6	74.7	0.7	4.0
Troop N	13,233	67.5	74.6	54.7	35.7	9.5	45.4	44.9	6.5	3.1	79.5	18.4	1.3	0.8	70.9	0.5	4.8
Troop P	8,414	68.7	80.2	56.8	35.3	7.9	10.9	71.6	15.8	1.7	82.4	16.2	1.0	0.3	85.9	0.5	5.9
Troop R	8,870	70.4	77.9	53.6	38.7	7.7	48.1	42.9	6.7	2.4	64.6	32.0	2.8	0.5	62.1	0.7	5.4
AREA III	84,655	71.6	74.0	51.2	41.6	7.2	25.4	60.3	11.2	3.1	88.0	10.6	0.7	0.7	81.2	0.6	4.5
Troop A	21,020	72.3	78.5	54.1	39.9	5.9	1.5	79.6	14.2	4.7	90.5	8.1	0.6	0.8	92.6	0.5	5.4
Troop G	32,593	71.3	74.8	51.8	42.8	5.3	38.3	51.6	8.9	1.2	90.4	8.5	0.6	0.5	71.0	0.7	3.4
Troop H	31,042	71.3	70.1	48.5	41.5	10.0	28.0	56.4	11.7	3.9	83.7	14.5	1.0	0.7	84.3	0.5	5.1
AREA IV	73,170	71.6	73.9	51.3	40.2	8.5	34.4	54.1	7.8	3.7	85.9	12.0	1.2	0.9	78.2	0.6	5.2
Troop C	19,215	68.1	74.3	49.2	43.6	7.2	36.7	54.9	6.6	1.8	85.2	13.1	1.1	0.6	66.2	0.7	4.2
Troop D	16,135	70.1	75.3	54.2	37.6	8.2	34.0	54.7	7.1	4.3	84.6	12.6	1.5	1.2	83.3	0.6	6.3
Troop E	16,728	75.4	73.4	51.0	40.0	9.0	33.9	54.6	8.0	3.6	84.4	13.4	1.1	1.1	81.3	0.6	5.8
Troop B	21,092	72.9	73.0	51.2	39.1	9.7	33.0	52.6	9.2	5.2	88.7	9.3	1.1	0.9	82.6	0.5	7.9
Bureau of Patrol	78,287	70.5	78.6 78.6	51.8	42.2	6.0	89.7 89.7	9.1	0.8	0.4	88.6	10.4	0.7	0.3	65.3	0.7	1.4
11000 1	10,201	70.5	70.0	51.0	72.2	0.0	07.1	7.1	0.0	0.7	00.0	10.4	0.7	0.5	05.5	0.7	T.T

Table 3.1: 2010 Traffic Stop and Vehicle Descriptives by Department, Area & Troop

	Total #	%	% Davtime		<u>Shift</u> % 7-3 % 3-11 % 11-7 %			Roadwa	ay Type		Duration of Stop (minutes)				Regist.	Avg #	% Vehicles
	of Stops	Weekday	Stops	% 7-3	% 3-11	% 11-7	% Inter	% State	% Local	% Other	% 1-15	% 16-30	% 31-60	% 61+	% PA	Passengers Per Vehicle	in Poor Condition
AREA I											1 10	10.50	51 00	UI I			
Troop J																	
Avondale	3,310	74.1	67.9	47.0	41.1	12.0	3.8	72.3	14.4	9.5	75.7	19.3	2.6	2.4	84.6	0.5	7.9
Embreeville	5,065	69.8	63.0	41.6	43.8	14.6	2.2	81.3	13.4	3.2	84.2	11.2	2.5	2.0	92.6	0.5	5.6
Ephrata	1,476	66.7	68.3	52.2	36.0	11.7	2.7	55.7	33.3	8.3	88.8	9.1	1.2	0.9	93.4	0.5	1.7
Lancaster	4,745	74.0	69.0	52.2	33.6	14.2	0.8	78.8	16.1	4.2	84.4	12.2	1.2	2.2	94.0	0.5	5.1
Troop K																	
Media	4,243	75.0	64.3	44.7	38.0	17.2	31.4	54.0	9.4	5.1	78.4	16.8	2.4	2.4	85.8	0.5	7.9
Philadelphia	15,662	71.9	69.4	47.1	35.6	17.2	74.4	17.9	2.2	5.4	79.4	17.9	2.1	0.6	87.6	0.5	5.7
Skippack	3,128	75.7	73.9	52.2	37.1	10.6	4.7	67.0	15.0	13.4	86.0	11.3	1.7	1.1	96.1	0.5	2.8
Troop L																	
Frackville	1,689	72.2	79.3	56.3	34.6	9.1	40.1	46.8	10.3	2.7	77.7	19.2	2.2	0.9	80.0	0.6	6.1
Hamburg	2,390	75.9	75.5	52.0	39.7	8.3	55.6	34.9	3.6	5.9	79.3	19.5	0.8	0.4	71.9	0.7	1.6
Jonestown	6,740	72.3	72.0	49.7	41.1	9.2	45.2	41.7	8.2	5.0	83.5	13.8	1.5	1.2	73.9	0.7	5.1
Reading	3,023	71.0	70.4	48.9	41.8	9.3	6.4	78.9	12.0	2.7	89.6	8.6	1.0	0.8	94.2	0.5	4.0
Schuy. Haven	1,876	78.7	73.9	48.2	40.7	11.1	2.7	77.7	15.4	4.2	76.9	20.5	2.1	0.6	96.4	0.4	5.0
Troop M																	
Belfast	4,216	72.9	68.9	46.4	44.0	9.6	23.9	62.5	8.0	5.7	79.9	17.7	2.0	0.4	85.2	0.6	7.5
Bethlehem	2,994	61.7	58.2	46.7	33.9	19.3	0.9	83.7	10.5	4.9	78.8	14.5	4.6	2.2	91.5	0.5	5.7
Dublin	3,711	71.9	68.3	49.7	36.5	13.8	1.6	73.7	21.7	3.0	83.9	14.1	1.3	0.7	95.6	0.5	5.1
Fogelsville	7,299	70.3	56.7	39.7	38.0	22.3	50.2	40.2	5.9	3.8	79.2	17.3	2.8	0.7	78.6	0.7	6.6
Trevose	5,026	64.5	67.0	44.7	40.7	14.5	74.1	21.4	2.7	1.9	52.6	42.1	4.0	1.3	75.9	0.6	5.8
AREA II																	
Troop F																	
Coudersport	1,874	68.9	73.4	45.5	46.2	8.4	0.2	89.5	7.2	3.2	85.0	12.9	1.7	0.4	82.1	0.7	5.0
Emporium	946	72.9	80.3	55.3	41.9	2.9	1.0	86.5	11.3	1.3	90.0	9.2	0.2	0.6	91.3	0.6	2.5
Lamar	3,750	74.7	74.1	57.5	34.1	8.4	62.7	30.9	5.7	0.6	82.9	16.4	0.5	0.2	54.3	0.7	2.4
Mansfield	1,433	72.8	72.6	48.1	45.8	6.1	0.1	89.2	9.7	1.0	81.9	15.1	2.0	1.1	61.1	0.7	4.7
Milton	4,927	68.5	82.1	56.8	36.2	7.0	46.7	47.2	5.4	0.7	84.9	13.2	1.4	0.5	64.1	0.8	1.7
Montoursville	4,303	63.6	76.4	55.3	37.0	7.7	18.5	72.3	6.4	2.9	82.6	15.3	1.6	0.5	86.7	0.7	6.7

#### Table 3.2: 2010 Traffic Stop and Vehicle Descriptives by Station (p. 1 of 4)

	Total #	%	% Davtime		<u>Shift</u> % 7-3 % 3-11 % 11-7 % In			<b>Roadw</b>	ay Type		Durat	ion of S	top (mi	nutes)	Regist.	Avg #	% Vehicles
	of Stops	Weekday	Stops	% 7-3	% 3-11	% 11-7	% Inter	% State	% Local	% Other	% 1-15	% 16-30	% 31-60	% 61+	% PA	Passengers Per Vehicle	in Poor Condition
AREA II											1-13	10-50	51-00	017			
(cont.)																	
Selinsgrove	4,765	63.5	82.8	54.4	43.0	2.6	0.1	83.4	15.4	1.1	94.5	4.6	0.4	0.5	79.4	0.6	3.5
Stonington	1,950	69.1	72.3	52.2	36.2	11.7	1.1	80.5	15.4	3.0	83.9	12.5	1.7	1.9	97.4	0.6	7.4
Troop N																	
Bloomsburg	2,372	72.3	80.3	59.7	32.0	8.3	62.9	31.1	2.2	3.8	70.9	27.3	1.0	0.8	62.7	0.7	3.0
Fern Ridge	3,328	65.3	70.6	53.8	35.3	10.8	61.1	32.2	5.2	1.4	78.6	20.4	0.8	0.2	60.0	0.7	2.4
Hazleton	2,135	69.6	76.8	57.6	33.3	9.1	45.7	45.7	4.5	4.1	89.4	7.8	1.2	1.6	79.2	0.7	6.4
Lehighton	1,908	60.8	73.8	47.6	48.0	4.4	0.7	77.3	16.3	5.8	76.1	22.6	0.7	0.6	94.3	0.6	8.8
Swiftwater	3,463	68.8	73.3	53.9	33.7	12.3	42.5	48.6	6.7	2.3	82.8	14.1	2.2	0.9	69.3	0.7	5.2
Troop P																	
Laporte	1,752	63.9	74.4	46.0	47.8	6.2	0.1	88.9	10.8	0.3	84.5	14.9	0.6	0.0	78.7	0.6	3.8
Shickshinny	1,021	67.5	73.4	53.6	31.2	15.2	2.3	81.8	14.5	1.5	77.4	21.0	1.4	0.3	97.4	0.5	4.3
Towanda	1,348	69.4	72.1	47.0	48.1	4.9	0.1	69.3	28.3	2.4	83.6	14.1	1.6	0.7	81.5	0.5	9.7
Tunkhannock	982	55.4	73.7	47.9	44.4	7.6	1.2	62.1	35.3	1.4	83.4	14.1	1.7	0.8	92.1	0.5	5.5
Wyoming	3,311	75.3	90.5	70.1	22.0	7.9	26.6	63.2	8.0	2.3	82.1	17.0	0.6	0.2	86.1	0.4	6.4
Troop R																	
Blm. Grove	2,041	80.0	77.1	56.1	35.0	8.9	46.8	45.0	5.0	3.2	65.2	32.5	1.7	0.6	63.2	0.6	4.2
Dunmore	2,574	72.0	73.9	49.3	38.8	11.9	64.6	30.4	2.9	2.0	58.3	37.9	3.6	0.2	71.5	0.6	3.7
Gibson	2,576	62.3	80.9	57.5	37.7	4.8	54.4	38.4	5.0	2.2	62.2	33.2	3.9	0.7	40.2	0.9	6.4
Honesdale	1,679	68.8	80.5	51.3	44.7	3.9	14.5	66.5	17.0	2.0	77.5	20.7	1.1	0.6	79.9	0.5	8.1
AREA III																	
Troop A																	
Ebensburg	3,547	69.8	78.1	51.3	41.6	7.1	0.9	80.5	15.4	3.3	82.2	15.2	0.4	2.1	91.9	0.6	3.2
Greensburg	4,740	73.6	73.5	55.1	38.4	6.5	1.3	77.2	13.0	8.6	92.6	6.1	0.7	0.6	96.7	0.4	7.9
Indiana	5,151	70.5	75.2	47.7	46.4	5.9	2.1	78.8	13.7	5.4	89.7	9.4	0.7	0.2	89.8	0.5	5.8
Kiski Val.	4,538	73.9	85.1	63.7	31.2	5.0	0.3	82.9	15.6	1.2	95.0	4.3	0.5	0.3	93.2	0.3	3.4
Somerset (A)	2,971	73.7	82.0	52.8	42.3	4.9	1.5	80.1	14.2	4.2	93.2	4.9	0.3	1.5	91.9	0.5	6.0

#### Table 3.2: 2010 Traffic Stop and Vehicle Descriptives by Station (p. 2 of 4)

	Total #	%	% Daytime	<u>Shift</u>			<u>Roadway Type</u> <u>D</u>			Duration of Stop (minutes)				Regist.	Avg #	% Vehicles	
	of Stops	Weekday	Stops	% 7-3	% 3-11	% 11-7	% Inter	% State	% Local	% Other	% 1-15	% 16-30	% 31-60	% 61+	% PA	Passengers Per Vehicle	in Poor Condition
AREA III (cont.)																	
Troop G																	
Bedford	3,543	68.8	79.8	54.4	39.3	6.2	25.8	60.9	12.5	0.8	88.7	10.1	0.8	0.5	71.0	0.7	5.3
Hollidaysburg	3,250	80.1	77.3	62.6	31.0	6.4	41.2	47.1	10.4	1.3	76.2	21.8	1.1	0.8	81.2	0.6	6.0
Huntingdon	3,309	72.7	67.5	48.4	44.2	7.4	1.1	75.5	20.6	2.9	90.9	7.5	0.6	1.0	95.2	0.6	5.8
Lewistown	5,644	68.7	72.2	49.6	45.3	5.1	0.2	84.5	14.9	0.5	92.5	6.6	0.4	0.4	88.3	0.6	3.3
McConnellsburg	g 7,117	71.4	79.8	52.5	43.9	3.6	69.5	26.8	2.8	1.0	96.9	2.5	0.3	0.3	39.0	0.9	1.4
Philipsburg	4,020	71.2	65.9	44.5	46.0	9.5	38.6	54.6	5.0	1.8	87.3	11.8	0.4	0.4	80.5	0.6	2.8
Rockview	5,558	68.7	76.8	51.9	45.5	2.5	63.8	31.6	3.4	1.2	93.6	5.6	0.4	0.3	67.9	0.6	3.0
Troop H							~										
Carlisle	7,334	71.3	65.7	46.0	38.2	15.8	43.0	38.8	13.9	4.2	80.9	16.3	1.7	1.2	79.5	0.6	5.3
Chambersburg	3,841	77.9	72.5	49.5	44.2	6.4	19.7	55.7	15.5	9.0	92.2	7.3	0.3	0.2	88.6	0.5	6.2
Gettysburg	3,869	75.2	68.8	49.7	43.5	6.8	1.1	75.1	21.8	2.0	90.2	7.6	1.4	0.9	79.0	0.6	2.0
Harrisburg	4,913	67.4	74.1	51.2	37.3	11.4	39.0	52.0	5.3	3.7	80.4	16.8	1.4	1.4	86.7	0.5	4.7
Lykens	3,008	69.6	70.0	45.8	44.7	9.5	0.6	80.6	15.4	3.4	89.9	8.9	0.5	0.7	98.4	0.5	4.2
Newport	3,186	64.9	81.5	55.6	40.3	4.0	0.4	93.9	4.4	1.3	64.2	35.2	0.4	0.1	87.9	0.6	4.6
York	4,891	72.4	64.3	44.8	45.7	9.5	57.0	33.9	6.2	2.8	88.5	10.6	0.8	0.1	78.7	0.5	7.7
AREA IV																	
Troop C																	
Clarion	2,965	72.8	65.1	45.2	39.1	15.8	66.3	30.8	1.8	1.2	66.4	31.1	1.6	0.8	49.5	0.9	4.9
Clearfield	4,130	65.7	78.1	49.3	47.0	3.6	69.5	28.4	1.3	0.9	95.8	3.7	0.3	0.2	49.9	0.8	2.4
Dubois	3,059	66.7	77.2	51.5	43.2	5.4	57.5	36.7	3.3	2.5	87.1	11.7	0.8	0.3	59.6	0.7	3.3
Kane	1,929	60.8	68.7	47.5	41.9	10.6	2.0	80.4	12.9	4.6	88.2	10.8	0.7	0.3	69.8	0.7	5.7
Punxsutawney	2,655	68.4	75.7	52.4	39.8	7.7	8.5	81.6	8.0	1.9	89.5	7.3	1.7	1.4	88.2	0.6	5.5
Ridgway	2,578	73.7	75.1	46.8	48.9	4.3	0.7	83.4	14.1	1.9	86.7	11.7	0.8	0.8	81.2	0.6	3.7
Tionesta	1,781	65.2	77.8	50.4	45.0	4.7	3.8	82.2	13.7	0.3	77.1	20.1	2.1	0.7	87.5	0.6	5.3
Troop D																	
Beaver	3,064	71.9	77.1	58.0	31.1	10.8	50.2	42.8	2.3	4.8	85.2	13.4	0.9	0.5	87.1	0.5	2.7
Butler	4,195	66.3	66.6	44.7	43.5	11.8	28.4	58.8	6.9	5.9	86.5	10.2	1.9	1.4	89.7	0.6	9.7
Kittanning	2,574	65.9	71.8	48.6	43.6	7.8	0.6	82.2	14.2	3.0	85.9	10.1	1.9	2.1	95.3	0.5	8.2
Mercer	3,650	69.1	79.0	58.7	35.2	6.1	58.4	34.1	5.7	1.8	83.8	13.4	1.7	1.1	62.4	0.7	4.7

#### Table 3.2: 2010 Traffic Stop and Vehicle Descriptives by Station (p. 3 of 4)

	Total #	%	% Daytime	<u>Shift</u> % 7.3 % 3.11 % 11.7 % I				<u>Roadwa</u>	ay Type		Durat	ion of S	top (miı	nutes)	Regist.	Avg #	% Vehicles
	of Stops	Weekday	Stops	% 7-3	% 3-11	% 11-7	% Inter	% State	% Local	% Other	% 1-15	% 16-30	% 31-60	% 61+	% PA	Passengers Per Vehicle	In Poor Condition
AREA IV																	
(cont.)																	
New Castle	2,557	79.2	85.3	63.6	33.6	2.9	20.0	65.8	8.3	6.0	80.9	16.7	1.2	1.1	86.8	0.4	5.0
Troop E																	
Corry	1,165	69.5	71.9	50.0	43.8	6.1	0.8	78.7	18.1	2.4	84.8	12.8	1.2	1.2	93.6	0.6	4.4
Erie	3,672	78.9	73.1	53.6	36.5	9.8	39.0	48.0	5.6	7.5	74.5	22.0	2.1	1.4	74.1	0.7	5.7
Franklin	1,585	75.1	72.2	46.9	46.1	7.0	20.8	61.5	11.6	6.1	83.1	15.1	1.3	0.4	85.0	0.6	8.9
Girard	3,501	75.6	75.0	54.8	38.8	6.4	40.8	50.1	6.6	2.6	86.1	12.0	1.1	0.8	82.1	0.6	3.6
Meadville	5,466	74.6	75.6	50.1	38.7	11.2	44.0	48.4	5.9	1.6	90.0	8.5	0.4	1.1	80.2	0.7	6.5
Warren	1,283	72.2	62.2	42.1	48.2	9.7	0.6	83.5	13.8	2.0	86.8	11.7	0.3	1.2	91.1	0.6	6.0
Troop B																	
Belle Vernon	3,852	73.4	75.4	51.8	37.3	10.9	42.3	46.5	7.9	3.3	90.1	7.9	1.2	0.9	85.7	0.5	6.5
Pittsburgh	3,360	71.8	75.7	59.1	33.9	7.0	50.9	41.1	6.6	1.3	89.9	8.6	0.8	0.7	81.7	0.4	3.2
Uniontown	7,270	74.0	68.2	43.0	46.6	10.4	3.0	72.0	14.5	10.5	89.4	9.2	0.5	0.9	94.2	0.5	12.6
Washington	4,199	71.5	78.4	61.4	30.6	8.0	56.9	36.3	4.0	2.7	91.2	7.5	0.7	0.5	72.0	0.5	5.4
Waynesburg	2,407	73.0	70.0	45.9	41.5	12.5	41.5	48.6	7.7	2.3	78.8	15.6	4.1	1.5	63.0	0.4	5.1
Bureau of									· · ·								
Patrol																	
Troop T																	
Bowmansville	13,032	68.2	78.1	51.1	43.4	5.5	98.3	1.6	0.1	0.1	90.7	8.3	0.6	0.4	74.5	0.7	0.6
Everett	11,936	68.6	80.5	49.6	46.6	4.0	87.5	11.8	0.7	0.0	89.8	9.9	0.2	0.1	53.2	0.9	0.9
Gibsonia	6,396	69.7	78.4	52.3	43.2	4.5	85.8	12.8	1.3	0.0	85.7	13.7	0.5	0.1	56.3	0.6	0.8
Highspire	30	23.3	100.0	86.7	10.0	3.3	80.0	16.7	3.3	100.0	96.7	0.0	0.0	3.3	83.3	0.7	16.7
K. of Prussia	10,911	72.0	64.7	46.1	40.8	13.1	78.6	18.6	1.3	1.4	83.3	15.3	0.9	0.5	78.5	0.5	1.7
New Stanton	11,270	72.5	84.4	57.1	39.5	3.3	92.7	5.8	1.2	0.2	93.0	6.6	0.3	0.1	72.2	0.6	2.4
Newville	9,020	72.2	80.1	53.8	39.8	6.4	86.0	12.8	0.4	0.9	84.9	11.9	2.3	0.9	62.5	0.8	1.7
Pocono	8,610	71.8	83.5	54.0	43.9	2.1	91.5	7.1	1.4	0.0	92.1	7.2	0.5	0.1	73.4	0.7	2.2
Somerset (T)	6,980	69.5	80.5	50.8	39.9	9.3	96.2	3.6	0.1	0.1	87.7	11.6	0.6	0.1	39.3	0.8	1.0

#### Table 3.2: 2010 Traffic Stop and Vehicle Descriptives by Station (p. 4 of 4)

## **Traffic Stops By Month**

Table 3.3 provides a monthly report of traffic stops for 2010 across all organizational units. March and May accounted for the largest percentage of traffic stops with 10.4% and 11.8% of all traffic stops, respectively. In contrast, December (5.5%), January (5.7%), and February (4.8%) contributed the smallest percentages of traffic stops in 2010. The monthly percentages are also reported at the area, troop, and station levels below.

	Total #	%	%	%	%	%	%	%	%	%	%	%	%
	of Stops	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
PSP Dept.	371,182	6.2	4.8	10.4	9.8	11.8	9.2	9.9	7.8	8.9	6.6	8.9	5.6
AREA I	76,711	7.8	5.3	9.7	9.2	11.1	8.1	9.5	8.1	9.0	6.3	9.0	6.8
Troop J	14,694	8.6	4.1	12.1	7.9	12.1	7.8	10.5	7.6	9.5	6.4	7.7	5.7
Avondale	3,310	8.3	4.6	9.2	7.9	9.4	11.0	13.1	6.5	9.8	7.9	6.9	5.6
Embreeville	5,065	6.1	3.2	11.2	7.0	12.4	7.4	12.6	10.0	9.4	6.6	8.4	5.7
Ephrata	1,476	14.4	3.7	9.6	8.7	10.1	6.7	7.1	5.5	10.7	6.8	9.1	7.7
Lancaster	4,745	10.0	4.9	16.0	8.8	14.5	6.2	7.0	6.5	8.9	5.0	7.0	5.2
Troop K	23,047	9.9	5.9	8.5	9.1	11.4	8.2	8.4	8.0	8.0	6.1	8.9	7.8
Media	4,243	9.1	5.5	11.5	10.4	11.6	7.7	8.8	6.0	8.2	5.3	7.8	8.2
Philadelphia	15,662	10.6	6.5	7.6	8.4	11.4	8.7	8.1	9.0	7.5	5.7	8.6	7.9
Skippack	3,128	7.3	3.5	8.9	10.7	11.1	6.0	9.4	5.5	9.9	9.0	12.0	6.8
Troop L	15,718	6.3	5.1	10.4	10.6	11.5	7.7	9.9	7.7	9.3	6.3	9.6	5.7
Frackville	1,689	3.4	4.4	11.0	11.1	11.1	7.4	13.8	7.3	8.8	8.2	10.5	3.1
Hamburg	2,390	3.6	4.5	10.9	7.7	12.0	5.0	9.1	12.1	13.6	7.2	7.8	6.7
Jonestown	6,740	7.4	4.9	8.1	12.8	13.6	9.4	9.3	6.2	7.7	5.5	9.8	5.1
Reading	3,023	7.8	6.6	13.2	9.1	8.5	6.3	9.9	7.5	10.1	5.9	8.6	6.5
Schuyl. Haven	1,876	6.0	4.9	12.6	8.3	8.0	7.5	9.7	8.0	8.6	7.0	12.1	7.4
Troop M	23,252	6.3	5.6	8.9	9.3	10.0	8.6	9.8	8.7	9.5	6.3	9.6	7.4
Belfast	4,216	6.2	3.6	9.7	9.5	10.3	8.7	8.9	9.5	8.8	6.2	9.0	9.4
Bethlehem	2,994	4.7	5.0	8.6	8.4	11.3	5.3	9.5	10.0	12.2	7.4	11.9	5.7
Dublin	3,711	9.9	7.9	9.8	9.2	10.2	8.8	9.6	7.2	9.1	3.9	7.4	7.0
Fogelsville	7,299	4.8	5.6	7.8	8.6	8.5	9.9	10.2	8.4	9.9	7.4	10.9	8.0
Trevose	5,026	6.8	5.7	9.5	10.8	11.1	8.4	10.2	8.7	8.2	5.9	8.6	6.0
AREA II	54,465	5.8	5.4	11.4	9.4	13.1	8.6	10.1	6.0	9.1	5.8	10.5	4.7
Troop F	23,948	6.8	5.8	11.4	9.7	11.8	10.5	9.9	6.0	8.2	6.0	9.6	4.1
Coudersport	1,874	5.5	7.3	11.2	9.9	12.1	7.8	9.8	6.1	6.8	9.6	9.2	4.9
Emporium	946	5.6	7.0	12.2	14.7	13.1	7.5	7.3	8.2	8.4	5.9	8.0	2.1
Lamar	3,750	6.9	3.0	10.1	16.1	14.1	12.7	11.9	5.9	8.4	3.7	5.3	2.0
Mansfield	1,433	6.2	6.6	9.4	7.5	16.5	8.2	9.6	4.0	13.7	5.3	9.3	3.8
Milton	4,927	6.5	4.4	12.8	7.8	11.6	12.4	9.6	6.4	7.3	6.7	8.8	5.7
Montoursville	4,303	7.9	7.2	12.6	6.9	9.1	13.0	10.4	4.7	7.9	3.9	12.2	4.2
Selinsgrove	4,765	6.7	7.4	10.1	9.4	10.9	8.2	9.3	6.3	8.1	7.7	11.3	4.6
Stonington	1,950	7.8	5.0	11.6	8.7	12.1	7.7	9.1	7.7	8.7	6.2	11.7	3.6

 Table 3.3: 2010 Monthly Breakdown of Traffic Stops By Department, Area, Troop, & Station (p. 1 of 3)

	Total #	%	%	%	%	%	%	%	%	%	%	%	%
	Of Stops	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Troop N	13,233	6.1	5.9	10.7	10.3	12.9	6.9	10.8	6.2	8.9	5.9	10.6	4.8
Bloomsburg	2,372	7.4	5.7	10.8	9.8	11.6	6.7	9.4	9.1	9.9	6.5	8.4	4.7
Fern Ridge	3,328	4.2	5.1	9.5	12.2	14.1	8.6	13.0	4.8	9.5	5.2	11.2	2.6
Hazleton	2,135	5.0	7.7	13.9	13.8	12.0	7.0	9.0	4.1	8.9	5.0	10.3	3.4
Lehighton	1,908	7.5	3.0	7.8	6.4	13.2	5.5	14.3	7.7	10.6	6.4	12.5	5.2
Swiftwater	3,463	6.8	7.2	11.3	8.9	13.3	5.7	8.9	5.9	6.8	6.7	10.9	7.7
Troop P	8,414	3.9	4.9	12.2	6.6	13.8	7.5	10.1	5.7	10.3	5.9	12.8	6.3
Laporte	1,752	4.5	4.5	9.3	5.1	10.3	9.5	7.0	-8.7	12.7	8.6	12.0	7.9
Shickshinny	1,021	3.7	3.9	12.4	5.4	10.4	9.9	12.0	4.4	11.2	6.6	13.1	7.0
Towanda	1,348	7.0	8.9	12.2	6.6	9.8	7.6	9.4	3.3	11.7	7.4	9.4	6.7
Tunkhannock	982	3.0	3.1	12.3	7.6	15.0	4.0	15.0	2.5	14.1	3.6	17.9	2.0
Wyoming	3,311	2.7	4.3	13.7	7.5	17.9	6.7	10.0	6.4	7.0	4.4	12.9	6.4
Troop R	8,870	4.6	4.1	12.1	9.7	16.2	7.2	9.8	5.9	10.6	4.8	10.3	4.7
Bloom. Grove	2,041	5.4	3.4	8.5	9.2	10.0	8.8	10.0	9.2	10.5	7.3	13.2	4.4
Dunmore	2,574	4.0	6.4	12.5	8.5	17.5	6.8	8.0	9.7	11.1	3.5	8.0	3.8
Gibson	2,576	4.5	3.1	13.6	10.6	20.1	7.1	11.2	1.8	10.4	3.1	10.0	4.5
Honesdale	1,679	4.9	3.0	13.8	10.6	15.5	5.7	9.8	2.3	10.4	6.3	10.9	6.9
AREA III	84,655	6.5	4.5	9.8	10.1	12.3	10.4	9.7	6.7	8.7	5.9	9.3	6.1
Troop A	21,020	5.5	4.0	9.9	10.6	13.6	8.7	8.7	7.7	9.1	7.2	9.8	5.2
Ebensburg	3,547	6.3	5.3	11.5	10.2	12.5	8.6	9.0	7.2	8.9	6.9	8.3	5.1
Greensburg	4,740	6.2	2.6	8.0	11.6	14.1	9.2	8.6	8.5	8.5	7.6	9.9	5.4
Indiana	5,151	7.4	4.8	10.8	7.3	13.1	7.9	7.3	6.4	10.9	8.7	9.5	6.0
Kiski Valley	4,538	4.6	3.8	6.8	11.3	12.3	8.4	10.8	9.0	8.4	7.8	11.0	5.9
Somerset (A)	2,971	2.0	3.5	14.0	14.3	16.6	9.8	7.8	7.5	8.3	3.3	10.5	2.3
Troop G	32,593	6.8	5.0	9.2	9.8	13.3	11.8	9.9	6.3	8.6	5.4	9.2	4.7
Bedford	3,543	10.4	4.8	11.8	10.4	12.9	13.2	6.3	5.5	7.8	4.1	8.4	4.5
Hollidaysburg	3,250	4.8	3.7	9.1	6.3	11.8	13.8	12.1	7.8	11.3	6.0	9.9	3.5
Huntingdon	3,309	10.3	6.4	13.3	8.8	8.0	9.7	8.1	3.7	6.1	7.5	11.6	6.5
Lewistown	5,644	6.5	5.0	9.8	10.6	12.7	12.4	6.8	4.3	8.8	6.8	12.5	3.7
McConnells.	7,117	5.8	4.0	6.7	12.6	17.2	13.1	13.0	6.8	7.9	3.0	5.7	4.2
Philipsburg	4,020	4.8	4.2	7.6	8.5	10.6	9.8	10.4	8.6	10.3	8.5	9.9	6.7
Rockview	5,558	6.9	6.8	9.2	8.8	15.2	10.0	10.4	6.4	8.8	4.2	8.9	4.5
Troop H	31,042	6.9	4.3	10.5	10.0	10.5	10.0	10.3	6.4	8.5	5.5	8.9	8.3
Carlisle	7,334	8.4	5.9	8.4	9.2	11.0	10.0	11.2	6.5	8.8	5.0	7.9	7.5
Chambersburg	3,841	8.5	5.2	11.7	9.0	8.2	11.1	8.7	3.9	3.9	2.3	11.0	16.6
Gettysburg	3,869	6.0	2.5	10.8	8.0	7.8	10.3	10.0	7.5	9.8	6.7	9.7	10.7
Harrisburg	4,913	5.3	3.5	14.8	13.3	14.4	10.6	8.4	4.2	8.3	4.5	8.3	4.5
Lykens	3,008	5.1	4.8	11.9	11.1	9.3	9.5	7.7	8.4	10.1	8.2	8.4	5.3
Newport	3,186	5.6	4.4	9.6	10.3	9.5	7.3	12.1	5.5	8.8	7.0	9.9	10.1
York	4,891	7.8	2.8	7.9	9.2	11.2	10.2	12.6	9.0	9.4	6.2	8.3	5.4

 Table 3.3: 2010 Monthly Breakdown of Traffic Stops by Department, Area, Troop, & Station (p. 2 of 3)

	Total #	%	%	%	%	%	%	%	%	%	%	%	%
	of Stops	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
AREA IV	73,170	4.3	4.8	12.4	11.0	11.9	8.9	9.7	8.6	9.2	6.7	8.1	4.3
Troop C	19,215	5.5	6.0	12.5	9.1	11.1	8.4	9.1	8.7	10.0	6.8	8.4	4.4
Clarion	2,965	2.5	3.6	10.2	7.5	11.3	11.2	11.4	11.0	13.1	6.1	7.7	4.3
Clearfield	4,130	5.7	6.8	14.5	9.6	11.3	8.6	9.0	8.1	8.3	6.9	8.1	3.3
Dubois	3,059	6.8	4.9	12.9	7.8	10.2	7.4	8.4	9.2	10.8	7.9	9.1	4.7
Kane	1,929	4.5	6.3	14.2	11.0	10.4	5.7	8.4	9.2	9.2	7.0	9.7	4.5
Punxs.	2,655	5.5	6.3	13.6	9.2	12.4	8.0	7.9	8.0	9.4	6.6	9.2	4.0
Ridgway	2,578	8.5	8.8	12.1	11.0	11.1	8.3	7.7	7.4	8.9	5.3	7.8	3.2
Tionesta	1,781	4.7	6.3	9.0	8.3	10.9	8.8	10.9	8.6	10.7	7.5	7.2	7.1
Troop D	16,135	3.2	4.0	11.4	10.8	12.8	9.1	10.3	8.3	8.8	6.7	9.1	56
Beaver	3,064	4.5	4.5	9.4	8.0	11.1	8.7	11.9	7.5	9.3	8.9	10.3	5.8
Butler	4,195	1.8	3.3	11.8	11.6	12.5	9.3	14.3	6.6	8.6	6.0	7.8	6.4
Kittanning	2,574	2.3	3.7	13.9	8.0	14.3	6.7	7.8	11.9	10.5	7.1	8.2	5.6
Mercer	3,650	3.6	4.6	7.3	12.3	15.3	9.6	8.8	10.0	9.0	4.5	9.8	5.3
New Castle	2,557	4.5	3.9	16.7	13.6	10.8	11.1	6.8	5.7	6.0	7.4	9.1	4.4
Troop E	16,728	3.7	5.2	13.1	11.6	11.9	8.2	8.2	8.8	9.5	6.9	9.2	3.7
Corry	1,165	3.0	5.0	11.2	14.8	12.1	10.4	11.4	5.8	10.6	4.7	8.3	2.7
Erie	3,672	3.4	4.7	13.2	9.7	10.8	4.8	9.0	10.6	10.8	7.7	12.0	3.2
Franklin	1,585	2.3	3.2	11.7	13.8	13.0	12.8	9.3	9.3	8.8	5.0	5.7	5.0
Girard	3,501	3.0	3.3	14.3	8.3	11.0	9.7	6.5	10.1	10.3	6.5	11.5	5.6
Meadville	5,466	4.6	6.9	13.6	13.4	12.5	8.0	7.8	7.4	7.8	7.5	7.6	2.9
Warren	1,283	5.3	7.4	11.4	11.9	14.3	6.2	8.6	8.0	9.7	7.4	7.2	2.7
Troop B	21,092	4.5	4.1	12.6	12.4	12.0	9.7	11.2	8.6	8.7	6.3	6.1	3.8
Belle Vernon	3,852	5.7	6.0	15.9	10.3	9.7	8.4	10.2	6.7	7.8	8.4	6.4	4.4
Pittsburgh	3,360	5.8	4.1	13.0	14.3	8.8	9.6	11.2	8.6	9.3	6.6	5.8	2.8
Uniontown	7,270	4.4	3.4	12.0	11.4	12.0	10.2	11.5	9.3	9.5	5.9	5.9	4.5
Washington	4,199	3.1	3.9	12.0	14.9	15.5	10.1	11.1	7.6	8.0	5.7	5.4	2.7
Waynesburg	2,407	3.8	3.1	10.1	11.9	13.5	10.1	11.6	11.5	8.2	5.0	7.4	3.8
Bur. of Patrol	78,287	6.4	4.3	8.6	9.0	10.9	9.5	10.5	9.5	8.7	8.3	8.3	5.9
Troop T	78,287	6.4	4.3	8.6	9.0	10.9	9.5	10.5	9.5	8.7	8.3	8.3	5.9
Bowmansville	13,032	7.9	4.0	9.4	9.5	11.3	9.3	9.7	8.3	8.6	8.2	8.2	5.6
Everett	11,936	9.6	6.5	10.0	9.0	8.7	8.1	9.4	9.1	7.5	7.2	8.0	6.9
Gibsonia	6,396	5.7	4.8	7.1	7.2	9.3	8.2	10.7	10.1	11.6	10.5	9.3	5.6
Highspire	30	0.0	0.0	0.0	0.0	0.0	33.3	3.3	0.0	3.3	0.0	53.3	6.7
K. of Prussia	10,911	10.2	6.4	11.2	9.5	9.5	6.5	8.0	8.8	9.7	7.6	7.2	5.4
New Stanton	11,270	1.6	1.6	6.2	7.2	10.6	13.7	17.4	13.4	8.4	8.2	7.3	4.3
Newville	9,020	6.0	4.5	6.9	7.6	10.7	10.0	10.0	10.0	9.0	9.1	9.9	6.4
Pocono	8,610	5.5	4.6	7.5	12.7	16.4	9.8	8.3	6.6	7.2	7.5	6.6	7.1
Somerset (T)	6,980	2.8	1.6	9.4	9.8	11.6	10.1	10.0	9.4	8.0	10.0	11.6	5.8

 Table 3.3: 2010 Monthly Breakdown of Traffic Stops by Department, Area, Troop, & Station (p. 3 of 3)

### **Reason for the Stop**

Information is also collected regarding the reason(s) both "prior to" and "subsequent to" the initiated traffic stop. Troopers may have indicated more than one reason for the stop; therefore, a sum of the categories for reasons for the stop exceeds 100%. Tables 3.4 and 3.5 report the total number of stops and the average number of violations, as well as the percent of stops that occurred for each of the following reasons: 1) speeding; 2) other moving violations; 3) equipment violations; 4) pre-existing information; 5) registration violations; 6) license violations; 7) special traffic enforcement programs; and 8) "other" reasons not previously indicated. In the case of traffic stops initiated for speeding, the average speed over the limit is also recorded. All information is reported at the department, area, and troop levels in Table 3.4, and at the station level in Table 3.5.

In 2010, traffic stops were initiated most frequently due to speeding. Across the department, 63.7% of all traffic stops were initiated due to a speeding violation, with the average speed reported at 19.2 miles per hour over the posted speed limit. The department levels average number of violations per traffic stop was 1.2, with one violation occurring 84.7% of the time, two violations occurring in 13.8% of stops, and 3 or more violations occurring rarely (1.3%). Moving violations accounted for 20.8% of the reasons for the stop, and equipment inspections were noted as a reason prior to the stop in 9.2% of all trooper initiated traffic stops. No other reason accounted for more than 5.5% of the traffic stops as reported.

As shown in Table 3.4, at the area level, speeding was also the most common reason for the stop, and ranged from a high of 73.2% of all traffic stops in the Bureau of Patrol to a low of 52.3% of all traffic stops in Area I. The average speed over the limit ranged from a low of 18.2 miles per hour in Area IV to a high of 22.6 miles per hour in Area I. The average numbers of violations were consistent across all areas. Area I had the lowest percent of stops with single violations (79.1%), while the Bureau of Patrol had the highest percent (89.9%). Moving violations and equipment inspections were the next two most common reasons for traffic stops in each of the areas, respectively. Area I personnel initiated 23.7% of their traffic stops due to moving violations, while Area III only initiated 17.9% of their traffic stops based on a moving violation. Area I had the highest percent of equipment inspections at 13.5%, whereas the Bureau of Patrol initiated only 3.4% of their traffic stops based on an equipment inspection. All other reasons for the stop at the area level accounted for less than 7.0% of the traffic stops with the exception of Area I, which initiated 9.0% of their traffic stops for a reason related to registration. The reasons for the stop are reported at the troop level in Table 3.4 and at the station level in Table 3.5. These organizational units demonstrated greater variation in their reasons for the stop.

	Total # of Stops	Average # of	% Speeding	Avg Amt over Limit	% Moving Violation	% Equipr Inspec	, nent/ ction	% Preex In	6 isting fo	% Registr	ation	% Lice	nse	% Spec. Traf. Enf.	% Oth	er
	01 500 ps	Violations	Р	(MPH)	Р	Р	S	P	S	Р	S	Р	S	Р	Р	S
PSP Dept	371,182	1.2	63.7	19.2	20.8	9.2	4.2	0.2	0.8	5.3	2.9	1.0	4.3	0.2	1.1	4.7
AREA I	76,711	1.2	52.3	22.6	23.7	13.5	5.6	0.2	1.1	9.0	3.4	1.5	6.7	0.3	1.8	7.1
Troop J	14,694	1.2	49.4	21.8	21.9	14.3	5.2	0.2	0.9	10.4	3.3	2.8	8.4	0.2	2.0	7.1
Troop K	23,047	1.3	39.4	25.3	33.9	16.4	7.6	0.1	1.6	10.0	3.7	1.2	6.9	0.3	2.3	9.3
Troop L	15,718	1.2	69.3	19.6	17.5	5.9	4.9	0.3	1.6	5.8	2.7	0.9	4.9	0.3	1.3	4.7
Troop M	23,252	1.2	55.4	23.7	19.0	15.2	4.5	0.2	0.4	9.3	3.5	1.4	6.6	0.2	1.4	6.3
AREA II	54,465	1.2	62.1	18.7	22.0	10.3	4.9	0.2	0.8	4.2	2.5	0.8	4.1	0.2	1.1	4.1
Troop F	23,948	1.1	71.9	18.0	15.8	7.4	4.2	0.1	0.1	3.8	2.3	0.6	3.3	0.1	1.0	4.1
Troop N	13,233	1.2	58.4	19.8	25.5	10.3	5.3	0.2	2.6	4.9	2.2	0.7	4.6	0.2	0.7	3.7
Troop P	8,414	1.2	49.8	19.7	28.8	14.7	6.4	0.2	0.2	5.0	3.2	1.4	4.5	0.4	0.9	4.1
Troop R	8,870	1.2	53.1	18.5	27.0	13.8	4.6	0.4	0.9	3.5	2.6	0.8	4.9	0.2	2.2	4.9
AREA III	84,655	1.2	67.6	18.7	17.9	7.9	3.8	0.2	0.5	5.3	2.5	1.1	3.7	0.2	1.1	4.7
Troop A	21,020	1.2	52.8	19.6	28.5	9.9	5.9	0.3	1.0	7.1	2.6	1.3	4.4	0.2	1.1	5.6
Troop G	32,593	1.1	76.8	18.1	13.7	6.4	2.9	0.1	0.4	3.1	2.3	0.5	2.9	0.2	0.6	3.4
Troop H	31,042	1.2	68.1	18.8	15.0	8.0	3.3	0.2	0.3	6.5	2.6	1.7	4.2	0.2	1.6	5.5
AREA IV	73,170	1.2	61.9	18.2	19.0	11.6	4.9	0.3	0.4	6.2	3.3	1.3	4.8	0.3	1.0	5.5
Troop C	19,215	1.2	72.5	16.4	14.8	8.7	4.4	0.2	0.5	3.0	3.4	0.7	3.6	0.2	1.3	6.3
Troop D	16,135	1.2	61.2	19.4	15.8	14.6	4.5	0.8	0.5	6.7	3.0	1.3	4.7	0.9	0.9	5.2
Troop E	16,728	1.2	70.1	17.4	13.5	9.4	4.5	0.3	0.2	5.8	3.6	0.7	4.3	0.2	1.2	6.5
Troop B	21,092	1.2	46.3	20.6	29.6	13.8	6.2	0.2	0.5	9.1	3.2	2.2	6.4	0.1	0.8	4.0
Bureau of Patrol	78,287	1.1	73.2	18.5	22.1	3.4	2.2	0.0	1.2	1.4	2.6	0.2	2.5	0.1	0.5	1.9
Troop T	78,287	1.1	73.2	18.5	22.1	3.4	2.2	0.0	1.2	1.4	2.6	0.2	2.5	0.1	0.5	1.9

#### Table 3.4: Reason for Stop by Department, Area, & Troop - 2010

NOTES: P = prior to stop, S = subsequent to stop. Speeding, Other Moving Violations, and Special Traffic Enforcement are only valid as reasons "prior" to the stop.

	Total # of Stops	Average # of	% Speeding	Amt. over Limit	% Moving Violation	% Equipt Inspec	nent/ ction	% Preexi Int	6 isting fo	Regis	% stration	9 Lic	‰ ense	% Spec. Traf. Enf.	% Oth	ler
	<b>F</b> -	Violations	Р	(MPH)	Р	Р	S	Р	S	Р	S	Р	S	Р	Р	S
AREA I								_								
Troop J								_								
Avondale	3,310	1.3	33.5	21.6	31.4	18.6	6.0	0.5	3.7	12.4	4.8	1.1	12.3	0.5	3.6	5.1
Embreeville	5,065	1.2	60.2	22.4	19.4	9.2	3.3	0.1	0.1	8.0	3.5	2.0	7.1	0.2	2.0	5.7
Ephrata	1,476	1.2	73.4	20.8	11.0	7.8	5.8	0.2		6.8	2.7	1.3	6.1		0.4	2.8
Lancaster	4,745	1.3	42.2	21.4	21.7	17.3	6.6	0.1	0.1	12.8	2.4	5.3	8.1	0.2	1.4	11.5
Troop K																
Media	4,243	1.3	32.0	24.6	39.7	12.8	6.0	0.4	1.2	16.6	2.5	1.4	8.4	0.3	1.7	7.8
Philadelphia	15,662	1.3	40.2	26.2	30.9	19.2	9.0	0.1	2.0	9.1	4.0	1.1	6.8	0.0	2.8	10.0
Skippack	3,128	1.2	45.5	22.1	40.8	7.1	2.8	0.1	0.1	5.3	4.3	1.6	5.5	1.4	1.0	8.0
Troop L																
Frackville	1,689	1.3	55.0	18.4	31.6	5.8	5.0	0.2	4.8	6.6	4.4	1.2	7.6	0.2	0.5	9.4
Hamburg	2,390	1.2	72.7	18.6	22.6	2.3	5.1	0.2	4.1	3.2	2.6	0.4	3.1	1.2	1.2	3.2
Jonestown	6,740	1.2	74.7	19.5	11.0	6.9	5.7	0.0	0.0	6.2	2.3	0.9	5.3	0.1	1.0	4.8
Reading	3,023	1.1	72.7	21.5	14.3	5.0	2.6	0.1	0.2	5.4	1.9	0.7	3.6		2.4	3.6
Schuylkill Haven	1,876	1.2	52.8	19.2	26.7	8.4	5.4	1.8	3.3	7.7	4.3	1.5	5.1	0.2	1.4	3.9
Troop M																
Belfast	4,216	1.2	45.3	20.5	16.4	25.5	4.1	0.1	0.3	9.4	3.0	2.2	5.8	0.1	1.3	3.1
Bethlehem	2,994	1.2	62.3	21.7	20.4	9.4	3.6	0.2	0.1	6.7	2.7	0.9	6.4	0.3	1.3	5.1
Dublin	3,711	1.2	48.7	21.5	20.8	15.8	4.3	0.2	0.2	10.5	3.2	2.9	7.2	0.6	1.6	7.4
Fogelsville	7,299	1.2	55.5	24.1	21.3	13.6	5.3	0.1	0.3	9.9	3.5	0.8	5.9	0.1	1.5	5.4
Trevose	5,026	1.3	64.7	27.2	15.8	11.9	4.2	0.2	1.0	9.1	4.6	0.9	8.2	0.3	1.3	10.4
AREA II																
Troop F																
Coudersport	1,874	1.1	68.3	17.1	8.1	15.4	2.9	0.2	0.1	5.1	2.6	0.9	3.7	0.3	2.0	6.4
Emporium	946	1.1	50.3	15.3	37.2	9.3	2.1	0.1	0.2	2.2	2.4	0.6	3.8	0.2	0.4	4.2
Lamar	3,750	1.1	84.7	17.2	12.3	2.1	2.5	0.1	0.2	0.5	1.9	0.1	1.7	0.1	0.2	1.2
Mansfield	1,433	1.1	75.4	17.9	12.2	8.9	4.0	0.3		2.8	2.4	0.3	3.8	0.2	0.6	3.4
Milton	4,927	1.1	75.1	18.7	18.2	2.9	3.1	0.1	0.0	2.1	1.2	0.4	2.8	0.1	1.6	1.3
Montoursville	4,303	1.2	60.5	18.6	19.5	12.1	5.8	0.1	0.1	6.6	3.0	0.8	4.6	0.2	1.0	8.0

#### Table 3.5: Reason for Stop by Station – 2010 (p. 1 of 4)

NOTE: P = prior to stop, S = subsequent to stop NOTE: Reasons for the stop may exceed 100% as more than one reason for the stop may be indicated for a traffic stop.

	Total #	Average #	% Sneeding	Amt. over	% Moving	% Equip	ment/	% Preex	⁄₀ isting	Regis	% tration	9 Lice	/o	% Spec. Traf Enf	% Oth	, 0 1er
	of Stops	Violations	specung	(MPH)	Violation	Inspe	ction	In	fo	Regis	ti ation	LIC	lise	IIai. Em.	ou	ICI
		violations	Р	(1911 11)	Р	Р	S	Р	S	Р	S	Р	S	Р	Р	S
AREA II (cont.)								_								
Selinsgrove	4,765	1.1	75.3	18.0	14.5	7.1	5.2	0.1	0.0	2.8	2.2	0.5	2.8	0.1	0.5	3.5
Stonington	1,950	1.2	66.8	18.6	11.2	9.8	6.2	0.1	0.3	10.4	3.9	1.3	5.1	0.1	1.3	8.2
Troop N											_					
Bloomsburg	2,372	1.1	58.7	18.5	37.6	2.4	2.5	0.1	0.3	1.2	1.4	0.2	2.0	0.6	0.3	1.3
Fern Ridge	3,328	1.1	59.1	18.8	24.6	13.2	4.7	0.0		2.2	1.6	0.8	2.9	0.0	0.7	3.7
Hazleton	2,135	1.2	59.4	21.3	23.7	7.4	5.7	0.4		7.7	2.1	0.6	6.7	0.7	1.1	2.8
Lehighton	1,908	1.2	40.6	20.9	29.2	19.5	4.4	0.2	7.0	10.1	3.3	0.7	6.0		0.5	2.7
Swiftwater	3,463	1.3	66.6	20.4	17.1	9.9	8.1	0.2	5.7	5.4	2.9	1.2	5.8	0.0	1.0	6.4
Troop P																
Laporte	1,752	1.2	42.8	17.9	43.4	9.5	7.2	0.1	0.2	3.5	4.1	0.7	3.6	0.1	0.4	3.2
Shickshinny	1,021	1.2	54.4	20.1	29.3	9.8	4.5			5.2	4.1	1.5	7.1	0.2	0.9	7.6
Towanda	1,348	1.2	53.9	17.8	16.2	19.7	8.9	0.5	0.5	7.4	4.0	1.9	5.8	0.7	0.9	6.3
Tunkhannock	982	1.2	43.9	20.9	29.3	14.1	4.5	0.2	0.1	7.2	3.4	2.0	4.8	0.3	3.7	8.5
Wyoming	3,311	1.1	52.2	20.9	25.9	17.0	6.0	0.2	0.1	4.0	2.1	1.3	3.7	0.6	0.5	1.2
Troop R																
Blooming Grove	2,041	1.2	54.5	18.8	21.9	16.9	5.9	1.4	3.5	4.7	4.1	0.6	5.4	0.3	1.2	3.1
Dunmore	2,574	1.2	63.9	19.1	19.9	8.8	5.2	0.2	0.1	3.5	2.4	1.0	6.4	0.2	3.3	9.0
Gibson	2,576	1.1	42.4	18.2	38.3	14.4	3.4	0.1	0.0	2.9	1.9	0.8	3.7	0.1	2.7	3.4
Honesdale	1,679	1.1	51.6	17.6	26.7	16.7	4.0	0.2	0.1	3.2	2.1	0.8	4.0	0.3	0.7	3.3
AREA III																
Troop A																
Ebensburg	3,547	1.2	65.3	19.1	15.7	12.6	7.3	0.2	3.4	5.7	3.9	0.6	4.2	0.4	0.6	5.9
Greensburg	4,740	1.2	42.3	20.1	30.0	13.0	5.9	0.1	0.4	12.5	2.4	2.1	6.1	0.3	1.2	3.7
Indiana	5,151	1.2	64.0	19.8	16.6	10.5	4.2	0.5	0.1	6.8	2.1	1.2	4.1	0.2	1.3	6.3
Kiski Valley	4,538	1.2	30.6	21.3	58.1	5.2	6.4	0.2	0.6	4.9	2.0	1.3	3.9	0.0	0.7	3.5
Somerset (Å)	2,971	1.3	70.2	18.3	16.8	7.3	6.6	0.3	1.3	4.0	3.0	0.7	3.5	0.1	1.5	10.6

Table 3.5: Reason for Stop by Station - 2010 (p. 2 of 4)

NOTE: P = prior to stop, S = subsequent to stop

NOTE: Reasons for the stop may exceed 100% as more than one reason for the stop may be indicated for a traffic stop.

	Total # of Stops	Average #	% Speeding	Amt. over Limit	% Moving Violation	e Equip Insp	% oment/ ection	% Preexis Inf	sting	% Registra	ation	9 Lic	‰ ense	% Spec. Traf. Enf.	% Oth	er
	· · · · · · · · · · · · · · · · · · ·	Violations	Р	(MPH)	Р	P	S	Р	S	Р	S	Р	S	Р	Р	S
AREA III (cont.)								_								
Troop G																
Bedford	3,543	1.2	73.5	18.5	9.9	11.5	3.6	0.1	1.3	4.9	3.1	0.5	3.6	0.1	1.1	3.1
Hollidaysburg	3,250	1.2	66.3	17.1	24.2	7.6	3.5	0.3	0.3	3.2	2.5	0.6	3.3	0.2	0.7	8.1
Huntingdon	3,309	1.2	65.3	17.6	15.6	11.4	4.3	0.1	0.2	8.2	3.4	0.8	5.3	0.1	0.6	4.3
Lewistown	5,644	1.2	87.0	17.7	5.2	5.0	3.2	0.0	0.2	2.4	2.9	0.6	3.8	0.1	0.5	5.4
McConnellsburg	7,117	1.1	86.2	19.0	8.2	4.3	1.3	0.0		1.0	1.6	0.3	1.0	0.4	0.3	1.0
Philipsburg	4,020	1.1	74.9	16.5	20.3	3.1	2.5	0.3	0.1	1.2	2.2	0.5	2.6	0.3	0.4	2.2
Rockview	5,558	1.1	71.9	19.0	19.8	4.9	3.2	0.1	0.8	3.5	1.4	0.2	2.4		0.6	2.3
Troop H																
Carlisle	7,334	1.2	67.1	18.0	14.9	9.1	3.1	0.1	0.5	7.2	2.1	1.8	4.9	0.1	2.2	5.5
Chambersburg	3,841	1.2	64.9	17.4	16.6	10.7	4.3	0.3	0.2	6.0	3.0	1.2	4.8	0.3	0.9	3.8
Gettysburg	3,869	1.2	66.1	19.0	19.6	8.2	4.3	0.2	0.1	3.8	2.1	1.1	4.1	0.3	1.7	5.9
Harrisburg	4,913	1.1	71.3	21.2	17.6	3.5	1.7	0.3	0.2	5.6	1.9	1.0	3.3	0.2	1.4	6.2
Lykens	3,008	1.2	60.1	17.9	14.5	11.7	4.3	0.5	0.2	9.7	2.6	2.0	3.6	0.2	2.6	7.0
Newport	3,186	1.2	78.3	17.4	13.5	3.3	1.9	0.1	0.2	2.9	4.5	0.8	3.3	0.1	1.5	7.0
York	4,891	1.1	68.6	20.2	8.9	9.7	3.7	0.1	0.3	8.9	2.7	3.7	4.4	0.1	0.9	4.0
AREA IV																
Troop C																
Clarion	2,965	1.2	79.1	18.5	10.2	7.8	6.1	0.3	0.2	2.3	4.4	0.7	3.2	0.4	1.2	5.7
Clearfield	4,130	1.1	71.6	16.6	13.6	9.5	4.4	0.1	1.6	3.9	2.2	1.0	2.7	0.0	1.4	3.3
Dubois	3,059	1.2	67.9	14.4	22.4	5.2	3.4	0.3	0.3	3.0	3.2	0.4	3.7	0.2	1.6	9.9
Kane	1,929	1.1	59.4	17.3	25.5	12.2	2.6	0.2	0.1	2.8	2.0	0.6	2.6		0.2	4.6
Punxsutawney	2,655	1.2	71.6	16.0	13.2	10.7	4.2	0.2	0.1	4.2	4.0	0.6	5.2	0.2	0.9	7.8
Ridgway	2,578	1.2	79.2	16.6	11.6	6.5	4.3	0.1	0.1	2.1	3.3	0.9	3.9	0.0	2.4	6.4
Tionesta	1,781	1.2	79.4	15.7	8.2	8.6	5.9	0.2	0.3	2.0	5.4	0.7	4.2	0.5	1.1	8.2
Troop D																
Beaver	3,064	1.2	34.5	20.5	21.3	30.4	4.8	0.2	0.1	13.8	3.8	1.0	6.0		0.4	4.0
Butler	4,195	1.2	69.9	19.5	12.2	10.3	4.6	0.2	0.7	5.9	3.3	2.1	5.4	3.0	1.2	5.9
Kittanning	2,574	1.3	69.1	21.3	8.9	12.5	6.9	0.1	1.3	7.4	3.1	1.6	6.3	0.3	1.0	9.6

Table 3.5: Reason for Stop by Station - 2010 (n. 3 of 4)

NOTE: P = prior to stop, S = subsequent to stop NOTE: Reasons for the stop may exceed 100% as more than one reason for the stop may be indicated for a traffic stop.

	Total # of Stops	Average # of	% Speeding	Amt. over Limit	% Moving Violation	% Equip Inspe	% ment/ ction	% Preexi In	6 isting fo	% Regist	% tration	9 Lic	% ense	% Spec. Traf. Enf.	% Otł	% her
	-	violations	Р	(MPH)	Р	P	S	Р	S	Р	S	Р	S	Р	Р	S
AREA IV (cont.)																
Mercer	3,650	1.1	78.2	17.5	10.7	7.2	2.2	0.2	0.2	2.4	1.4	0.5	2.2	0.2	1.2	2.9
New Castle	2,557	1.2	45.4	18.3	29.6	15.8	4.7	3.8	0.1	5.0	3.8	0.8	4.1	0.2	0.2	4.7
Troop E																
Corry	1,165	1.2	71.8	16.1	13.5	7.0	3.7	0.3		4.4	4.5	1.0	4.9	0.7	1.3	9.3
Erie	3,672	1.2	65.7	18.6	17.9	7.5	7.1	0.2	0.1	9.5	5.1	0.5	5.8	0.1	1.4	8.6
Franklin	1,585	1.2	52.8	17.3	20.1	16.2	5.9	0.6	0.4	7.8	3.8	1.5	6.1	0.1	1.7	3.7
Girard	3,501	1.2	78.5	17.2	16.4	2.3	2.7	0.1	0.1	2.5	4.1	0.1	4.2	0.1	1.0	9.6
Meadville	5,466	1.1	73.1	17.2	7.1	13.3	3.7	0.2	0.2	5.2	2.3	0.8	2.5	0.3	1.0	3.3
Warren	1,283	1.2	69.7	16.7	11.1	9.6	3.7	0.5	0.5	6.1	2.7	1.4	5.5	0.3	2.1	6.2
Troop B																
Belle Vernon	3,852	1.2	50.1	21.4	20.0	19.8	6.8	0.1	0.2	9.0	3.0	2.2	5.5	0.2	0.5	4.7
Pittsburgh	3,360	1.2	50.2	23.0	39.4	3.1	3.8	0.1	0.3	6.0	2.2	2.0	4.3	0.1	0.7	3.7
Uniontown	7,270	1.3	40.2	19.2	24.1	19.9	9.3	0.4	1.2	14.1	4.6	3.6	9.8	0.2	1.0	4.7
Washington	4,199	1.1	40.6	20.9	43.7	9.1	3.0	0.1	0.1	5.6	2.4	0.9	4.7		0.7	3.8
Waynesburg	2,407	1.1	63.0	18.9	23.0	8.8	4.6	0.2		5.0	2.3	0.5	3.2	0.1	0.6	1.9
<b>Bureau of Patrol</b>						_		_								
Troop T																
Bowmansville	13,032	1.1	74.1	19.3	22.1	2.4	1.4	0.0	0.0	1.3	1.2	0.2	2.1	0.0	0.4	1.2
Everett	11,936	1.1	95.6	15.9	2.6	1.3	2.4	0.0	4.0	0.6	2.7	0.1	2.4		0.3	1.4
Gibsonia	6,396	1.2	51.7	16.9	44.9	3.1	1.8		1.5	1.0	4.5	0.3	2.4	0.0	1.1	4.8
Highspire	30	1.0	70.0	21.9	26.7									3.3		
King of Prussia	10,911	1.2	69.6	20.0	23.1	4.7	2.7	0.0	1.6	2.8	3.3	0.3	3.2	0.9	0.9	3.7
New Stanton	11,270	1.1	53.9	19.3	39.3	5.4	3.0	0.0	1.7	1.5	2.9	0.2	2.6	0.0	0.3	0.6
Newville	9,020	1.1	84.9	18.8	8.0	5.6	2.9	0.0	0.0	1.8	3.7	0.2	3.0	0.0	0.2	1.5
Pocono	8,610	1.1	75.2	20.2	20.4	2.6	2.0	0.0	0.1	1.5	1.6	0.2	2.2		0.4	2.2
Somerset (T)	6,980	1.1	72.7	18.4	25.6	1.4	1.4	0.1	0.1	0.4	1.1	0.2	1.4		0.8	1.0

Table 3.5: Reason for Stop by Station - 2010 (p. 4 of 4)

NOTE: P = prior to stop, S = subsequent to stop NOTE Reasons for the stop may exceed 100% as more than one reason for the stop may be indicated for a traffic stop.

## **DRIVERS' CHARACTERISTICS**

Driver characteristics are reported in Tables 3.6 & 3.7 across all organizational units. The characteristics of the drivers are grouped by: 1) drivers' age and gender; 2) drivers' race/ethnicity; and 3) drivers' residency. New information regarding driver behavior, impairment, and criminal histories is reported for the data collected via TraCS in Tables 3.8 and 3.9.

## Drivers' Age & Gender

Table 3.6 reports the total number of traffic stops initiated by PSP personnel, the average age of the driver, and the percent of traffic stops involving male drivers at the department, area, and troop levels. Based on the 371,182 traffic stops, drivers' average age was 37.2 years old and 66.6% of all traffic stops involved a male driver. At the area level, the average age of drivers ranged from a high of 37.2 years old in Area IV to a low of 35.8 years old in Area I. The percentage of male drivers varied from a high of 67.3% in the Bureau of Patrol and Area I to a low of 65.0% in Area III. Drivers' average age varied more noticeably at the troop level (Table 3.6) and at the station level (Table 3.7).

### **Drivers' Race/Ethnicity**

In all trooper initiated traffic stops, PSP personnel visually determined the racial/ethnic composition of the drivers based solely on their own perceptions. This method avoids asking drivers to self-identify their race/ethnicity. The collection of drivers' race/ethnicity raises reliability and validity concerns for data collection. Police may be reluctant to indicate drivers' race/ethnicity or may report that information incorrectly. Alternatively, PSP personnel may "disengage," or initiate fewer traffic stops overall.

There are strategies, however, to increase the validity and reliability of this type of data. For example, the current data collection effort contractually guarantees confidentiality to each Trooper. Although Troopers' employee numbers are initially reported on the data collection forms, the research team is required to remove this information from all data files after the Troopers' demographic information has been successfully merged with the traffic stop data. Through the procedures included in the contract and approved by the University of Cincinnati Institutional Review Board, PSP legal team, and PSP union officials, individual Troopers cannot be identified in data analyses. The purpose of this protection is to increase the reliability and validity of the data collected. All PSP Troopers were advised of this confidentiality agreement by the Principal Investigator in a training video. Other initiatives designed to increase compliance and data accuracy are fully described in the *Year 1 Final Report* (see Engel et al., 2004).

Across the department, the racial/ethnic composition of all drivers encountered during member-initiated traffic stops in 2010 is as follows:

- White = 81.6%
- Black = 9.4%

- Any Hispanic = 4.3%
  - White Hispanic = 3.8%
  - Black Hispanic = 0.5%
- Native American = 0.2%
- Middle Eastern = 2.2%
- Asian = 2.0%
- Unknown race/ethnicity or missing data 0.5%

Importantly, some variation in the racial/ethnic background of drivers stopped across areas, troops, and stations is to be expected due to differences in the demographic makeup of residents and travelers, as well as differences in traffic flow patterns in these locations. Further analyses are provided in Section 4, where the percentage of traffic stops by race/ethnicity is compared with the percentage across previous years.

At the area level, the rate of traffic stops involving White drivers ranged from a high of 89.5% in Area IV to a low of 70.0% in Area I (see Table 3.6). Traffic stops involving Black drivers reached a high of 15.5% in Area I and a low of 5.7% in Area IV. Finally, Hispanic traffic stops were also highest in Area I (9.2%) and lowest in Area IV (1.5%). Greater variation is reported at the troop and station levels in Tables 3.6 & 3.7, respectively.

## **Drivers' Residency**

Tables 3.6 & 3.7 also report stopped drivers' residency based on reported residential zip codes. For every traffic stop, drivers' zip codes were recorded to determine the percentage of stops that occurred in locations where the drivers actually reside. Across the department, 94.3% of drivers stopped did not reside in the municipality where they were stopped, 65.0% did not reside in the county where they were stopped, and 23.8% did not reside in the state of Pennsylvania. The rates of out-of-state and out-of-county residents stopped varied noticeably across organizational units. At the area level, out-of-state traffic stops ranged from a high of 34.9% in the Bureau of Patrol to a low of 14.8% in Area I, while out-of-county traffic stops ranged from a high of 89.9% in the Bureau of Patrol to a low of 51.2% in Area I. These differences are likely partially related to the geographic locations of these organizational units and the traffic patterns that exist within those units. Table 3.6 provides a description of the troop rates, while station rates are reported in Table 3.7.

	Total # of Stops	Average Age	% Male	% White	% Black	% White Hispanic	% Black Hispanic	% Any Hispanic	% Native American	% Middle Eastern	% Asian	% Missing/ Unknown	% Stopped out of Municipality	% Stopped out of County	% Stopped out of State
PSP Dept.	371,182	36.6	66.6	81.6	9.4	3.8	0.5	4.3	0.2	2.2	2.0	0.5	94.3	65.0	23.8
AREA I	76,711	35.8	67.3	70.0	15.5	8.3	0.9	9.2	0.0	2.0	2.4	0.8	88.3	51.2	14.8
Troop J	14,694	35.0	67.1	75.6	10.2	10.2	0.6	10.8	$^{-}0.0^{-}$	1.2	1.7	0.4	93.8	35.7	9.5
Troop K	23,047	36.1	68.1	57.3	28.5	5.3	1.1	6.4	0.1	2.1	3.6	2.0	74.2	50.4	11.9
Troop L	15,718	36.5	65.2	81.2	6.8	7.3	1.1	8.4	0.1	2.0	1.4	0.2	94.9	57.9	19.9
Troop M	23,252	35.4	67.9	71.4	12.0	10.6	0.9	11.5	0.0	2.5	2.2	0.3	94.4	57.2	17.6
AREA II	54,465	37.0	67.2	84.6	6.4	4.1	0.5	4.6	0.1	1.9	1.8	0.6	94.7	66.3	27.7
Troop F	23,948	37.7	66.0	88.5	5.2	2.3	0.2	2.5	0.1	1.6	1.4	0.7	96.2	70.5	25.6
Troop N	13,233	35.3	66.6	74.5	10.6	7.7	1.3	9.0	0.1	2.7	2.4	0.8	93.0	68.0	32.5
Troop P	8,414	37.6	69.4	92.5	2.9	2.4	0.3	2.7	0.0	0.8	0.8	0.2	95.2	53.9	14.3
Troop R	8,870	37.1	69.2	81.6	6.9	5.0	0.6	5.6	0.1	2.7	2.7	0.4	92.7	64.4	39.0
AREA III	84,655	36.5	65.0	88.1	6.3	2.2	0.2	2.4	0.1	1.5	1.4	0.3	95.1	61.7	21.1
Troop A	21,020	36.8	65.9	93.5	3.7	0.7	0.1	0.8	0.2	0.8	0.8	0.2	93.3	49.6	7.3
Troop G	32,593	36.8	65.5	86.5	6.9	1.8	0.2	$^{-}2.0$	0.1	2.2	2.0	0.1	97.1	75.0	29.5
Troop H	31,042	36.1	63.8	86.0	7.3	3.6	0.4	4.0	0.1	1.2	1.2	0.2	94.3	56.0	21.7
AREA IV	73,170	37.2	66.5	89.5	5.7	1.3	0.2	1.5	0.1	1.8	1.2	0.2	93.6	55.7	21.6
Troop C	19,215	38.3	69.4	86.9	5.4	2.1	0.5	2.6	0.1	3.2	1.7	0.2	95.1	73.0	33.7
Troop D	16,135	36.1	64.9	89.2	6.8	1.1	0.1	1.2	0.2	1.4	0.8	0.2	95.0	56.1	16.2
Troop E	16,728	37.6	63.7	91.0	4.4	1.2	0.1	1.4	0.1	1.7	1.1	0.3	92.5	46.9	18.5
Troop B	21,092	36.7	67.2	90.8	6.2	0.7	0.1	0.7	0.1	0.9	1.1	0.1	92.0	46.7	17.3
Bureau of Patrol	78,287	36.8	67.3	76.5	12.1	3.3	0.5	3.9	0.5	3.6	3.0	0.4	99.5	89.9	34.9
Troop T	78,287	36.8	67.3	76.5	12.1	3.3	0.5	3.9	0.5	3.6	3.0	0.4	99.5	89.9	34.9

 Table 3.6: 2010 Characteristics of Drivers Stopped by Department, Area & Troop (n=371,182)

NOTE: The totals for "Any Hispanic" may appear to differ slightly from the combination of White Hispanic & Black Hispanic due to rounding.

	Total # of Stops	Ave. Age	% Male	% White	% Black	% White Hispanic	% Black Hispanic	% Any Hispanic	% Native American	% Middle Eastern	% Asian	% Missing/ Unknown	% Stopped out of Municipality	% Stopped out of County	% Stopped out of State
AREA I													L V	C C	
Troop J															
Avondale	3,310	35.4	66.3	71.4	9.1	16.9	0.3	17.2	0.0	0.5	1.3	0.5	94.1	32.6	16.1
Embreeville	5,065	35.4	67.2	73.5	14.4	6.6	0.7	7.3	0.1	2.1	2.4	0.2	94.1	42.5	7.9
Ephrata	1,476	32.9	67.5	79.2	6.2	9.2	0.7	9.9	0.1	1.0	1.4	2.3	96.3	40.9	7.9
Lancaster	4,745	35.0	67.2	79.9	7.9	9.4	0.7	10.1	0.0	0.9	1.1	0.1	92.3	28.8	7.0
Troop K								4							
Media	4,243	37.1	65.4	67.7	23.9	3.3	0.3	3.6	0.0	1.7	2.8	0.3	94.1	50.5	15.4
Philadelphia	15,662	35.5	70.4	49.5	33.5	6.3	1.4	7.7	0.1	2.3	4.0	2.9	64.7	53.0	12.5
Skippack	3,128	37.8	60.5	82.7	9.3	3.2	0.4	3.6	0.0	1.4	2.8	0.2	94.6	37.1	4.4
Troop L															
Frackville	1,689	36.7	66.7	87.5	5.2	3.6	0.6	4.2	0.2	1.5	1.4	0.1	95.2	53.7	20.7
Hamburg	2,390	36.7	63.3	80.0	7.4	6.9	1.1	7.9	0.1	3.0	1.5	0.1	97.5	72.8	29.1
Jonestown	6,740	36.4	65.3	77.8	8.4	8.3	0.7	9.0	0.1	2.6	1.8	0.3	93.9	68.6	26.8
Reading	3,023	35.2	66.1	80.4	5.5	9.7	2.3	12.0	0.1	0.6	1.3	0.1	94.0	41.4	6.7
Schuylkill Haven	1,876	38.2	64.5	90.7	3.5	3.7	0.8	4.5	0.0	0.8	0.4	0.1	95.8	30.9	4.2
Troop M															
Belfast	4,216	34.6	66.8	70.2	13.1	11.5	1.0	12.1	0.0	2.4	1.5	0.7	96.0	60.7	17.4
Bethlehem	2,994	34.4	65.2	73.0	9.5	12.6	1.6	13.7	0.1	2.3	1.3	0.0	93.7	48.8	8.7
Dublin	3,711	36.5	67.6	83.3	4.4	8.4	0.8	9.1	0.0	1.3	1.6	0.2	91.8	55.6	6.3
Fogelsville	7,299	36.1	70.1	69.2	11.1	13.0	1.2	14.2	0.0	3.2	2.1	0.1	96.0	58.6	21.7
Trevose	5,026	34.8	67.3	66.0	19.5	6.8	0.7	7.5	0.0	2.3	4.0	0.6	92.9	58.4	25.6
AREA II				_											
Troop F															
Coudersport	1,874	39.9	71.0	97.2	1.1	0.9	0.2	1.0	0.0	0.3	0.3	0.1	90.4	64.8	17.7
Emporium	946	39.6	76.1	98.5	0.3	0.4	0.1	0.5	0.1	0.3	0.2	0.0	95.0	74.2	7.7
Lamar	3,750	38.5	67.5	81.7	7.3	3.9	0.5	4.3	0.1	3.2	2.0	1.4	99.0	87.8	45.1
Mansfield	1,433	37.2	69.9	82.3	4.9	1.6	0.1	1.7	0.1	2.0	1.8	7.3	96.9	65.5	38.8
Milton	4,927	36.6	63.6	81.1	9.0	3.9	0.3	4.2	0.1	3.1	2.4	0.1	97.9	88.5	37.1
Montoursville	4,303	36.5	65.7	92.4	4.8	1.2	0.1	1.3	0.0	0.7	0.7	0.1	93.9	45.0	13.3

### Table 3.7: 2010 Characteristics of Drivers Stopped by Station (p. 1 of 4)

NOTE: The totals for "Any Hispanic" may appear to differ slightly from the combination of White Hispanic & Black Hispanic due to rounding.

	Total # of Stops	Ave. Age	% Male	% White	% Black	% White Hispanic	% Black Hispanic	% Any Hispanic	% Native American	% Middle Eastern	% Asian	% Missing/ Unknown	% Stopped out of municipality	% Stopped out of County	% Stopped out of State
AREA II (cont.)													¥		
Selinsgrove	4,765	38.2	63.9	91.1	4.4	2.1	0.1	2.2	0.0	0.8	1.4	0.0	97.8	77.4	22.1
Stonington	1,950	38.4	62.6	96.3	1.1	1.4	0.2	1.5	0.0	0.4	0.4	0.3	93.4	37.8	1.5
Troop N															
Bloomsburg	2,372	33.8	63.3	77.6	10.1	4.7	0.5	5.2	0.0	4.2	2.8	0.1	99.2	83.6	37.6
Fern Ridge	3,328	36.6	67.3	72.4	11.4	7.6	1.7	9.2	0.3	3.4	3.2	0.1	87.6	73.6	42.5
Hazleton	2,135	34.0	65.5	71.4	7.4	12.4	2.4	14.8	0.0	1.8	1.3	3.3	95.4	63.6	28.2
Lehighton	1,908	36.4	65.1	87.3	4.0	4.9	0.6	5.5	0.1	1.2	0.5	1.4	88.3	47.6	7.3
Swiftwater	3,463	35.2	69.6	69.3	15.7	8.4	1.2	9.5	0.1	2.3	3.0	0.0	94.9	65.7	35.7
Troop P															
Laporte	1,752	40.1	76.3	95.8	1.2	1.5	0.2	1.7	0.1	0.3	0.7	0.2	96.4	83.2	20.1
Shickshinny	1,021	35.7	64.9	94.7	1.4	2.4	0.4	2.8	0.0	0.4	0.7	0.0	92.9	38.4	2.9
Towanda	1,348	37.5	70.9	96.3	1.1	1.9	0.0	1.9	0.1	0.1	0.4	0.0	93.2	36.1	17.1
Tunkhannock	982	37.1	71.4	96.7	1.3	1.2	0.3	1.5	0.0	0.0	0.3	0.1	94.5	68.5	8.0
Wyoming	3,311	37.0	65.8	87.4	5.6	3.4	0.5	3.9	0.1	1.7	1.1	0.3	96.4	46.0	15.6
Troop R									_						
Blooming Grove	2,041	38.4	65.9	80.8	7.7	6.6	1.2	7.8	0.0	1.8	1.5	0.3	86.7	67.8	38.6
Dunmore	2,574	35.0	68.4	80.8	6.6	6.2	0.5	6.7	0.1	2.5	2.7	0.5	94.4	59.4	28.7
Gibson	2,576	37.5	73.8	75.8	9.5	4.1	0.3	4.4	0.2	4.7	5.0	0.4	96.6	77.6	60.4
Honesdale	1,679	38.2	67.2	92.5	2.3	2.6	0.3	2.9	0.2	0.9	0.8	0.4	91.5	47.9	22.2
AREA III															
Troop A			_												
Ebensburg	3,547	36.6	66.1	94.4	3.3	0.6	0.0	0.6	0.0	1.0	0.6	0.1	92.0	54.6	8.2
Greensburg	4,740	35.9	62.3	94.2	3.3	0.5	0.0	0.6	0.3	0.4	1.3	0.0	91.8	27.1	3.2
Indiana	5,151	36.0	67.8	92.0	4.3	1.3	0.1	1.5	0.3	1.0	0.8	0.2	93.1	56.7	9.5
Kiski Valley	4,538	37.6	68.2	92.4	5.0	0.5	0.1	0.6	0.0	1.0	0.9	0.1	98.0	68.2	7.3
Somerset (A)	2,971	38.9	64.6	96.7	1.0	0.5	0.0	0.5	0.0	0.3	0.3	1.2	90.7	38.0	8.1

Table 3.7: 2010 Characteristics of Drivers Stopped by Station (p. 2 of 4)

NOTE: Any Hispanic totals may appear to differ slightly from the combination of White Hispanic & Black Hispanic due to rounding.

	Total # of Stops	Ave. Age	% Male	% White	% Black	% White Hispanic	% Black Hispanic	% Any Hispanic	% Native American	% Middle Eastern	% Asian	% Missing/ Unknown	% stopped out of municipality	% stopped out of county	% stopped out of state
AREA III (cont.)													<b>I</b> U	· ·	
Troop G															
Bedford	3,543	36.0	63.7	87.7	6.4	1.7	0.1	1.7	0.1	2.1	1.9	0.1	95.5	63.8	29.9
Hollidaysburg	3,250	35.5	62.8	88.0	4.6	1.8	0.1	1.9	0.1	1.6	1.5	2.2	96.9	69.0	20.5
Huntingdon	3,309	38.6	65.2	96.3	2.4	0.6	0.1	0.7	0.0	0.3	0.3	0.0	96.3	57.0	5.3
Lewistown	5,644	35.0	64.1	89.0	4.6	2.4	0.2	2.6	0.1	1.6	1.9	0.1	97.1	74.7	12.3
McConnellsburg	7,117	39.7	67.0	76.6	14.4	2.0	0.0	2.0	0.0	3.8	2.9	0.3	97.4	91.2	61.3
Philipsburg	4,020	35.9	65.2	90.9	3.8	1.3	0.2	1.5	0.0	2.0	1.7	0.1	96.5	74.9	19.4
Rockview	5,558	35.6	67.6	86.7	5.8	1.9	0.4	2.4	0.0	2.5	2.3	0.4	98.5	75.4	32.2
Troop H										, , , , , , , , , , , , , , , , , , ,	Ť				
Carlisle	7,334	36.2	65.3	86.4	7.5	3.2	0.4	3.6	0.0	1.2	1.0	0.2	96.3	70.7	31.4
Chambersburg	3,841	36.7	60.8	88.3	6.1	3.5	0.3	3.9	0.0	0.8	0.7	0.3	91.4	39.3	24.7
Gettysburg	3,869	36.1	62.5	84.5	4.5	7.0	0.3	7.3	0.1	2.1	1.4	0.2	96.4	54.9	24.6
Harrisburg	4,913	36.1	67.6	80.9	10.2	4.9	0.7	5.6	0.0	1.7	1.5	0.1	94.2	63.9	16.8
Lykens	3,008	37.7	59.9	97.0	1.1	1.1	0.0	1.1	0.1	0.1	0.4	0.1	88.5	30.2	1.6
Newport	3,186	34.8	62.6	91.5	4.1	1.6	0.2	1.9	0.1	0.9	1.5	0.1	97.3	74.9	13.5
York	4,891	35.3	64.2	79.7	13.2	3.4	0.6	4.0	0.2	1.0	1.5	0.4	93.8	43.5	24.8
AREA IV															
Troop C															
Clarion	2,965	37.0	68.5	78.6	9.2	4.1	0.5	4.7	0.0	4.7	2.6	0.2	97.2	82.5	50.3
Clearfield	4,130	37.2	68.8	78.7	8.2	3.1	0.9	4.0	0.1	6.0	2.8	0.2	97.8	79.7	49.9
Dubois	3,059	37.1	68.1	84.0	7.5	2.5	0.6	3.0	0.1	3.0	2.1	0.2	97.8	78.5	40.6
Kane	1,929	40.2	71.9	90.3	2.1	1.2	0.3	1.5	0.2	3.9	1.6	0.4	89.6	61.5	30.8
Punxsutawney	2,655	38.5	70.6	95.2	2.6	0.8	0.2	1.1	0.2	0.4	0.6	0.0	94.8	62.2	10.7
Ridgway	2,578	39.6	68.5	95.6	1.4	0.6	0.2	0.8	0.0	1.4	0.8	0.0	90.1	57.1	18.7
Tionesta	1,781	40.7	71.0	97.4	1.1	0.7	0.1	0.7	0.0	0.5	0.2	0.0	94.3	82.1	12.4
Troop D															
Beaver	3,064	35.0	63.1	89.5	8.6	0.7	0.0	0.7	0.0	0.6	0.5	0.1	95.3	44.2	12.3
Butler	4,195	35.0	64.3	92.8	4.1	0.7	0.1	0.8	0.1	1.3	0.7	0.2	93.5	54.2	9.7
Kittanning	2,574	34.7	64.7	90.6	7.3	0.6	0.0	0.7	0.1	0.8	0.5	0.1	95.9	48.6	4.2
Mercer	3,650	36.2	66.8	83.0	8.5	2.4	0.2	2.6	0.0	3.5	1.9	0.5	97.9	77.6	37.1

#### Table 3.7: 2010 Characteristics of Drivers Stopped by Station (p. 3 of 4)

NOTE: Any Hispanic totals may appear to differ slightly from the combination of White Hispanic & Black Hispanic due to rounding.

	Total # of Stops	Ave. Age	% Male	% White	% Black	% White Hispanic	% Black Hispanic	% Any Hispanic	% Native American	% Middle Eastern	% Asian	% Missing/ Unknown	% stopped out of municipality	% stopped out of county	% stopped out of state
AREA IV (cont.)															
New Castle	2,557	40.5	65.1	90.9	5.8	0.9	0.1	1.1	1.2	0.5	0.4	0.1	91.9	48.9	12.4
Troop E															
Corry	1,165	38.9	67.0	97.3	1.0	0.8	0.2	0.9	0.1	0.6	0.1	0.0	94.3	38.0	5.9
Erie	3,672	37.5	63.8	89.5	4.7	1.9	0.2	2.1	0.2	2.0	1.1	0.3	90.8	38.8	26.4
Franklin	1,585	38.0	66.6	92.9	3.3	1.1	0.2	1.3	0.1	1.5	0.8	0.1	88.5	49.3	14.6
Girard	3,501	37.7	60.7	90.7	4.7	1.5	0.1	1.6	0.1	1.6	1.0	0.2	88.3	33.1	17.9
Meadville	5,466	37.3	63.1	89.2	5.6	0.8	0.1	0.9	0.1	2.1	1.6	0.6	96.7	64.0	19.1
Warren	1,283	37.8	67.8	97.2	1.2	0.5	0.1	0.6	0.0	0.4	0.6	0.0	94.2	38.0	8.0
Troop B															
Belle Vernon	3,852	37.1	69.8	90.9	6.4	0.6	0.3	0.9	0.2	0.9	0.7	0.1	91.7	57.1	14.1
Pittsburgh	3,360	36.0	66.0	87.6	8.2	1.1	0.0	1.1	0.0	1.7	1.4	0.1	96.8	53.0	19.3
Uniontown	7,270	37.0	65.6	92.2	5.6	0.4	0.0	0.4	0.1	0.2	1.4	0.1	87.6	24.5	5.4
Washington	4,199	36.9	66.5	91.0	5.8	0.7	0.1	0.9	0.1	1.1	0.8	0.3	94.2	59.7	28.0
Waynesburg	2,407	35.7	71.3	91.2	5.4	0.6	0.0	0.7	0.0	1.3	1.1	0.3	95.0	65.4	37.1
<b>Bureau of Patrol</b>															
Troop T								_	_						
Bowmansville	13,032	35.4	65.0	73.9	13.7	4.6	1.1	5.7	0.0	3.5	2.9	0.2	99.9	93.8	26.1
Everett	11,936	36.1	64.5	73.6	14.3	3.0	0.4	3.4	0.1	4.8	3.6	0.3	100.0	99.6	47.5
Gibsonia	6,396	38.6	67.9	79.5	9.6	1.6	0.3	2.0	2.6	3.0	2.6	0.6	98.8	83.9	43.9
Highspire	30	36.0	56.7	70.0	23.3	3.3	3.3	6.7	0.0	0.0	0.0	0.0	0.0	90.0	23.3
King of Prussia	10,911	36.8	71.0	75.2	11.9	4.8	0.7	5.4	0.0	3.4	3.8	0.2	99.1	78.5	22.2
New Stanton	11,270	37.4	67.1	83.0	9.1	1.5	0.1	1.6	0.9	2.2	1.9	1.3	98.7	74.9	28.2
Newville	9,020	37.7	69.7	75.8	12.6	2.8	0.8	3.6	0.6	4.0	3.1	0.2	99.9	97.2	37.5
Pocono	8,610	35.3	66.4	81.6	9.1	3.9	0.4	4.4	0.1	2.8	2.0	0.0	99.7	94.0	26.1
Somerset (T)	6980	38.7	67.8	69.6	15.9	3.6	0.3	3.9	0.5	5.6	3.9	0.4	99.9	99.1	60.1

#### Table 3.7: 2010 Characteristics of Drivers Stopped by Station (p. 4 of 4)

NOTE: Any Hispanic totals may appear to differ slightly from the combination of White Hispanic & Black Hispanic due to rounding.
Tables 3.8 and 3.9 report additional information regarding drivers stopped by PSP Troopers in 2010 based on new variables that were introduced in TraCS: driver's compliance, impairment, and criminal history. Therefore, this information is based on only the 324,619 stops collected via TraCS. Table 3.8 reports this information at the department, area and troop levels, while station level information is reported in Table 3.9.

### **Driver Behavior**

As shown in Table 3.8, at the department level, noncompliant and/or resistant drivers were a rare event. Noncompliance and/or resistance only occurred in 2.1% of stops. Area I had the highest rate of noncompliance and/or resistance with 2.9%. The Bureau of Patrol had the least noncompliant and/or resistant drivers with only 1.5%. Troop K reported the highest percentage of noncompliant and/or resistant drivers (3.9%), while Troop F had the lowest percentage (1.0%). Station level trends in driver behavior are reported in Table 3.9.

### Impairment

As shown in Table 3.8, at the department level, 1.8% of drivers were reported to be impaired by drugs and/or alcohol. Impairment due to mental issues and/or sleep deprivation occurred very infrequently (0.1%) as did issues with a language barrier (0.1% of stops). At the area level, the highest percent of drivers impaired due to drugs and/or alcohol were in Area I (4.2%), while the lowest percentage of drivers impaired by drugs and/or alcohol occurred in the Bureau of Patrol (0.1%). Station level trends in driver impairment are reported in Table 3.9.

### **Criminal History**

Table 3.8 reports the percent of drivers with criminal history run by the PSP, and the percent of drivers with any criminal history. Drivers' criminal histories are recorded as falling into one or more of the following categories: drug possession, drug trafficking, property offenses, violent offenses, and license offenses. In all, 4.3% of drivers had their criminal history run by the PSP; of those 1.1% had a criminal history. The total number of drivers with any criminal history was 3,693. At the department level, license offenses accounted for nearly half (44.0%) of the criminal records discovered, followed closely by drug possession (36.3%). At the area level, the highest percentage of criminal histories run was 8.2% in Area I. Of these drivers, 2.7% had a criminal history. The Bureau of Patrol ran the smallest percentage of criminal histories (2.2%), of which only 0.3% had a criminal history. The type of criminal history varied between areas. License offenses accounted for the highest percentage of criminal history. Drug possession accounted for the highest percentage of criminal history. The type of criminal history varied between areas offenses accounted for the highest percentage of criminal history. Drug possession accounted for the highest percentage of criminal history. Drug possession accounted for the highest percentage of criminal history in Area II (40.1%) and the Bureau of Patrol (43.3%). Station level trends in drivers criminal records are reported in Table 3.9.

	Total #	% Non- compliant	% Impaired	1 % Impaired by Mental	%	% with Criminal	% with Any	# Drivers with Any		Of drivers w	with a crimina	al history	
	of Stops	and/or Resistant	and/or Alcohol	Issues &/or Sleep Depriv.	Language Barrier	History Run	Criminal History	Criminal History	<sup>%</sup> Drug Possession	% Drug Trafficking	% Property Offense	% Violent Offense	% License Offense
PSP Dept.	324,619	2.1	1.8	0.1	0.1	4.3	1.1	3,693	36.3	9.3	22.2	23.9	44.0
AREA I	66,926	2.9	4.1	0.1	0.2	8.2	2.7	1,825	37.2	8.1	21.3	25.3	46.0
Troop J	12,297	3.0	6.9	0.1	0.3	11.2	2.9	357	34.2	6.7	20.4	22.1	50.7
Troop K	21,436	3.9	3.6	0.1	0.2	7.7	2.6	563	47.1	6.6	22.4	26.5	35.2
Troop L	13,337	1.6	1.8	0.1	0.1	6.3	1.7	223	29.6	9.9	21.1	23.3	45.7
Troop M	19,856	2.5	4.4	0.2	0.2	8.1	3.4	682	33.1	9.4	20.8	26.7	52.6
AREA II	47,284	1.5	1.6	0.1	0.1	3.6	0.9	436	40.1	12.6	23.2	25.5	37.4
Troop F	21,305	1.0	1.9	0.0	0.1	4.2	0.7	141	33.3	5.0	21.3	23.4	56.7
Troop N	11,369	2.3	1.9	0.1	0.1	2.9	0.9		47.5	15.2	24.2	29.3	28.3
Troop P	6,970	1.1	1.2	0.1	0.0	3.5	0.8	54	14.8	3.7	22.2	25.9	46.3
Troop R	7,640	1.9	1.0	0.0	0.1	3.2	1.9	142	51.4	21.8	24.6	24.6	21.1
AREA III	72,333	2.4	1.2	0.1	0.1	4.4	0.8	598	30.3	8.7	22.7	18.9	44.5
Troop A	17,927	2.5	1.0	0.1	0.0	2.2	0.6	108	31.5	7.4	24.1	19.4	49.1
Troop G	28,096	1.2	0.8	0.0	0.1	3.1	0.8	232	29.3	13.4	31.9	23.7	29.3
Troop H	26,265	3.7	1.8	0.1	0.1	7.3	1.0	258	30.6	5.0	14.0	14.3	56.2
AREA IV	63,100	1.9	2.2	0.1	0.0	3.1	0.9	581	33.9	6.9	20.3	19.8	47.0
Troop C	17,294	1.1	1.1	0.1	0.0	2.2	0.7	129	32.6	9.3	24.0	17.8	47.3
Troop D	14,347	1.5	3.3	0.1	0.0	3.2	1.2	168	40.5	6.5	20.2	17.3	45.2
Troop E	14,765	1.1	2.0	0.0	0.0	3.1	1.0	149	29.5	5.4	20.8	18.8	49.0
Troop B	16,694	3.8	2.7	0.1	0.0	3.8	0.8	135	31.9	6.7	16.3	25.9	46.7
Bureau of Patrol	71,123	1.4	0.1	0.1	0.1	2.2	0.3	215	43.3	21.4	29.8	34.9	29.3
Troop T	71,123	1.4	0.1	0.1	0.1	2.2	0.3	215	43.3	21.4	29.8	34.9	29.3

 Table 3.8: 2010 Characteristics of Drivers Stopped by Department, Area & Troop (n=324,619)

\* 30 or fewer drivers stopped had a criminal history detected. Interpret the types of criminal history percentages for these organizational units with caution.

	Total	% Non-	% Impaired	% Impaired	0/2	% with	% with	# Drivers		Of drivers with a criminal history		,	
	# of Stops	compliant and/or Resistant	by Drugs and/or Alcohol	by Mental Issues &/or Sleep Depriv.	Language Barrier	Criminal History Run	Any Criminal History	with Any Criminal History	% Drug Possession	% Drug Trafficking	% Property Offense	% Violent Offense	% License Offense
AREA I													
Troop J													
Avondale	2,832	4.1	7.4	0.1	0.3	11.1	4.3	122	32.8	7.4	23.8	25.4	38.5
Embreeville	4,384	2.9	7.9	0.1	0.3	11.0	3.1	135	43.0	8.1	25.2	28.9	48.1
Ephrata	1,030	3.3	2.7	0.1	0.2	3.6	1.7*	18	11.1	0.0	0.0	0.0	88.9
Lancaster	3,953	2.4	6.6	0.0	0.3	13.7	1.9	77	27.3	2.6	11.7	7.8	68.8
Troop K													
Media	3,582	4.4	7.9	0.2	0.2	11.3	4.3	154	61.0	11.0	24.0	27.3	24.0
Philadelphia	15,294	3.9	2.7	0.1	0.2	7.2	2.5	375	42.9	5.1	20.5	26.7	38.9
Skippack	2,546	2.9	3.1	0.0	0.0	5.1	1.3	32	31.3	3.1	34.4	18.8	43.8
Troop L													
Frackville	1,400	1.0	2.3	0.1	0.0	2.7	1.3*	18	33.3	16.7	27.8	27.8	72.2
Hamburg	2,082	0.3	0.0	0.0	0.0	2.4	0.5*	10	30.0	0.0	5.0	20.0	30.0
Jonestown	5,641	1.8	2.0	0.1	0.2	5.4	2.3	128	32.0	14.8	23.4	27.3	31.3
Reading	2,642	2.7	2.7	0.0	0.0	14.4	2.0	52	25.0	0.0	7.7	15.4	67.3
Schuylkill Haven	1,572	1.5	1.3	0.1	0.1	4.1	1.0*	15	20.0	0.0	20.0	13.3	73.3
Troop M													
Belfast	3,659	2.0	2.2	0.1	0.1	3.8	1.5	55	49.1	7.3	18.2	29.1	25.5
Bethlehem	2,748	2.8	6.1	0.2	0.0	4.7	2.4	65	32.3	18.5	24.6	38.5	41.5
Dublin	2,945	4.3	6.3	0.2	0.1	21.3	8.0	237	10.5	1.7	4.6	7.6	87.3
Fogelsville	6,361	2.3	3.3	0.2	0.5	8.9	3.8	242	47.1	14.9	30.6	36.0	36.8
Trevose	4,137	2.1	5.5	0.2	0.1	3.5	2.0	82	47.6	9.8	36.6	43.9	26.8
AREA II													
Troop F													
Coudersport	1,739	0.6	1.0	0.1	0.0	8.3	0.5*	9	33.3	0.0	44.4	33.3	77.8
Emporium	841	1.0	1.9	0.0	0.0	1.4	0.8*	7	28.6	0.0	14.3	28.6	0.0
Lamar	3,392	1.2	1.1	0.0	0.0	1.1	0.4*	13	38.5	0.0	7.7	30.8	46.2
Mansfield	1,303	1.8	2.8	0.0	0.0	1.7	0.8*	11	18.2	0.0	27.3	27.3	27.3
Milton	4,457	0.7	1.8	0.0	0.3	11.2	0.8	36	36.1	11.1	16.7	19.4	52.8
Montoursville	3,899	1.4	3.1	0.0	0.0	3.5	1.1	44	38.6	6.8	20.5	20.5	56.8

### Table 3.9: 2010 Characteristics of Drivers Stopped by Station (p. 1 of 4)

	Total	% Non-	% Impaired	% Impaired	0/2	% with	% with	# Drivers		Of drivers with a criminal history			
	# of Stops	compliant and/or Resistant	by Drugs and/or Alcohol	by Mental Issues &/or Sleep Depriv.	Language Barrier	Criminal History Run	Any Criminal History	with Any l Criminal History	% Drug Possession	% Drug Trafficking	% Property Offense	% Violent Offense	% License Offense
AREA II (cont.)													
Selinsgrove	4,044	0.8	1.1	0.0	0.1	0.7	0.3*	13	38.5	0.0	23.1	15.4	46.2
Stonington	1,630	1.0	2.9	0.1	0.1	1.5	0.5*	8	0.0	0.0	37.5	37.5	87.5
Troop N													
Bloomsburg	1,971	1.3	1.1	0.2	0.1	1.3	0.3*	6	50.0	0.0	0.0	0.0	50.0
Fern Ridge	2,930	2.5	0.5	0.1	0.1	1.6	0.2*	7	14.3	14.3	42.9	28.6	14.3
Hazleton	1,901	1.2	2.4	0.2	0.1	1.1	0.3*	6	66.7	16.7	33.3	50.0	0.0
Lehighton	1,630	4.0	0.2	0.0	0.0	1.5	0.6*	10	20.0	0.0	50.0	0.0	30.0
Swiftwater	2,910	2.4	4.4	0.0	0.1	7.2	2.4	69	53.6	17.4	20.3	33.3	30.4
Troop P													
Laporte	1,565	0.4	1.4	0.0	0.0	7.4	1.9*	29	17.2	3.4	20.7	27.6	37.9
Shickshinny	881	0.3	1.4	0.0	0.0	1.8	0.2*	2	0.0	0.0	0.0	50.0	50.0
Towanda	990	1.8	0.8	0.1	0.0	1.2	0.4*	4	25.0	0.0	25.0	50.0	0.0
Tunkhannock	652	1.4	5.5	0.2	0.0	11.3	2.5*	16	12.5	0.0	31.3	12.5	75.0
Wyoming	2,882	1.3	0.2	0.1	0.0	0.8	0.1*	3	0.0	33.3	0.0	33.3	33.3
Troop R													
Blooming Grove	1,836	1.8	1.3	0.0	0.0	3.5	2.0	37	27.0	8.1	27.0	21.6	29.7
Dunmore	2,297	1.1	0.8	0.0	0.1	3.9	2.5	58	69.0	32.8	24.1	31.0	10.3
Gibson	2,188	3.1	1.1	0.1	0.1	3.1	1.5	33	57.6	24.2	18.2	21.2	21.2
Honesdale	1,319	1.5	0.8	0.0	0.0	1.7	1.1*	14	28.6	7.1	35.7	14.3	42.9
AREA III													
Troop A													
Ebensburg	2,983	0.9	1.9	0.0	0.0	3.7	0.7*	20	15.0	5.0	20.0	25.0	65.0
Greensburg	4,147	5.6	1.3	0.1	0.0	2.9	0.8	32	25.0	9.4	28.1	25.0	46.9
Indiana	4,407	2.1	0.6	0.0	0.0	1.8	0.2*	9	33.3	0.0	22.2	0.0	44.4
Kiski Valley	3,849	1.2	0.5	0.1	0.0	0.9	0.6*	25	32.0	4.0	32.0	12.0	52.0
Somerset (Å)	2,513	1.8	0.8	0.1	0.0	1.2	0.5*	13	30.8	0.0	7.7	23.1	61.5

### Table 3.9: 2010 Characteristics of Drivers Stopped by Station (p. 2 of 4)

	Total	% Non-	% Impaired	% Impaired	0/2	% with	% with	# Drivers		Of drivers with a criminal history		,	
	# of Stops	compliant and/or Resistant	by Drugs and/or Alcohol	by Mental Issues &/or Sleep Depriv.	Language Barrier	Criminal History Run	Any Criminal History	with Any Criminal History	% Drug Possession	% Drug Trafficking	% Property Offense	% Violent Offense	% License Offense
AREA III (cont.)													
Troop G													
Bedford	2,818	0.9	1.5	0.0	0.0	1.2	0.3*	9	33.3	0.0	22.2	33.3	55.6
Hollidaysburg	2,456	0.9	0.7	0.1	0.2	6.5	1.8	45	17.8	15.6	37.8	33.3	37.8
Huntingdon	2,606	1.6	1.5			5.7	0.9*	24	37.5	8.3	20.8	12.5	33.3
Lewistown	4,849	1.4	1.2	0.1	0.1	2.0	0.3*	14	35.7	14.3	35.7	14.3	28.6
McConnellsburg	6,442	0.7	0.5	0.0	0.1	1.4	0.7	47	31.9	19.1	29.8	21.3	14.9
Philipsburg	3,685	0.8	0.6	0.0	0.1	2.6	0.2*	8	37.5	12.5	12.5		37.5
Rockview	5,088	2.0	0.6	0.0	0.1	3.7	1.2	61	29.5	11.5	34.4	23.0	29.5
Troop H													
Carlisle	5,893	1.7	2.7	0.1	0.1	8.9	0.8	50	32.0	2.0	20.0	26.0	50.0
Chambersburg	3,160	2.5	1.0	0.0	0.2	2.7	0.8*	25	24.0	12.0	24.0	20.0	52.0
Gettysburg	3,015	11.8	2.3	0.0	0.1	2.3	0.6*	19	15.8			5.3	89.5
Harrisburg	4,398	4.8	2.7	0.1	0.1	8.0	1.8	77	45.5	7.8	15.6	11.7	44.2
Lykens	2,578	2.2	2.0	0.1		1.6	0.6*	15	13.3	6.7	20.0	6.7	60.0
Newport	3,050	0.7	0.6	0.0		11.2	0.3*	9	22.2			11.1	77.8
York	4,171	3.2	0.9	0.1	0.1	12.0	1.5	63	23.8	3.2	7.9	11.1	63.5
AREA IV													
Troop C													
Clarion	2,737	1.2	0.8	0.2		0.9	0.4*	12	41.7	16.7	33.3	16.7	66.7
Clearfield	3,843	1.3	0.3	0.0	0.0	1.3	0.6*	24	33.3	8.3	33.3	29.2	25.0
Dubois	2,728	1.0	0.8	0.0		1.2	0.7*	18	5.6		5.6	5.6	
Kane	1,697	2.0	2.5	0.1		1.8	0.5*	9	11.1		11.1		77.8
Punxsutawney	2,407	0.7	2.5			3.5	2.2	53	37.7	11.3	24.5	22.6	35.8
Ridgway	2,215	0.9	0.3	0.0	0.0	6.5	0.2*	5	20.0		40.0	20.0	40.0
Tionesta	1,549	0.8	1.4	0.2	0.1	0.9	0.4*	6	66.7	16.7	33.3		16.7
Troop D													
Beaver	2,879	0.6	0.8	0.1		1.1	0.5*	14	50.0	21.4	21.4	21.4	28.6
Butler	3,916	2.0	5.9	0.1	0.1	5.1	1.7	66	34.8	4.5	18.2	9.1	59.1
Kittanning	2,202	2.0	4.9	0.1		3.8	1.6	36	69.4	2.8	5.6	8.3	25.0
Mercer	2,937	1.5	2.3	0.0		2.0	0.6*	18	22.2		22.2	16.7	50.0

### Table 3.9: 2010 Characteristics of Drivers Stopped by Station (p. 3 of 4)

	Total	% Non-	% Impaired	% Impaired	0/2	% with	% with	# Drivers		Of drivers with a criminal history			
	# of Stops	compliant and/or Resistant	by Drugs and/or Alcohol	by Mental Issues &/or Sleep Depriv.	Language Barrier	Criminal History Run	Any Criminal History	with Any l Criminal History	% Drug Possession	% Drug Trafficking	% Property Offense	% Violent Offense	% License Offense
AREA IV (cont.)													
New Castle	2,318	1.1	1.6	0.0		1.0	0.6*	13	38.5	7.7	30.8	30.8	61.5
Troop E													
Corry	960	0.9	2.0			2.9	0.6*	6	16.7		16.7	16.7	66.7
Erie	3,329	0.9	1.7	0.1		4.0	2.0	65	36.9	10.8	33.8	16.9	30.8
Franklin	1,375	2.5	2.4			3.2	1.3*	18	27.8		5.6	11.1	61.1
Girard	3,077	0.9	2.2		0.1	1.9	0.7*	21	23.8		9.5	19.0	61.9
Meadville	4,870	1.0	1.7			3.4	0.5*	26	19.2		11.5	23.1	69.2
Warren	1,098	1.0	2.8	0.1		2.1	1.0*	11	36.4		18.2	27.3	63.6
Troop B													
Belle Vernon	3,224	6.0	1.7		0.1	1.2	0.3*	11	18.2		9.1	18.2	63.6
Pittsburgh	2,274	1.1	1.6	0.1	0.0	1.5	0.4*	9	44.4	22.2	11.1	33.3	33.3
Uniontown	6,085	5.8	3.7	0.1	0.0	8.0	1.2	75	24.0	1.3	21.3	22.7	56.0
Washington	3,022	1.5	2.3	0.0	0.0	1.5	0.8*	25	48.0	16.0	8.0	44.0	20.0
Waynesburg	2,085	0.9	2.7	0.0		1.2	0.6*	13	46.2	15.4	15.4	7.7	46.2
<b>Bureau of Patrol</b>													
Troop T													
Bowmansville	12,874	0.5	0.1	0.0	0.0	1.9	0.2	32	25.0	6.3	40.6	53.1	40.6
Everett	10,462	0.4	0.0		0.0	0.0							
Gibsonia	5,526	0.5	0.1	0.1	0.0	5.2	0.1*	6	33.3		50.0	33.3	33.3
Highspire	25	8.0		4.0									
King of Prussia	8,647	3.1	0.3	0.1	0.0	1.3	0.5	46	50.0	21.7	32.6	30.4	45.7
New Stanton	10,922	2.1	0.1	0.1	0.1	6.4	0.2*	23	17.4	13.0	26.1	34.8	26.1
Newville	7,903	2.8	0.4	0.3	0.1	0.7	0.4	32	50.0	15.6	18.8	46.9	31.3
Pocono	7,922	0.7	0.1	0.0		1.1	0.7	54	66.7	37.0	24.1	24.1	14.8
Somerset (T)	6,740	1.3	0.1	0.0	0.2	0.3	0.1*	6	16.7	16.7	16.7	16.7	33.3

### Table 3.9: 2010 Characteristics of Drivers Stopped by Station (p. 4 of 4)

## **TRAFFIC STOP OUTCOMES**

Traffic stop outcomes, including the rate of warnings, citations, arrests, searches, and seizures of contraband, are provided at all organizational levels in Tables 3.10 & 3.11. These tables report: 1) the total number of stops; 2) the percentage of warnings, citations, and arrests issued to drivers and passengers; 3) the total number of searches conducted; 4) the percentage of occupants and/or vehicles searched; and 5) the percentage of searches resulting in contraband seizures (i.e., the "hit rate"). These percentages may exceed one-hundred percent, as drivers and passengers may experience one or more outcomes (i.e., a driver may be both warned and cited in the same stop). Additional analyses are presented in Table 3.12, in which traffic stop outcomes are examined for drivers only. Post-stop outcomes are discussed in greater detail in Sections 5 & 7 of this report.

### Warnings

Based on the 371,182 traffic stops initiated in 2010, warnings were issued to drivers in 26.5% of those traffic stops. Passengers were warned in 0.5% of all department-wide traffic stops. At the area level, drivers received a warning most frequently in Area I (35.1% of all stops) and least frequently in the Bureau of Patrol (15.5%). Troop level rates of warnings are reported in Table 3.10 and at the station level in Table 3.11.

### Citations

The most common traffic stop outcome for drivers in 2010 was a citation, which occurred in 88.5% of all traffic stops. Furthermore, 0.7% of all traffic stops involved one or more passengers receiving a citation. The rate of citations for drivers differed across areas. The highest rate of citations was reported in Bureau of Patrol (92.7%) while the lowest rate of citations occurred in Area IV (84.5%). The percentages of citations at the troop and station levels are also reported in Tables 3.10 & 3.11.

### Arrests

Compared to warnings and citations, member-initiated traffic stops that result in arrests of drivers or passengers are relatively rare events. In 2010, 3.0% of stops resulted in the arrest of the driver, while 0.2% of all traffic stops resulted in the arrest of a passenger. At the area level, the rate of arrest ranged from a high of 4.7% in Area I to a low of 1.0% in the Bureau of Patrol. Troop level and station level rates of arrests demonstrate greater variation and are reported in Tables 3.10 & 3.11, respectively.

### Searches

Similar to arrests, searches of vehicles or occupants are rare events and only occurred in 1.3% of all member-initiated traffic stops in 2010. Throughout the department, PSP

personnel reported 5,001 searches of vehicles or occupants.<sup>1</sup> At the area level, the rate of searches was highest in Area I, where over half of all department-wide searches were conducted. This organizational unit reported a search during 3.7% of all traffic stops. The fewest searches were conducted by the Bureau of Patrol (n=188 searches), with a rate of 0.2% searches occurring during traffic stops. Tables 3.10 & 3.11 also report the raw number of searches and the rate of searches at the troop and station levels, respectively.

### Seizures

The rate of contraband discovery during traffic stops is referred to as a "hit rate" or a "search success rate." To calculate this rate, the number of traffic stops in which contraband was seized is divided by the number of traffic stops in which a search was conducted. This rate allows a comparison across organizational units regardless of the number of searches conducted. The search success rates reported in the tables below include searches for any reason. Additional analyses in Section 7 further examine search success rates by reason for the search.

In 2010, the overall search success rate across the department was 28.2%. In other words, contraband was discovered in slightly less than 30% of all traffic stops in which a search was reported. At the area level, the highest hit rate was reported in Area IV at 34.8%, while Area I had the lowest hit rate at 24.6%. Interestingly, Area I conducted the most searches, but had the lowest hit rate. Table 3.10 also reports the hit rates at the troop level and Table 3.11 summarizes the hit rate for stations. It is important to note that at some of these organizational units, only a limited number of searches were conducted, thus an asterisk is placed beside the hit rates based on less than ten searches. These hit rates may be unstable due to the infrequent occurrence of a vehicle or occupant search.

<sup>&</sup>lt;sup>1</sup> A search is defined by one of three conditions present on the CDR: a) 'search initiated' is indicated, b) 'reason for the search' is indicated, or c) 'seizure of contraband' is indicated.

		Wa	rnings	Cita	ations	Ar	rests		% Person or	<b>A</b> (
	Total #	%	%	%	%	%	%	# Of	Vehicle	% Sei1
	of Stops	Drivers	Passengers	Drivers	Passengers	Drivers	Passengers	Searches	Searched	Seized
PSP Dept.	371,182	26.5	0.5	88.5	0.7	3.0	0.2	5,001	1.3	28.2
AREA I	76,711	35.1	0.6	86.8	0.9	4.7	0.5	2,846	3.7	24.6
Troop J	14,694	33.6	0.5	88.9	0.6	7.2	0.6	700	4.8	27.6
Troop K	23,047	40.1	1.0	88.6	1.3	4.3	0.7	1,330	5.8	24.7
Troop L	15,718	31.2	0.5	88.1	0.7	2.1	0.1	225	1.4	19.6
Troop M	23,252	33.6	0.4	82.7	0.7	5.4	0.3	591	2.5	22.8
AREA II	54,465	20.7	0.5	91.7	0.8	3.2	0.2	475	0.2	30.9
Troop F	23,948	18.0	0.5	91.6	0.7	3.7	0.1	114	0.5	25.4
Troop N	13,233	21.9	0.5	94.0	0.8	3.8	0.2	137	1.0	21.9
Troop P	8,414	19.8	0.4	90.3	0.8	1.4	0.1	38	0.5	31.6
Troop R	8,870	27.0	0.8	89.8	0.9	3.1	0.4	186	2.1	37.6
AREA III	84,655	27.5	0.5	87.8	0.5	2.9	0.2	783	0.9	33.2
Troop A	21,020	25.8	0.5	89.2	0.6	1.9	01	194	0.9	36.1
Troop G	32,593	28.8	0.4	86.6	0.4	2.4	0.2	203	0.6	42.9
Troop H	31,042	27.4	0.5	88.1	0.6	4.2	0.3	386	1.2	26.7
AREA IV	73,170	32.6	0.5	84.5	$^{-}$ 0.6	3.5	0.2	667	0.9	34.8
Troop C	19,215	37.9	0.4	79.4	0.5	1.5	0.1	110	0.6	28.2
Troop D	16,135	31.2	0.6	87.1	0.6	3.8	0.4	234	1.5	32.9
Troop E	16,728	37.6	0.5	78.5	0.8	4.8	0.1	95	0.6	43.2
Troop B	21,092	24.9	0.6	92.0	0.7	4.3	0.3	228	1.1	36.4
Bureau of Patrol	78,287	15.5	0.2	92.7	0.8	1.0	0.1	188	0.2	33.5
Troop T	78,287	15.5	0.2	92.7	0.8	1.0	0.1	188	0.2	32.5

### Table 3.10: 2010 Driver Outcomes by Department, Area & Troop

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	Π-4-1 #	Wai	rnings	Cit	ations	Ar	rests	# - C	% Person or	0/
	1 otal # of Stops	%	%	%	%	%	%	# 01 Searches	Vehicle	% Seized
	or Brops	Drivers	Passengers	Drivers	Passengers	Drivers	Passengers	Bearenes	Searched	Beizeu
AREA I										
Troop J										
Avondale	3,310	42.2	0.9	83.8	0.6	7.4	0.7	217	6.6	26.3
Embreeville	5,065	27.0	0.1	86.8	0.7	8.9	0.6	351	6.9	24.2
Ephrata	1,476	29.1	0.1	94.6	0.3	3.0	0.3	28	1.9	32.1
Lancaster	4,745	34.6	0.8	94.7	0.7	6.8	0.7	102	2.1	41.2
Troop K					_					
Media	4,243	34.0	0.7	81.7	0.8	82	1.2	486	11.5	25.9
Philadelphia	15,662	43.5	1.2	91.2	1.5	3.4	$\overline{0.7}$	743	4.7	22.5
Skippack	3,128	31.1	0.3	85.6	0.8	3.8	0.3	100	3.2	34.0
Troop L				~						
Frackville	1,689	33.2	0.5	88.2	0.5	2.3	0.3	18	1.1	
Hamburg	2,390	36.4	0.4	92.6	0.8	0.5		3	0.1	33.3*
Jonestown	6,740	23.6	0.5	88.6	0.9	2.2	0.1	113	1.7	12.4
Reading	3,023	36.8	0.3	89.2	0.5	3.0	0.1	61	2.0	26.2
Schuylkill Haven	1,876	41.4	0.3	78.9	0.5	1.9	0.3	30	1.6	43.3
Troop M					_					
Belfast	4,216	23.8	0.2	83.8	0.7	2.2	0.2	53	1.3	9.4
Bethlehem	2,994	33.2	0.7	80.8	0.4	10.8	0.5	107	3.6	30.8
Dublin	3,711	33.5	0.4	81.6	0.5	9.5	0.3	116	3.1	20.7
Fogelsville	7,299	36.3	0.4	81.2	0.7	3.1	0.4	220	3.0	24.1
Trevose	5,026	38.2	0.5	86.2	0.9	5.3	0.2	93	1.9	21.5
AREA II										
Troop F										
Coudersport	1,874	31.4	1.9	80.4	0.4	3.9	0.1	8	0.4	25.0*
Emporium	946	31.0	0.8	80.4	0.3	2.1	0.2	1	0.1	
Lamar	3,750	16.0	1.0	90.3	0.5	4.7	0.0	9	0.2	11.1*
Mansfield	1,433	23.6	0.5	89.1	0.7	3.3	0.1	4	0.3	50.0*
Milton	4,927	14.8	0.2	95.8	0.8	5.7	0.1	28	0.6	21.4
Montoursville	4,303	17.4	0.4	92.4	1.0	3.5	0.2	32	0.7	28.1

### Table 3.11: 2010 Driver Outcomes by Station (p. 1 of 4)

\* Indicates fewer than 10 searches conducted. Interpret percentages with caution.

	T T T T T T T	Wa	rnings	Cita	ations	Ar	rests		% Person or	0 /
	1 otal # of Stops	%	%	%	%	%	%	# 0I Searches	Vehicle	% Seized
	of Stops	Drivers	Passengers	Drivers	Passengers	Drivers	Passengers	Searches	Searched	Beizeu
AREA II (cont.)										
Selinsgrove	4,765	11.9	0.1	95.3	0.6	1.2	0.0	15	0.3	26.7
Stonington	1,950	23.3	0.2	90.5	0.8	3.4	0.2	17	0.9	23.5
Troop N										
Bloomsburg	2,372	10.5	0.1	93.9	0.5	1.2	0.0	4	0.2	25.0*
Fern Ridge	3,328	20.1	0.5	92.5	1.1	1.9	0.1	10	0.3	10.0*
Hazleton	2,135	18.5	0.3	94.5	0.5	10.1	0.1	17	0.8	17.6
Lehighton	1,908	30.1	0.9	95.6	1.3	1.8	0.3	28	1.5	28.6
Swiftwater	3,463	29.2	0.8	94.5	0.8	4.5	0.4	77	2.2	22.1
Troop P										
Laporte	1,752	24.3	0.4	84.7	1.3	1.4	0.1	18	1.0	33.3
Shickshinny	1,021	36.4	1.0	85.7	0.8	1.7		3	0.3	33.3*
Towanda	1,348	34.1	0.6	83.2	0.7	1.1	0.1	6	0.4	16.7*
Tunkhannock	982	23.5	0.2	90.6	1.4	4.3	0.1	2	0.2	0.0*
Wyoming	3,311	5.5	0.1	97.6	0.5	0.6	0.1	9	0.3	44.4*
Troop R										
Blooming Grove	2,041	29.9	1.1	93.4	0.8	7.0	0.3	33	1.6	9.1
Dunmore	2,574	32.8	0.9	84.1	0.7	1.3	0.3	64	2.5	40.6
Gibson	2,576	23.2	0.2	90.1	0.7	1.9	0.5	66	2.6	45.5
Honesdale	1,679	20.6	1.1	93.6	1.3	2.9	0.4	23	1.4	47.8
AREA III										
Troop A										
Ebensburg	3,547	24.1	0.3	89.5	0.6	3.5	0.3	16	0.5	68.8
Greensburg	4,740	36.5	0.7	83.4	0.9	1.7	0.1	41	0.9	36.6
Indiana	5,151	25.8	0.5	88.5	0.3	1.6	0.1	31	0.6	25.8
Kiski Valley	4,538	11.8	0.5	96.0	0.3	1.0	0.1	62	1.4	30.6
Somerset (A)	2,971	29.9	0.4	91.2	0.8	2.4	0.1	24	0.8	20.8

### Table 3.11: 2010 Driver Outcomes by Station (p. 2 of 4) Provide the state of the state of

\* Indicates fewer than 10 searches conducted. Interpret percentages with caution.

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		Wa	rnings	Cita	ations	Ar	rests		% Person or	0/
	Total #	%	%	%	%	%	%	# 01 Soorahaa	Vehicle	% Soizod
	of Stops	Drivers	Passengers	Drivers	Passengers	Drivers	Passengers	Searches	Searched	Seizeu
AREA III (cont.)										
Troop G										
Bedford	3,543	23.0	0.4	88.4	0.9	1.8	0.2	24	0.7	45.8
Hollidaysburg	3,250	48.6	0.3	80.0	0.6	1.6	0.1	25	0.8	12.0
Huntingdon	3,309	38.9	0.7	75.9	0.3	1.9	0.5	35	1.1	45.7
Lewistown	5,644	13.4	0.4	95.1	0.5	7.9	0.1	11	0.2	81.8*
McConnellsburg	7,117	40.2	0.5	84.7	0.4	0.6	0.1	47	0.7	53.2
Philipsburg	4,020	33.6	0.3	83.9	0.2	0.7	0.1	12	0.3	41.7*
Rockview	5,558	10.5	0.3	93.7	0.3	1.3	0.3	40	0.7	42.5
Тгоор Н										
Carlisle	7,334	23.2	0.4	88.3	0.7	3.9	0.4	87	1.2	39.1
Chambersburg	3,841	31.1	0.8	88.1	0.4	2.3	0.1	55	1.4	18.2
Gettysburg	3,869	30.4	0.4	81.8	0.5	2.6	0.2	37	1.0	24.3
Harrisburg	4,913	23.4	0.4	93.3	0.5	4.3	0.1	50	1.0	24.0
Lykens	3,008	42.8	0.4	69.7	0.9	2.1	0.3	23	0.8	34.8
Newport	3,186	27.5	1.3	95.2	0.5	12.1	0.5	26	0.8	30.8
York	4,891	22.9	0.5	93.9	0.9	3.6	0.5	108	2.2	20.4
AREA IV										
Troop C										
Clarion	2,965	45.9	0.7	75.0	0.6	1.0	0.1	15	0.5	26.7*
Clearfield	4,130	18.8	0.2	93.2	0.5	0.5	0.1	21	0.5	28.6
Dubois	3,059	35.8	0.2	83.2	0.4	1.9	0.0	9	0.3	22.2*
Kane	1,929	47.5	0.6	81.0	0.8	2.8	0.1	6	0.3	16.7*
Punxsutawney	2,655	47.0	0.6	69.4	0.4	2.9	0.5	42	1.6	31.0
Ridgway	2,578	33.7	0.1	77.0	0.2	0.8	0.1	7	0.3	42.9*
Tionesta	1,781	41.7	0.6	69.6	0.6	1.2	0.2	2	0.1	*
Troop D										
Beaver	3,064	29.6	0.4	92.4	0.7	1.6	0.2	21	0.7	19.0
Butler	4,195	41.0	0.8	84.4	0.5	6.4	0.4	47	1.1	34.0
Kittanning	2,574	26.1	0.8	85.2	0.9	5.1	1.1	93	3.6	43.0
Mercer	3,650	27.8	0.5	87.5	0.5	3.0	0.2	34	0.9	20.6

#### Table 3.11: 2010 Driver Outcomes by Station (p. 3 of 4)

\* Indicates fewer than 10 searches conducted. Interpret percentages with caution.

	T ( ) //	Wa	rnings	Cita	ations	Ar	rests		% Person or	<b>A</b> /
	Total # of Stops	%	%	%	%	%	%	# Of Searches	Vehicle	% Seized
	or brops	Drivers	Passengers	Drivers	Passengers	Drivers	Passengers	Bearenes	Searched	Beizeu
AREA IV (cont.)										
New Castle	2,557	24.2	0.3	89.6	0.5	1.9	0.3	21	0.8	42.9
Troop E										
Corry	1,165	40.9	0.2	73.6	0.8	4.3		2	0.2	50.0*
Erie	3,672	38.9	0.7	79.8	1.1	5.3	0.3	36	1.0	30.6
Franklin	1,585	47.5	0.4	71.0	0.5	7.8	0.2	10	0.6	60.0*
Girard	3,501	30.5	0.5	86.8	0.7	3.0	0.1	2	0.1	0.0*
Meadville	5,466	36.3	0.5	78.3	0.8	4.7	0.1	36	0.7	58.3
Warren	1,283	41.8	0.2	69.9	0.4	5.8	0.2	5	0.4	20.0*
Troop B										
Belle Vernon	3,852	28.3	1.6	93.1	0.5	4.5	0.1	13	0.3	30.8
Pittsburgh	3,360	21.7	0.4	95.9	0.9	1.7	0.2	21	0.6	57.1
Uniontown	7,270	32.1	0.5	88.1	0.9	6.3	0.4	88	1.2	31.8
Washington	4,199	12.6	0.2	94.5	0.7	2.2	0.4	69	1.6	39.1
Waynesburg	2,407	23.7	0.1	92.8	0.4	5.2	0.2	37	1.5	32.4
Bureau of Patrol										
Тгоор Т		_		_	-					
Bowmansville	13,032	8.6	0.2	95.0	1.2	0.3	0.1	40	0.3	45.0
Everett	11,936	9.3	0.1	96.4	0.7	0.1		3	0.0	33.3*
Gibsonia	6,396	18.5	0.3	94.6	0.9	2.2	0.0	10	0.2	40.0*
Highspire	30	6.7		93.3	3.3			1	3.3	0.0*
King of Prussia	10,911	31.0	0.2	85.1	0.6	0.2	0.1	51	0.5	35.3
New Stanton	11,270	15.2	0.2	94.4	0.8	1.6	0.0	7	0.1	28.6*
Newville	9,020	10.6	0.3	96.9	1.2	3.3	0.1	36	0.4	19.4
Pocono	8,610	19.1	0.2	87.7	0.6	0.2	0.0	21	0.2	28.6
Somerset (T)	6,980	13.4	0.2	91.4	0.8	0.2	0.1	11	0.2	45.5

 Table 3.11: 2010 Driver Outcomes by Station (p. 4 of 4)
 Particular

\* Indicates fewer than 10 searches conducted. Interpret percentages with caution.

### **Post-Stop Outcomes by Severity**

All previous analyses on post-stop outcomes reported each disposition independently. The total percentages across outcomes may exceed 100% because drivers could receive multiple outcomes. An alternative way to examine these data is to use a severity index, where only the most severe outcome for each traffic stop is reported. A severity index was created using warnings, citations, and arrests.<sup>2</sup> The rank ordering is as follows (from least severe to most severe):

- Level 1: Warning
- Level 2: Citation
- Level 3: Arrest

For example, if a driver received both a warning and a citation, they would be included only in the citation category. In the case of a citation and an arrest, the traffic stop would be categorized as resulting in an arrest.

Table 3.12 reports the severity index for all member-initiated traffic stops in 2010. Across the department, 10.8% of all traffic stops resulted in the issuance of a warning to the driver as the most severe disposition. A large majority of traffic stops resulted in a citation as the most severe outcome (86.2%), while only 3.1% of all traffic stops resulted in a drivers' arrest. Compared to the information reported in Table 3.10, there is a dramatic reduction in the percentage of warnings; that is, the majority of these warnings were issued in combination with either a citation or arrest.

 $<sup>^2</sup>$  Searches and seizures were removed from these analyses because they represent a special type of activity and were conducted independent of warnings, citation, and arrests. To create the severity index, all traffic stops that resulted in the classification of "Other" (n=93) were removed due to their rare occurrence and the complexity they introduce to the development of a severity index.

	<u> </u>	<u>%</u>	%	%
	Total # of Stops	Warning as Most Severe	Citation as Most Severe	Arrest as Most Severe
PSP Dept.	371,182	10.8	86.2	3.1
AREA I	76,711	12.2	83.1	4.8
Troop J	14,694	9.8	83.0	7.2
Avondale	3,310	15.0	77.6	7.4
Embreeville	5,065	11.4	79.7	8.9
Ephrata	1,476	4.4	92.7	3.0
Lancaster	4,745	4.2	89.0	6.8
Troop K	23,047	10.4	85.3	4.3
Media	4,243	16.4	75.4	8.2
Philadelphia	15,662	8.1	88.5	3.4
Skippack	3,128	13.5	82.6	3.8
Troop L	15,718	11.3	86.6	2.1
Frackville	1,689	11.2	86.5	2.3
Hamburg	2,390	6.9	92.6	0.5
Jonestown	6,740	10.9	86.9	2.2
Reading	3,023	10.0	87.0	3.0
Schuylkill Haven	1,876	20.5	77.6	1.9
Troop M	23,252	16.0	78.5	5.4
Belfast	4,216	15.8	82.1	2.2
Bethlehem	2,994	16.2	73.0	10.8
Dublin	3,711	16.3	74.2	9.5
Fogelsville	7,299	17.9	79.0	3.1
Trevose	5,026	13.1	81.6	5.3
AREA II	54,465	7.6	89.1	3.2
Troop F	23,948	7.7	88.7	3.7
Coudersport	1,874	19.0	77.1	3.9
Emporium	946	19.0	78.8	2.1
Lamar	3,750	8.7	86.6	4.8
Mansfield	1,433	9.6	87.1	3.3
Milton	4,927	3.9	90.4	5.7
Montoursville	4,303	6.8	89.7	3.5
Selinsgrove	4,765	4.0	94.4	1.2
Stonington	1,950	8.3	88.3	3.4

Table 3.12: 2010 Driver Outcome Severity by Department, Area, Troop & Station (p. 1 of 3)\*

\* 93 traffic stops were reported as "Other" and are not included in these percentages.

-

	onie Severity Sy Depui	0/2	0/2 01 0	0/2
	Total #	70 Warning as	Citation as	∕₀ Arrest as
	of Stops	Most Severe	Most Severe	Most Severe
Troop N	13,233	5.4	90.8	3.8
Bloomsburg	2,372	5.5	93.3	1.2
Fern Ridge	3,328	7.0	91.1	1.9
Hazleton	2,135	5.3	84.6	10.1
Lehighton	1,908	3.6	94.6	1.8
Swiftwater	3,463	4.7	90.8	4.5
Troop P	8,414	8.9	89.7	1.4
Laporte	1,752	14.7	83.8	1.4
Shickshinny	1,021	13.3	85.0	1.7
Towanda	1,348	16.4	82.5	1.1
Tunkhannock	982	7.0	88.7	4.3
Wyoming	3,311	2.0	97.4	0.6
Troop R	8,870	9.5	87.4	3.1
Blooming Grove	2,041	5.9	87.1	7.0
Dunmore	2,574	15.3	83.4	1.3
Gibson	2,576	9.0	89.1	1.9
Honesdale	1,679	5.6	91.5	2.9
AREA III	84,655	11.6	85.4	2.9
Troop A	21,020	9.9	88.2	1.9
Ebensburg	3,547	8.6	87.9	3.5
Greensburg	4,740	16.1	82.2	1.7
Indiana	5,151	11.1	87.3	1.6
Kiski Valley	4,538	3.6	95.5	1.0
Somerset (A)	2,971	7.1	90.6	2.4
Troop G	32,593	13.0	84.6	2.4
Bedford	3,543	11.3	86.9	1.8
Hollidaysburg	3,250	19.6	78.8	1.6
Huntingdon	3,309	23.3	74.7	1.9
Lewistown	5,644	4.5	87.5	7.9
McConnellsburg	7,117	14.9	84.6	0.6
Philipsburg	4,020	15.7	83.6	0.7
Rockview	5,558	60	92.7	1.3
Тгоор Н	31,042	11.4	84.4	4.2
Carlisle	7,334	10.8	85.3	3.9
Chambersburg	3,841	11.6	86.2	2.3
Gettysburg	3,869	17.8	79.7	2.6
Harrisburg	4,913	6.2	89.5	4.3
Lykens	3,008	29.7	68.1	2.1
Newport	3,186	4.5	83.4	12.1
York	4,891	5.7	90.7	3.6

### Table 3.12: 2010 Driver Outcome Severity by Department, Area, Troop & Station (p. 2 of 3)

	come severity by Depuit	%	0/2 0/2	
	Total #	Warning as Most Severe	Citation as Most Severe	Arrest as Most Severe
	of Stops			
AREA IV	73,170	14.8	81.7	3.6
Troop C	19,215	20.2	78.3	1.5
Clarion	2,965	24.6	74.4	1.0
Clearfield	4,130	6.3	93.3	0.5
Dubois	3,059	16.6	81.5	1.9
Kane	1,929	18.5	78.7	2.8
Punxsutawney	2,655	30.1	67.0	2.9
Ridgway	2,578	22.5	76.6	0.8
Tionesta	1,781	30.1	68.7	1.2
Troop D	16,135	12.2	84.0	3.8
Beaver	3,064	7.1	91.2	1.6
Butler	4,195	14.3	79.2	6.4
Kittanning	2,574	13.8	81.1	5.1
Mercer	3,650	12.2	84.8	3.0
New Castle	2,557	10.0	88.2	1.9
Troop E	16,728	20.7	74.5	4.8
Corry	1,165	25.4	70.3	4.3
Erie	3,672	19.4	75.3	5.3
Franklin	1,585	27.6	64.5	7.9
Girard	3,501	12.6	84.5	3.0
Meadville	5,466	20.9	74.3	4.7
Warren	1,283	29.3	64.9	5.8
Troop B	21,092	7.2	88.5	4.3
Belle Vernon	3,852	6.7	88.8	4.5
Pittsburgh	3,360	3.8	94.5	1.7
Uniontown	7,270	10.6	83.1	6.3
Washington	4,199	4.8	93.0	2.2
Waynesburg	2,407	6.7	88.1	5.3
Bureau of Patrol	78,287	6.8	92.2	1.0
Troop T	78,287	6.8	92.2	1.0
Bowmansville	13,032	4.6	95.1	0.3
Everett	11,936	3.1	96.8	0.1
Gibsonia	6,396	5.0	92.8	2.2
Highspire	30	6.7	93.3	
King of Prussia	10,911	14.6	84.9	0.5
New Stanton	11,270	4.8	93.6	1.7
Newville	9,020	2.4	94.3	3.3
Pocono	8,610	11.9	87.8	0.3
Somerset (T)	6,980	7.9	91.9	0.2

 Table 3.12: 2010 Driver Outcome Severity by Department, Area, Troop & Station (p. 3 of 3)

# SUMMARY

Section 3 reported the characteristics of traffic stops and stopped drivers at the department, area, troop, and station levels based on 371,182 member-initiated traffic stops from January 1, 2010 through December 31, 2010. Department-wide trends are reported below. Trends at the area, troop, and station levels are reported within this section.

- Across the department, the majority of traffic stops had the following characteristics:
  - Occurred on a weekday (70.9%)
  - Occurred during the daytime (74.2%)
  - Occurred on a state highway (45.7%) or an interstate (43.9%)
  - Involved a vehicle registered in Pennsylvania (77.0%)
  - Involved vehicles with an average of 0.6 passengers
  - Lasted between 1-15 minutes (84.8%)
  - March and May accounted for the largest percentages of traffic stops
- Across the department, characteristics of the stop included:
  - The most frequent violation observed prior to traffic stops was speeding (63.7%), followed by moving and equipment violations (20.8% and 9.2%, respectively)
  - For speeding stops, the average amount over the limit was 19.2 mph
- Across the department, characteristics of the drivers included:
  - Average age of 37.2 years
  - o 66.6% male
  - White (81.6%), Black (9.4%), Hispanic (4.3%), Middle Eastern (2.2%), and Asian/Pacific Islander (2.0%)
  - Non-resident of the municipality in which they were stopped (94.3%), non-resident of the county in which they were stopped (65.0%), and non-Pennsylvania resident (23.8%)
  - 2.1% non-compliant and/or resistant
  - 1.8% impaired by drugs and/or alcohol
  - 1.1% with a criminal history
- Across the department, traffic stop outcomes can be summarized by the following characteristics:
  - o 26.5% of stops resulted in a warning issued to the driver
  - 88.5% of stops resulted in a citation issued to the driver
  - 3.0% of stops resulted in the arrest of the driver
  - $\circ$  1.3% of stops resulted in a search of either the occupant(s) and/or the vehicle
  - $\circ$   $\,$  Of the searches conducted, 28.2% resulted in the discovery of contraband
  - Severity scale:
    - $\circ$  Warning was most severe outcome = 10.8% of stops
    - $\circ$  Citation was most severe outcome = 86.2% of stops
    - $\circ$  Arrest was most severe outcome = 3.1% of stops

# 4. TREND ANALYSES I: TRAFFIC STOPS 2002 – 2010

### **OVERVIEW**

This section documents the rate of Black and Hispanic drivers stopped by PSP Troopers between 2002 and 2010. These trends are reported at the department and troop levels<sup>3</sup> (Appendix A summarizes the station level trends).<sup>4</sup> Temporal analyses are best used to summarize the rate of activity (i.e., the rate of traffic stops of a selected group) <u>within</u> organizational units <u>across</u> time. This section exclusively uses this type of analysis to compare the rate of traffic stops of Black and Hispanic citizens within one organizational unit. In this manner, the rates from year to year in a jurisdiction are comparable. Importantly, changes in the rate of traffic stops within that organizational unit may result from a variety of factors including differences in traffic patterns, alterations of driver behaviors, modifications of officer behavior, and/or officer deployment practices; however, any changes in the rate of traffic stops will not be affected by changes in other jurisdictions. In effect, differences between organizational units are considered in these analyses and do not influence the results. As a result, the strength of documenting temporal trends is to examine differences within organizational units across time.

### METHODOLOGY

The temporal trends of Black and Hispanic drivers stopped by PSP Troopers were constructed using a standard deviation analysis technique. This approach relies on the previous years' data as the key component in reporting the spectrum of activity that occurred within one organizational unit. The rate of traffic stops could range from considerably less activity relative to the normal rate (i.e., one or more standard deviational units <u>below</u> the average) to considerably more activity compared to the normal rate (i.e., one or more standard deviational units <u>above</u> the average). Based on probability theory, the majority of values (i.e., the rate of traffic stops) will fall within one standard deviation of the average. Fewer cases will be within two standard deviations of the average, and even fewer values within three standard deviations.

While no definitive conclusions regarding bias in traffic stops can be ascertained from this methodology, the analyses that follow do offer a basic picture of the traffic stopping trends by organizational unit. The standard deviation is a statistical indicator that offers a range of roughly "average" values. Using this statistic, units experiencing rates of traffic stops within one standard deviation of the eight-year average were operating in a similar fashion to the eight-year average. Organizational units reporting rates of traffic stops more than two

<sup>&</sup>lt;sup>3</sup> In this section and all subsequent sections involving temporal trends, no analyses are offered regarding rates of activity at the area level. As described in this section, temporal trends are based on all previous years of data collection and are only applicable to organizational units that are consistent in composition from year to year. In 2008, the PSP underwent an agency-wide re-organization, which significantly altered the composition of all areas. Thus, comparing the rate of activity within Area I between 2002 and 2010, for example, would be inappropriate due to the difference in troop and station composition. As a result, all temporal analyses are restricted to the department, troop, and station levels.

<sup>&</sup>lt;sup>4</sup> The table in Appendix A was not constructed using the standard deviation methodology; rather, it simply reports the rate of traffic stops by race/ethnicity between 2002 and 2010. Additional standard deviation analyses at the station level are available from the authors upon request.

standard deviations outside their eight-year average were experiencing a shift from previous years. Any rate of traffic stops beyond three standard deviations is roughly equivalent to achieving statistical significance using a statistical test. Such changes identified should be further examined by PSP administrators to identify the cause of these changes.

To create the standard deviation, the following steps were used:

- a. <u>Calculate an average rate of traffic stops.</u> For Black and Hispanic drivers, the rate of traffic stops between 2002 and 2009 was used to compute an average rate for the organizational unit of interest. The current year (2010) was not included in the average because it is the data point of most interest and should not be included in the average for comparison purposes.
- b. <u>Calculate standard deviation using the eight-year average rate of traffic stops.</u> The standard deviation is a standardized measure of variability based on the changes in the rate of traffic stops across all years. Again, the 2010 rate was not included in the average, as it is the focal point of this report. Inclusion of its rate would bias the development of the standard deviation.
- c. <u>Compare the 2010 rate of traffic stops to the eight-year average using the standard deviation</u>. The standard deviation is a measure of variation in the rate of traffic stops for one organizational unit based on eight years of data collection. The research team purposefully does not offer a value assessment of the 2010 rate in relation to the eight-year average. In other words, the research team does not assign a "cutoff value" for an acceptable rate of traffic stops (i.e., a standard deviational value at which any rate of traffic stops above or below is concerning</u>). The graphs and maps used to illustrate this information are strictly tools to assess trends over time in the rate of traffic stops and to identify organizational units that experienced noticeable increases or decreases in their rate of traffic stops of Black or Hispanic drivers in 2010. There are numerous factors beyond the scope of this methodology that may be directly related to changes in the rate of traffic stops of minority drivers. For example:
  - changes in the traffic population within that jurisdiction
  - alterations to the reporting patterns by PSP troopers
  - adjustments in PSP traffic stop behaviors
  - differences in deployment patterns across time
  - modifications of manpower allocation

Any single factor or a combination of these factors may influence the rate of traffic stops of minority drivers in any one year and result in an increase or decrease in the rates reported in the graphs and maps below. The displayed temporal trends are to be interpreted with caution and cannot be used as evidence of overt biased policing by the PSP or any of its organizational units.

# **TRAFFIC STOPS: 2002 – 2010**

The stopping rate of Black and Hispanic drivers by PSP Troopers between 2002 and 2010 is reported in the following graphs and maps. The department rate for Black and Hispanic

drivers is reported in Figures 4.1 & 4.2 and the rate of traffic stops for Black and Hispanic drivers at the troop level is summarized in Figures 4.3 - 4.4. At the department level, the eight-year average and three standard deviations in either direction comprise the background of the graphs in Figures 4.1 and 4.2. For all nine years (i.e., 2002-2010), the actual percentages of traffic stops for the target group are plotted on the graph's vertical axis to allow an assessment of the 2010 rate of traffic stops in relation to all previous years (the horizontal axis) as well as the eight-year average and the standard deviational values. The graph shows the eight-year average represented by a solid black line. Moving up and down from this central number are the values for one, two, and three standard deviations above and below the eight-year average, respectively. The red line indicates the actual rate of traffic stops for each year. The interpretation is straightforward: if the red line is above the eight-year average at one time point, the rate for that year was below the average; similarly, if the red line is below the black line, the rate for that year was below the average. Importantly, the scale of the graphs is appropriate for the specific organizational unit and racial/ethnic group of interest reported in that graph and should be consulted prior to reviewing the results.

Each graph includes text indicating how the 2010 rate of traffic stops compares to the value of the standard deviation (based on the previous eight years). This provides a simple method to assess any specific year of data in relation to the overall trend, while also offering substantive information regarding the difference between the specific year and the average. In summary, each graph reports the following information:

- the actual rate of traffic stops for each year
- each year's rate of traffic stops in relation to the eight-year average
- each year's rate of traffic stops in standard deviational units
- the overall trend of traffic stops



#### Figure 4:1: Percent of Traffic Stops with Black Drivers – <u>Department</u>

Figure 4.1 illustrates that, across the department, the rate of traffic stops involving Black drivers was 9.4% in 2010, which is two standard deviations above the eight-year average and represents an increase from 8.8% in 2009. As demonstrated in Figure 4.1, the rate of traffic stops involving Black drivers increased in 2006 and 2007 after several years of relative stability, and remained stable in 2008 and 2009. The 2010 rate represents the highest percentage of Black drivers stopped since data collection began.



#### Figure 4:2: Percent of Traffic Stops with Hispanic Drivers – Department

As demonstrated in Figure 4.2, the rates of traffic stops involving Hispanic drivers increased from 3.4% in 2009 to 4.3% in 2010. After a period of relative stability from 2004 to 2009, this represents an increase of more than three standard deviations from the eight-year average. The 2010 rate represents the highest percentage of Hispanic drivers stopped since data collection began.

At the troop level, the same standard deviation methodology is applied to traffic stops of Black and Hispanic drivers, but the results for these organizational units are displayed in map form rather than graphs. The maps in Figures 4.3 and 4.4 include the boundaries for each troop within the state. Due to troop boundary overlap, Troop T is mapped separately. Each map includes a table listing the 2010 percentage of stops with Black and Hispanic drivers and the average percent of stops between 2002 and 2009 for each troop. Additionally, the table includes the number of standard deviations from the eight-year average for each troop, which is also displayed graphically on the maps themselves. The legends have seven different colors to represent distance from the mean value for percentages of stops with Black and Hispanic drivers in standard deviational units. The gray-colored category designates troops where the percentage of stops was within one standard deviation of the mean value for the 8 year average. The red, orange, and yellow colored categories indicate that the percentage of stops was a set number of standard deviations greater than the mean value for the 8 year average. Conversely, the green colored categories represent troops where the percentage of stops was a set number of standard deviations less than the mean value for the 8 year average.

In summary, each map reports the following information for each troop:

- the 2010 rate of traffic stops for Black or Hispanic drivers
- the average rate of traffic stops for Black or Hispanic drivers between 2002 and 2009
- the rate of traffic stops in 2010 for Black or Hispanic drivers compared to the average between 2002 and 2009 in standard deviational units

Figure 4.3 compares the 2010 rate of traffic stops involving Black drivers at the Troop level with the average rate of traffic stops involving Black drivers between 2002 and 2009.<sup>5</sup> Of the 16 troops, nine reported 2010 traffic stop rates of Black drivers that were within one standard deviation of the eight-year average (Troops J, M, N, R, H, C, E, B, and T). There were no <u>decreases</u> in the 2010 rate of traffic stops involving Black drivers. Seven troops, however, reported <u>increases</u> in the 2010 rate of traffic stops involving Black drivers:

- Two troops were more than one standard deviation <u>above</u> their eight-year averages (Troops F and D)
- Three troops were more than two standard deviations <u>above</u> their eight-year averages (Troops K, L, and A)
- Two troops were more than three standard deviations <u>above</u> their eight-year averages (Troops P and G)

<sup>&</sup>lt;sup>5</sup> For information regarding the individual years' rates of traffic stops of Black and Hispanic Drivers, see Table 10.1 in the Appendix.

Figure 4:3: Percent of Traffic Stops with Black Drivers – Troop Level



Figure 4.4 compares the 2010 rate of traffic stops involving Hispanic drivers at the Troop level with the average rate of traffic stops involving Hispanic drivers between 2002 and 2009. Of the 16 troops, two reported 2010 traffic stop rates of Hispanic drivers that were within one standard deviation of the eight-year average (Troops C and D). There were no <u>decreases</u> in the 2010 rate of traffic stops involving Hispanic drivers. Fourteen troops, however, reported <u>increases</u> in the 2010 rate of traffic stops involving Hispanic drivers:

- Six troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops J, K, M, E, and B)
- Two troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops N and A)
- Six troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops L, F, P, R, H, and T)

Figure 4:4: Percent of Traffic Stops with Hispanic Drivers - Troop Level



As noted above, there are numerous factors beyond the scope of this methodology that may be directly related to changes in the rate of traffic stops of minority drivers. One of the possible explanations for the significant increases in stops of Black and Hispanic drivers displayed in Figures 4.3 and 4.4 is demographic changes in the traffic population within individual jurisdictions. The maps in Figures 4.5 and 4.6 display the changes in percentage of Black and Hispanic driving-age population between 2000 and 2010 in order to provide some context for the traffic stops that occurred during these years.<sup>6</sup> In Figures 4.5 and 4.6, the troop boundaries are outlined in blue<sup>7</sup>, but the demographic information is aggregated by county. Counties with a larger increase in Black or Hispanic percent of the driving-age population are portrayed in increasingly darker shades of green.

Figure 4.5 shows the change in percentage of the Black driving-age population from 2000 to 2010. Only one county (Greene) reported a decrease in this population, and the change is very small (0.02% decrease). The largest increases in Black driving-age population were along the Eastern edge of the state, particularly in Troops K, N, and R. The counties with increases in Black driving-age population over the past ten years do not appear to coincide strongly with the troops that show significant increases in percentages of stops with Black drivers (Figure 4.3). However, it bears repeating that the demographic changes in Figure 4.5 reflect the past ten years, whereas Figure 4.5 reflects only the past year.

Figure 4.6 shows the change in percentage of the Hispanic driving-age population from 2000 to 2010. Again, only one county (Cameron) reported a decrease in this population (0.08% decrease). The largest increases in Hispanic driving population were again along the Eastern edge of the state, particularly in Troops R, M, N, and L. The counties that show increases in Hispanic driving-age population over the past ten years do appear to have some overlap with the troops that show significant increases in percentages of stops with Hispanic drivers (Figure 4.4). However, the counties with the greatest demographic increases do not coincide with the troops that have the most significant increases in Hispanic stops.

In summary, it is likely that at least some of the significant increases in PSP stops of Black and Hispanic drivers are due to the changing demographics illustrated in Figures 4.5 and 4.6.

<sup>&</sup>lt;sup>6</sup> It is important to note that while the stops measured in the present analysis are for 2010, and then compared to the previous eight years' average, the demographic data displayed in Figures 4.5 and 4.6 are for the entire ten year period.

<sup>&</sup>lt;sup>7</sup> Troop T is excluded from the map due to its overlapping boundaries with other troops.



Figure 4:5: Difference in Percent Black Driving-Age Population Between 2000 and 2010 – <u>County Level</u>

**Difference in Percent Hispanic Driving-Age Population** Between 2000 and 2010 Erie E Susquehanna Warren McKean Bradford Tioga Potter Wavne P Crawford R Forest Wyoming Cameron Elk Sullivan ckawanna Venango C Pike Lycoming Mercer Clinton Clarion 1.117 Jefferson Columbia Monro Montou Lawrence Clearfield D Centre Union N Carbon Northumber Butler Armstrong Snyder Northampto Schuylkill Beaver Indiana Mifflin Juniata Cambria G Blair Allegheny Dauphin Berks Perry Lebanon Bucks Westmoreland Huntingdon Δ Washington Montgomer Cumberland B Н Lancaster Chester Bedford Philad Somerset Fulton Franklin Fayette York elaware Adams Greene Difference in % Hispanic Driving-Age Population Between 2000-2010 -0.08 - 0.00 (Decrease) 0.01 - 0.55 0.56 - 1.11 1.12 - 2.33 2.34 - 3.63 3.64 - 6.09 Data obtained from US Census Bureau, 2000 and 2010 Troop Boundaries (Excluding Troop T) For display reasons, maps are not projected

Figure 4:6: Difference in Percent Hispanic Driving-Age Population Between 2000 and 2010 – <u>County Level</u>

# SUMMARY

Section 4 summarizes the trends in traffic stops for Black and Hispanic drivers between 2002 and 2010 at the department and troop levels. It is important to note that the analyses reported in this section are descriptive and cannot be used to determine the causes of the trends reported. The available data simply cannot be used to determine why certain organizational units reported increases or decreases in the percentage of stops involving Black or Hispanic drivers. Some factors potentially responsible for upward trends include:

- Changes in the racial/ethnic composition of residential populations serviced by those organizational units which have altered the racial/ethnic composition of drivers eligible to be stopped
- Alterations to the reporting patterns by PSP troopers
- Other changes in travel patterns that differentially impact the percentages of minority drivers on particular roadways
- Adjustments to PSP deployment patterns and manpower allocation to address changes in reported criminal patterns and calls for service, resulting in higher concentrations of Troopers in areas where minorities are more likely to travel and/or violate the law
- Trooper behavior toward minority drivers may have changed across time

Importantly, it is not possible to conclusively determine that an upward trend in traffic stops indicates racially biased behavior by PSP Troopers. One factor or a combination of factors listed above may be responsible for such trends.

The major findings of the traffic stop temporal analyses are:

- <u>Department wide</u>, the 2010 rate of traffic stops involving Black drivers was 9.4%, which is two standard deviations above the eight-year average and represents an increase from 8.8% in 2009. The 2010 rate represents the highest percentage of Black drivers stopped since data collection began.
- <u>Department wide</u>, the 2010 rate of traffic stops involving Hispanic drivers was 4.3%, which represents an increase from 3.4% in 2009 and an increase of more than three standard deviations from the eight-year average. The 2010 rate represents the highest percentage of Hispanic drivers stopped since data collection began.

Troop trends for **Black** drivers (n=16 troops):

Nine troops reported 2010 traffic stop rates of **Black** drivers that were within one standard deviation of the eight-year average (Troops J, M, N, R, H, C, E, B, and T)

- <u>Increases</u> in the 2010 rate of traffic stops involving **Black** drivers:
  - Two troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops F and D)
  - Three troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops K, L, and A)
  - Two troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops P and G)

• There were no <u>decreases</u> in the 2010 rate of traffic stops involving **Black** drivers.

Troop trends for **Hispanic** drivers (n=16 troops):

- Two troops reported 2010 traffic stop rates of **Hispanic** drivers that were within one standard deviation of their eight-year average (Troops C and D)
- <u>Increases</u> in the 2010 rate of traffic stops with **Hispanic** drivers:
  - Six troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops J, K, M, E, and B)
  - Two troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops N and A)
  - Six troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops L, F, P, R, H, and T)
- There were no <u>decreases</u> in the 2010 rate of traffic stops involving **Hispanic** drivers.

5. TRAFFIC STOP OUTCOMES 2002 - 2010

# **OVERVIEW**

Section 5 reports the temporal trends for warnings, citations, arrests, searches, and seizures between 2002 and 2010.<sup>8</sup> Using the standard deviation methodology described in Section 4, the 2010 rate of all traffic stop outcomes are compared to the eight-year average at the department level in Figures 5.1 - 5.5.<sup>9</sup> Figures 5.6 - 5.10 present the information regarding the department level traffic stop outcomes in bar charts in order to display the rates of traffic stop outcomes for all drivers are reported in map format in Figures 5.11 - 5.14 and by racial/ethnic group in Figures 5.15 - 5.22.<sup>10</sup>

As described in Section 4, temporal analyses are best used to summarize the rate of activity (i.e., the rate of traffic stop outcomes of a selected group) within organizational units across time. This section exclusively uses this type of analysis to compare the rate of traffic stop outcomes of Black and Hispanic drivers within one organizational unit. In this manner, the rates from year to year in a jurisdiction are comparable. In effect, differences between organizational units are considered in these analyses and do not influence the results. As a result, the strength of documenting temporal trends is to examine differences within organizational units across time.

As with the analyses presented in Section 4, the research team purposefully does not offer a value assessment of the 2010 rate of outcomes in relation to the eight-year average. In other words, the research team does not assign a "cutoff value" for an acceptable rate of traffic stop outcomes. The graphs and maps demonstrating temporal values are strictly tools to assess trends over time in the rate of traffic stop outcomes and to identify organizational units that are experiencing noticeable increases or decreases in their rate of traffic stop outcomes of Black or Hispanic drivers. There are numerous factors beyond the scope of this methodology that may be directly related to changes in the rate of traffic stop outcomes. For example:

- changes in the traffic population within that jurisdiction
- alterations to the reporting patterns by PSP troopers
- adjustments in PSP traffic stop behaviors

<sup>&</sup>lt;sup>8</sup> For the trends in arrests and searches during traffic stops, it is important to remember that, prior to 2006 there were some data inconsistencies for these outcomes. As documented in the *2003-2004 Final Report*, during focus groups conducted with PSP Troopers in August 2005, it was discovered that there were some problems associated with the ongoing data collection project. Specifically, it became apparent that not all Troopers were completing the Contact Data Reports during all member-initiated stops and were, in particular, underreporting traffic stops resulting in arrests and/or searches that resulted in the discovery of contraband. Upon discovery of these discrepancies, the PSP immediately addressed and corrected these issues. Nevertheless, based on the known problems of underreporting of arrests and searches, firm conclusions regarding trends in these outcomes cannot be made.

<sup>&</sup>lt;sup>9</sup> Troop and station level trends in outcomes for all drivers are reported in Tables 10.2, 10.3, 10.8, and 10.9 in the Appendix.

<sup>&</sup>lt;sup>10</sup> The rates of outcomes by race/ethnicity for individual years, rather than just a comparison of the 2010 rate to the 8 year average between 2002 and 2009, are reported at the troop level in Tables 10.4 - 10.7 in the Appendix.

- differences in deployment patterns across time
- modifications of manpower allocation

Any single factor or a combination of these factors may influence the rate of traffic stop outcomes of minority drivers in any year and result in an increase or decrease in the rates reported in the graphs and maps below. The results presented in the following graphs and maps are to be interpreted with caution and cannot be used as evidence of overt biased policing by the PSP or any of its organizational units. While no definitive conclusions regarding bias in traffic stop outcomes can be ascertained from the following graphs, they do offer a basic picture of the traffic stop outcome trends by organizational unit.

# **TRAFFIC STOP OUTCOMES: 2002 – 2010**

This section documents the rate of warnings, citations, arrests, searches, and seizures across the department between 2002 and 2010 in Figures 5.1 - 5.5. A standard deviational methodology is applied to traffic stop outcomes of all drivers at the department level. The standard deviation is a statistical indicator that offers a range of roughly "average" values. Using this statistic, rates of traffic stop outcomes within one standard deviation of the eightyear average were operating in a similar fashion to the eight-year average. Rates of traffic stop outcomes more than two standard deviations outside their eight-year average were experiencing a shift from previous years, and any rate of traffic stop outcomes beyond three standard deviations is roughly equivalent to achieving statistical significance using a statistical test.

For each graph, a solid black line shows the eight-year average. Moving up and down from this central number are the values for one, two, and three standard deviations above and below the eight-year average, respectively. The red line indicates the actual rate of traffic stop outcomes in each year. The interpretation is straightforward: if the red line is above the eight-year average at one time point, the rate for that year was above the average; similarly, if the red line is below the black line, the rate for that year was below the average.

Each graph includes text indicating how the 2010 rate of traffic stop outcomes compares to the value of the standard deviation (based on the previous eight years). This provides a simple method to assess any of the nine years of data in relation to the eight-year trend, while also offering substantive information regarding the difference between the specific year and the average. In summary, each graph reports the following information:

- the actual rate of traffic stop outcomes for each year
- each year's rate of traffic stop outcomes in relation to the eight-year average
- each year's rate of traffic stop outcomes in standard deviational units
- the overall trend of traffic stop outcomes



### Figure 5:1: Percent of Traffic Stops Resulting in Warnings – Department

Figure 5.1 displays the rate of warnings (i.e., the number of traffic stops resulting in a warning divided by the total number of traffic stops) throughout the department between 2002 and 2010. The 2010 warning rate (26.5%) was within one standard deviation of the eight-year average. This represents a decrease in the rate of warnings after a steady increase between 2005 and 2009.



#### Figure 5:2: Percent of Traffic Stops Resulting in Citations - Department

The citation rate (i.e., the number of traffic stops resulting in a citation divided by the total number of traffic stops) for the department between 2002 and 2010 is reported in Figure 5.2. The 2010 citation rate increased nearly two percentage points from the 2009 rate of 86.6%. Indeed, the 2010 citation rate (88.5%) was the highest it has been since data collection began, but it was still only slightly more than one standard deviation of the eight-year average.


#### Figure 5:3: Percent of Traffic Stops Resulting in Arrest – Department

The arrest rate (i.e., the number of traffic stops resulting in arrests divided by the total number of traffic stops) for the department between 2002 and 2010 is summarized in Figure 5.3. The 2010 arrest rate was more than three standard deviations higher than the eight-year average and the highest it has been since data collection began. The nine-year trend indicates that there was a considerable rise in the arrest rate between 2004 and 2006, but this upswing is at least partially the result of discrepancies in the data collection regarding arrests prior to 2006, as documented in the 2003 - 2004 Final Report. These data collection limitations were believed to result in an underreporting of arrests prior to 2006. Therefore, it is likely that this reported upswing is simply the result of more accurate reporting since 2006, rather than changes in actual outcomes received by motorists. This is further evidenced by the stability in the arrest rate between 2006 and 2009.



#### Figure 5:4: Percent of Traffic Stops Resulting in Searches - Department

The search rate (i.e., the number of traffic stops resulting in a search divided by the total number of traffic stops) for the department between 2002 and 2010 is reported in Figure 5.4. The 2010 search rate was slightly more than one standard deviation above the eight-year average and represents a slight increase in the rate of searches after a period of relative stability for the previous four years. Similar to the arrest rate, however, there were some data collection problems prior to 2006, which may have resulted in an underreporting of searches throughout the department. Please refer to the *2003 - 2004 Final Report* for further discussion of these limitations.



Figure 5:5: Percent of Searches Resulting in Seizures - Department

Figure 5.5 displays the seizure rate (i.e., the number of traffic stops resulting in the discovery of contraband divided by the number of traffic stops involving a search) for the department between 2002 and 2010. The 2010 seizure rate was within one standard deviation of the eight-year average and similar to the seizure rates from the three previous years. Note that the seizure rate includes the discovery of contraband from searches made for any reason. Further examination of *discretionary* searches is conducted in Section 7.

### Traffic Stop Outcomes by Race/Ethnicity: 2002-2010

Figures 5.6 - 5.10 display the rate of traffic stop outcomes at the department level between 2002 and 2010 for specific racial/ethnic groups. Due to the small number of traffic stops that occurred for some racial/ethnic groups (e.g., Native Americans, Asians, etc.), the statistics reported below are limited to comparisons of White, Black, and Hispanic drivers. All percentages reported in the following figures were calculated by taking the total number of traffic stop outcomes issued to a specific racial/ethnic group of drivers and dividing it by the total number of traffic stops for that group. In this manner, the percentages reflect only the outcomes that occurred within a specific racial/ethnic group.



# Figure 5:6: Percent of Traffic Stops Resulting in <u>Warnings</u> by Race/Ethnicity – Department Wide





Figure 5.6 displays the department rate of warnings issued to White, Black, and Hispanic drivers between 2002 and 2010. In 2010, the warning rates for Black and Hispanic drivers were slightly higher than the warning rates for White drivers, which mirror the trends in the three previous years. Across the nine years of data collection, the warning rate for White drivers decreased between 2002 and 2005, but increased slightly between 2005 and 2009, followed by a decrease of two percentage points in 2010. The warning rates for Black and Hispanic drivers dropped slightly in 2010 after steadily increasing over the previous several years. The citation rate for White, Black, and Hispanic drivers throughout the department from 2002 to 2010 is reported in Figure 5.7. In 2010, as in 2008 and 2009, the citation rate for Black and Hispanic drivers was higher than the rate for White drivers. Throughout the nine years of data collection, the citation rates for all groups increased between 2002 and 2005, but have stabilized in the past four years. Hispanic drivers consistently have the highest rate of citations, while White drivers are consistently the least cited group (except 2007).



# Figure 5:8: Percent of Traffic Stops Resulting in <u>Arrests</u> by Race/Ethnicity – Department Wide





Figure 5.8 displays the arrest rate for White, Black, and Hispanic drivers throughout the department from 2002 to 2010. The overall arrest rates prior to 2006 may have been artificially depressed due to underreporting of arrests in those years. This should not influence the differences across racial/ethnic groups, however. In 2010, the arrest rates for all racial/ethnic groups were the highest they have been since data collection began. In 2010, as with previous years, the arrest rate was highest for Hispanic drivers, followed by Black and White drivers, respectively. In all years, Hispanic drivers are arrested at a higher rate than the other two groups, with White drivers generally being arrested less frequently (except 2006).

The search rate for White, Black, and Hispanic drivers throughout the department from 2002 to 2010 is reported in Figure 5.9. In 2010, the search rate was 3.6% for both Black and Hispanic drivers, while only 1.0% for White drivers. Throughout the nine years of data collection, the search rate of White drivers has been relatively stable, with a slight bump between 2005 and 2007, and again between 2009 and 2010. For Black drivers, the search rate indicates an upward trend between 2002 and 2007, with a slight decrease and stabilization in 2008 and 2009 and another slight increase in 2010. The search rate for Hispanic drivers also increased in early years of data collection, but has stabilized and decreased since 2005. Note, however, that the dramatic differences across racial/ethnic groups in terms of search rates have persisted across time.



Figure 5:10: Percent of Traffic Stops Resulting in <u>Seizures</u> by Race/Ethnicity – Department Wide

Figure 5.10 documents the seizure rate for White, Black, and Hispanic drivers throughout the department from 2002 to 2010. Again, these seizure rates include discoveries of contraband for searches based on any reason, including mandatory searches. In Section 7, seizure rates based strictly on *discretionary* searches are reported. In 2010, the seizure rate was highest for White drivers, followed by Black drivers and Hispanic drivers, respectively. This has been a consistent trend in all nine years of data collection. For White drivers, the 2010 seizure rate is very similar to the seizure rates of the three previous years. In 2010, the seizure rate for Black drivers rose slightly from 2009 but remained lower than the rates between 2005 and 2008. The seizure rate for Hispanic drivers also rose slightly in 2010 compared to 2009.

## 2002-2010 Temporal Trends in Stop Outcomes – Troop Level

Figures 5.11 - 5.14 compare the 2010 rate of warnings, citations, arrests, and searches<sup>11</sup> for all drivers with the average rate of these same outcomes between 2002 and 2009 at the Troop level using the standard deviation methodology described above.<sup>12</sup> The maps in Figures 5.11 -5.14 include the boundaries for each troop within the state. Due to troop boundary overlap, Troop T is mapped separately. Included in each figure is a table listing the 2010 percentage of stops resulting in warnings, citations, arrests, and searches (respectively) and the average percent of stops resulting in these same outcomes between 2002 and 2009 for each troop. Additionally, the table includes the number of standard deviations from the eight-year average for each troop, which is also displayed graphically on the map itself. The legends have seven different colors to represent distance from the mean value for percentages of stop results between 2002 and 2009. These colors represent the distance from the eight-year average in standard deviational units. The gray-colored category designates troops where the percentage of stops was within one standard deviation of the mean value for the eight-year average. The red, orange, and yellow colored categories indicate that the percentage of stops was a set number of standard deviations greater than the mean value for the eight-year average. Conversely, the green colored categories represent troops where the percentage of stops was a set number of standard deviations less than the mean value for the eight-year average.

In summary, each map reports the following information for each troop:

- the actual rate of traffic stops resulting in warnings, citations, arrests, and searches (respectively) for 2010
- the average rate of traffic stops resulting in these same outcomes between 2002 and 2009
- the rate of traffic stops resulting in these same outcomes in 2010 compared to the average between 2002 and 2009 in standard deviational units

Figure 5.11 compares the 2010 rate of warnings for all drivers with the average rate of these same outcomes between 2002 and 2009 at the Troop level and shows the following trends:

- Five troops reported a 2010 rate of warnings that was within one standard deviation of the eight-year average (Troops K, L, F, E, and B)
- <u>Increases</u> in the 2010 rate of warnings:
  - 2 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops R and H)
  - 4 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops J, P, C, and T)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages

<sup>&</sup>lt;sup>11</sup> No trends are provided for seizure rates at the Troop level due to the small number of searches conducted in some troops, thereby causing instability in the rates for these organizational units.

<sup>&</sup>lt;sup>12</sup> For information regarding the individual years' rates of traffic stop outcomes, see Tables 10.2 and 10.3 in the Appendix.

- <u>Decreases</u> in the 2010 rate of warnings:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>below</u> their eight-year average (Troops M, N, and A)
  - 2 troops were <u>more</u> than <u>two</u> standard deviations <u>below</u> their eight-year average (Troops G and D)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>below</u> their eight-year averages

Figure 5:11: Percent of Traffic Stops Resulting in Warnings - Troop Level



Figure 5.12 compares the 2010 rate of citations for all drivers with the average rate of these same outcomes between 2002 and 2009 at the Troop level and shows the following trends:

- Nine troops reported a 2010 rate of citations that was within one standard deviation of the eight-year average (Troops J, L, M, R, H, D, E, B, and T)
- <u>Increases</u> in the 2010 rate of citations:
  - 2 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops F and A)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops K, N, and G)
  - 2 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops P and C)
- There were no <u>decreases</u> in the 2010 rate of citations.

Figure 5:12: Percent of Traffic Stops Resulting in Citations - Troop Level



Figure 5.13 compares the 2010 rate of arrests for all drivers with the average rate of these same outcomes between 2002 and 2009 at the Troop level and shows the following trends:

- No troops reported a 2010 rate of arrests that was within one standard deviation of the eight-year average.
- <u>Increases</u> in the 2010 rate of arrests:
  - 2 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops P and A)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops J, P, C, and T)
  - 10 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops J, K, M, F, N, R, G, H, E, B, and T)
- There were no <u>decreases</u> in the 2010 rate of arrests.

Figure 5:13: Percent of Traffic Stops Resulting in <u>Arrests</u> – <u>Troop Level</u>



Figure 5.14 compares the 2010 rate of searches for all drivers with the average rate of these same outcomes between 2002 and 2009 at the Troop level and shows the following trends:

- Nine troops reported a 2010 rate of searches that was within one standard deviation of the eight-year average (Troops F, N, A, G, H, C, D, E, and T)
- <u>Increases</u> in the 2010 rate of searches:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops K, R, and B)
  - 2 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops J and M)
  - 1 troop was <u>more</u> than <u>three</u> standard deviations <u>above</u> its eight-year average (Troop L)
- <u>Decreases</u> in the 2010 rate of searches:
  - 1 troop was more than one standard deviation below its eight-year average (Troop P)
  - No troops were <u>more</u> than <u>two</u> or <u>three</u> standard deviations <u>below</u> their eight-year averages
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>below</u> their eight-year averages

Figure 5:14: Percent of Traffic Stops Resulting in Searches - Troop Level



Figures 5.15 and 5.16 compare the 2010 rate of warnings for White (Figure 5.15) and non-White<sup>13</sup> (Figure 5.16) drivers with the average rate of warnings involving White and non-White drivers between 2002 and 2009.

Figure 5.15 shows the following trends for warnings of White drivers:

- Five troops reported a 2010 rate of warnings for White drivers that was within one standard deviation of the eight-year average (Troops K, L, F, E, and B)
- <u>Increases</u> in the 2010 rate of warnings for White drivers:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops N, R, and H)
  - 2 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops C, and T)
  - 1 troop was more than three standard deviations <u>above</u> its eight-year averages (Troop J)
- <u>Decreases</u> in the 2010 rate of warnings for White drivers:
  - 2 troops were <u>more</u> than <u>one</u> standard deviation <u>below</u> their eight-year averages (Troops M and A)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>below</u> their eight-year averages (Troops P, G, and D)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>below</u> their eight-year averages

Figure 5.16 shows the following trends for warnings of non-White drivers:

- Ten troops reported a 2010 rate of warnings for non-White drivers that was within one standard deviation of the eight-year average (Troops J, K, L, M, F, N, R, G, E, and B)
- <u>Increases</u> in the 2010 rate of warnings for non-White drivers:
  - 1 troop was <u>more</u> than <u>one</u> standard deviation <u>above</u> its eight-year averages (Troops H)
  - 2 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year averages (Troops C and T)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages
- <u>Decreases</u> in the 2010 rate of warnings for non-White drivers:
  - No troops were <u>more</u> than <u>one</u> standard deviation <u>below</u> their eight-year averages
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>below</u> their eight-year averages (Troops P, A, and D)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>below</u> their eight-year averages

<sup>&</sup>lt;sup>13</sup> Black, Hispanic, and "other" drivers are collapsed into a non-White category for comparisons at the Troop level due to the small number of minorities stopped in some troops.

Figure 5:15: Percent of Traffic Stops Resulting in <u>Warnings</u> at the Troop Level – White Drivers







Figures 5.17 and 5.18 compare the 2010 rate of citations for White (Figure 5.17) and non-White (Figure 5.18) drivers with the average rate of citations involving White and non-White drivers between 2002 and 2009.

Figure 5.17 shows the following trends for citations of White drivers:

- Nine troops reported a 2010 rate of citations for White drivers that was within one standard deviation of the eight-year average (Troops J, L, M, R, H, C, E, B, and T)
- <u>Increases</u> in the 2010 rate of citations for White drivers:
  - 4 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops F, N, A, and D)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops K, P, and G)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages
- There were no <u>decreases</u> in the 2010 rate of citations for White drivers.

Figure 5.18 shows the following trends for citations of non-White drivers:

- Eleven troops reported a 2010 rate of citations for non-White drivers that was within one standard deviation of the eight-year average (Troops J, M, F, R, A, G, H, C, E, B and T)
- <u>Increases</u> in the 2010 rate of citations for non-White drivers:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops L, N, and D)
  - No troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average
  - 2 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops K and P)
- There were no <u>decreases</u> in the 2010 rate of citations for non-White drivers.

Figure 5:17: Percent of Traffic Stops Resulting in <u>Citations</u> at the Troop Level – White Drivers



Figure 5:18: Percent of Traffic Stops Resulting in <u>Citations</u> at the Troop Level – Non-White Drivers



Figures 5.19 and 5.20 compare the 2010 rate of arrests for White (Figure 5.19) and non-White (Figure 5.20) drivers with the average rate of arrests involving White and non-White drivers between 2002 and 2009.

Figure 5.19 shows the following trends for arrests of White drivers:

- No troops reported a 2010 rate of arrests for White drivers that was within one standard deviation of the eight-year average
- <u>Increases</u> in the 2010 rate of arrests for White drivers:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops P, A, and T)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops L, C, and D)
  - 10 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops J, K, M, F, N, R, G, H, E, and B)
- There were no <u>decreases</u> in the 2010 rate of arrests for White drivers.

Figure 5.20 shows the following trends for arrests of non-White drivers:

- 2 troops reported a 2010 rate of arrests for non-White drivers that was within one standard deviation of the eight-year average (Troops P and A)
- <u>Increases</u> in the 2010 rate of arrests for non-White drivers:
  - 1 troop was <u>more</u> than <u>one</u> standard deviation <u>above</u> its eight-year averages (Troop D)
  - 1 troop was <u>more</u> than <u>two</u> standard deviations <u>above</u> its eight-year average (Troop K)
  - 12 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops J, L, M, F, N, R, G, H, C, E, B, and T)
- There were no <u>decreases</u> in the 2010 rate of arrests for non-White drivers.

Figure 5:19: Percent of Traffic Stops Resulting in <u>Arrests</u> at the Troop Level – White Drivers



Figure 5:20: Percent of Traffic Stops Resulting in <u>Arrests</u> at the Troop Level – Non-White Drivers



Figures 5.21 and 5.22 compare the 2010 rate of searches for White (Figure 5.21) and non-White<sup>14</sup> (Figure 5.22) drivers with the average rate of searches involving White and non-White drivers between 2002 and 2009.

Figure 5.21 shows the following trends for searches of White drivers:

- Nine troops reported a 2010 rate of searches for White drivers that was within one standard deviation of the eight-year average (Troops J, L, M, R, H, C, E, B, and T)
- <u>Increases</u> in the 2010 rate of searches for White drivers:
  - 4 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops F, N, A, and D)
  - 3 troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average (Troops K, P, and G)
  - No troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages.
- There were no <u>decreases</u> in the 2010 rate of searches for White drivers.

Figure 5.22 shows the following trends for searches of non-White drivers:

- 11 troops reported a 2010 rate of searches for non-White drivers that was within one standard deviation of the eight-year average (Troops J, M, F, R, A, G, H, E, B, and T)
- <u>Increases</u> in the 2010 rate of searches for non-White drivers:
  - 3 troops were <u>more</u> than <u>one</u> standard deviation <u>above</u> their eight-year averages (Troops L, N, and D)
  - No troops were <u>more</u> than <u>two</u> standard deviations <u>above</u> their eight-year average
  - 2 troops were <u>more</u> than <u>three</u> standard deviations <u>above</u> their eight-year averages (Troops K and P)
- There were no <u>decreases</u> in the 2010 rate of searches for non-White drivers.

<sup>&</sup>lt;sup>14</sup> Black, Hispanic, and "other" drivers are collapsed into a non-White category for comparisons at the Troop level due to the small number of minorities stopped in some troops.

Figure 5:21: Percent of Traffic Stops Resulting in <u>Searches</u> at the Troop Level – White Drivers



Figure 5:22: Percent of Traffic Stops Resulting in <u>Searches</u> at the Troop Level – Non-White Drivers



# SUMMARY

### **Traffic Stop Outcomes – Department Wide**

- The 2010 warning rate (26.5%) was within one standard deviation of the eight-year average. This represents a decrease in the rate of warnings after a steady increase between 2005 and 2009.
- The 2010 citation rate increased nearly two percentage points from the 2009 rate of 86.6%. Indeed, the 2010 citation rate (88.5%) was the highest it has been since data collection began, but it was still only slightly more than one standard deviation of the eight-year average.
- The 2010 arrest rate was more than three standard deviations higher than the eight-year average and the highest it has been since data collection began. The nine-year trend indicates that there was a considerable rise in the arrest rate between 2004 and 2006, but this upswing is at least partially the result of discrepancies in the data collection regarding arrests prior to 2006, as documented in the *2003 2004 Final Report*. These data collection limitations were believed to result in an underreporting of arrests prior to 2006. Therefore, it is likely that this reported upswing is simply the result of more accurate reporting since 2006, rather than changes in actual outcomes received by motorists. This is further evidenced by the stability in the arrest rate between 2006 and 2009.
- The 2010 search rate was slightly more than one standard deviation above the eight-year average and represents a slight increase in the rate of searches after a period of relative stability for the previous four years. Similar to the arrest rate, however, there were some data collection problems prior to 2006, which may have resulted in an underreporting of searches throughout the department.
- The 2010 seizure rate was within one standard deviation of the eight-year average and similar to the seizure rates from the three previous years. Note that the seizure rate includes the discovery of contraband from searches made for any reason.

### Traffic Stop Outcomes by Race/Ethnicity – Department Wide

- <u>Warnings</u>: In 2010, the warning rates for Black and Hispanic drivers were slightly higher than the warning rates for White drivers, which mirror the trends in the three previous years. Across the nine years of data collection, the warning rate for White drivers decreased between 2002 and 2005, but increased slightly between 2005 and 2009, followed by a decrease of two percentage points in 2010. The warning rates for Black and Hispanic drivers dropped slightly in 2010 after steadily increasing over the previous several years.
- <u>Citations:</u> In 2010, as in 2008 and 2009, the citation rate for Black and Hispanic drivers was higher than the rate for White drivers. Throughout the nine years of data collection, the citation rates for all groups increased between 2002 and 2005, but have stabilized in the past four years. Hispanic drivers consistently have the highest rate of citations, while White drivers are consistently the least cited group (except 2007).
- <u>Arrests:</u> In 2010, the arrest rates for all racial/ethnic groups were the highest they have been since data collection began. In 2010, as with previous years, the arrest rate was highest for Hispanic drivers, followed by Black and White drivers, respectively. In all

years, Hispanic drivers are arrested at a higher rate than the other two groups, with White drivers generally being arrested less frequently (except 2006). The overall arrest rates prior to 2006 may have been artificially depressed due to underreporting of arrests in those years. This should not, however, influence the differences across racial/ethnic groups, which are consistent across all nine years of data collection.

- <u>Searches:</u> In 2010, the search rate was 3.6% for both Black and Hispanic drivers, while only 1.0% for White drivers. Throughout the nine years of data collection, the search rate of White drivers has been relatively stable, with a slight bump between 2005 and 2007, and again between 2009 and 2010. For Black drivers, the search rate indicates an upward trend between 2002 and 2007, with a slight decrease and stabilization in 2008 and 2009 and another slight increase in 2010. The search rate for Hispanic drivers also increased in early years of data collection, but has stabilized and decreased since 2005. Note, however, that the dramatic differences across racial/ethnic groups in terms of search rates have persisted across time.
- <u>Seizures:</u> In 2010, the seizure rate was highest for White drivers, followed by Black drivers and Hispanic drivers, respectively. This has been a consistent trend in all nine years of data collection. For White drivers, the 2010 seizure rate is very similar to the seizure rates of the three previous years. In 2010, the seizure rate for Black drivers rose slightly from 2009 but remained lower than the rates between 2005 and 2008. The seizure rate for Hispanic drivers also rose slightly in 2010 compared to 2009.

The temporal trends of the search and seizure rates for White drivers indicate a lower rate of search, but a higher rate of seizure compared to Black and Hispanic drivers. In all years examined, White drivers had the lowest rates of searches, but the highest rates of seizures; conversely, Black and Hispanic drivers experienced a higher rate of searches, but a lower rate of seizures. There are a number of possible explanations for these racial disparities in post-stop outcomes. The rates presented in this section are simply descriptive and do not take into account other legitimate factors that may contribute to these racial/ethnic differences. As a result, any interpretation of these findings must be made with caution.

# 6. ANALYSES OF TRAFFIC STOP OUTCOMES



## **OVERVIEW**

This section further examines traffic stop outcomes during member-initiated traffic stops conducted in 2010. Building on the descriptive statistics reported in Section 3, this section reports the results of statistical significance testing conducted on warnings, citations, arrests, and searches at the department, area, troop, and station levels. Two sets of analyses are the focal point of this section: 1) analyses examining the relationship between traffic stop outcomes and driver characteristics (i.e., drivers' race/ethnicity and gender) and 2) more sophisticated multivariate analyses on warnings, citations, arrests, and searches. Tables 6.1 & 6.2 document statistically significant differences between racial/ethnic and gender groups for warnings, citations, arrests, and searches across the department, area, and troop levels. All analyses are conducted using the chi-square statistic.<sup>15</sup> Table 6.3 reports statistically significant differences between White and non-White drivers at the station level for warnings, citations, arrests, and searches. These traffic stop outcomes are further explored in hierarchical multivariate statistical analyses presented in Tables 6.4 & 6.5.

# **BIVARIATE ANALYSES OF TRAFFIC STOP OUTCOMES**

All bivariate analyses were based on two comparisons. In separate analyses, drivers' race/ethnicity and drivers' gender were analyzed in relation to all four traffic stop outcomes (i.e., warnings, citations, arrests, and searches). Drivers' race/ethnicity is represented by three categories: White, Black, and Hispanic. Given the relatively small number traffic stops involving drivers identified as Middle Eastern, Asian, Native American, unknown, or missing, analyses of these stops are not reported. Analyses involving drivers' gender reflect all traffic stops in which drivers' gender was recorded. For each organizational unit, the tables report the total number of stops for each race/ethnicity and gender group and the percent of drivers from each group that were warned, cited, arrested, or searched. Statistically significant relationships are indicated with an asterisk.<sup>16</sup>

<sup>&</sup>lt;sup>15</sup> In Tables 6.1– 6.3, the asterisks indicate statistically significant differences in the outcomes received by racial/ethnic and gender groups based on bivariate chi-square associations. Chi-square statistics are based on the differences between groups while considering the sample size. Because this statistical technique is sensitive to sample size, smaller differences between groups can result in statistically significant differences when the sample size is large. Therefore, depending on the sample size used in the chi-square test, statistical significance is reported at the 0.05, 0.01, or 0.001 level. For example, if the 0.05 level is used, a finding is statistically significant if we are 95% confident that the difference between groups is not due to chance; in contrast, a 0.001 level is interpreted as 99.9% confident that the result is not due to chance. Also note that these analyses are based on only the relationship between two variables (e.g., drivers' race and citations). That is, for each chi-square test, the comparison is between one outcome (e.g., citation) and one explanatory variable (e.g., drivers' gender). These findings do not take into account any other factors that might influence the outcome of the stop. Multivariate analyses address this limitation of bivariate analyses and also use asterisks to signify statistical significance (see Tables 6.4 & 6.5). These asterisks, however, represent statistical significance when other factors believed to influence the outcome of stops are taken into account.

<sup>&</sup>lt;sup>16</sup> The asterisk is only included in the first group of the comparison. For example, if the relationship between racial/ethnic groups (i.e., White, Black, and Hispanic drivers) and warnings was statistically significant, an asterisk is placed beside the rate of warning for White drivers. The correct interpretation of this result is that the rate of warnings significantly differs between the three races/ethnicities, and the actual rate of warnings for each group should be consulted for the rank order of the groups. For each group, the number of asterisks indicates

Table 6.1 illustrates the variation in post-stop outcomes (i.e., warnings, citations, arrests, and searches) by drivers' race/ethnicity and gender for both the department and area levels. Across the department, there were statistically significant differences between drivers' race/ethnicity in all traffic stop outcomes, based on bivariate analyses. Of the Black and Hispanic motorists stopped, 29.2% and 28.7%, respectively, received warnings compared to 26.5% of White drivers stopped. Conversely, Hispanic drivers had slightly higher rates of citations (88.7%), compared to White (88.1%) and Black (89.2%) drivers. Arrest rates also showed statistically significant racial/ethnic disparities, as White drivers were arrested during 3.0% of stops, while Black and Hispanic drivers were arrested during 3.3% and 4.3% of stops, respectively. The largest differences across racial/ethnic groups were found for searches. Of all Black and Hispanic drivers stopped, 3.6% from both groups resulted in searches, compared to only 1.0% of White drivers stopped. All of these statistically significant results, reported in Table 6.1, occurred at the 0.001 level indicating that these differences reflect a statistical difference between the groups 99.9% of the time. Based solely on the statistical significance, these results suggest that a difference exists in the rate of warnings, citations, arrests, and searches depending on the race of the driver. It is important to recognize, however, that chi-square analyses do not consider other variables when determining statistical significance. In other words, the chi-square test does not measure other factors potentially associated with the likelihood of receiving post-stop outcomes; rather, it only considers the race/ethnicity of the driver. Further, these statistical tests are influenced by the large sample size. Consequently, the results of these analyses should be interpreted with caution and the multivariate models (reported later in this section) should be examined for a better understanding of the relationship between driver race and post-stop outcomes.

Drivers' gender also produced statistically significant results when examining the data for the entire department. Statistically significant differences were reported for male and female drivers in regard to citations, arrests, and searches at the 0.001 level. Of all the male drivers stopped, 88.7% were cited, compared to 88.2% of all females drivers stopped. 3.4% of male drivers were arrested, compared to only 2.3% of all female drivers. Male drivers were also significantly more likely to be searched (1.7% of male drivers stopped) compared to female drivers (0.7% of female drivers stopped). As with the racial differences reported above, these results do not consider the impact of any other factors and should not be considered definitive evidence of disparity. The differences between male and female drivers for warnings and citations were very small and only statistically significant for warnings.

Area level differences in traffic stop outcomes based on racial/ethnic characteristics are also displayed in Table 6.1. Analyses of warnings indicate racial/ethnic differences in all areas except Area II. Blacks and Hispanics were more likely to be warned during stops by Area I Troopers and the Bureau of Patrol, while Whites and Blacks were most likely to be warned in Area III and Whites and Hispanics were most likely to be warned in Area IV. All areas demonstrated statistically significant racial/ethnic differences in rates of citations. In Areas I, II, and III, Blacks and Hispanics were more likely to be cited during stops, whereas Blacks

the degree of statistical significance as described at the bottom of all tables in this section. Statistical significance is reported at the 0.05, 0.01, and 0.001 levels.

and Whites were more likely to be cited in Area IV and Hispanics and Whites were more likely to be cited in the Bureau of Patrol. For arrests, three of the five areas reported statistically significant differences across racial/ethnic groups. In all three areas, Black and Hispanic drivers displayed disproportionately higher rates of arrest than Whites. Finally, all five areas demonstrated statistically significant racial/ethnic differences in search rates, with Black and Hispanic drivers consistently being searched proportionately more frequently in all areas compared to White drivers.

Analyses of drivers' gender also demonstrated statistically significant differences. As demonstrated in Table 6.1, Area III and the Bureau of Patrol reported statistically significant differences across gender for warnings, with female drivers being more likely to be warned in Area III and male drivers being more likely to be warned by the Bureau of Patrol. Regarding citations, male drivers were more likely to be cited by Troopers in Areas I and III, whereas female drivers were more likely to be arrested and searched than females.

Again, it is important to recognize that racial/ethnic or gender differences are not evidence of bias-based policing because other factors related to these traffic stop outcomes were not considered in these analyses. Refer to the multivariate analyses for a more sophisticated examination of the relationship between driver characteristics and traffic stop outcomes.

		Total # of Stops	%	%	%	%
	Drivers		Drivers	Drivers	Drivers	Drivers
		Btops	Warned	Cited	Arrested	Searched
	White	302,800	26.5***	88.1***	3.0***	$1.0^{***}$
	Black	34,784	29.2	89.2	3.3	3.6
PSP Dent	Hispanic	11,330	28.7	89.7	4.3	3.6
ISI Dept						
	Male	246,999	26.6	88.7***	3.4***	1.7***
	Female	124,130	26.5	88.2	2.3	0.7
	White	53,689	33.8***	86.3***	4.7**	3.0***
	Black	11,927	41.3	87.3	5.2	6.5
	Hispanic	7,056	36.5	87.8	5.4	5.5
AKEA I						
	Male	51,579	35.2	87.2***	5.6***	4.5***
	Female	25,109	34.8	85.9	3.1	2.0
	White	46,066	21.0	91.2***	3.3	0.7***
	Black	3,508	21.4	92.7	3.6	3.0
	Hispanic	2,517	21.1	94.2	4.1	1.7
AREA II	-			_		
	Male	36,582	20.8	91.8	3.6***	1.1***
	Female	17,878	20.6	91.4	2.6	0.4
	White	74,574	27.7*	87.4***	2.9***	0.7***
	Black	5,291	29.0	89.1	3.2	2.8
	Hispanic	2,068	26.0	91.4	4.6	3.0
AREA III						
	Male	54,987	27.3*	88.1***	3.2***	1.2***
	Female	29,663	28.0	87.2	2.4	0.5
	White	65,470	33.1**	84.2***	3.6	0.7***
	Black	4,173	30.6	87.1	3.4	3.2
	Hispanic	1,084	33.9	82.4	2.7	3.5
AREA IV						
	Male	48,637	32.8	84.7	3.9***	1.1***
	Female	24,525	32.4	84.2	2.8	0.5
	White	59,864	15.6*	92.7***	0.6***	0.1***
	Black	9,490	16.4	91.5	1.0	0.9
BUREAU OF	Hispanic	3,041	17.1	91.7	2.6	1.1
PATROL						
	Male	52,654	15.7*	92.5**	1.0*	0.3***
	Female	25,622	15.1	93.1	0.9	0.1

Table 6.1: 2010 Stop Outcomes by Race and Gender for Department and Areas

NOTE: Asterisks identify statistically significant chi-square associations. \* p < .05 \*\* p < .01 \*\*\* p < .01

Table 6.2 displays differences in traffic stop outcomes by drivers' race/ethnicity and gender at the troop level. Ten of the 16 troops show statistically significant racial/ethnic differences in warnings. Of the ten troops with statistically significant differences, seven troops had at least one minority group with the highest rate of warnings, while in the other three troops White drivers received disproportionately more warnings. For citations, 11 of the 16 troops reported a statistically significant differences between racial/ethnic groups. Of the 11 troops with statistically significant differences, ten troops reported at least one minority group with the highest rate of citations. Seven of 16 troops reported statistically significant differences in arrest rates across racial/ethnic groups, with either Black or Hispanic drivers ranking highest in the rate of arrest in all but one of these seven troops. In addition, 15 of the 16 troops demonstrated statistically significant racial/ethnic differences in the rate of searches, and in all cases, Black and Hispanic drivers were subject to proportionately more searches compared to White drivers. In some troops, the differences between races/ethnicities were quite large.

Table 6.2 also reports differences in traffic stop outcomes by drivers' gender at the troop level. Three of the 16 troops reported statistically significant differences in warnings; in two of these troops, female drivers received proportionately more warnings compared to male drivers. For citations, six of the 16 troops indicated statistically significant differences in the citation rate between male and female drivers. In all but one of these troops with statistically significant differences, male drivers received disproportionately more citations. All but three of the 16 troops demonstrated statistically significant gender differences in rates of arrest – male drivers were arrested disproportionately more frequently than female drivers in all of these troops. Finally, all 16 troops indicated statistically significant differences in search rates for male and female drivers. In all of these troops, male drivers were searched disproportionately more frequently compared to female drivers.

Table 6.3 presents the results of bivariate analyses between drivers' race/ethnicity and traffic stop outcomes at the station level for 2010. In contrast to information provided in Tables 6.1 & 6.2, the racial/ethnic categories presented in Table 6.3 are restricted to White and non-White because the number of stops of some racial/ethnic groups is too small for individual comparisons at the station level. The "non-White" category includes Black, Black Hispanic, White Hispanic, Native American, Middle Eastern, and Asian drivers. Analyses examining the relationship between drivers' gender and traffic stops outcomes at the station level are not reported, however, are available from the author(s) upon request. As shown in Table 6.3, statistically significant racial differences in the rates of warnings and citations are evident in 36 and 35 stations, respectively. Twenty-three stations show significant racial differences in the rates of arrests. Over half (n=51) of all stations show statistically significant racial differences.

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
	White	11,105	33.4	88.5***	6.6***	4.1***
	Black	1,506	34.1	87.7	10.3	8.2
Area I,	Hispanic	1,587	34.7	91.7	9.8	7.3
Troop J						
	Male	9,864	33.9	89.1	8.4***	5.8***
	Female	4,828	32.9	88.5	4.8	2.6
	White	13,214	36.7***	87.7***	4.4	4.8***
	Black	6,565	46.9	89.6	4.6	7.5
Area I, Troop K	Hispanic	1,476	44.5	89.8	4.3	9.0
	Male	15,693	40.4	89.1**	5.2***	6.9***
	Female	7,340	39.4	87.7	2.5	3.3
	White	12,763	31.5	87.9	2.1*	1.1***
	Black	1,061	29.6	87.3	1.9	4.4
Area I, Troop L	Hispanic	1,316	33.4	88.7	3.1	3.2
	Male	10,245	31.6	88.3	2.6***	1.9***
	Female	5,469	30.4	87.9	1.1	0.6
	White	16,607	33.4*	82.3	5.8*	2.2***
	Black	2,795	36.2	82.0	5.0	4.0
Area I, Troop M	Hispanic	2,677	34.7	83.9	4.7	3.5
	Male	15,777	33.0**	83.5***	6.1***	3.1***
	Female	7,472	34.8	81.0	4.0	1.3
	White	21,184	18.4*	91.1***	3.7	0.4***
	Black	1,250	15.4	94.7	3.5	1.3
Area II, Troop F	Hispanic	607	16.5	94.6	4.6	1.0
	Male	15,807	18.3	91.6	4.0***	0.6***
	Female	8,140	17.6	91.4	2.9	0.2
	White	9,860	22.3	93.7*	3.9	0.9***
	Black	1,397	23.7	93.6	3.6	2.2
Area II, Troop N	Hispanic	1,187	21.7	95.5	4.4	1.3
-	Male	8,806	21.7	94.4*	4.1**	1.2**
	Female	4,426	22.3	93.4	3.1	0.6

 Table 6.2: 2010 Stop Outcomes by Race and Gender for Troops (p. 1 of 3)

NOTE: Asterisks identify statistically significant chi-square associations. \* p < .05 \*\* p < .01 \*\*\* p < .001
	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
	White	7,787	20.4***	89.9***	1.4	0.4
	Black	247	10.9	96.8	1.6	0.8
Area II, Troop P	Hispanic	229	14.8	95.6	1.3	0.4
	Male	5,835	19.6	90.4	1.7***	0.6***
	Female	2,578	20.3	90.1	0.7	0.0
	White	7,235	27.5*	89.6**	3.1	1.5***
	Black	614	32.6	84.9	4.6	9.1
Area II, Troop R	Hispanic	494	28.3	89.9	3.8	4.5
	Male	6,134	27.0	90.0	3.3	2.6***
	Female	2,734	27.1	89.2	2.6	0.9
	White	19,664	25.7	89.2	1.9	0.8***
	Black	769	29.0	88.7	2.3	3.5
Area III, Troop A	Hispanic	170	26.5	87.1	1.8	1.2
_	Male	13,850	25.5	89.5	2.3***	1.1***
	Female	7,169	26.3	88.8	1.1	0.6
	White	28,201	29.2*	86.2*	2.5***	0.5***
	Black	2,248	29.4	87.3	1.1	2.1
Area III, Troop G	Hispanic	641	23.9	89.1	3.1	1.7
-	Male	21,336	28.8	86.6	2.4	0.8***
	Female	11,255	28.9	86.5	2.3	0.3
	White	26,709	27.5	87.4***	4.1***	1.0***
	Black	2,274	28.5	91.0	5.6	3.3
Area III, Troop H	Hispanic	1,257	27.0	93.2	5.8	3.9
	Male	19,801	27.0*	88.7***	4.8***	1.6***
	Female	11,239	28.1	86.9	3.2	0.6
	White	16,691	39.6***	78.0***	1.5	0.3***
	Black	1,037	28.4	86.7	1.1	2.9
Area IV, Troop C	Hispanic	498	33.5	85.7	1.4	3.4
_	Male	13,332	37.8	80.0**	1.6	0.7**
	Female	5,882	38.3	78.1	1.2	0.3

Table 6.2: 2010 Stop Outcomes by Race and Gender for Troops (p. 2 of 3)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
	White	14,392	31.3*	87.1***	3.8	1.2***
	Black	1,095	31.5	87.3	3.9	3.8
Area IV, Troop D	Hispanic	200	39.5	75.0	2.5	5.5
	Male	10,467	31.3	87.0	4.5***	1.9***
	Female	5,665	30.9	87.1	2.3	0.6
	White	15,227	38.0	78.2	4.9**	0.4***
	Black	737	38.3	79.2	2.4	2.3
Area IV, Troop E	Hispanic	228	40.8	75.4	5.7	3.5
	Male	10,659	38.0	78.3	5.3***	0.7***
	Female	6,067	37.1	78.9	4.0	0.3
	White	19,160	24.7*	92.0	4.3	0.9***
	Black	1,304	27.2	91.6	5.3	3.3
Area IV, Troop B	Hispanic	158	18.4	91.1	2.5	1.3
-	Male	14,179	25.2	92.3	4.7***	1.3***
	Female	6,911	24.4	91.5	3.5	0.6
	White	59,864	15.6*	92.7***	0.6***	0.1***
	Black	9,490	16.4	91.5	1.0	0.9
Area V, Troop T	Hispanic	3,041	17.1	91.7	2.6	1.1
	Male	52,654	15.7*	92.5**	1.0*	0.3***
	Female	25,622	15.1	93.1	0.9	0.1

 Table 6.2: 2010 Stop Outcomes by Race and Gender for Troops (p. 3 of 3)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
AREA I, Troop J						
Avondale	White	2,379	43.4*	81.8***	6.4***	5.8**
	Non-White	931	39.0	88.7	10.1	8.5
Embreeville	White	3,733	27.0	86.4	8.0***	6.0***
	Non-White	1,332	27.2	88.1	11.3	9.5
Ephrata	White	1,203	28.7	94.3	3.1	1.7
	Non-White	273	31.1	96.0	2.6	2.9
Lancaster	White	3,795	34.5	94.5	6.5	1.8**
	Non-White	950	34.8	95.5	7.9	3.5
AREA I, Troop K				_		
Media	White	2,885	32.5**	81.2	7.9	9.6***
	Non-White	1,358	37.0	82.8	8.7	15.5
Philadelphia	White	8,200	40.3***	90.7*	3.2	3.8***
	Non-White	7,462	47.0	91.7	3.5	5.7
Skippack	White	2,593	30.2*	85.7	4.1	3.2
	Non-White	535	35.5	85.2	2.6	3.4
AREA I, Troop L						
Frackville	White	1,479	34.4**	87.6*	2.5	1.1
	Non-White	210	24.3	92.4	1.0	0.5
Hamburg	White	1,914	38.0**	92.4	0.5	0.1
	Non-White	476	29.6	93.5	0.2	0.2
Jonestown	White	5,264	23.4	88.6	2.2	0.9***
	Non-White	1,476	24.5	88.6	2.4	4.3
Reading	White	2,433	35.8*	89.5	2.8	1.7*
	Non-White	590	40.7	88.1	3.6	3.2
Schuykill Haven	White	1,704	40.7	79.0	1.9	1.4*
	Non-White	172	48.3	77.3	1.2	3.5
AREA I, Troop M		_				
Belfast	White	2,990	22.8*	83.8	2.5*	1.2
	Non-White	1,226	26.1	83.5	1.5	1.3
Bethlehem	White	2,187	33.1	81.2	11.0	3.2
	Non-White	807	33.7	79.7	10.3	4.6
Dublin	White	3,100	33.3	80.5***	9.8	3.3
	Non-White	611	34.7	87.2	7.7	2.5
Fogelsville	White	5,058	36.1	80.7	3.1	2.2***
	Non-White	2,241	36.5	82.4	3.2	4.9
Trevose	White	3,348	38.7	86.2	5.8*	1.5**
	Non-White	1,678	37.1	86.2	4.2	2.6

 Table 6.3: 2010 Stop Outcomes by Race for Station (p. 1 of 5)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
AREA II, Troop F	1					
Coudersport	White	1,824	31.6	80.3	3.9	0.4
	Non-White	50	24.0	82.0	2.0	0.0
Emporium	White	932	31.1	80.5	2.0	0.1
	Non-White	14	21.4	78.6	7.1	0.0
Lamar	White	3,115	17.0***	89.2**	4.7	0.2
	Non-White	635	11.2	95.9	5.2	0.3
Mansfield	White	1,284	24.8**	88.2**	3.7*	0.3
	Non-White	149	12.8	96.6	0.0	0.0
Milton	White	3,998	15.0	95.5	6.2**	0.5
	Non-White	929	13.9	96.8	3.7	0.9
Montoursville	White	3,981	17.1*	92.4	3.5	0.5***
	Non-White	322	21.7	92.5	4.0	3.7
Selinsgrove	White	4,341	12.1	95.2	1.2	0.3
	Non-White	424	9.2	96.5	1.2	0.5
Stonington	White	1,883	23.2	90.4	3.5	0.8
	Non-White	67	28.4	91.0	1.5	1.5
AREA II, Troop N		-				
Bloomsburg	White	1,843	11.5**	93.2**	1.4	0.1
	Non-White	529	6.8	96.4	0.6	0.4
Fern Ridge	White	2,412	20.6	91.9*	2.1	0.1**
	Non-White	916	18.6	94.1	1.4	0.8
Hazelton	White	1,594	18.9	93.7**	10.3	0.8
	Non-White	541	17.2	97.0	9.4	0.7
Lehighton	White	1,692	29.3*	95.8	1.7	1.4
	Non-White	216	36.6	94.4	2.8	1.9
Swiftwater	White	2,402	28.7	94.8	4.7	2.0
	Non-White	1,061	30.3	93.7	3.9	2.7
AREA II, Troop P						
Laporte	White	1,682	24.3	84.7	1.5	1.0
	Non-White	70	24.3	85.7	0.0	1.4
Shickshinny	White	967	37.7***	85.1*	1.8	0.3
	Non-White	54	13.0	96.3	0.0	0.0
Towanda	White	1,298	34.2	83.1	1.1	0.5
	Non-White	50	30.0	86.0	2.0	0.0
Tunkhannock	White	951	23.8	90.4	4.2	0.2
	Non-White	31	16.1	96.8	6.5	0.0
Wyoming	White	2,903	5.1	97.4	0.5	0.2
	Non-White	408	8.1	98.5	1.0	0.5

Table 6.3: 2010 Stop Outcomes by Race for Station (p. 2 of 5)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
AREA II, Troop R						
Blooming Grove	White	1,656	30.3	92.8*	7.0	1.1***
	Non-White	385	28.3	96.4	6.8	3.9
Dunmore	White	2,094	33.1	84.0	1.1*	1.8***
	Non-White	480	31.7	84.4	2.5	5.4
Gibson	White	1,963	24.1*	90.2	2.1	1.6***
	Non-White	613	20.2	89.7	1.3	5.5
Honesdale	White	1,560	20.9	93.3	2.7	1.2
	Non-White	119	16.8	97.5	5.0	3.4
AREA III, Troop A						
Ebensburg	White	3,349	24.1	89.4	3.5	0.4*
	Non-White	198	24.2	90.9	2.5	1.5
Greensburg	White	4,463	36.7	83.2	1.8	0.8*
	Non-White	277	34.3	86.6	0.7	2.2
Indiana	White	4,746	25.9	88.3	1.6	0.6
	Non-White	405	25.2	90.1	1.7	0.5
Kiski Valley	White	4,198	11.6*	96.0	1.0	1.2**
	Non-White	340	15.3	95.6	0.9	2.9
Somerset (A)	White	2,908	29.9	91.2	2.3	0.8*
	Non-White	63	30.2	92.1	4.8	3.2
AREA III, Troop G						
Bedford	White	3,111	24.1***	88.0	2.0**	0.6
	Non-White	432	14.8	91.2	0.2	1.4
Hollidaysburg	White	2,931	48.2	81.1	1.7	0.4***
	Non-White	319	52.0	69.3	0.6	4.1
Huntingdon	White	3,186	38.9	76.0	1.8*	1.0*
	Non-White	123	39.0	72.4	4.9	3.3
Lewiston	White	5,030	13.6	94.7**	8.2*	0.2
	Non-White	614	12.1	97.7	5.4	0.5
McConnellsburg	White	5,469	41.5	83.1***	0.6	0.6
	Non-White	1,648	36.0	90.0	0.4	0.9
Philipsburg	White	3,660	34.5***	83.5*	0.7	0.2***
	Non-White	360	24.4	88.6	0.8	1.4
Rockview	White	4,837	10.9*	93.5	1.3	0.5***
	Non-White	721	8.2	95.3	1.2	2.2

 Table 6.3: 2010 Stop Outcomes by Race for Station (p. 3 of 5)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
AREA III, Troop I	H	•				
Carlisle	White	6,351	23.1	88.2	3.7*	0.9***
	Non-White	983	23.9	89.4	5.1	3.1
Chambersburg	White	3,402	30.9	87.6**	2.1*	1.1***
-	Non-White	439	32.8	92.0	3.9	4.1
Gettysburg	White	3,278	30.9	80.4***	2.4	0.8**
	Non-White	591	27.9	89.2	3.6	2.0
Harrisburg	White	3,978	22.7*	93.5	3.9**	0.6***
	Non-White	935	26.5	92.3	6.1	2.7
Lykens	White	2,923	43.0	69.4*	2.0	0.7**
	Non-White	85	37.6	80.0	3.5	3.5
Newport	White	2,918	27.7	95.0*	12.3	0.8
	Non-White	268	25.7	97.8	9.3	1.1
York	White	3,919	22.3	93.6	3.2**	1.9**
	Non-White	972	25.1	95.2	5.1	3.6
AREA IV, Troop (	2		-			
Clarion	White	2,336	49.6***	72.4***	1.1	0.3*
	Non-White	629	32.3	84.9	0.8	1.1
Clearfield	White	3,259	19.7**	92.4***	0.5	0.3***
	Non-White	871	15.3	96.3	0.3	1.3
Dubois	White	2,578	37.7***	81.7***	2.0	0.2
	Non-White	481	25.4	91.7	1.0	0.6
Kane	White	1,750	48.3*	80.2**	3.0	0.3
	Non-White	179	39.7	89.4	0.6	0.6
Punxsutawney	White	2,527	47.4	68.9**	2.7**	0.6***
	Non-White	128	39.8	79.7	7.0	21.1
Ridgway	White	2,464	34.2*	76.7*	0.8	0.2
	Non-White	114	23.7	85.1	0.9	0.9
Tionesta	White	1,735	51.9	69.5	1.2	0.1
	Non-White	46	41.3	73.9	0.0	0.0
AREA IV, Troop I	) —					
Beaver	White	2,745	29.7	92.2	1.5*	0.5***
	Non-White	319	28.5	93.7	3.1	2.5
Butler	White	3,900	41.4*	83.9***	6.7**	1.0**
	Non-White	295	35.3	91.5	2.7	2.7
Kittanning	White	2,334	25.8	85.0	4.9	3.2***
-	Non-White	240	28.8	87.9	6.3	7.9
Mercer	White	3,049	28.1	88.3**	3.2	0.8
	Non-White	601	26.5	83.2	2.0	1.5
New Castle	White	2,327	23.9	89.8	1.7*	0.6***
	Non-White	230	27.0	87.0	3.9	3.0

 Table 6.3: 2010 Stop Outcomes by Race for Station (p. 4 of 5)

	Drivers	Total # of Stops	% Drivers Warned	% Drivers Cited	% Drivers Arrested	% Drivers Searched
AREA IV, Troop B	C					
Corry	White	1.133	41.0	73.6	4.4	0.2
2	Non-White	32	34.4	75.0	0.0	0.0
Erie	White	3,298	39.0	79.8	5.3	0.7***
	Non-White	374	38.5	79.4	4.8	3.7
Franklin	White	1,475	48.1	71.1	8.0	0.5**
	Non-White	110	39.1	69.1	5.5	2.7
Girard	White	3,185	30.5	86.6	3.0	0.0*
	Non-White	316	29.7	88.6	3.2	0.3
Meadville	White	4,906	36.9**	77.7**	4.8	0.7
	Non-White	560	31.3	83.6	3.8	0.7
Warren	White	1,247	41.8	69.8	5.9	0.2***
	Non-White	36	41.7	72.2	2.8	8.3
AREA IV, Troop E	3					
Belle Vernon	White	3,502	28.8*	92.9	4.6	0.3**
	Non-White	350	22.9	95.4	4.0	1.1
Pittsburgh	White	2,945	21.5	96.2*	1.6	0.5**
-	Non-White	415	23.1	94.0	2.7 _	1.7
Uniontown	White	6,707	31.5***	88.1	6.2	1.1***
	Non-White	563	39.6	88.3	7.3	3.0
Washington	White	3,831	12.2*	94.7*	2.0	1.3***
	Non-White	368	16.8	91.8	3.5	5.2
Waynesburg	White	2,201	23.8	92.5	5.5	1.5
	Non-White	206	22.8	96.1	2.4	1.5
Bureau of Patrol, 7	Ггоор Т					
Bowmansville	White	9,655	7.9***	95.3**	0.2***	0.1***
	Non-White	3,377	10.5	94.0	0.5	0.9
Everett	White	8,820	9.8**	96.1**	0.1	0.0**
	Non-White	3,116	7.8	97.4	0.1	0.1
Gibsonia	White	5,126	17.3***	94.8*	0.4***	0.1***
	Non-White	1,270	23.5	93.4	9.7	0.6
Highspire	White	21	4.8	95.2	0.0	0.0
	Non-White	9	11.1	88.9	0.0	11.1
King of Prussia	White	8,226	31.0	84.9	0.3***	0.2***
	Non-White	2,685	30.8	85.6	1.0	1.2
New Stanton	White	9,500	15.6**	94.1**	1.6	0.0**
	Non-White	1,770	12.6	95.7	1.9	0.2
Newville	White	6,858	10.9	97.0	1.5***	0.2***
	Non-White	2,162	9.8	96.5	8.9	1.0
Pocono	White	7,031	18.6*	88.1*	0.2**	0.1***
	Non-White	1,579	21.0	86.1	0.6	0.8
Somerset (T)	White	4,888	14.2**	90.7**	0.2	0.1
	Non-White	2,092	11.5	93.0	0.2	0.3

Table 6.3:	2010 Stop	Outcomes by	v Race for	Station (	n. 5	of 5	)
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Tables 6.1 - 6.3 illustrate the wide variation in traffic stop outcomes across drivers' racial/ethnic and gender groups at the department, area, troop, and station levels for 2010. It is important to reiterate, however, that the relationships reported in the previous tables are bivariate relationships and thus, do not statistically control for other relevant legal and extralegal factors that might influence officer decision-making. Therefore, the information provided in these tables cannot be used to assess whether the differences in outcomes across racial/ethnic and gender groups are due to Trooper bias. It is plausible that racial/ethnic and gender differences in post-stop outcomes exist due to legal and extralegal reasons other than race/ethnicity and gender. To explore these possibilities, more advanced statistical analyses that control for other legally relevant variables are presented below. The information reported in Tables 6.1 - 6.3 is included in this report solely to provide details to PSP administrators regarding differences in post-stop outcomes at the department, area, troop, and station levels. Although this information will allow PSP administrators to identify potential problems and target specific troops and stations for policy interventions, it cannot be the sole source of information used to examine whether discriminatory practices exist.

## MULTIVARIATE ANALYSES IN TRAFFIC STOP OUTCOMES

A multivariate statistical model takes many different factors/variables into account when attempting to understand a particular behavior or outcome, such as the outcomes associated with traffic stops. Unlike a bivariate model, it does not simply assess the relationship between two variables. Rather, a multivariate model examines many variables simultaneously, and therefore provides a more thorough and accurate interpretation of the data. Many factors other than drivers' race/ethnicity are likely to influence officers' decision making once a traffic stop has been made. For example, other driver characteristics, vehicle characteristics, stop characteristics, reasons for the stop, other legal variables, and Trooper characteristics have all been hypothesized to influence post-stop outcomes. Multivariate analyses examine the independent effect of these predictor variables, while controlling for the influence of the other variables. For example, the influence of drivers' race/ethnicity can be examined while holding constant the predictive power of drivers' age, reason for the stop, time of day, etc.

Importantly, however, it still cannot be said with certainty that racial disparity in stop outcomes reflects officer bias. Although multivariate analysis is a stronger analytical strategy than traffic stop comparisons to benchmark data or bivariate analysis, it is not without its limitations. The key weakness of multivariate statistical analysis is that it can only statistically control for those variables that are measured. This is called "specification error" or the error in a statistical model due to the inability to specify all of the factors that might have an influence over the outcome (in this case, officers' behavior). Due to issues associated with specification error, the results from the multivariate models must be interpreted with caution. Despite these limitations, researchers can generally be more confident in the findings of multivariate models that examine traffic stop dispositions because at least some legal and extralegal factors that contribute to officer decision-making are statistically controlled. Multivariate analyses are conducted on information collected at one level and reflect a oneto-one ratio between variables. In other words, all variables within the dataset are independent of other variables. Traffic stop data, however, do not conform to this rule because both traffic stop and Trooper characteristics are hypothesized to influence traffic stop outcomes, and one Trooper generally initiates more than one traffic stop. For example, one Trooper may initiate hundreds or thousands of traffic stops throughout the year thus creating a one-to-many ratio between Trooper characteristics and other traffic stop characteristics. Traffic stop datasets include information from two sources: 1) the traffic stop encounter information, such as traffic stop outcomes, driver characteristics, stop characteristics, etc., and 2) organizational information representing the aggregated characteristics of the Troopers within that unit (i.e., PSP stations), such as the average level of Trooper's education within each station, or the average Trooper age within each station, etc. A special type of multivariate modeling, referred to as hierarchical linear and nonlinear modeling (bi-level modeling), is required for data reflecting more than one level of aggregation, such as traffic stops.<sup>17</sup>

These bi-level models are interpreted in a similar fashion to other multivariate models. The information of note is contained in two values produced from the analyses: 1) the coefficient, or predicted log-odds, and 2) the odds ratio for each independent variable in the model. The coefficient represents an additive expression of a particular variable. In the "coefficient" column, the asterisk indicates that a significant relationship exists between the independent variable (e.g., male drivers) and the dependent variable (e.g., warnings). If an asterisk is not present, the relationship is not considered statistically significant. Due to the extremely large number of traffic stops at level 1, the statistical significance of the relationships is assessed at the 0.001 level. The coefficient is also accompanied by a sign (i.e., positive or negative), which indicates the direction of the relationship. For example, a positive sign on the "driver male" variable would indicate that male drivers were *more* likely than female drivers to receive a particular outcome, while a negative sign would indicate that males were *less* likely than females to receive a particular outcome.

<sup>&</sup>lt;sup>17</sup> Using data at two or more levels of aggregation introduces a statistical dilemma where regression residuals for the level 1 cases (traffic stops) within the same level 2 units (station characteristics) may be correlated (i.e., are more similar than level 1 cases taken from independent stations). This violates the assumption of independence that underlies most ordinary regression techniques. The implications of violating this assumption are substantial, as dependence can lead to inefficient estimates and biased test statistics, making the analyses appear to have more power than they do (Raudenbush & Bryk, 2002). Hierarchical linear modeling (HLM) is a modeling procedure that can overcome this statistical dilemma (Raudenbush & Bryk, 2002). HLM includes an extra error term, Ui, which reflects the extra variation common to all level 1 cases within the level 2 unit, so the level 1 error term (Rij) can be independent. That is, HLM explicitly models the dependence of the residuals through this error term. For binary outcome variables like the ones utilized here, hierarchical models cannot use the standard level 1 model which assumes a linear model and normally distributed errors at level 1, once the additional error term is included (Raudenbush & Bryk, 2002). To account for these characteristics of this type of dependent variable, we employ a nonlinear form of hierarchical modeling that uses a binomial sampling model with a Bernoulli distribution, as opposed to a normal sampling model, and a logit link instead of an identity link (Guo & Zhao, 2000; Raudenbush & Bryk, 2002). To properly model the relationship between variables in a bi-level model, the traffic stop variables would be included at level 1 and the station characteristics (i.e., aggregated Trooper characteristics) would be included at level 2. Due to confidentiality restrictions, it is not possible to locate each traffic stop within a PSP station and link that information with a specific Trooper. Therefore, Trooper characteristics are included in the bi-level model at level 1.

The second important piece of information from the model is the odds ratio. The odds ratio indicates the <u>strength</u> of the relationship.<sup>18</sup> For example, an odds ratio of 3.0 indicates that the presence of the variable (e.g., a male driver) roughly leads to three times the likelihood of receiving the outcome (e.g., a warning).<sup>19</sup> The strength of the relationship is one of the most important considerations. Even if the relationship between variables is statistically significant, it may not be substantively important due to the large sample size. Therefore, the odds ratio is important to consider when determining the amount of influence particular factors have over the post-stop outcomes.

#### **Multivariate Findings**

The multivariate models demonstrate which factors influenced whether a particular traffic stop outcome was issued, other factors being equal. For each of these models, multiple independent variables were included that could potentially influence officers' actions. Although the PSP data collection system already included many important explanatory variables, in 2010 the agency voluntarily included additional variables in the newly implemented TraCS electronic system to consider their ability to explain variation in poststop outcomes.<sup>20</sup> Therefore, Tables 6.4 – 6.7 display the results of a series of *three* bi-level multivariate models that predict warnings, citations, arrests, and searches, respectively.

- Model 1: This model includes all cases without missing data from the merged CDR Express and TraCS data. The variables examined are identical to those presented in previous years' reports and are comparable to those results.
- Model 2: This model includes only cases from the TraCS data and, again, examines the same variables used in previous years' analyses. This model is created for comparison purposes to Model 3.
- Model 3: This model includes only cases from the TraCS data and examines the same variables as Model 2, but also includes the additional predictor variables recorded in the TraCS data collection system described above. This allows for a direct comparison of the effects on post-stop outcomes between the models with just the original variables and those with the additional explanatory variables.

It is believed that each of these variables described below has the potential to influence officer behavior, and therefore must be statistically controlled to examine the variables of interest (i.e., drivers' race/ethnicity).<sup>21</sup> As shown in the left hand column of Tables 6.4 - 6.7, the predictor variables at Level 1 included:

<sup>&</sup>lt;sup>18</sup> Technically, this odds ratio is a form of log-odds but the interpretation of this value is not intuitively straightforward; therefore, this type of coefficient is usually exponentiated to allow for interpretation in terms of odds (Liao, 1994). The odds ratio represents this antilog transformation of the coefficient into the multiplicative odds of the outcome variable based on the predictor variable, all being equal.

<sup>&</sup>lt;sup>19</sup> For negative relationships, the odds ratio is presented as 1/Exp(b), for easier interpretation.

 $<sup>^{20}</sup>$  In the tables, as well as the description of variables below, variables newly included in PSP's TraCS data collection system are noted with a  $\dagger$ .

<sup>&</sup>lt;sup>21</sup> Some variables were excluded from the models for comparison purposes. For example, drivers' race was captured in the model as Black, Hispanic, and "other." The "other" category included Native American, Asian/Pacific Islander, and Middle Eastern. White was excluded from the model for comparison purposes. The

- Driver characteristics (values for each variable are in parentheses):
  - Race/ethnicity (four dichotomous variables: 1) White, 2) Black, 3) Hispanic,
    4) other; White is the excluded comparison category in the analyses)
  - Gender (0 =female; 1 =male)
  - Age (in years)
  - County residency where stop occurred (0 = no; 1 = yes)
  - Pennsylvania residency (0 = no; 1 = yes)
  - Driver behavior† (two dichotomous variables: 1) non-compliant and 2) verbally and/or physically resistant, where 0 = no; 1 = yes for both variables)
  - Driver impairment<sup>†</sup> (three dichotomous variables: 1) impaired by alcohol and/or drugs, 2) impaired by mental illness and/or sleep deprivation, and 3) language barrier between driver and Trooper, where 0 = no; 1 = yes for all variables)
  - Criminal History<sup>22</sup> (0 = no; 1 = yes)
- <u>Vehicle characteristics</u>:
  - $\circ$  Vehicle registration (1 = PA registration; 0 = out-of-state registration)
  - Number of passengers in the vehicle (range = 0-5)
  - Vehicle condition (0 = good or fair, 1 = poor)
- <u>Stop characteristics</u>:
  - Daytime (0 = nighttime; 1 = daytime)
  - Rush hour (0 = no; 1 = rush hour)
  - Weekday (0 = weekend; 1 = weekday)
  - Summer (0 = January May & September December; 1 = June, July & August)
  - Interstate (0 = state road, county road, other; 1 = interstate)
- Legal variables:
  - Reason for the stop (0 = other moving violations, equipment violations, preexisting information, registration violations, license violations, special traffic enforcement programs, and "other" reasons not previously indicated; 1 = speeding)
  - Number of reasons for the stop (range = 1 6)
  - Evidence found during a search (0 = no evidence; 1 = any evidence)
- <u>Trooper characteristics</u>:
  - Gender (0 =female; 1 =male)
  - Race/ethnicity (0 = Non-White; 1 = White)
  - Experience (0 = more than 5 years experience; 1 = less than 5 years)

<sup>22</sup> Troopers recorded drivers' criminal records (if found) into the following categories: drug offense (possession), drug offense (trafficking), property offense (auto theft), property offense (burglary), property offense (other), violent offense (assault), violent offense (robbery), violent offense (other), and traffic/license offense. For inclusion in the multivariate models, however, these categories are collapsed into a single variable measuring "any criminal history detected/"

effects of race/ethnicity variables reported in the models are *in comparison to* Whites. For examples, the odds ratio represents the likelihood of a Black driver being issued a citation compared to a White driver. The other dichotomous variables in the models were simply compared against their opposite (e.g., male drivers compared to female drivers).

- Education (range 1-6: 1 = high school, 2 = some college, no degree, 3 = Associate's degree, 4 = 4 year degree, 5 = 1-2 years graduate level, 6 = > 2 years graduate level)
- Assignment (0 = non-Patrol; 1 = Patrol)

#### Warnings

Table 6.4 reports results for three HLM models predicting whether or not drivers received warnings. As described above, the first model includes all cases from the merged CDR Express and TraCS data and is comparable to the models produced for earlier years' reports. The second model includes only cases from the TraCS data and, again, examines the same variables used in previous years' analyses. This model is created for comparison purposes to Model 3, which includes only cases from the TraCS data and adds the new predictor variables available in the TraCS system to those examined in Model 2. Presenting the results in this manner allows for a direct comparison of the race effects on post-stop outcomes with and without the additional explanatory variables. The findings discussed below refer to the results in Model 3 unless otherwise noted.

As reported in Table 6.4, across all three bi-level models for warnings indicated that *Black and Hispanic drivers showed no statistically significant differences in the likelihood of being warned compared to Whites*. Drivers of "other" race/ethnicity were 1.2 times less likely to be warned compared to White drivers. Although this racial/ethnic difference is statistically significant, the strength of this relationship indicates that it is not substantively important. Similarly, although driver gender, age, and residency also show statistically significant relationships with the likelihood of receiving a warning, their small odds ratios indicate marginal substantive significance. Drivers' drug and/or alcohol impairment, on the other hand, shows a significant and substantive negative relationship with the likelihood of receiving warnings. Impaired drivers were 15.2 times less likely to be warned than non-impaired drivers. Drivers' verbal or physical resistance to Troopers is also negatively related to the likelihood of a warning, but with an odds ratio of 1.5, is only modestly important in terms of substantive significance.

Legal variables were also substantively strong predictors of the likelihood of receiving a warning during a traffic stop. Specifically, traffic stops initiated as a result of speeding were 1.7 times less likely to result in a warning compared to traffic stops initiated for non-speeding reasons. Conversely, for each additional reason for the stop, the likelihood of a warning increased 3.7 times.

Finally, no Trooper characteristics were statistically significant predictors of the likelihood of a warning being issued.

In summary, Troopers' decisions to issue warnings are most strongly based on legally relevant factors like driver impairment, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

	Model 1: Level 1 Variables (n=368,498)		N Level 1 Vai	/Iodel 2: riables (n=322,154)	Model 3: Level 1 Variables (n=322,154)	
Level 2 Variables (N=90)	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]
Intercept	-2.40*		-2.76*		-2.76*	
Driver Characteristics						
Black	0.07	1.08	0.06	1.06	0.05	1.05
Hispanic	-0.09	1.09	-0.09	1.10	-0.10	1.11
Other Race	-0.16*	1.17	-0.16*	1.17	-0.17*	1.18
Male	-0.06*	1.06	-0.06*	1.06	-0.05*	1.05
Age	0.00*	1.00	0.00*	1.00	0.01*	1.01
County resident	0.11*	1.12	0.12*	1.12	0.14*	1.15
PA resident	0.06	1.06	0.07	1.07	0.06	1.06
Non-compliant <sup>†</sup>					-0.06	1.06
Verbally or Phys Resistant†					-0.38*	1.46
Impaired (Alcohol/Drugs)†					-2.72*	15.23
Impaired (Mental Illness / Sleep Deprivation)†					0.32	1.38
Language Barrier†					-0.55	1.73
Criminal History†					0.32	1.37
Vehicle Characteristics						
PA registration	0.14*	1.15	0.14*	1.15	0.10	1.10
Number of Passengers	0.01	1.01	0.01	1.01	0.02	1.02
Poor Condition <sup>†</sup>					-0.02	1.02
Stop Characteristics						
Daytime	-0.02	1.02	-0.02	1.02	-0.13*	1.14
Rush hour	-0.01	1.01	0.00	1.00	-0.02	1.02
Weekday	0.13*	1.14	0.12*	1.12	0.07*	1.07
Summer	-0.08	1.09	-0.06	1.07	-0.06	1.06
Interstate	-0.12	1.12	-0.13*	1.14	-0.15*	1.16
Legal Characteristics						
Reason for Stop: Speeding	-0.50*	1.65	-0.46*	1.59	-0.51*	1.67
Number of reasons for stop	1.18*	3.24	1.20*	3.30	1.30*	3.65
Contraband/Evidence found	-0.61	1.84	-0.65	1.91	0.23	1.26
<b>Trooper Characteristics</b>						
Male	0.14	1.15	0.14	1.15	0.16	1.17
White	0.13	1.14	0.15	1.16	0.15	1.17
Less than 5 years experience	0.02	1.02	0.02	1.02	0.01	1.01
Education scale	0.00	1.00	-0.01	1.01	-0.01	1.01
Patrol assignment	-0.32	1.37	-0.01	1.01	0.00	1.00

#### Table 6.4: HLM Analyses Predicting WARNINGS during all Traffic Stops in 2010

NOTE: Asterisks indicate statistically significant relationships \*  $p \le .001$ . TraCS-only variables are noted with a  $\dagger$ .

#### **Citations**

Table 6.5 reports results for three HLM models predicting whether or not drivers received citations. The findings discussed below refer to the results in Model 3 unless otherwise noted.

Table 6.5 indicates that, across all three bi-level models for citations, *Black and Hispanic drivers were equally likely to be cited compared to White drivers in similar situations*. In contrast, drivers of "other" race/ethnicity were 1.5 times more likely to be cited compared to White drivers. Drivers' gender, age, and county residency were also statistically significant predictors of the likelihood of receiving citations, but not substantively important effects.

On the other hand, the new TraCS data fields capturing drivers' resistance, drug and/or alcohol impairment, mental and/or sleep impairment, and criminal history all show these variables have a significant impact on the likelihood of receiving citations. Specifically, verbally or physically resistant drivers were 1.8 times more likely than compliant drivers to receive a citation. Drivers impaired by drugs and/or alcohol were 1.5 times more likely to be cited than non-impaired drivers. Drivers impaired by mental illness or sleep deprivation, however, were 1.8 times *less* likely to be issued a citation than non-impaired drivers. Finally, drivers with a criminal history detected were 2.2 times less likely than those without a criminal history to be cited (but more likely to be arrested, see Table 6.6).

Other findings include: traffic stops initiated during daytime hours and on the interstate were 1.4 and 1.3 times more likely to result in a citation compared to non-daytime and non-interstate stops; traffic stops for speeding were 2.2 times more likely to result in a citation compared to non-speeding based traffic stops; the likelihood of being cited increased 1.9 times for every additional reason for the stop; and traffic stops resulting in the discovery of contraband were 2.7 times *less* likely to result in a citation compared to traffic stops in which no contraband was discovered (but more likely to result in a arrest, see Table 6.6). Finally, no Trooper characteristics were statistically significant predictors of the likelihood of a citation being issued.

In summary, Troopers' decisions to issue citations are most strongly based on legally relevant factors like driver impairment, criminal history, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

	Model 1: Level 1 Variables (n=368,498)		N Level 1 Va	Model 2: riables (n=322,154)	Model 3: Level 1 Variables (n=322,154)	
Level 2 Variables (N=90)	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]
Intercept	0.86		1.16		1.15	
<b>Driver Characteristics</b>						
Black	-0.07	1.07	-0.05	1.05	-0.03	1.03
Hispanic	0.09	1.10	0.10	1.11	0.11	1.12
Other Race	0.39*	1.48	0.40*	1.50	0.40*	1.49
Male	0.11*	1.12	0.12*	1.13	0.12*	1.13
Age	-0.01*	1.01	-0.02*	1.02	-0.02*	1.02
County resident	-0.18*	1.20	-0.18*	1.20	-0.19*	1.21
PA resident	0.01	1.01	0.00	1.00	0.00	1.00
Non-compliant†					-0.12	1.13
Verbally or Phys Resistant†					0.60*	1.83
Impaired (Alcohol/Drugs)†					0.42*	1.52
Impaired (Mental Illness / Sleep Deprivation)†					-0.56	1.75
Language Barrier†					0.44	1.56
Criminal History†					-0.78*	2.17
Vehicle Characteristics						
PA registration	-0.09	1.10	-0.11	1.11	-0.11	1.12
Number of Passengers	-0.01	1.01	0.00	1.00	0.00	1.00
Poor Condition†					0.15	1.16
Stop Characteristics						
Daytime	0.34*	1.40	0.32*	1.37	0.34	1.40
Rush hour	0.07	1.07	0.06	1.06	0.06*	1.06
Weekday	-0.11*	1.12	-0.12*	1.12	-0.11*	1.11
Summer	0.05	1.05	0.07	1.07	0.06	1.07
Interstate	0.21*	1.23	0.23*	1.26	0.25*	1.28
Legal Characteristics2.16						
Reason for Stop: Speeding	0.82*	2.28	0.77*	2.16	0.78*	2.18
Number of reasons for stop	0.61*	1.84	0.66*	1.93	0.65*	1.92
Contraband/Evidence found	-1.19*	3.27	-1.04*	2.84	-0.98*	2.68
<b>Trooper Characteristics</b>						
Male	-0.35	1.42	-0.26	1.30	-0.26	1.30
White	0.01	1.01	0.01	1.01	0.01	1.01
Less than 5 years experience	0.23	1.26	0.21	1.23	0.21	1.24
Education scale	-0.01	1.01	0.00	1.00	0.00	1.00
Patrol assignment	0.74*	2.09	0.34	1.40	0.32	1.38

#### Table 6.5: HLM Analyses Predicting CITATIONS during all Traffic Stops in 2010

NOTE: Asterisks indicate statistically significant relationships \*  $p \le .001$ . TraCS-only variables are noted with a  $\dagger$ .

#### Arrests

Table 6.6 reports results for three HLM models predicting whether or not drivers were arrested. The findings discussed below refer to the results in Model 3 unless otherwise noted. For arrests, there were no statistically significant racial differences for Black, Hispanic, or Other drivers when other factors were simultaneously considered. In other words, minority drivers were equally likely as White drivers to be arrested given similar circumstances surrounding the traffic stop. *Therefore, even though the rates of arrests were higher for Black and Hispanic drivers compared to Whites, once the factors associated with the traffic stops were considered, there were no racial/ethnic disparities in arrests.* 

The new TraCS data fields capturing drivers' drug and/or alcohol impairment and criminal history show that these variables have a significant impact on the likelihood of being arrested. Specifically, drivers impaired by drugs and/or alcohol were more than 550 times more likely to be arrested than non-impaired drivers. Drivers with a criminal history detected were 7.4 times more likely than those without a criminal history to be arrested. Finally, drivers who were non-compliant and verbally or physically resistant were 3.3 and 2.4 times more likely than compliant drivers to be arrested (statistically significant at p < .05).

As reported in Models 1 and 2 of Table 6.6, traffic stops initiated during the daytime were more than three times less likely to result in an arrest. Once the additional TraCS variables (e.g., impairment, criminal history, compliance and resistance) are controlled for in Model 3, however, this effect is eliminated.

The second strongest predictor of the likelihood of arrest is the discovery of contraband. Specifically, traffic stops resulting in the discovery of contraband were over 97 times more likely to end in an arrest than stops without contraband. Although speeding shows a significant, negative relationship with the likelihood of arrest in Models 1 and 2, this effect is eliminated with the inclusion of the additional TraCS variables in Model 3. The likelihood of arrest increased 1.4 times for each additional reason for the stop. Finally, White Troopers were 5.8 times less likely than non-White Troopers to make an arrest.

Collectively, these results demonstrate that the most severe sanction issued during traffic stops (i.e., arrests) is based on legally relevant factors like impairment, contraband seized, and criminal history, rather than drivers' race/ethnicity.

	Model 1: Level 1 Variables (n=368,498)		N Level 1 Vai	/Iodel 2: riables (n=322,154)	Model 3: Level 1 Variables (n=322,154)	
Level 2 Variables (N=90)	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]
Intercept	-3.79		-3.51		-4.62	
<b>Driver Characteristics</b>						
Black	-0.01	1.01	-0.01	1.01	0.11	1.11
Hispanic	0.03	1.03	0.03	1.04	0.25	1.29
Other Race	0.39	1.48	0.47	1.60	0.84	2.32
Male	0.22	1.24	0.19*	1.20	0.01	1.01
Age	0.00	1.00	0.00	1.00	0.00*	1.00
County resident	0.31*	1.37	0.27*	1.31	0.16	1.17
PA resident	0.00	1.00	-0.06	1.06	-0.02	1.02
Non-compliant†					1.20	3.33
Verbally or Phys Resistant†					0.87	2.38
Impaired (Alcohol/Drugs)†					6.31*	550.44
Impaired (Mental Illness / Sleep Deprivation)†					0.72	2.05
Language Barrier†					0.55	1.73
Criminal History†					2.01*	7.43
Vehicle Characteristics						
PA registration	0.16	1.17	0.17	1.19	0.18	1.19
Number of Passengers	-0.07*	1.08	-0.06	1.06	-0.03	1.03
Poor Condition†					0.35	1.41
Stop Characteristics						
Daytime	-1.28*	3.59	-1.18*	3.24	-0.03	1.01
Rush hour	-0.04*	1.04	-0.33*	1.39	-0.11	1.11
Weekday	-0.54*	1.71	-0.49*	1.64	-0.01	1.01
Summer	0.17*	1.18	0.10	1.10	0.03	1.03
Interstate	0.02	1.02	-0.17	1.19	0.06	1.06
Legal Characteristics						
Reason for Stop: Speeding	-0.67*	1.95	-0.55*	1.74	0.16	1.17
Number of reasons for stop	0.74*	2.10	0.77*	2.15	0.34*	1.40
Contraband/Evidence found	4.77*	117.85	4.70*	110.33	4.58*	97.43
<b>Trooper Characteristics</b>						
Male	0.47	1.60	0.43	1.54	0.34	1.40
White	-1.01	2.75	-1.10	3.01	-1.76*	5.82
Less than 5 years experience	-0.14	1.15	-0.15	1.16	-0.14	1.15
Education scale	0.07	1.07	0.06	1.06	0.02	1.02
Patrol assignment	0.45	1.57	0.31	1.36	0.46	1.58

#### Table 6.6: HLM Analyses Predicting ARRESTS during all Traffic Stops in 2010

NOTE: Asterisks indicate statistically significant relationships \*  $p \le .001$ . TraCS-only variables are noted with a  $\dagger$ .

#### **Searches**

Table 6.7 reports results for three HLM models predicting whether or not drivers were searched. The findings discussed below refer to the results in Model 3 unless otherwise noted. In contrast to the previous models predicting warnings, citations and arrests, statistically significant and substantive racial/ethnic differences were identified across all three models predicting searches. *Specifically, Black drivers were 2.0 times more likely to be searched compared White drivers. Likewise, Hispanic drivers were 1.7 times more likely than White drivers to be searched. These differences existed even after controlling for other measured legal and extralegal factors.* In addition, male drivers were 1.8 times more likely to be searched compared to female drivers. This effect is somewhat attenuated by the inclusion of the additional predictor variables in Model 3 as the odds ratios for this variable were 2.2 in both Models 1 and 2. Finally, younger drivers were slightly more likely to be searched.

The new TraCS data fields capturing drivers' drug and/or alcohol impairment, mental and/or sleep impairment, and criminal history show that these variables have a significant impact on the likelihood of being searched. Specifically, drivers impaired by drugs and/or alcohol were nearly 18 times more likely to be searched than non-impaired drivers, while drivers impaired by mental illness or sleep deprivation were 7.4 times more likely to be searched than non-impaired drivers. Drivers with a criminal history detected were 13 times more likely to be searched than those without a criminal history.

As reported in Models 1 and 2 of Table 6.6, traffic stops initiated during the daytime were nearly two times less likely to result in a search. Once the additional TraCS variables (e.g., impairment, criminal history) are controlled for in Model 3, however, this effect is eliminated. Vehicles in poor condition were 2.4 times more likely to be searched than vehicles in good or fair condition.

Similar to arrests, drivers stopped for speeding were 2.3 times *less* likely to be searched compared to those stopped for non-speeding reasons. This effect is somewhat attenuated by the inclusion of the additional predictor variables in Model 3 as the odds ratios for this variable were approximately 3.3 in both Models 1 and 2. Conversely, the likelihood of a search increased 1.9 times for each additional reason for the stop (i.e., multiple reasons for the stop were more likely to result in searches). This effect is also reduced with the inclusion of the TraCS variables in Model 3, as the odds ratios for this variable were 2.6 and 2.7 in Models 1 and 2, respectively. Finally, no Trooper characteristics significantly predicted the likelihood of a search.

Collectively, these results demonstrate that racial/ethnic differences in the rates of searches cannot be explained by the legal and extralegal factors captured on the traffic stop forms. Given similar situations (as measured on the traffic stop form), Black and Hispanic drivers are 2.0 and 1.7 times significantly more likely, respectively, to be searched compared to White drivers. More detailed analyses examining searches and seizures are provided in Section 7.

	Model 1: Level 1 Variables (n=368,498)		N Level 1 Vai	Model 2: riables (n=322,154)	Model 3: Level 1 Variables (n=322,154)	
Level 2 Variables (N=90)	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]	Coeff.	Odds ratio [Exp(b) or 1/Exp(b)]
Intercept	-4.34	<u> </u>	-4.75		-5.24	
Driver Characteristics						
Black	0.72*	2.06	0.63*	1.87	0.68*	1.96
Hispanic	0.41*	1.51	0.36*	1.44	0.53*	1.70
Other Race	0.49*	1.63	0.53*	1.71	-0.32	1.37
Male	0.80*	2.23	0.77*	2.15	0.56*	1.75
Age	-0.03*	1.03	0.03*	1.03	-0.04*	1.04
County resident	0.16	1.17	0.18	1.19	0.09	1.10
PA resident	-0.23	1.26	-0.23	1.25	-0.24	1.28
Non-compliant†					0.23	1.26
Verbally or Phys Resistant†					-0.02	1.02
Impaired (Alcohol/Drugs)†					2.88*	17.81
Impaired (Mental Illness / Sleep Deprivation)†					2.00*	7.39
Language Barrier <sup>+</sup>					0.39	1.48
Criminal History†					2.56*	13.00
Vehicle Characteristics						
PA registration	-0.12	1.12	-0.06	1.06	-0.08	1.08
Number of Passengers	0.07*	1.07	0.06	1.06	0.07	1.07
Poor Condition <sup>†</sup>					0.88*	2.42
Stop Characteristics						
Daytime	-0.66*	1.93	-0.69*	1.99	0.07	1.08
Rush hour	-0.36*	1.44	-0.36	1.43	-0.21	1.23
Weekday	-0.12	1.13	-0.15	1.16	0.17*	1.19
Summer	0.02	1.02	0.04	1.04	-0.01	1.01
Interstate	0.01	1.01	0.15	1.17	0.23	1.26
Legal Characteristics						
Reason for Stop: Speeding	-1.20*	3.33	-1.21*	3.36	-0.81*	2.26
Number of reasons for stop	0.95*	2.58	0.99*	2.70	0.64*	1.90
<u>Trooper Characteristics</u>						
Male	0.42	1.52	0.45	1.57	0.29	1.34
White	0.48	1.62	0.54	1.72	0.54	1.72
Less than 5 years experience	-0.05	1.05	-0.04	1.04	-0.06	1.06
Education scale	0.01	1.01	0.00	1.00	-0.02	1.02
Patrol assignment	-1.08*	2.94	-0.88	2.41	-0.87	2.39

#### Table 6.7: HLM Analyses Predicting SEARCHES during all Traffic Stops in 2010

NOTE: Asterisks indicate statistically significant relationships \*  $p \le .001$ . TraCS-only variables are noted with a  $\dagger$ .

## **SECTION SUMMARY**

This summary highlights the bivariate and multivariate analyses of warnings, citations, arrests, and searches issued to drivers during member-initiated traffic stops conducted in 2009. When reviewing these results, it is important to remember that the bivariate analyses only consider two variables at a time (e.g., the race/ethnicity of the driver or the drivers' gender and the traffic stop outcome). As a result, the interpretation of these findings should be made with caution and cannot determine the existence of racial bias. The multivariate analyses are better suited to make substantive claims about the results of post-stop outcomes due to their consideration of more than one factor simultaneously. Nevertheless, the multivariate analyses are limited by the type and amount of data collected. Conclusions based on any multivariate analyses are limited to the variables in the model, and do not consider the potential of a misspecified model. Misspecified models occur when important, pertinent variables related to the dependent variables are not included in the model. Thus, multivariate analyses can only demonstrate racial/ethnic disparities that exist after statistically controlling for other factors that might influence officer decision making that are measured with these data.

#### **Bivariate Analysis**

- At the department level, racial/ethnic and gender based statistically significant differences were noted for warnings, citations, arrests, and searches.
  - Warnings:
    - Of the Hispanic and Black motorists stopped, 28.7% and 29.2%, respectively, received warnings compared to 26.5% of White drivers stopped.
    - The difference between male and female drivers for warnings revealed no significant relationship.
  - o <u>Citations:</u>
    - Conversely, Hispanic drivers had slightly higher rates of citations (89.7%), compared to White (88.1%) and Black (89.2%) drivers.
    - Like most previous years (with the exception of 2008), there were statistically significant differences between male and female drivers on the rates of citations with males (88.7%) being slightly more likely to be cited than females (88.2%).
  - o <u>Arrests:</u>
    - Arrest rates also showed statistically significant racial/ethnic disparities, as White drivers were arrested during 3.0% of stops, while Black and Hispanic drivers were arrested during 3.3% and 4.3% of stops, respectively.
    - Male drivers were arrested more frequently (3.4% of male drivers stopped) compared to female drivers (2.3%).
  - o <u>Searches:</u>
    - The largest differences across racial/ethnic groups were found for searches.
    - Of all Black and Hispanic drivers stopped, 3.6% and 3.6% resulted in searches for these racial groups, compared to only 1.0% of White drivers stopped.
    - Males (1.7%) were searched more frequently compared to females (0.7%).
- These patterns and trends varied somewhat at the area level and more so at the troop and station levels.
- Racial, ethnic, and gender differences alone are not evidence of bias-based policing because other factors related to traffic stop outcomes were not considered in these analyses.

• PSP supervisors should review these findings for the best understanding of trends in racial/ethnic and gender disparities in stop outcomes within their jurisdictions.

#### Multivariate Analyses

• Multivariate statistical models take many different factors into account when attempting to explain traffic stop outcomes. Unlike a bivariate model, they do not simply assess the relationship between two variables. Rather, multivariate models examine many variables simultaneously, and therefore provide a more thorough and accurate interpretation of the data. The findings summarized below represent the independent effects on traffic stop outcomes when other factors are statistically controlled.

#### • Warnings

- Black and Hispanic drivers showed no statistically significant differences in the likelihood of being warned compared to Whites.
- Drivers of "other" race/ethnicity were 1.2 times *less* likely than Whites to be warned.
- Drivers impaired by drugs and/or alcohol were 15.2 times less likely to be warned than non-impaired drivers.
- Traffic stops initiated as a result of speeding were 1.7 times *less* likely to result in a warning compared to traffic stops initiated for other non-speeding reasons.
- For each additional reason for the stop (traffic infraction), the likelihood of a warning *increased* 3.7 times.
- No Trooper characteristics were statistically significant predictors of the likelihood of a warning being issued.

In summary, Troopers' decisions to issue warnings are most strongly based on legally relevant factors like driver impairment, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

#### • Citations

- Black and Hispanic drivers were *equally likely* to be cited compared to White drivers in similar situations.
- Drivers of "other" race/ethnicity were 1.5 times more likely than Whites to be cited.
- Verbally or physically resistant drivers were 1.8 times more likely than compliant drivers to receive a citation.
- Drivers impaired by drugs and/or alcohol were 1.5 times more likely to be cited than non-impaired drivers, while drivers impaired by mental illness or sleep deprivation were 1.8 times *less* likely to be issued a citation than non-impaired drivers.
- Drivers with a criminal history detected were 2.2 times less likely than those without a criminal history to be cited (but more likely to be arrested).
- Traffic stops for speeding were 2.2 times more likely to result in a citation compared to non-speeding based traffic stops.
- The likelihood of being cited increased 1.9 times for each additional reason for the stop.
- Traffic stops resulting in the discovery of contraband were 2.7 times *less* likely to result in a citation compared to traffic stops in which no contraband was discovered (but more likely to result in arrest).

• No Trooper characteristics were significant predictors of the likelihood of a citation.

In summary, Troopers' decisions to issue citations are most strongly based on legally relevant factors like driver impairment, criminal history, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

#### • Arrests

- There were no statistically significant racial differences for Black, Hispanic, or Other drivers when other factors were simultaneously considered. In other words, minority drivers were equally likely as White drivers to be arrested given similar circumstances surrounding the traffic stop.
- Drivers impaired by drugs and/or alcohol were more than 550 times more likely to be arrested than non-impaired drivers. Drivers with a criminal history detected were 7.4 times more likely than those without a criminal history to be arrested.
- Traffic stops resulting in the discovery of contraband were over 97 times *more* likely to end in arrest compared to traffic stops without contraband discoveries.
- The likelihood of arrest *increased* 1.4 times for each additional reason for the stop.
- White Troopers were 5.8 times less likely than non-White Troopers to make an arrest.

Collectively, these results demonstrate that the most severe sanction issued during traffic stops (i.e., arrests) is based on legally relevant factors like impairment, contraband seized, and criminal history, rather than drivers' race/ethnicity.

#### • Searches

- Black and Hispanic drivers were 2.0 and 1.7 times *more* likely to be searched compared to White drivers, respectively.
- Male drivers were 1.8 times *more* likely to be searched compared to female drivers.
- Younger drivers were slightly *more* likely to be searched compared to older drivers.
- Drivers impaired by drugs and/or alcohol were nearly 18 times more likely to be searched than non-impaired drivers, while drivers impaired by mental illness or sleep deprivation were 7.4 times more likely to be searched than non-impaired drivers.
- Drivers with a criminal history detected were 13 times more likely to be searched than those without a criminal history.
- Vehicles in poor condition were 2.4 times more likely to be searched than vehicles in good or fair condition.
- Traffic stops initiated due to speeding were 2.3 times *less* likely to result in searches compared to traffic stops initiated for non-speeding reasons.
- $\circ$   $\,$  The likelihood of a search increased 1.9 times for every additional reason for the stop.
- No Trooper characteristics significantly predicted the likelihood of a search.

Collectively, these results demonstrate that racial/ethnic differences in the rates of searches cannot be explained by the legal and extralegal factors captured on the traffic stop forms. Given similar situations (as measured on the traffic stop form), Black and Hispanic drivers are 2.0 and 1.7 times significantly more likely, respectively, to be searched compared to White drivers.

# 7. SEARCH AND SEIZURE



### **OVERVIEW**

The material presented in this section focuses specifically on motor vehicle and person searches conducted during traffic stops, and subsequent seizures of contraband. As reported in Section 6, searches are the only post-stop outcomes conducted by PSP Troopers that have unexplained racial and ethnic disparities. After statistically controlling for some of the other relevant legal and extralegal factors, Black and Hispanic drivers were approximately 2.0 and 1.7 times more likely than Whites to be searched. The purpose of the analyses presented in this section is to further examine searches and seizures conducted by PSP Troopers. The descriptive statistics for the search and seizure rates of the department, areas, troops, and stations are presented in an earlier section of this report (see Section 3, Tables 3.10 and 3.11).

Tables 7.1 and 7.2 present the different types of searches conducted at the department, area, troop, and station levels. For additional analyses, the types of searches are collapsed into three categories: Type I (mandatory), Type II (probable cause), and Type III (consent). Using these three search types, Table 7.3 documents the search rates for different types of drivers and Troopers. Tables 7.4 and 7.5 report the different types of contraband seized by department, area, troop, and station, while Tables 7.6 – 7.9 report search success rates. Finally, Tables 7.10 – 7.12 present a series of analyses focused specifically on consent searches. This section concludes with a summary of the main findings on PSP's search and seizure rates.

## **SEARCH RATES**

As reported in Sections 3 and 5, 1.3% of all member-initiated traffic stops during the one-year period under review resulted in a search of the vehicle and/or driver. Despite the statistical infrequency with which PSP Troopers conduct searches, the physical and psychological intrusion of a person or vehicle search merits further scrutiny of this type of coercive police action.

## **TYPES OF SEARCHES**

Table 7.1 documents the number of searches and the percentage of searches for each reason indicated on the Contact Data Report (e.g., incident to arrest, inventory, warrant, plain view, canine alert, drug odor, consent, probable cause, and other<sup>23</sup>) by department, area, and troop. Troopers may have indicated that a search was conducted for multiple reasons. As a result, the sum of percentages across search categories reported in Table 7.1 may exceed 100%. In addition, the last column in Table 7.1 indicates the percentage of searches that were conducted based *only* on drivers' consent. This column partially duplicates information provided in the "consent" column, but excludes searches that were conducted based on consent in addition to another reason. Although specific information regarding the reason for the search is provided at the station level in Table 7.2, due to the small number of searches conducted in many stations, these percentages need to be interpreted with caution.

<sup>&</sup>lt;sup>23</sup> In 31 cases when "other" was selected, the written text in this data field was a reason matching a preexisting search reason category. Therefore, these 31 cases were recoded to their respective categories.

As shown in Table 7.1, 53.4% of drivers gave their consent to be searched at the department level in 2010. A smaller percentage of searched drivers, however, were searched based *solely* on consent (22.3%). This is consistent with data from previous years that also indicated consent was the most common reason for searches during traffic stops. The second most frequently recorded reason for a search was inventory (33.5% of searches), followed by incident to arrest (22.0%), the odor of drugs (15.7%), probable cause 8.5%), plain view (7.2%), canine alerts (2.4%), and search warrant (0.8%). For 3.8% of searches, the "other" category was indicated as the reason for the search. The exact reasons for "other," however, are unknown.

Table 7.1 also illustrates the different reasons for searches across areas and troops. For example, 80.3% of searches conducted in the Bureau of Patrol were based on consent, compared to only 38.4% of searches conducted in Area I. Over 50% of searches in Area I were based on vehicle inventory, while this reason accounted for approximately 10% or less of the searches in all other areas. At the troop level, over 80% of the searches in Troops P, R, G, D, and T were based on consent, compared to less than half of the searches in Troops J, K, L, M, and N. Similar variation in reasons for searches is evident at the station level (shown in Table 7.2) but comparisons of the percentages in this table should be interpreted cautiously due to the small number of searches in many stations.

	# of Searches	% Incident to Arrest	% Inventory	% Search Warrant	% Plain View	% Canine Alert	% Drug Odor	% Prob. Cause	% Officer Safety / Patdown <sup>24</sup>	% Other	% Consent	% Consent Only
PSP Dept.	5,001	22.0	33.5	0.8	7.2	2.4	15.7	8.5	4.7	3.8	53.4	22.3
AREA I	2,846	27.1	50.4	0.4	5.7	1.0	11.2	5.6	3.3	2.6	38.4	15.3
Troop J	700	35.6	45.4	0.4	5.9	0.7	15.7	4.0	5.4	1.9	36.7	11.6
Troop K	1,330	25.3	58.6	0.3	5.3	0.4	8.4	4.4	1.7	1.8	33.7	14.7
Troop L	225	27.1	16.0	0.0	2.2	1.8	10.7	8.4	6.8	6.2	62.2	36.0
Troop M	591	21.0	51.1	0.8	8.0	2.5	12.5	9.0	3.3	3.9	42.0	13.4
AREA II	475	20.2	13.7	1.1	6.1	2.5	20.0	9.5	8.0	5.9	70.5	30.1
Troop F	114	36.8	7.9	1.8	10.5	0.9	23.7	8.8	7.7	2.6	71.9	15.8
Troop N	137	16.1	33.6	0.0	5.1	0.7	11.7	11.7	6.2	6.6	48.2	25.5
Troop P	38	15.8	5.3	0.0	7.9	0.0	31.6	7.9	6.3	5.3	84.2	23.7
Troop R	186	14.0	4.3	1.6	3.8	5.4	21.5	8.6	10.2	7.5	83.3	43.5
AREA III	783	11.2	12.6	0.8	13.5	4.5	19.7	13.4	13.9	4.6	70.8	30.8
Troop A	194	15.5	2.6	0.5	20.6	11.9	20.1	8.2	8.7	6.2	72.2	27.8
Troop G	203	6.9	5.4	2.0	8.4	4.9	18.2	21.2	6.4	3.0	80.3	39.4
Troop H	386	11.4	21.5	0.3	12.7	0.5	20.2	11.9	6.8	4.7	65.0	27.7
AREA IV	667	19.5	8.5	1.2	7.5	3.1	24.3	11.8	6.8	5.1	76.3	31.6
Troop C	110	5.5	0.9	1.8	4.5	8.2	15.5	15.5	3.2	4.5	88.2	53.6
Troop D	234	23.5	11.1	1.3	9.0	1.7	26.5	9.8	12.2	6.8	73.9	27.8
Troop E	95	23.2	5.3	1.1	4.2	5.3	32.6	5.3	3.9	6.3	69.5	24.2
Troop B	228	20.6	11.0	0.9	8.8	1.3	22.8	14.9	4.4	3.1	75.9	28.1
Bureau of Patrol	188	6.4	5.9	3.7	3.7	12.8	26.1	19.7	2.3	9.0	80.3	35.1
Troop T	188	6.4	5.9	3.7	3.7	12.8	26.1	19.7	2.3	9.0	80.3	35.1

Table 7.1: Reasons for Search by Department, Area, and Troop

<sup>&</sup>lt;sup>24</sup> Officer safety/patdown was not included as a reason for search in the CDR Express data. Therefore, the percentages for this reason for search in Table 7.1 and 7.2 are based only on the 4,199 searches that were recorded by Troopers via the TraCS system.

	# of Searches	% Incident	% Inventory	% Search Warrant	% Plain View	% Canine	% Drug Odor	% Prob. Cause	% Officer Safety / Patdown	% Other	% Consent	% Consent Only
AREA I		to Arrest		vv al l'alli	VICW	AICIT	0001	Cause	1 atuowii			
Troop J								_				
Avondale	217	15.7	39.2	0.0	4.1	0.0	17.1	3.2	2.5	2.3	49.8	21.7
Embreeville	351	44.4	56.1	0.6	4.3	0.3	13.4	2.6	6.2	0.9	26.5	5.7
Ephrata	28	28.6	17.9	0.0	3.6	0.0	10.7	10.7	5.0	3.6	53.6	25.0
Lancaster	102	50.0	29.4	1.0	15.7	3.9	22.5	8.8	9.3	3.9	38.2	5.9
Тгоор К							_					
Media	486	30.9	58.8	0.2	6.0	0.2	10.3	2.9	2.3	1.9	35.4	15.8
Philadelphia	743	22.9	59.2	0.4	4.2	0.4	5.4	3.8	1.5	1.7	31.8	14.4
Skippack	100	16.0	53.0	0.0	10.0	0.0	21.0	16.0	0.0	2.0	39.0	11.0
Troop L												
Frackville	18	77.8	5.6	0.0	0.0	11.1	0.0	0.0	0.0	5.6	16.7	5.6
Hamburg	3	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	66.7
Jonestown	113	32.7	10.6	0.0	2.7	0.9	2.7	10.6	10.6	7.1	62.8	44.2
Reading	61	14.8	32.8	0.0	0.0	0.0	24.6	3.3	0.0	3.3	60.7	29.5
Schuylkill Haven	30	3.3	10.0	0.0	6.7	3.3	20.0	13.3	13.6	10.0	86.7	33.3
Troop M												
Belfast	53	22.6	52.8	0.0	1.9	3.8	9.4	3.8	0.0	5.7	26.4	7.5
Bethlehem	107	24.3	42.1	0.9	9.3	1.9	13.1	3.7	2.0	0.9	40.2	13.1
Dublin	116	20.7	71.6	0.0	7.8	0.9	11.2	3.4	2.2	2.6	27.6	6.9
Fogelsville	220	12.7	48.2	1.8	8.2	4.5	16.8	14.5	3.9	5.0	51.8	14.5
Trevose	93	36.6	43.0	0.0	9.7	0.0	5.4	11.8	6.2	4.3	47.3	21.5
AREA II												
Troop F												
Coudersport	8	12.5	25.0	0.0	0.0	0.0	37.5	12.5	0.0	0.0	75.0	37.5
Emporium	1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0
Lamar	9	55.6	33.3	0.0	0.0	0.0	11.1	0.0	0.0	0.0	33.3	0.0
Mansfield	4	25.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	25.0	75.0	25.0
Milton	28	42.9	7.1	3.6	17.9	0.0	25.0	0.0	22.2	7.1	82.1	10.7
Montoursville	32	18.8	3.1	3.1	12.5	3.1	25.0	12.5	3.8	0.0	78.1	25.0

 Table 7.2: Reasons for Search by Station (p. 1 of 4)

	# of Searches	% Incident to Arrest	% Inventory	% Search Warrant	% Plain View	% Canine Alert	% Drug Odor	% Prob. Cause	% Officer Safety / Patdown	% Other	% Consent	% Consent Only
AREA II (cont.)												
Selinsgrove	15	26.7	6.7	0.0	13.3	0.0	33.3	20.0	0.0	0.0	93.3	13.3
Stonington	17	76.5	0.0	0.0	0.0	0.0	17.6	0.0	6.7	0.0	41.2	5.9
Troop N						<u>^</u>						
Bloomsburg	4	0.0	0.0	0.0	25.0	0.0	0.0	25.0	50.0	25.0	100.0	25.0
Fern Ridge	10	10.0	10.0	0.0	0.0	0.0	20.0	30.0	20.0	10.0	70.0	10.0
Hazleton	17	64.7	11.8	0.0	5.9	0.0	11.8	23.5	0.0	5.9	29.4	11.8
Lehighton	28	7.1	60.7	0.0	3.6	0.0	7.1	17.9	8.3	7.1	42.9	14.3
Swiftwater	77	10.4	33.8	0.0	5.2	1.3	13.0	3.9	1.9	5.2	48.1	33.8
Troop P												
Laporte	18	16.7	5.6	0.0	0.0	0.0	44.4	0.0	7.1	5.6	77.8	22.2
Shickshinny	3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	66.7	66.7
Towanda	6	33.3	0.0	0.0	0.0	0.0	33.3	0.0	0.0	16.7	83.3	16.7
Tunkhannock	2	50.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	100.0	0.0
Wyoming	9	0.0	0.0.	0.0	33.3	0.0	0.0	33.3	11.1	0.0	100.0	22.2
Troop R					_		_					
Blooming Grove	33	33.3	6.1	0.0	0.0	3.0	12.1	3.0	0.0	6.1	66.7	42.4
Dunmore	64	10.9	6.3	1.6	7.8	10.9	17.2	14.1	13.7	6.3	85.9	40.6
Gibson	66	4.5	3.0	1.5	3.0	1.5	28.8	7.6	11.8	4.5	89.4	54.5
Honesdale	23	21.7	0.0	4.3	0.0	4.3	26.1	4.3	13.3	21.7	82.6	21.7
AREA III												
Troop A		_										
Ebensburg	16	25.0	6.3	6.3	43.8	0.0	31.3	12.5	0.0	0.0	62.5	12.5
Greensburg	41	24.4	0.0	0.0	12.2	9.8	7.3	4.9	10.0	9.8	80.5	34.1
Indiana	31	3.2	0.0	0.0	3.2	0.0	25.8	19.4	11.5	3.2	90.3	35.5
Kiski Valley	62	19.4	3.2	0.0	37.1	6.5	22.6	6.5	6.1	4.8	53.2	21.0
Somerset (Å)	24	12.5	8.3	0.0	16.7	8.3	20.8	8.3	11.8	8.3	75.0	37.5

Table 7.2: Reasons for Search by Station (p. 2 of 4)

	# of Searches	% Incident to Arrest	% Inventory	% Search Warrant	% Plain View	% Canine Alert	% Drug Odor	% Prob. Cause	% Officer Safety / Patdown	% Other	% Consent	% Consent Only
AREA III (cont.)												
Troop G												
Bedford	24	0.0	4.2	4.2	12.5	8.3	20.8	4.2	0.0	8.3	79.2	41.7
Hollidaysburg	25	0.0	0.0	4.0	4.0	8.0	12.0	12.0	0.0	0.0	92.0	68.0
Huntingdon	35	11.4	2.9	0.0	5.7	5.7	28.6	34.3	3.8	5.7	74.3	25.7
Lewistown	11	9.1	18.2	9.1	36.4	9.1	27.3	0.0	0.0	0.0	54.5	9.1
McConnellsburg	47	2.1	10.6	0.0	8.5	0.0	12.8	21.3	5.0	0.0	72.3	44.7
Philipsburg	12	8.3	8.3	0.0	0.0	0.0	16.7	16.7	10.0	0.0	100.0	41.7
Rockview	40	17.5	2.5	2.5	7.5	5.0	20.0	37.5	22.2	5.0	85.0	22.5
Troop H												
Carlisle	87	14.9	2.3	0.0	25.3	2.3	41.4	29.9	0.0	8.0	71.3	17.2
Chambersburg	55	0.0	9.1	1.8	3.6	0.0	23.6	16.4	14.0	7.3	81.8	34.5
Gettysburg	37	43.2	24.3	0.0	10.8	0.0	32.4	2.7	12.0	2.7	64.9	18.9
Harrisburg	50	16.0	24.0	0.0	14.0	0.0	12.0	6.0	5.0	4.0	52.0	22.0
Lykens	23	4.3	0.0	0.0	13.0	0.0	13.0	13.0	26.7	4.3	78.3	43.5
Newport	26	7.7	11.5	0.0	3.8	0.0	3.8	3.8	12.0	7.7	88.5	57.7
York	108	3.7	48.1	0.0	9.3	0.0	6.5	2.8	2.1	0.9	49.1	27.8
AREA IV												
Troop C												
Clarion	15	26.7	0.0	6.7	6.7	13.3	6.7	20.0	8.3	6.7	66.7	26.7
Clearfield	21	4.8	4.8	4.8	4.8	14.3	23.8	42.9	0.0	0.0	85.7	33.3
Dubois	9	0.0	0.0	0.0	0.0	11.1	22.2	11.1	22.2	33.3	66.7	11.1
Kane	6	16.7	0.0	0.0	16.7	0.0	16.7	0.0	0.0	0.0	83.3	66.7
Punxsutawney	42	0.0	0.0	0.0	0.0	2.4	7.1	0.0	0.0	2.4	97.6	88.1
Ridgway	7	0.0	0.0	0.0	14.3	0.0	28.6	57.1	0.0	0.0	100.0	0.0
Tionesta	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Troop D												
Beaver	21	38.1	0.0	0.0	4.8	14.3	14.3	9.5	17.6	4.8	57.1	14.3
Butler	47	14.9	6.4	4.3	6.4	0.0	12.8	19.1	9.5	12.8	83.0	40.4
Kittanning	93	25.8	14.0	1.1	15.1	0.0	33.3	10.8	7.9	3.2	78.5	18.3
Mercer	34	2.9	5.9	0.0	5.9	2.9	20.6	2.9	35.3	11.8	85.3	38.2

Table 7.2: Reasons for Search by Station (p. 3 of 4)

	# of Searches	% Incident to Arrest	% Inventory	% Search Warrant	% Plain View	% Canine Alert	% Drug Odor	% Prob. Cause	% Officer Safety / Patdown	% Other	% Consent	% Consent Only
AREA IV (cont.)												
New Castle	21	71.4	38.1	0.0	4.8	0.0	42.9	4.8	22.2	9.5	19.0	4.8
Troop E												
Corry	2	0.0	50.0	0.0	0.0	0.0	$^{-}0.0$	0.0	0.0	50.0	100.0	50.0
Erie	36	8.3	11.1	2.8	8.3	0.0	11.1	5.6	6.1	5.6	80.6	52.8
Franklin	10	20.0	0.0	0.0	10.0	20.0	40.0	20.0	14.3	10.0	60.0	0.0
Girard	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	50.0
Meadville	36	41.7	0.0	0.0	0.0	0.0	52.8	2.8	0.0	0.0	55.6	2.8
Warren	5	40.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	80.0	20.0
Troop B												
Belle Vernon	13	15.4	7.7	0.0	15.4	0.0	30.8	15.4	10.0	0.0	76.9	23.1
Pittsburgh	21	19.0	19.0	4.8	14.3	0.0	28.6	14.3	0.0	4.8	76.2	14.3
Uniontown	88	28.4	5.7	1.1	8.0	1.1	25.0	3.4	6.0	3.4	76.1	29.5
Washington	69	20.3	21.7	0.0	7.2	2.9	18.8	24.6	0.0	2.9	62.3	24.6
Waynesburg	37	5.4	0.0	0.0	8.1	0.0	18.9	24.3	9.4	2.7	100.0	40.5
<b>Bureau of Patrol</b>												
Troop T												
Bowmansville	40	10.0	0.0	0.0	0.0	15.0	22.5	30.0	0.0	7.5	90.0	50.0
Everett	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	33.3	33.3
Gibsonia	10	10.0	0.0	0.0	0.0	10.0	30.0	10.0	0.0	0.0	100.0	40.0
Highspire	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
King of Prussia	51	7.8	19.6	7.8	3.9	7.8	29.4	13.7	5.6	3.9	72.5	29.4
New Stanton	7	0.0	0.0	14.3	14.3	42.9	42.9	28.6	14.3	0.0	85.7	0.0
Newville	36	0.0	0.0	2.8	8.3	16.7	25.0	25.0	0.0	0.0	91.7	41.7
Pocono	21	4.8	0.0	0.0	0.0	0.0	33.3	14.3	0.0	28.6	47.6	19.0
Somerset (T)	11	18.2	9.1	9.1	9.1	18.2	27.3	27.3	0.0	27.3	81.8	9.1

 Table 7.2: Reasons for Search by Station (p. 4 of 4)

While examining the specific reasons for searches is instructive, this information is better analyzed when collapsed into discrete categories or types of searches. For the analyses reported in Table 7.3 below, searches were divided into three categories based on the presumed level of officer discretion for different situations. The first search category (Type I) includes searches that are required by PSP policy and are therefore mandatory for Troopers to perform. Type I searches include searches incident to arrest, searches based on a preexisting warrant, and inventory searches. The second search category (Type II) includes searches that are not mandatory but, rather, are based on suspicion and officer discretion. Specifically, Type II searches include plain view searches, canine alert searches, drug odor searches, probable cause, officer safety/patdown, and "other" unspecified reasons. The third search category (Type III) includes searches that are based solely on consent. If a search was based on multiple reasons, it was assigned to the search category with the least officer discretion (e.g., if a search is based on a canine alert [Type II] and consent [Type III], it was defined as a Type II searches are mutually exclusive.

The influences of drivers' characteristics and Troopers' characteristics are examined within these three categories of searches and are reported in Table 7.3. Overall, this table shows that 49.3% of PSP searches in 2010 were Type I, 28.4% were Type II, and 22.4% were Type III. Unlike in previous years, the results in Table 7.3 indicate no significant differences in the types of search across racial/ethnic groups in 2010.

Male drivers were significantly less likely than females to be searched for mandatory reasons, but significantly more likely to be searched for Type II and III reasons. Drivers who were less than 25 years old were significantly less likely to be searched for mandatory reasons, while drivers over 25 years old were less likely to be searched probable cause and consent reasons compared to younger drivers. A considerably larger percentage of Pennsylvania residents were searched for mandatory (Type I) reasons, while a larger percentage of non-Pennsylvania residents were searched for consent reasons. Type II searches did not significantly differ by drivers' residency.

Driver compliance, impairment, and criminal history were also examined for their relationship with searches. Non-compliant drivers were significantly more likely to be subject to mandatory searches and less likely to be subject to probable cause and consent searches. The same pattern emerged for impaired drivers. Drivers with a criminal history were significantly more likely to be searched based on consent but less likely to be searched for mandatory reasons.

There were also differences in the reasons for a search based on Troopers' characteristics. There were no statistically significant differences between White and non-White Troopers on any type of searches. Male Troopers were significantly less likely to conduct mandatory searches compared to Female Troopers, but more likely to conduct Type III searches. There were also differences in the types of searches conducted across Troopers' experience and education. More experienced Troopers were more likely to conduct consent searches and searches based on probable cause and less likely to conduct mandatory searches compared to Troopers with less than five years of experience. Finally, Troopers with 2 or 4 year degrees were significantly more likely to conduct mandatory and less likely to conduct probable cause searches compared to Troopers with no college degree. The reasons for these Trooper differences in types of searches may be assignment based – this explanation cannot be directly assessed in the bivariate analyses reported in Table 7.3.

Table 7.5 Reasons for Search (by search	(type) by DI			<b>T</b>
	Total # of Searches	Mandatory Searches	Ype II: % Prob. Cause Searches	7 ype 111: % Consent Searches
All Drivers	5,001	49.3	28.4	22.4
By Drivers' Characteristics				
White Driver	3,015	49.4	28.9	21.8
Black Driver	1,253	50.0	27.7	22.3
Hispanic Driver	562	49.3	26.0	24.7
Male Driver	4,137	47.4***	29.5***	23.1**
Female Driver	834	58.5	22.8	18.7
Driver under 25 years old	1,661	39.6***	36.4***	24.1*
Driver over 25 years old or older	3,310	54.1	24.4	21.5
Driver PA Resident	4,068	54.1***	26.8***	19.2***
Driver Non-PA Resident	905	27.7	35.5	36.8
Driver Compliant <sup>25</sup>	3,806	50.1***	28.0**	22.0***
Driver Non-compliant and/or Resistant	365	71.2	21.1	7.7
Driver Unimpaired	2,477	31.4***	35.0***	33.6***
Driver Impaired <sup>26</sup>	1,694	81.8	16.2	1.9
Driver with no criminal history	2,850	55.5***	26.6	17.9***
Driver with criminal history of any kind	1,321	44.1	28.9	26.9
By Troopers' Characteristics				
White Trooper	4.624	49.0	28.4	22.6
Non-White Trooper	348	53.2	27.9	19.0
Male Trooper	4,756	48.5***	28.6	23.0***
Female Trooper	216	67.1	23.6	9.3
<5 years experience	2.620	57.6***	23.2***	19.2***
>5 years experience	2,352	40.0	34.1	25.9
No College Degree	811	40.2***	37.4***	22.4
2 Year Degree	1,317	53.8	24.7	21.6
4 Year Degree or more	2,828	49.8	27.6	22.6

 Table 7.3 Reasons for Search (by search type) by Driver and Trooper Characteristics

NOTE: \* p < .05, \*\* p < .01, \*\*\* p < .001

<sup>&</sup>lt;sup>25</sup> Driver compliance, impairment, and criminal history were not included as data fields in the CDR Express data. Therefore, the number of searches and percentages provided for these driver characteristics are based only on the 4,199 searches that were recorded by Troopers via the TraCS system.

<sup>&</sup>lt;sup>26</sup> Driver was impaired by one or more of the following: alcohol, drugs, language barrier with Trooper, mental issues or sleep deprivation.

## **TYPES OF SEIZURES**

Table 7.4 documents the types of evidence and/or contraband confiscated during searches conducted by PSP Troopers. In 2010, there were 1,411 seizures of contraband resulting from 5,001 searches (28.2% of searches resulted in the discovery of contraband). A majority of the contraband seized was drugs (76.5%), followed distantly by "other"  $(14.4\%)^{27}$ , alcohol (8.6%), and cash (7.0%). Note that a single search could produce multiple types of contraband seized; therefore, the sum of percentages in the various categories in Table 7.4 may exceed 100%. Table 7.4 also documents the differences in the types of evidence seized across areas and troops. The trends displayed at the department level were, with few exceptions, consistent across area and troop levels. More fluctuation was evident at the station level (shown in Table 7.5), particularly in locations with small numbers of contraband seizures.

	# of Seizures	% Cash	% Drugs	% Vehicle	% Weapons	% Stolen Prop.	% Alcohol	% Other
PSP Dept.	1,411	7.0	76.5	4.0	4.7	1.3	8.6	14.4
AREA I	700	4.0	74.6	3.0	3.3	1.4	10.7	15.6
Troop J	193	2.1	68.4	2.6	4.1	1.0	16.1	17.1
Troop K	328	4.3	$78.0^{$	2.7	3.4	1.5	10.7	9.5
Troop L	44	6.8	65.9	2.3	0.0	2.3	9.1	22.7
Troop M	135	5.2	77.8	4.4	3.0	1.5	3.7	25.9
AREA II	141	17.7	79.4	8.5	2.8	0.7	7.1	6.4
Troop F	29	13.8	65.5	6.9	6.9	0.0	20.7	6.9
Troop N	30	20.0	80.0	10.0	0.0	3.3	6.7	6.7
Troop P	12	0.0	100.0	8.3	0.0	0.0	0.0	0.0
Troop R	70	21.4	81.4	8.6	2.9	0.0	2.9	7.1
AREA III	260	7.3	78.8	3.1	6.9	1.2	9.6	13.8
Troop A	70	10.0	72.9	4.3	10.0	0.0	7.1	21.4
Troop G	87	10.3	89.7	4.6	8.0	0.0	3.4	12.6
Troop H	103	2.9	73.8	1.0	3.9	2.9	16.5	9.7
AREA IV	232	5.2	80.6	3.9	5.6	1.3	4.3	17.2
Troop C	31	12.9	90.3	9.7	3.2	3.2	0.0	12.9
Troop D	77	3.9	83.1	3.9	9.1	0.0	3.9	15.6
Troop E	41	2.4	48.8	2.4	4.9	2.4	12.2	41.5
Troop B	83	4.8	90.4	2.4	3.6	1.2	2.4	8.4
B. Patrol	63	20.6	66.7	9.5	9.5	1.6	3.2	11.1
Troop T	63	20.6	66.7	9.5	9.5	1.6	3.2	11.1

Table 7.4: Types of Evidence Seized by	Department, Area, and Troop
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<sup>&</sup>lt;sup>27</sup> The "other" category includes contraband that does not fit in the other given categories but was not specified on the original CDR. The CDR X-press does include a field where Troopers may manually enter this information. The most frequent type of "other" contraband indicated was drug paraphernalia.

	# of Seizures	% Cash	% Drugs	% Vehicle	% Weapons	% Stolen Prop.	% Alcohol	% Other
AREA I								
Troop J								
Avondale	57	3.5	73.7	1.8	1.8	1.8	14.0	8.8
Embreeville	85	2.4	65.9	2.4	4.7	0.0	17.6	24.7
Ephrata	9	0.0	55.6	11.1	11.1	0.0	22.2	0.0
Lancaster	42	0.0	69.0	2.4	4.8	2.4	14.3	16.7
Troop K								
Media	126	2.4	73.8	4.0	3.2	2.4	11.1	9.5
Philadelphia	167	5.4	80.2	2.4	4.2	0.6	10.2	5.4
Skippack	34	5.9	82.4	0.0	0.0	2.9	11.8	29.4
Troop L								
Frackville	0							
Hamburg	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Jonestown	14	21.4	78.6	0.0	0.0	0.0	0.0	0.0
Reading	16	0.0	43.8	6.3	0.0	0.0	12.5	43.8
Schuylkill Haven	13	0.0	84.6	0.0	0.0	7.7	7.7	23.1
Troop M								
Belfast	5	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Bethlehem	33	3.0	81.8	3.0	0.0	0.0	0.0	33.3
Dublin	24	8.3	79.2	8.3	0.0	0.0	4.2	20.8
Fogelsville	53	5.7	71.7	1.9	7.5	1.9	5.7	24.5
Trevose	20	5.0	80.0	10.0	0.0	5.0	5.0	30.0
AREA II			_	_				
Troop F			_		-			
Coudersport	2	50.0	0.0	0.0	50.0	0.0	0.0	100.0
Emporium	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Lamar	1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Mansfield	2	0.0	50.0	50.0	0.0	0.0	50.0	0.0
Milton	6	16.7	83.3	16.7	16.7	0.0	16.7	0.0
Montoursville	9	22.2	55.6	0.0	0.0	0.0	22.2	0.0
Selinsgrove	4	0.0	75.0	0.0	0.0	0.0	25.0	0.0
Stonington	4	0.0	100.0	0.0	0.0	0.0	0.0	0.0

 Table 7.5: Types of Evidence Seized by Station (p. 1 of 3)

	# of Seizures	% Cash	% Drugs	% Vehicle	% Weapons	% Stolen Prop.	% Alcohol	% Other
Troop N						•		
Bloomsburg	1	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Fern Ridge	1	100.0	100.0	0.0	0.0	0.0	0.0	0.0
Hazleton	3	0.0	33.3	33.3	0.0	0.0	33.3	0.0
Lehighton	8	12.5	87.5	0.0	0.0	0.0	12.5	12.5
Swiftwater	17	23.5	82.4	11.8	0.0	5.9	0.0	0.0
Troop P								
Laporte	6	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Shickshinny	1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Towanda	1	0.0	100.0	100.0	0.0	0.0	0.0	0.0
Tunkhannock	0							
Wyoming	4	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Troop R								
Blooming Grove	3	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Dunmore	26	11.5	76.9	7.7	7.7	0.0	0.0	19.2
Gibson	30	36.7	83.3	6.7	0.0	0.0	3.3	0.0
Honesdale	11	9.1	81.8	18.2	0.0	0.0	9.1	0.0
AREA III								
Troop A								
Ebensburg	11	9.1	81.8	0.0	9.1	0.0	9.1	9.1
Greensburg	15	6.7	46.7	6.7	20.0	0.0	26.7	13.3
Indiana	8	12.5	62.5	0.0	12.5	0.0	0.0	25.0
Kiski Valley	19	10.5	89.5	5.3	10.5	0.0	0.0	5.3
Somerset (A)	5	20.0	60.0	0.0	0.0	0.0	0.0	40.0
Troop G								
Bedford	11	9.1	100.0	9.1	0.0	0.0	0.0	9.1
Hollidaysburg	3	0.0	100.0	0.0	0.0	0.0	0.0	33.3
Huntingdon	16	12.5	87.5	12.5	18.8	0.0	0.0	25.0
Lewistown	9	11.1	88.9	0.0	0.0	0.0	22.2	0.0
McConnellsburg	25	0.0	96.0	0.0	4.0	0.0	0.0	0.0
Philipsburg	5	0.0	60.0	0.0	0.0	0.0	0.0	40.0
Rockview	17	23.5	82.4	0.0	11.8	0.0	0.0	17.6
Troop H		_						
Carlisle	34	2.9	73.5	0.0	5.9	2.9	20.6	8.8
Chambersburg	10	10.0	80.0	0.0	10.0	10.0	0.0	0.0
Gettysburg	9	11.1	55.6	0.0	0.0	0.0	44.4	11.1
Harrisburg	12	0.0	83.3	8.3	8.3	8.3	0.0	0.0
Lykens	8	0.0	87.5	0.0	0.0	0.0	0.0	12.5
Newport	8	0.0	50.0	0.0	0.0	0.0	37.5	25.0
York	22	0.0	77.3	0.0	0.0	0.0	13.6	13.6

 Table 7.5: Types of Evidence Seized by Station (p. 2 of 3)

	# of Seizures	% Cash	% Drugs	% Vehicle	% Weapons	% Stolen Prop.	% Alcohol	% Other
AREA IV						11010		
Troop C								
Clarion	4	25.0	50.0	75.0	0.0	25.0	0.0	25.0
Clearfield	6	0.0	100.0	0.0	0.0	0.0	0.0	16.7
Dubois	2	0.0	50.0	0.0	0.0	0.0	0.0	50.0
Kane	1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Punxsutawney	13	23.1	100.0	0.0	0.0	0.0	0.0	7.7
Ridgway	3	0.0	100.0	0.0	33.3	0.0	0.0	0.0
Tionesta	0							
Troop D								
Beaver	4	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Butler	16	0.0	87.5	0.0	18.8	0.0	0.0	18.8
Kittanning	40	5.0	87.5	2.5	5.0	0.0	0.0	15.0
Mercer	7	0.0	100.0	0.0	0.0	0.0	0.0	14.3
New Castle	9	11.1	44.4	22.2	22.2	0.0	22.2	22.2
Troop E								
Corry	1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Erie	11	9.1	81.8	9.1	9.1	0.0	9.1	0.0
Franklin	6	0.0	66.7	0.0	16.7	16.7	16.7	0.0
Girard	0							
Meadville	21	0.0	23.8	0.0	0.0	0.0	9.5	81.0
Warren	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Troop B								
Belle Vernon	4	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Pittsburgh	12	8.3	91.7	0.0	8.3	0.0	0.0	8.3
Uniontown	28	7.1	85.7	3.6	3.6	3.6	0.0	10.7
Washington	27	0.0	92.6	3.7	3.7	0.0	7.4	3.7
Waynesburg	12	8.3	91.7	0.0	0.0	0.0	0.0	16.7
<b>Bureau of Patrol</b>								
Troop T								
Bowmansville	18	22.2	77.8	5.6	5.6	5.6	0.0	0.0
Everett	1	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Gibsonia	4	0.0	75.0	0.0	0.0	0.0.	25.0	25.0
Highspire	0							
King of Prussia	18	5.6	55.6	11.1	22.2	0.0	5.6	16.7
New Stanton	2	50.0	50.0	50.0	0.0	0.0	0.0	50.0
Newville	7	42.9	57.1	0.0	14.3	0.0	0.0	0.0
Pocono	6	33.3	83.3	0.0	0.0	0.0	0.0	0.0
Somerset (T)	5	20.0	80.0	20.0	0.0	0.0	0.0	20.0

Table 7.5: Types of Evidence Seized by Station (p. 3 of 3)

NOTE: Frackville, Tunkhannock, Tionesta, Girard, and Highspire conducted no searches.
### SEARCH SUCCESS RATES

As described in previous final reports, the discovery of contraband during person and vehicle searches is an important outcome to consider when examining potential bias by police officers. Often referred to as search "success rates," or "hit rates" (i.e., the percent of searches conducted that produce contraband and/or resulted in arrest), some researchers use the "outcome test" to identify racial and ethnic disparities by examining differential outcomes in search success rates (Ayres, 2001; Knowles, Persico, & Todd, 2001). Racial/ethnic comparisons of hit rates are calculated by dividing the percent of searches in which officers seize some type of contraband (e.g., drugs, illegal weapons, etc.) by the number of total searches (Fridell, 2004; Ramirez et al., 2000). Some researchers have suggested that if drivers are searched strictly based on legal factors and suspicions unrelated to race, one would expect similar percentages of searches resulting in seizures across racial groups (Ayres, 2001; Knowles, Persico, & Todd, 2001). The application of the outcome test to police searches is based on the notion that if officers are profiling minority drivers based on racial prejudice, they will continue to search minorities even when the returns (i.e., the discovery of contraband) are smaller for minorities than the returns for searching Whites (Anwar & Fang, 2006). Conversely, if no bias exists, over a period of time a state of equilibrium will be achieved in which the police will search racial groups proportionate to their actual possession of contraband. The need to include multiple variables (i.e., multivariate model) is removed by reliance on the principle of equilibrium.

As with other analytical techniques, limitations exist that limit the conclusions that can be drawn from the outcome test (Engel, 2008; Engel & Tillyer, 2008). The outcome test is only appropriate for an analysis of traffic stops that result in a probable cause search; therefore, mandatory and consent searches should not be considered. In addition, any racial/ethnic disparities in search success rates discovered using this method do not necessarily imply officer bias. Notwithstanding the limitations of the outcome test, it does provide an alternative method to assess post-stop outcomes. Nevertheless, no definitive conclusions about racial bias can be drawn from these comparisons based on the limitations of this technique (for details, see Engel, 2008; Engel & Tillyer, 2008).

### Search Success Rates by Reason for Search

Prior to examining search success rates by race/ethnicity, this section documents the variation in search success rates by the reason for search. Based on PSP policies, Troopers have little discretion over some types of searches (e.g., inventory searches, searches incident to arrest, searches based on a preexisting warrant). Furthermore, it is likely that different reasons for searches might lead to varying search success rates. Table 7.6 explores this possibility by documenting the overall search success rate and the success rates for each specific type of search at both the department and area levels. Department-wide, the overall search success rate is 28.2% (i.e., 28.2% of searches conducted during member-initiated traffic stops result in the discovery of contraband). This rate, however, varies dramatically across search types, as exemplified by the range from 89.7% success for search warrant searches to 18.5% success for searches based on consent only. Searches based on inventory, consent only, and "other" reasons were the least likely to be successful in terms of

discovering contraband, with success rates at 18.6% ,18.5%, and 23.6%, respectively. Searches likely to be moderately successful included: probably cause (46.5%), consent (33.1%), incident to arrest (32.8%), and officer safety/patdowns (34.8%). In over half of the searches conducted based on drug odor (54.1%) and canine alert (63.1%) contraband was seized. Searches based on search warrants (89.7%) and plain view (81.9) were the most likely to be successful in terms of seizing contraband. These patterns remain relatively consistent across geographical areas within the department.

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	Overall Search Success Rate	Incident to Arrest Success Rate	Inventory Success Rate	Search Warrant Success Rate	Plain View Success Rate	Canine Alert Success Rate	Drug Odor Success Rate	Probable Cause Success Rate	Officer Safety / Patdown Success Rate	Other Reason Success Rate	Consent Success Rate	Consent Only Success Rate
PSP Dept.	28.2	32.8	18.6	89.7	81.9	63.1	54.1	46.5	34.8	23.6	33.1	18.5
AREA I	24.6	30.9	18.5	83.3	85.9	41.4	55.6	47.5	37.3	25.7	32.4	18.3
AREA II	29.7	25.0	16.9	100.0*	86.2	58.3	46.3	37.8	31.0	21.4	32.5	26.6
AREA III	33.2	44.3	15.2	83.3	74.5	82.9	50.6	46.7	25.0	27.8	33.2	18.7
AREA IV	34.8	37.7	28.1	100.0	84.0	52.4	60.5	50.6	37.8	23.5	35.0	14.2
BUREAU OF PATROL	33.5	83.3	27.3	85.7	57.1	70.8	49.0	45.9	100.0*	11.8	31.1	13.6

Table 7.6: Search Success Rates by Reasons for Search for Department and Areas

NOTE: Search success rates are measured as the percent of searches that resulted in a seizure of contraband; thus all search success rate entries in the table are percentages. \* Five or fewer searches conducted for this reason; interpret percentage with caution. Information regarding the search success rates of different types of searches is further summarized below. In Table 7.7, search success rates for each type of search (collapsed by level of officer discretion) are displayed. Again, types of searches are classified as follows: Type I includes mandatory searches that are required by PSP policy (searches incident to arrest, searches based on a pre-existing warrant, and inventory searches), Type II includes searches that are not mandatory but rather, are based on officer discretion (plain view searches, canine alert searches, drug odor searches, and probable cause searches), and Type III includes searches that are based only on consent. As illustrated in this table, Type II probable cause searches were the most successful in terms of recovering contraband (44.8%), while Type III consent searches were the least successful (18.5%). The search success rate for mandatory Type I searches was 23.3%.

The success rate patterns were slightly different across areas. Searches conducted by Troopers assigned to the Bureau of Patrol were most successful in recovering contraband during mandatory searches, while the remaining Areas reported the most seizures during probable cause searches. Consent search success rates were the lowest across all areas when compared to Type I and Type II searches except for Area II, where consent searches were slightly more successful than mandatory searches.

	Overall Search Success Rate	Type I: Mandatory Search Success Rate	Type II: Probable cause Search Success Rate	Type III: Consent Search Success Rate
PSP Dept.	28.2	23.3	44.8	18.5
AREA I	24.6	20.9	44.8	18.3
AREA II	29.7	22.6	38.9	26.6
AREA III	33.2	30.8	44.6	18.7
AREA IV	34.8	36.0	49.8	14.2
Bureau of Patrol	33.5	63.0	39.4	13.6

Table 7.7: Search Type Success Rates by Department and Areas

NOTE: Search success rates are measured as the percent of searches that resulted in a seizure of contraband; thus all search success rate entries in the table are percentages.

### Search Success Rates by Drivers' and Troopers' Characteristics

It is also important to examine whether the search success rates vary based on drivers' and Troopers' characteristics. As noted previously, however, only Type II searches should be analyzed for purposes of the "outcome test," as these searches are the only ones that are based solely on officer discretion (i.e., are not mandatory to perform or require compliance by citizens in the form of giving consent). Therefore, information regarding only the Type II search success rates is reported in Table 7.8 below.

Table 7.8 shows that there are significant differences in the probable cause search success rates across some driver and Trooper characteristics. As shown in this table, and graphically displayed in Figure 7.1 below, the results of the outcome test for race/ethnicity indicate that White drivers who are searched for probable cause reasons were significantly more likely to be found in possession of contraband compared to searched Black and Hispanic drivers. Specifically, 50.3% of probable cause searches of White drivers were successful, compared to 37.2% of searches of Black drivers, and only 24.0% of searches of Hispanic drivers.

Statistically significant differences in Type II search success rates are also evident based on other driver characteristics. Unlike in 2008 when no statistically significant differences in search success rates were evident based on driver age and residency, the analyses of the 2010 data show that drivers under 25 and Pennsylvania residents were more likely to have contraband seized during Type II searches than their older and out-of-state counterparts. There was not a significant difference in the success rate of searches between males and females.

Statistically significant differences exist between impaired drivers and unimpaired drivers regarding search success rates, with the success rate being 65.8% for impaired drivers and only 37.9% for unimpaired drivers. Driver compliancy and driver's criminal history did not exhibit any statistical differences.

Statistically significant differences in probable cause search success rates also exist based on Trooper gender. Specifically, male Troopers are more likely to discover contraband during probable cause searches than are their female counterparts. No statistically significant differences in Type II search success rates are evident based on Trooper race, experience, or education.

	Total # Searches	Total # of Type II Probable Cause Searches	Type II: Probable Cause Search Success Rate
All Drivers	5,001	1,410	28.4
By Drivers' Characteristics			
White Driver	3,036	438	50.3***
Black Driver	1,257	129	37.2
Hispanic Driver	565	35	24.0
Male Driver	4,156	551	45.2
Female Driver	843	80	42.1
Driver under 25 years old	1,667	291	48.2*
Driver over 25 years old or older	3,332	340	42.2
Driver PA Resident	4,090	516	47.4***
Driver Non-PA Resident	911	115	35.8
Driver Compliant	3,833	474	44.5
Driver Non-compliant and/or Resistant	366	35	45.5
Driver Unimpaired	2.498	328	37.9***
Driver Impaired	1,701	181	65.8
Driver with no criminal history	2,871	348	45.8
Driver w/ criminal history of any kind	1,328	161	42.1
By Troopers' Characteristics			
White Trooper	4,650	592	45.1
Non-White Trooper	350	39	40.2
Male Trooper	4,782	616	45.3*
Female Trooper	218	15	29.4
Less than 5 years experience	2,636	258	42.5
5 years experience or more	2,364	373	46.5
No College Degree	816	134	44.2
2 Year Degree	1,322	145	44.6
4 Year Degree or more	2,846	352	45.1

### Table 7.8: Probable Cause Search Success Rates by Driver & Trooper Characteristics

NOTE: \* p < .05, \*\* p < .01, \*\*\* p < .001



Figure 7.1: Racial/Ethnic Differences in Type II Search Success Rates



Specific categories of Type II search success rates were further explored in an effort to better understand these racial/ethnic disparities. Table 7.9 reports the search success rates by race/ethnicity for specific types of searches contained with the larger Type II search category. Specifically, racial/ethnic differences in search success rates based on drug odor searches, plain view, canine alert, probable cause, officer safety/patdown, and other reasons are reported. As shown, no statistically significant racial differences in search success rates are reported for plain view, canine alert, officer safety/patdowns, and "other" reasons. Statistically significant differences are evident by driver race for searches based on drug odor and probable cause. Specifically, for searches based on drug odor, 58.3% of searches of White drivers resulted in the seizure of contraband, compared to 44.8% of Black drivers and 46.0% of Hispanic drivers. Similarly, 53.2% of probable cause searches of drivers resulted in the seizure of contraband, compared to 38.1% of Black drivers and 19.6% of Hispanic drivers. Although these differences are based on a small number of searches, they are deserving of further scrutiny.

	# Drug Odor Searches	Drug Odor Search Success Rate	# Plain View Searches	Plain View Search Success Rate	# Canine Alert Searches	Canine Search Success Rate	# Probable Cause Searches	Probable Cause Search Success Rate	# Officer Safety / Patdown Searches	Officer Safety / Patdown Search Success Rate	# Other Searches	Other Search Success Rate
White Driver	525	58.3**	262	82.4	48	70.8	265	53.2***	123	39.8	95	27.4
Black Driver	183	44.8	60	85.0	55	58.2	97	38.1	40	35.0	62	22.6
Hispanic Driver	63	46.0	24	66.7	16	56.3	51	19.6	33	18.2	30	13.3

Table 7.9: Racial/Ethnic Differences in Probable Cause Search Success Rates by Reason for Search

NOTE: \* p < .05, \*\* p < .01, \*\*\* p < .001

In summary, although PSP Troopers were significantly more likely to search Black and Hispanic motorists during traffic stops, as compared to White motorists, search success rates for probable cause searches indicate that Blacks and Hispanics were significantly less likely than Whites to be found in possession of contraband. This finding is consistent with findings from other state and local police agencies across the country, as well as previous reports issued for the PSP. This suggests that rather than individual police officer bias, there are larger cultural, social psychological, and/or organizational explanations for these disparities. One possible explanation for this gap is that language and/or cultural differences between officers and minority citizens may create "false positive" searches. Officers may misread verbal or nonverbal cues from minority motorists, and therefore, may be mistaken more often in their suspicions that lead to discretionary searches.

Alternatively, searched Blacks and Hispanics may, *in fact*, possess contraband at lower rates than Whites because Troopers are over-searching minority motorists when compared to their involvement in criminal activity. It is important to note, however, that the current PSP data collection system does not measure the quantity of contraband seized during searches. Research in another statewide study of this kind indicated that Hispanic motorists were more likely than Whites to be in possession of sale or transportation quantities of drugs as compared to personal use amounts (Engel, Cherkauskas, & Smith, 2011). Although it is beyond the scope of the current Pennsylvania data to examine whether the same finding applies, it is possible that Troopers may consciously or unconsciously be willing to tolerate lower success rates in their searches of minority drivers because of the probability that they could uncover more significant quantities of drugs when compared to searches of Whites.

Finally, as noted in previous reports, it is plausible that Troopers hold different thresholds for reasonable suspicion either overtly or subconsciously for different racial/ethnic groups. For example, Smith and Alpert (2007) proposed a theory of police behavior, rooted in socialpsychological research on stereotypes, which suggests that officers have unintentional but biased responses during encounters with minority citizens. Specifically, they suggest that police may develop subconscious, cognitive scripts based on exposure to societal or media conceptions about particular groups, vicarious experiences, and their own personal contacts with groups that they repeatedly encounter in situations involving criminal activity (see also, Smith, Makarios, & Alpert, 2006). These scripts are easily recalled in individual stops and may cause officers to be more likely to be suspicious of specific minority group members. When applied to searches, the social conditioning theory would suggest that some of the racial/ethnic disparity in probable cause search success rates could be due to Troopers relying on these cognitive scripts that unintentionally cause them to differentially assess the suspiciousness of stops with members of different racial/ethnic groups. If an officer's suspicion is subconsciously triggered more often in situations with minority drivers, this may contribute to higher search rates and lower search success rates of these drivers.

Based on the same discrepancy in earlier reports, nine focus groups were conducted with PSP Troopers in 2005 to better understand patterns and practices related to search and seizure during traffic stops, specifically these racial and ethnic disparities for searches and search success rates. The goal of these focus groups was to document the most effective techniques related to search and seizure in order to improve and potentially alter departmental training

and reduce the racial/ethnic disparities reported in the *Year 2 Final Report*. Focus group participants from the PSP, along with focus groups conducted with officers from other state police agencies including the Ohio State Highway Patrol, Nebraska State Patrol, and Arizona Department of Public Safety offered several insightful and plausible interpretations for the inconsistent search success rates across racial/ethnic groups. Specifically, focus group participants indicated that lower search success rates for minority drivers (and in particular, Hispanic drivers) may be due to: 1) limited training, 2) Troopers relying on one or two indicators of suspicion (possibly including race or race-related stereotypes) rather than the totality of circumstances, 3) a limited understanding of cultural differences in behaviors across racial/ethnic groups. used across racial/ethnic groups.

Although the PSP has implemented portions of previous recommendations regarding these issues, racial/ethnic disparities in search and seizure rates persist. Therefore, in Section 8, the UCPI team reemphasizes training recommendations and suggests data collection changes that may help to further the department's understanding of these racial/ethnic disparities in search and seizure rates.

### SPOTLIGHT ON CONSENT SEARCHES

As noted previously, a substantial percentage of PSP searches in 2010 were based solely on drivers' consent (22.3%).<sup>28</sup> Yet, of the reasons identified on the Contact Data Report, "solely consent" is the least productive search reason in terms of discovering contraband. Only 18.5% of searches based solely on consent resulted in the discovery of contraband. Examining whether consent search success rates vary by race/ethnicity, however, is complex. As noted above, it is unwise to utilize the outcome test to assess racial/ethnic bias in consent searches, because ultimately it is the citizen, not the officer, who has final discretion over whether these types of searches are conducted (citizens always have the right to refuse). As such, one of the underlying assumptions of the outcome test – that officers have full discretion over whether to conduct searches - is violated. Despite these limitations, in order to allow the PSP to better understand consent searches and their productivity, analyses examining racial/ethnic differences in consent search success rates are provided with the strong caveat that this information cannot be used to assess officer bias. This section includes: 1) an overview of consent searches; 2) an examination of driver and Trooper differences in requests for consent and granting/obtaining consent to search; and 3) an analysis of racial/ethnic differences in consent search success rates.

As demonstrated in Figure 7.2 below, of the 371,182 traffic stops initiated by PSP Troopers in 2010, 3,009 drivers (0.8%) were asked for consent to search.

<sup>&</sup>lt;sup>28</sup> PSP Troopers' heavy reliance on the use of consent searches is due, in part, to the unique case law in Pennsylvania guiding vehicular searches, which does not allow searches based on probable cause without a search warrant.

- Of these 3,009 requests, 88.8% (2,673 requests) resulted in a consent search being conducted, while 11.2% (n=336) did not. That is, an overwhelming majority of drivers gave their consent to be searched when asked by Troopers.
- Of the 2,673 consent searches that were conducted, 33.1% resulted in the discovery of contraband.
- Of the 2,673 consent searches that were conducted, 41.6% (1,113 searches) were based *solely* on consent; that is, there was no other reason indicated by the Trooper for the search. Of these 1,113 searches based *solely* on consent, 18.5% resulted in the discovery of contraband.
- Of the 336 consent search requests that did not result in consent searches, a little over half (56.3%) resulted in a search for a different reason. In these cases, the search success rate was 39.7%. The search success rate for the remaining consent search requests is not calculable because they did not result in a search being conducted for any other reason.



Figure 7.2: 2010 PSP Requests for Consent and Consent Searches

### **Driver and Trooper Differences in Requests for Consent**

As noted above, of the 371,182 traffic stops initiated by PSP Troopers in 2010, 3,009 drivers (0.8%) were asked for consent to search. As shown in Table 7.10, there are significant differences based on driver and Trooper characteristics in who is asked for consent to search and who requests consent to search.

First, an examination of the drivers' race/ethnicity in Table 7.10 indicates that certain racial/ethnic groups were significantly more likely than others to be asked for consent to search. Specifically, 2.1% of Black drivers and 2.1% of Hispanic drivers were asked for consent to search, compared to only 0.6% of White drivers. These racial/ethnic differences are also graphically displayed in Figure 7.3 below.

Furthermore, Table 7.10 also reveals significant differences in requests for consent based on drivers' gender and age. Specifically, male drivers and drivers 25 and younger were significantly more likely to be asked for consent to search than females and drivers over 25. No differences in consent requests were evident based on driver residency. An examination of the new driver characteristics captured in TraCS also shows significant differences in who is asked for consent to search, as noncompliant and/or resistant drivers, impaired drivers, and drivers with a criminal history were significantly more likely than drivers who were compliant, unimpaired, and without a criminal history to be asked for consent to search.

Table 7.10 also shows some significant differences in requests for consent based on Trooper characteristics. Troopers who were White, male, less experienced, and more educated were significantly more likely to ask for consent to search compared to their Non-White, female, more experienced and less educated counterparts.

	Total # Requests for Consent to Search	% of Stops Resulting in Request for Consent to Search
All Drivers	3,009	0.8
By Drivers' Characteristics		
White Driver	1,832	0.6***
Black Driver	744	2.1
Hispanic Driver	341	2.1
Male Driver	2,586	1.0***
Female Driver	421	0.3
Driver 25 years old or under	1,156	1.2***
Driver over 25 years old	1,853	0.7
Driver PA Resident	2,286	0.8
Driver Non-PA Resident	723	0.8
Driver Compliant	2,301	0.7***
Driver Non-compliant and/or Resistant	156	2.3
Driver Unimpaired	1,958	0.6***
Driver Impaired	499	7.8
Driver with no criminal history	1,512	0.5***
Driver w/ criminal history of any kind	945	25.6
White Trooper	2,809	0.8*
Non-White Trooper	199	0.7
Male Trooper	2,910	0.8**
Female Trooper	98	0.6
Less than 5 years experience	1,439	1.2***
5 years experience or more	1,569	0.6
No College Degree	523	0.5***
2 Year Degree	759	0.9
4 Year Degree or more	1,717	1.0

<b>Table 7.10:</b>	<b>Trooper and</b>	Driver	Differences in	<b>Requests</b> f	for Consent
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NOTE: \* *p* <.05, \*\* *p* < .01, \*\*\* *p* < .001

Figure 7.3: Racial/Ethnic Differences in Requests for Consent to Search (n=369,475)



**<u>NOTE</u>**: Differences across the racial/ethnic groups presented in this figure are statistically significant at  $p \le .001$ .

### **Driver and Trooper Differences in Granting and Obtaining Consent**

Figure 7.4 and Table 7.11 below compare the percentages of drivers who gave their consent to be searched based on driver characteristics. As shown, although differences in the rates of granting consent are evident based on driver race/ethnicity, these differences are not statistically significant for 2010. While the differences between groups are smaller than in previous years, the finding that Hispanics were more likely to grant consent than Whites or Blacks is consistent with previous findings.



Figure 7.4: Racial/Ethnic Differences in Requests for Consent Resulting in Consent Search (n=2,917)

NOTE: Differences across the racial/ethnic groups presented in this figure are not statistically significant.

Table 7.11 also shows that there were no significant differences in the rates of granting consent were noted for driver gender, age, residency, impairment, or criminal history. Non-compliant and/or resistant drivers, however, were less likely to grant consent to search than compliant drivers. Differences in obtaining consent across different types of Troopers are also shown in Table 7.11. Similar to previous years, different types of Troopers were not more or less likely to obtain consent from drivers.

	Total # Requests for Consent to Search	% Consent Requests Resulting in Consent Search
All Drivers	3,009	88.8
By Drivers' Characteristics		
White Driver	1,832	87.9
Black Driver	744	89.0
Hispanic Driver	341	90.9
Male Driver	2,586	88.6
Female Driver	421	89.3
Driver 25 years old or under	1,156	87.7
Driver over 25 years old	1,853	89.4
Driver PA Resident	2,286	88.8
Driver Non-PA Resident	723	88.5
Driver Compliant	2,301	88.2***
Driver Non-compliant and/or Resistant	156	71.8
Driver Unimpaired	1,958	87.5
Driver Impaired	499	86.0
Driver with no criminal history	1,512	88.0
Driver w/ criminal history of any kind	945	85.8
White Trooper	2,809	88.7
Non-White Trooper	199	88.9
Male Trooper	2,910	88.9
Female Trooper	98	84.7
Less than 5 years experience	1,439	87.8
5 years experience or more	1,569	89.5
No College Degree	523	90.8
2 Year Degree	759	88.1
4 Year Degree or more	1,717	88.4

### Table 7.11: Trooper and Driver Differences in Granting and Obtaining Consent

NOTE: \* *p* <.05, \*\* *p* < .01, \*\*\* *p* < .001

Table 7.12 documents the differences across driver and Trooper characteristics in search success rates for searches based solely on consent and based on any consent (i.e., consent searches including additional reasons identified for the search). As shown in Table 7.12, White drivers who were searched based solely on consent and any consent were significantly more likely to be found in possession of contraband compared to Black and Hispanic drivers. Specifically, 20.7% of searches of Whites based solely on consent were successful, compared to 15.1% of searches of Black drivers, and 13.7% of searches of Hispanic drivers. The search success rates were somewhat higher for searches based on any consent (i.e., consent searches also based upon another reason for search). Searches of Whites, however, were still significantly more likely to result in the discovery of contraband (37.2%), compared to 26.2% of searches of Blacks and only 18.4% of searches of Hispanics.

Table 7.12 also shows that consent searches of older drivers, Pennsylvania residents, and impaired drivers were significantly more likely to result in the discovery of contraband compared to searches of younger, out-of-state, and unimpaired drivers. No significant differences in consent search success rates were noted for driver gender, compliant behavior, or criminal history.

Differences in consent search success rates across different types of Troopers are also shown in Table 7.12. Unlike previous years, in 2010, different types of Troopers were not more or less likely to discover contraband during consent searches of drivers.

		Total # of	Consent	Total # of	Any Consent	
	Total #	<b>Consent Only</b>	<b>Only Search</b>	Any Consent	Search	
	Searches	Searches	Success Rate	Searches	Success Rate	
All Drivers	5,001	1,113	18.5	2,673	33.1	
Driver Characteristics						
White Driver	3,036	656	20.7*	1,612	37.2***	
Black Driver	1,257	279	15.1	663	28.4	
Hispanic Driver	565	139	13.7	310	18.4	
Male Driver	4,156	955	17.9	2,294	33.1	
Female Driver	843	156	22.4	376	33.0	
Driver 25 years old or under	1 667	713	187	1 658	31 1**	
Driver over 25 years old	3.332	400	18.3	1.014	36.3	
· · · · · · · · · · · · · · · · ·	-,			-,		
Driver PA Resident	4,090	780	20.4*	2,031	35.6***	
Driver Non-PA Resident	911	333	14.1	641	25.0	
Driver Compliant	3,833	837	16.8	2,031	32.2	
Driver Non-compliant and/or	366	28	10.7	113	34.5	
Resistant	200		1011		0.110	
Driver Unimpaired	2,498	832	16.0**	1,714	27.5***	
Driver Impaired	1,701	33	33.3	430	51.2	
Driver with no criminal	2.071	500	10.1	1 222	22.2	
history	2,871	509	18.1	1,332	33.2	
Driver w/ criminal history of	1,328	356	14.6	812	30.8	
<b>Trooper Characteristics</b>						
White Trooper	4,650	1,046	18.5	2,494	33.0	
Non-White Trooper	350	66	18.2	177	34.5	
Male Trooper	4,782	1,092	18.7	2,588	33.2	
Female Trooper	218	20	10.0	83	28.9	
Less than 5 years experience	2,636	504	20.4	1,264	31.6	
5 years experience or more	2,364	608	16.9	1,407	34.5	
No Collaga Decrea	016	190	107	175	25.2	
2 Vear Degree	010	102	16.7	4/J 670	33.2 30.0	
4 Year Degree or more	1,322	∠0 <del>4</del> 630	10.2	1 518	33.5	
	∠,040	037	19.0	1,510	55.5	

Table 7.12: Consent Search Success Rates by Driver and Trooper Characteristics

NOTE: \* p < .05, \*\* p < .01, \*\*\* p < .001

It is possible that consent searches of minority drivers are less successful in terms of discovering contraband compared to Whites because "guilty" minority drivers are more likely to decline search requests when asked. Examinations of consent search requests when no search was conducted, however, suggest that this is unlikely. In 2010, less than 15% of all drivers refused consent and analyses of consent search requests by race/ethnicity indicated that it is White drivers who were more likely to refuse to consent to search when compared to Blacks and Whites. Therefore, it is highly unlikely that the explanation for the differences in search success rates for consent searches is that "guilty" minority drivers are avoiding detection by refusing consent. What appears more plausible is that the same causes for the racial/ethnic disparities in search success rates for probable cause searches also pervade consent searches. Unfortunately, traffic stop data are very limited in their ability to offer causal explanations for racial/ethnic disparities.

## SUMMARY

- For the year 2010, PSP Troopers conducted 5,001 searches, or 1.3% of all stops.
- In 2010, 53.4% of searches by Troopers were conducted based on drivers' consent. In addition, 22.3% of searched drivers were searched based solely on consent. The next most common reasons for a search included: inventory (33.5%), followed by incident to arrest (22.0%), the odor of drugs (15.7%), probable cause (8.5%), and plain view (7.2%).
- In 2010, 49.3% of PSP searches were Type I (mandatory), 28.4% were Type II (probable cause), and 22.4% were Type III (solely consent).
- Racial/ethnic differences in the types of searches were not evident. However, gender, age, residency, driver compliancy, driver impairment, and criminal history all saw significant differences among the types of searches.
- In 2010, 1,411 of the 5,001 searches resulted in the seizure of contraband (28.2%).
- A majority of the contraband seized was drugs (76.5%), followed distantly by "other" (14.4%), alcohol (8.6%), and cash (7.0%).
- Search success rates varied dramatically across the type of search authority.
  - Least successful: Consent only (18.5%), vehicle inventory (18.6%), and "other" reasons (23.6%)
  - Moderately successful: Consent (33.1%), incident to arrest (32.8%), officer safety/patdowns (34.8%), and probable cause searches (46.5%)
  - In over half of the searches conducted based on drug odor (54.1%) and canine alerts (63.1%) contraband was seized.
  - Most successful: search warrants (89.7%) and plain view (81.9%).

- Type II probable cause searches were the most successful in terms of recovering contraband (44.8%), while Type III consent searches were the least successful (18.5%). The Type I (mandatory) search success rate was 23.3%.
- Probable cause (Type II) searches of Black and Hispanic drivers (37.2% and 24.0%, respectively) were less successful in recovering contraband compared to searches of White drivers (50.3%).
  - An examination of specific categories of Type II search success rates reveals that statistically significant racial/ethnic differences in search success rates exist for searches based on drug odor and probable cause.
    - Drug odor: 58.3% of these searches of Whites resulted in the seizure of contraband, compared to 44.8% of Blacks and 46.0% of Hispanics.
    - Probable cause: 53.2% of these searches for Whites resulted in the seizure of contraband, compared to 38.1% of Blacks and 19.6% of Hispanics.
- Of the 371,182 traffic stops initiated by PSP Troopers in 2010, 3,009 drivers (0.8%) were asked for consent to search.
  - Of these 3,009 requests, 88.8% (2,673 requests) resulted in a consent search being conducted, while 11.2% (n=336) did not. That is, an overwhelming majority of drivers gave their consent to be searched when asked by Troopers.
  - Of the 2,673 consent searches that were conducted, 33.1% resulted in the discovery of contraband.
  - Of the 2,673 consent searches that were conducted, 41.6% (1,113 searches) were based *solely* on consent; that is, there was no other reason indicated by the Trooper for the search. Of these 1,113 searches based *solely* on consent, 18.5% resulted in the discovery of contraband.
  - Of the 336 consent search requests that did not result in consent searches, a little over half (56.3%) resulted in a search for a different reason. In these cases, the search success rate was 39.7%. The search success rate for the remaining consent search requests is not calculable because they did not result in a search being conducted for any other reason.
- Black (2.1%) and Hispanic (2.1%) drivers were significantly more likely than White (0.6%) drivers to be asked for consent to search.
- Although differences in the rates of granting consent are evident based on driver race/ethnicity, these differences are not statistically significant for 2010. The results indicate, however, that Hispanics were more likely to grant consent than Whites or Blacks, which is consistent with previous years' findings.
- Consent search success rates by race/ethnicity are provided with the strong caveats that they be used for purposes of internal comparisons and training only, and that *no definitive conclusions about racial bias should be drawn from these comparisons*.
  - White drivers who were searched based solely on consent and any consent were significantly more likely to be found in possession of contraband compared to searched Black and Hispanic drivers.

These findings cannot be used to determine the legality of and/or the presence of discrimination in individual searches conducted by PSP Troopers.

# 8. CONCLUSIONS

### SUMMARY

This report documents the findings from statistical analyses of data collected during all member-initiated traffic stops by the Pennsylvania State Police (PSP) from January 1, 2010 – December 31, 2010. These data represent the ninth year of data collection for the Project on Police-Citizen Contacts. Information on 371,182 traffic stops was reported using the CDR X-press system and newly instituted TraCS system. The information from both systems was collated by the research team into a single dataset for analysis. Both data collection instruments gathered similar information regarding the traffic stop, although some new data fields were collected exclusively with the TraCS system. These included: driver behavior (compliant, non-compliant, verbally resistant, and/or physically resistant), driver impairment (alcohol, drugs, language barrier, mental issue, and/or sleep deprivation), whether criminal history was run and if detected, the type of criminal history (drugs, property offense, violent offense, traffic/license offense), and vehicle condition (good, fair, or poor).

Of the 371,182 stops recorded between January 1, 2010 and December 31, 2010, 87.5% of that information was transmitted using the TraCS system (n=324,619), while the remaining 12.5% was collected via the CDR X-press system (n=46,563). Throughout 2010, the rate of traffic stops reported using the CDR X-press system decreased dramatically; by April, the overwhelming majority of data regarding PSP traffic stops was reported via the TraCS system.

Basic descriptive analyses were conducted on the 371,182 officer-initiated traffic stops and reported at the department, area, troop, and station levels. Some of the department-level trends in these descriptive findings are summarized below:

- Across the department, characteristics of the stop included:
  - The most frequent violation observed prior to traffic stops was speeding (63.7%), with an average amount over the limit of 19.2 mph. Other less commonly observed violations included: moving and equipment violations (20.8% and 9.2%, respectively)
- Across the department, characteristics of the drivers included:
  - White (81.6%), Black (9.4%), Hispanic (4.3%), Middle Eastern (2.2%), and Asian/Pacific Islander (2.0%)
- Across the department, traffic stop outcomes can be summarized by the following characteristics:
  - 26.5% of stops resulted in a warning, 88.5% of stops resulted in a citation,
     3.0% of stops resulted in arrest, and 1.3% of stops resulted in a search of either the occupant(s) and/or the vehicle
  - Of the searches conducted, 28.2% resulted in the discovery of contraband

In addition to analyzing the 2010 traffic stops, data collected between 2002 and 2010 at the department and troop levels were also analyzed.<sup>29</sup> It is important to note that the following results are descriptive and, even when based on statistical testing, cannot be used to determine the causes of the trends reported. Key findings of the department-level traffic stop temporal analyses include:

- <u>Department wide</u>, the 2010 percent of traffic stops involving Black drivers was 9.4%, which is two standard deviations above the eight-year average and represents an increase from 8.8% in 2009. The 2010 rate represents the highest percentage of Black drivers stopped since data collection began.
- <u>Department wide</u>, the 2010 percent of traffic stops involving Hispanic drivers was 4.3%, which represents an increase from 3.4% in 2009 and an increase of more than three standard deviations from the eight-year average. The 2010 rate represents the highest percentage of Hispanic drivers stopped since data collection began.
- Specific Troop-level trends for stops of Black and Hispanic drivers can be found in Section 4, while station-level trends for stops of minority drivers are presented in the Appendix.

It is important to note that the available data cannot be used to determine why the department or specific organizational units reported increases in the percentage of stops that were of Black or Hispanic drivers. Some factors potentially responsible for upward or downward trends include:

- Changes in the racial/ethnic composition of residential populations serviced by those organizational units which have altered the racial/ethnic composition of drivers eligible to be stopped
- Alterations to the reporting patterns by PSP troopers
- Other changes in travel patterns that differentially impact the percentages of minority drivers on particular roadways
- Adjustments to PSP deployment patterns and manpower allocation to address changes in reported criminal patterns and calls for service, resulting in higher concentrations
- of Troopers in areas where minorities are more likely to travel and/or violate the law
- Trooper behavior toward minority drivers may have changed across time.

Trend analyses were also conducted for traffic stop outcomes between 2002 and 2010. Using the same standard deviation methodology employed for the temporal analyses of traffic stops, the 2010 rate of all traffic stop outcomes was compared to the eight-year average:

- The 2010 warning rate (26.5%) was within one standard deviation of the eight-year average. This represents a decrease in the rate of warnings after a steady increase between 2005 and 2009.
- The 2010 citation rate increased nearly two percentage points from the 2009 rate of 86.6%. Indeed, the 2010 citation rate (88.5%) was the highest it has been since data

<sup>&</sup>lt;sup>29</sup> No area level rates were reported due to the changes in organizational structure in 2008.

collection began, but it was still only slightly more than one standard deviation of the eight-year average.

- The 2010 arrest rate was more than three standard deviations higher than the eightyear average and the highest it has been since data collection began. The nine-year trend indicates that there was a considerable rise in the arrest rate between 2004 and 2006, but this upswing is at least partially the result of discrepancies in the data collection regarding arrests prior to 2006, as documented in the 2003 - 2004 Final *Report*. These data collection limitations were believed to result in an underreporting of arrests prior to 2006. Therefore, it is likely that this reported upswing is simply the result of more accurate reporting since 2006, rather than changes in actual outcomes received by motorists. This is further evidenced by the stability in the arrest rate between 2006 and 2009.
- The 2010 search rate was slightly more than one standard deviation above the eightyear average and represents a slight increase in the rate of searches after a period of relative stability for the previous four years. Similar to the arrest rate, however, there were some data collection problems prior to 2006, which may have resulted in an underreporting of searches throughout the department.
- The 2010 seizure rate was within one standard deviation of the eight-year average and similar to the seizure rates from the three previous years. Note that the seizure rate includes the discovery of contraband from searches made for any reason.

The rate of traffic stop outcomes within racial/ethnic groups was also compared over time:

- <u>Warnings:</u> In 2010, the warning rates for Black and Hispanic drivers were slightly higher than the warning rates for White drivers, which mirror the trends in the three previous years. Across the nine years of data collection, the warning rate for White drivers decreased between 2002 and 2005, but increased slightly between 2005 and 2009, followed by a decrease of two percentage points in 2010. The warning rates for Black and Hispanic drivers dropped slightly in 2010 after steadily increasing over the previous several years.
- <u>Citations:</u> In 2010, as in 2008 and 2009, the citation rate for Black and Hispanic drivers was higher than the rate for White drivers. Throughout the nine years of data collection, the citation rates for all groups increased between 2002 and 2005, but have stabilized in the past four years. Hispanic drivers consistently have the highest rate of citations, while White drivers are consistently the least cited group (except 2007).
- <u>Arrests:</u> In 2010, the arrest rates for all racial/ethnic groups were the highest they have been since data collection began. In 2010, as with previous years, the arrest rate was highest for Hispanic drivers, followed by Black and White drivers, respectively. In all years, Hispanic drivers are arrested at a higher rate than the other two groups, with White drivers generally being arrested less frequently (except 2006). The overall arrest rates prior to 2006 may have been artificially depressed due to underreporting of arrests in those years. This should not, however, influence the differences across racial/ethnic groups, which are consistent across all nine years of data collection.
- <u>Searches:</u> In 2010, the search rate was 3.6% for both Black and Hispanic drivers, while only 1.0% for White drivers. Throughout the nine years of data collection, the

search rate of White drivers has been relatively stable, with a slight bump between 2005 and 2007, and again between 2009 and 2010. For Black drivers, the search rate indicates an upward trend between 2002 and 2007, with a slight decrease and stabilization in 2008 and 2009 and another slight increase in 2010. The search rate for Hispanic drivers also increased in early years of data collection, but has stabilized and decreased since 2005. Note, however, that the dramatic differences across racial/ethnic groups in terms of search rates have persisted across time.

• <u>Seizures:</u> In 2010, the seizure rate was highest for White drivers, followed by Black drivers and Hispanic drivers, respectively. This has been a consistent trend in all nine years of data collection. For White drivers, the 2010 seizure rate is very similar to the seizure rates of the three previous years. In 2010, the seizure rate for Black drivers rose slightly from 2009 but remained lower than the rates between 2005 and 2008. The seizure rate for Hispanic drivers also rose slightly in 2010 compared to 2009.

There are a number of possible explanations for these racial disparities in post-stop outcomes. As a result, any interpretation of these findings must be made with caution.

In addition to the trend analyses of stop outcomes, the 2010 post-stop outcomes were examined in detail. This process involved both bivariate analyses and multivariate analyses of warnings, citations, arrests, and searches issued to drivers during member-initiated traffic stops conducted in 2010.

### **Bivariate Analyses**

- At the department level, statistically significant racial/ethnic differences were noted for warnings, citations, arrests, and searches.
  - Black and Hispanic motorists were slightly more likely than White drivers to receive warnings.
  - Hispanic drivers had slightly higher rates of citations compared to White and Black drivers.
  - Black and Hispanic drivers had higher rates of arrest compared to White drivers.
  - The largest racial/ethnic differences are found for searches: Black and Hispanic drivers had significantly higher rates of searches (both 3.6%), compared to only 1.0% of White drivers.
- These patterns and trends varied somewhat at the area level and more so at the troop and station levels.
- When reviewing these results, it is important to remember that the bivariate analyses only consider two variables at a time. As a result, the interpretation of these findings, which indicate racial/ethnic differences, should be made with caution and cannot determine the existence of racial bias because other factors related to traffic stop outcomes were not considered in these analyses.
- PSP supervisors should review these findings for the best understanding of trends in racial/ethnic and gender disparities in stop outcomes within their jurisdictions.

#### **Multivariate Analyses**

Multivariate analyses are better suited to make substantive claims about the results of poststop outcomes due to their consideration of more than one factor simultaneously. Nevertheless, multivariate analyses are limited by the type and amount of data collected. Conclusions based on any multivariate analyses are limited to the variables in the model, and do not consider the potential of a misspecified model. Misspecified models occur when pertinent variables related to the dependent variables are not included in the model. Thus, multivariate analyses can only demonstrate racial/ethnic disparities that exist after statistically controlling for other factors that might influence officer decision making that are measured with these data. The findings summarized below represent the independent effects of driver race/ethnicity on traffic stop outcomes when other factors are statistically controlled.

### • Warnings

- Black and Hispanic drivers showed no statistically significant differences in the likelihood of being warned compared to Whites.
- Drivers impaired by drugs and/or alcohol were 15.2 times less likely to be warned than non-impaired drivers.
- Traffic stops initiated as a result of speeding were 1.7 times *less* likely to result in a warning compared to traffic stops initiated for other non-speeding reasons.
- For each additional reason for the stop (traffic infraction), the likelihood of a warning *increased* 3.7 times.

In summary, Troopers' decisions to issue warnings are most strongly based on legally relevant factors like driver impairment, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

#### • Citations

- Black and Hispanic drivers were *equally likely* to be cited compared to White drivers in similar situations, while drivers of "other" race/ethnicity were 1.5 times more likely than Whites to be cited.
- Verbally or physically resistant drivers were 1.8 times more likely than compliant drivers to receive a citation.
- Drivers impaired by drugs and/or alcohol were 1.5 times more likely to be cited, while drivers impaired by mental illness or sleep deprivation were 1.8 times *less* likely to be issued a citation, as compared to non-impaired drivers.
- Drivers with a criminal history detected were 2.2 times less likely than those without a criminal history to be cited (but more likely to be arrested).
- Traffic stops for speeding were 2.2 times more likely to result in a citation compared to non-speeding based traffic stops.
- The likelihood of being cited increased 1.9 times for each additional reason for the stop.
- Traffic stops resulting in the discovery of contraband were 2.7 times *less* likely to result in a citation compared to traffic stops without contraband.

In summary, Troopers' decisions to issue citations are most strongly based on legally relevant factors like driver impairment, criminal history, reason for the stop, and number of reasons for the stop, rather than driver or Trooper demographic characteristics.

- Arrests
  - There were no statistically significant racial differences for Black, Hispanic, or Other drivers when other factors were simultaneously considered. In other words, minority drivers were equally likely as White drivers to be arrested given similar circumstances surrounding the traffic stop.
  - Drivers impaired by drugs and/or alcohol were more than 550 times more likely to be arrested than non-impaired drivers. Drivers with a criminal history detected were 7.4 times more likely than those without a criminal history to be arrested.
  - Traffic stops resulting in the discovery of contraband were over 97 times *more* likely to end in arrest compared to traffic stops without contraband discoveries.
  - White Troopers were 5.8 times less likely than non-White Troopers to make an arrest.

Collectively, these results demonstrate that the most severe sanction issued during traffic stops (i.e., arrests) is based on legally relevant factors like impairment, contraband seized, and criminal history, rather than drivers' race/ethnicity.

- Searches
  - Black and Hispanic drivers were 2.0 and 1.7 times *more* likely to be searched compared to White drivers, respectively.
  - Males were 1.8 times *more* likely to be searched compared to females.
  - Drivers impaired by drugs and/or alcohol were nearly 18 times more likely to be searched, while drivers impaired by mental illness or sleep deprivation were 7.4 times more likely to be searched, as compared to non-impaired drivers.
  - Drivers with a criminal history detected were 13 times more likely to be searched than those without a criminal history.
  - Vehicles in poor condition were 2.4 times more likely to be searched than vehicles in good or fair condition.
  - Traffic stops initiated due to speeding were 2.3 times *less* likely to result in searches compared to traffic stops initiated for non-speeding reasons.
  - The likelihood of a search increased 1.9 times for every additional reason for the stop.

Collectively, these results demonstrate that racial/ethnic differences in the rates of searches cannot be explained by the legal and extralegal factors captured on the traffic stop forms. Given similar situations (as measured on the traffic stop form), Black and Hispanic drivers are 2.0 and 1.7 times significantly more likely, respectively, to be searched compared to White drivers. Note, however, that 49% of these searches are mandatory searches (e.g., based on warrants, inventory, incident to arrest, etc.) that afford little officer discretion.

### Search and Seizure

Due in part to the persistent racial/ethnic disparities evident in searches and search success rates, further analyses were conducted on 2010 search and seizure activity.

- For the year 2010, PSP Troopers conducted 5,001 searches, or 1.3% of all stops. The majority of these searches (53.4%) were conducted based on drivers' consent. In addition, 22.3% of searched drivers were searched based solely on consent.
- Other less common reasons for a search included: inventory (33.5%), incident to arrest (22.0%), the odor of drugs (15.7%), probable cause (8.5%), and plain view (7.2%).
- In 2010, 49.3% of PSP searches were Type I (mandatory), 28.4% were Type II (probable cause), and 22.4% were Type III (solely consent).
- Unlike previous years, bivariate racial/ethnic differences in the types of searches were not evident. However, gender, age, residency, driver compliancy, driver impairment, and criminal history all saw significant bivariate differences among the types of searches.
- In 2010, 1,411 of the 5,001 searches resulted in the seizure of contraband (28.2%). A majority of the contraband seized was drugs (76.5%), followed distantly by "other" (14.4%), alcohol (8.6%), and cash (7.0%).
- Search success rates varied dramatically across the type of search authority.
  - Least successful: Consent only (18.5%), vehicle inventory (18.6%), and "other" reasons (23.6%)
  - Moderately successful: Consent (33.1%), incident to arrest (32.8%), officer safety/patdowns (34.8%), and probable cause searches (46.5%)
  - In over half of the searches conducted based on drug odor (54.1%) and canine alerts (63.1%) contraband was seized.
  - Most successful: search warrants (89.7%) and plain view (81.9%).
- Type II probable cause searches were the most successful in terms of recovering contraband (44.8%), while Type III consent searches were the least successful (18.5%). The Type I (mandatory) search success rate was 23.3%.
- Probable cause (Type II) searches of Black and Hispanic drivers (37.2% and 24.0%, respectively) were less successful in recovering contraband compared to searches of White drivers (50.3%).
  - An examination of specific categories of Type II search success rates reveals that statistically significant racial/ethnic differences in search success rates exist for searches based on drug odor and probable cause:
    - Drug odor: 58.3% of these searches of Whites resulted in the seizure of contraband, compared to 44.8% of Blacks and 46.0% of Hispanics.
    - Probable cause: 53.2% of these searches for Whites resulted in the seizure of contraband, compared to 38.1% of Blacks and 19.6% of Hispanics.

- Of the 371,182 traffic stops initiated by PSP Troopers in 2010, 3,009 drivers (0.8%) were asked for consent to search.
  - Of these 3,009 requests, 88.8% (2,673 requests) resulted in a consent search being conducted, while 11.2% (n=336) did not. That is, an overwhelming majority of drivers gave their consent to be searched when asked by Troopers.
  - Of the 2,673 consent searches that were conducted, 33.1% resulted in the discovery of contraband.
  - Of the 2,673 consent searches that were conducted, 41.6% (1,113 searches) were based *solely* on consent; that is, there was no other reason indicated by the Trooper for the search. Of these 1,113 searches based *solely* on consent, 18.5% resulted in the discovery of contraband.
  - Of the 336 consent search requests that did not result in consent searches, a little over half (56.3%) resulted in a search for a different reason. In these cases, the search success rate was 39.7%. The search success rate for the remaining consent search requests is not calculable because they did not result in a search being conducted for any other reason.
- Black (2.1%) and Hispanic (2.1%) drivers were significantly more likely than White (0.6%) drivers to be asked for consent to search. Although Hispanics were more likely to grant consent than Whites or Blacks, the differences across racial/ethnic groups were not statistically significant for 2010.
- Consent search success rates by race/ethnicity are provided with the strong caveats that they be used for purposes of internal comparisons and training only, and that *no definitive conclusions about racial bias should be drawn from these comparisons*.
  - White drivers who were searched based solely on consent and any consent were significantly more likely to be found in possession of contraband compared to searched Black and Hispanic drivers.

Collectively these results demonstrate that Blacks and Hispanics motorists who were searched based on probable cause/reasonable suspicion or consent were significantly less likely than searched Whites to be found in possession of contraband. These statistical analyses, however, cannot be used to determine the legality of and/or the presence of officer bias in individual searches conducted by PSP Troopers. While racial/ethnic disparities in search and seizure rates remain an area of concern, these patterns mirror those reported in multiple jurisdictions and are the subject of continued examination by both academics and practitioners across the country.

## CONCLUSION

In every annual report we have issued, we have provided a series of recommendation to assist PSP administrators' efforts to identify and reduce racial/ethnic disparities in traffic stops and stop outcomes. Many of our recommendations have been followed throughout the nine year data collection and analysis time frame. Indeed, we have previously documented considerable progress regarding the significantly improved accuracy of the data collected;

updated training, policies, and procedures; and the reduction of racial/ethnic disparities in all stop outcomes except searches and seizures.

As a result of the department's proactivity and responsiveness to these recommendations, the Pennsylvania State Police Project on Police-Citizen Contacts should be considered a model for other state police agencies to follow. The department voluntarily initiated the study a decade ago and extended the contract with the UC research team multiple times. Faced with data quality issues in the early part of the study, the department quickly and decisively instituted corrective measures and implemented an electronic data collection system (TraCS) that offers one of the most comprehensive and efficient data collection systems currently in use by any state police agency.

The PSP also voluntarily contracted with the UC research team to conduct qualitative focus group research to augment the findings from statistical analyses of official traffic stop data, which can identify potential problem areas but cannot address the reasons behind statistical disparities discovered. The findings from this research with PSP troopers provided invaluable insight and context for a more nuanced and appropriate interpretation of the aggregate level patterns of racial and ethnic disparities in traffic stops and traffic stop outcomes observed in the quantitative analyses of traffic stop data.

It is only with the knowledge of why racial and ethnic disparities exist that the PSP can determine the appropriate course of action to reduce these disparities. As detailed throughout previous years' reports, the PSP has consistently sought out answers for the statistical findings of disparities in stop outcomes, implemented training and policies designed to ensure equitable treatment of all motorists, and improved supervisory oversight of troopers' traffic stop data collection efforts and traffic stopping behavior. As the PSP now concludes the formal independent study of its traffic stop data, we are confident that the department will continue their dedication to providing equitable treatment across racial/ethnic groups and maintaining their legitimacy among the citizens of Pennsylvania.

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## 10. APPENDIX: TRAFFIC STOPS AND TRAFFIC STOP OUTCOMES 2002 – 2010

The Appendix is divided into two parts designed to supplement information presented in Section 4 (rates of stops of minority drivers) and Section 5 (rates of stop outcomes for all drivers and minority drivers). First, Table 10.1 documents the stopping trends by PSP Troopers of Black and Hispanic drivers at the department, troop, and station level between 2002 and 2010. Table 10.1 is intended to supplement the information provided at the troop level in Figures 4.3 - 4.4 (Section 4) by reporting the rates of stops of Black and Hispanic drivers for individual years rather than just a comparison of the 2010 rate to the 8 year average between 2002 and 2009. Table 10.1, however, does not utilize the standard deviation methodology for examining trends at the station level like those provided at the department and troop level in Section  $4.^{30}$  It simply reports the rate of traffic stops by race/ethnicity between 2002 and 2010.

Second, Tables 10.2 - 10.9 report the rates of post-stop outcomes (e.g., warnings, citations, arrests, and searches<sup>31</sup>) at the troop and station level between 2002 and 2010. Table 10.2 reports the rates of warnings and citations between 2002-2010 by troop for all drivers, while Table 10.3 reports the same information for arrests and searches. Tables 10.4 - 10.7 report the rates of these same four outcomes at the troop level, but compare the rates of these outcomes for White and Non-White drivers between 2002 and 2010. Tables 10.2 - 10.7 are intended to supplement the information provided at the troop level in Figures 5.11 - 5.22 in Section 5 by reporting the rates of outcomes for individual years rather than just a comparison of the 2010 rate to the 8 year average between 2002 and 2009. Tables 10.8 and 10.9 report the rate of traffic stops resulting in warnings, citations, arrests and searches for all drivers between 2002 and 2010 at the station level. They do not, however, utilize the standard deviation methodology for examining trends at the station level like those provided at the department and troop level in Section  $5.^{32}$  All of these tables are presented without any further accompanying text due to space considerations and the ease of the tables' interpretation.

As described in Sections 4 and 5, temporal analyses are best used to summarize the rate of activity (i.e., the rate of stops or the rate of traffic stop outcomes of a selected group) within organizational units <u>across</u> time. This appendix exclusively uses this type of analysis to compare the rates of traffic stops and traffic stop outcomes for all drivers within one organizational unit over time. In this manner, the rates from year to year in a jurisdiction are comparable because, in effect, differences between organizational units are considered in these analyses and do not influence the results.

<sup>&</sup>lt;sup>30</sup> Additional standard deviation analyses at the station level are available from the authors upon request.

<sup>&</sup>lt;sup>31</sup> For the trends in arrests and searches during traffic stops, it is important to remember that, prior to 2006 there were some data inconsistencies for these outcomes. As documented in the *2003-2004 Final Report*, during focus groups conducted with PSP Troopers in August 2005, it was discovered that not all Troopers were completing the Contact Data Reports during all member-initiated stops and were, in particular, underreporting traffic stops resulting in arrests and/or searches that resulted in the discovery of contraband. Upon discovery of these discrepancies, the PSP immediately addressed and corrected these issues. Nevertheless, based on the known problems of underreporting of arrests and searches, firm conclusions regarding trends in these outcomes cannot be made.

<sup>&</sup>lt;sup>32</sup> Again, additional standard deviation analyses at the station level are available from the authors upon request.
The research team purposefully does not offer a value assessment of the 2010 rate in relation to the rates of previous years. In other words, the research team does not assign a "cutoff value" for an acceptable rate of stops of minority drivers or traffic stop outcomes. The tables demonstrating temporal values are strictly a tool to assess trends over time in the rate of stops of minority drivers and traffic stop outcomes, thereby making it easier to identify organizational units that are experiencing noticeable increases and/or decreases in their rates of stops of minority drivers, particular traffic stop outcomes for all drivers, and stop outcomes of minority drivers as compared to White drivers (troop level only). There are numerous factors this methodology that may be directly related to changes in the rate of traffic stops and/or traffic stop outcomes. For example:

- changes in the traffic population within that jurisdiction
- alterations to the reporting patterns by PSP troopers
- adjustments in PSP traffic stop behaviors
- differences in deployment patterns across time
- modifications of manpower allocation

Any single factor or a combination of these factors may influence the rate of minority drivers stopped and/or traffic stop outcomes for minority drivers in any year and result in an increase or decrease in the rates reported in the tables below. The rates are to be interpreted with caution and cannot be used as evidence of overt biased policing by the PSP or any of its organizational units; however, they do offer a basic picture of the traffic stops and traffic stop outcome trends by organizational unit. Any significant changes in stops of minority drivers and/or post-stop outcomes within organizational units should be further examined by PSP administrators to determine the likely source of such changes.

			0	% Stops	of Blacl	<b>x Drive</b>	rs					%	Stops o	f Hispa	nic Driv	vers		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
PSP Dept.	7.9	7.8	7.7	7.8	8.5	8.9	8.9	8.8	9.4	3.1	2.9	3.3	3.4	3.5	3.5	3.5	3.4	4.3
AREA I																		
Troop J	8.9	8.9	9.4	9.6	9.8	10.7	9.9	10.7	10.2	7.5	7.2	9.2	10.1	9.3	9.6	10.0	9.8	10.8
Avondale	10.3	9.6	9.9	9.4	11.5	9.9	10.1	9.6	9.1	11.2	10.4	14.4	15.6	13.2	16.2	16.4	16.7	17.2
Embreeville	12.7	12.1	13.2	14.8	13.2	14.9	16.1	16.3	14.4	4.8	5.5	5.3	6.3	5.9	5.1	5.5	5.8	7.3
Ephrata	6.5	6.9	6.8	7.3	4.8	5.8	3.5	5.9	6.2	8.1	7.0	9.1	9.7	7.6	5.3	7.1	7.6	9.9
Lancaster	6.3	5.0	5.6	6.5	6.7	8.1	6.8	8.2	7.9	5.9	4.9	6.5	8.2	9.6	8.9	8.7	9.3	10.1
Troop K	17.3	16.2	17.1	18.5	20.8	24.9	27.8	27.0	28.5	3.7	3.4	4.1	4.6	5.0	4.8	5.0	5.4	6.4
Media	18.1	17.0	21.3	19.3	20.2	24.0	24.3	22.4	23.9	2.9	3.0	3.2	4.0	3.9	3.8	3.3	3.3	3.6
Philadelphia	24.9	23.6	24.2	24.5	25.5	29.2	31.4	33.0	33.5	5.4	4.0	5.0	5.3	5.2	5.0	5.4	6.4	7.7
Skippack	10.4	8.9	9.0	10.7	12.4	12.6	10.3	11.3	9.3	4.2	3.3	4.4	4.4	5.9	5.5	5.1	5.1	3.6
Troop L	6.2	6.0	6.3	6.9	6.0	6.3	6.4	6.2	6.8	5.1	6.4	6.2	7.1	6.4	6.0	6.2	6.3	8.4
Frackville	5.4	3.9	3.0	6.1	5.9	6.2	6.0	6.8	5.2	2.8	2.9	3.7	3.6	5.0	5.6	6.2	4.8	4.2
Hamburg	10.0	9.7	8.7	8.5	7.9	6.8	9.0	7.9	7.4	8.0	7.7	7.1	8.7	7.8	8.1	7.1	7.3	7.9
Jonestown	9.0	8.2	8.9	8.7	7.5	8.8	7.7	6.7	8.4	5.8	6.2	6.9	7.2	8.0	5.9	6.4	7.7	9.0
Reading	4.0	5.1	5.2	5.6	4.7	4.3	3.4	4.8	5.5	6.0	10.7	9.2	10.8	7.9	6.3	7.3	8.8	12.0
Schuyl. Haven	3.0	1.5	2.3	2.8	2.7	2.8	3.9	4.5	3.5	1.5	1.5	1.9	3.5	2.2	3.2	3.2	2.1	4.5
Troop M	8.4	8.4	8.3	9.2	10.5	10.2	11.0	11.7	12.0	7.1	6.7	8.5	10.0	10.5	9.7	9.7	8.9	11.5
Belfast	8.5	8.9	9.3	9.4	12.7	12.4	10.2	11.2	13.1	8.4	8.1	10.2	11.6	11.5	12.6	10.8	11.2	12.1
Bethlehem	6.6	7.2	8.4	9.4	9.8	8.9	10.5	9.9	9.5	8.3	8.2	10.3	12.1	13.7	11.0	14.7	12.0	13.7
Dublin	2.0	2.4	3.0	4.0	3.7	3.8	3.7	3.7	4.4	3.2	3.5	4.6	4.6	5.4	4.2	5.7	4.7	9.1
Fogelsville	9.6	8.8	9.1	9.1	10.3	10.3	9.5	9.4	11.1	9.3	9.0	10.6	11.8	12.3	12.0	12.4	12.2	14.2
Trevose	16.2	16.2	12.9	16.2	19.3	17.8	21.7	20.1	19.5	5.1	5.5	5.8	8.3	7.9	7.0	7.2	6.5	7.5

Table 10.1: Traffic Stops By Race of Driver By Department, Troop, and Station – 2002-2010 (p. 1 of 5)

		v	0	× % Stops	of Blac	k Drivei	<u>s</u>				<b>`</b>	<u>%</u>	Stops of	f Hispa	nic Driv	vers		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA II																		
Troop F	4.9	4.6	4.7	4.0	5.1	5.2	5.0	4.7	5.2	2.2	1.9	1.9	1.6	1.7	1.9	1.9	1.9	2.5
Coudersport	0.6	0.8	1.1	0.4	0.8	0.6	0.7	0.6	1.1	0.1	0.5	0.6	0.4	0.5	0.3	0.5	0.9	1.0
Emporium	0.6	0.6	0.4	0.5	0.4	0.6	0.9	0.3	0.3	0.2	0.2	0.2	0.1	0.6	0.5	0.5	0.3	0.5
Lamar	8.3	8.9	8.7	9.1	8.5	6.6	8.4	7.3	7.3	5.2	4.4	4.6	4.8	3.9	3.3	3.6	4.2	4.3
Mansfield	4.1	2.8	3.7	3.5	4.6	4.4	4.4	3.8	4.9	1.4	1.1	0.3	1.1	1.2	1.2	1.5	1.3	1.7
Milton	9.4	8.3	7.7	7.1	8.5	9.3	7.6	8.4	9.0	4.4	3.5	3.9	3.6	2.6	3.9	2.9	3.0	4.2
Montoursville	3.9	4.4	4.3	3.4	7.6	8.2	6.5	4.7	4.8	0.8	1.5	1.1	0.8	0.8	1.2	0.9	1.0	1.3
Selinsgrove	4.9	4.0	3.7	3.8	4.8	4.3	4.3	4.3	4.4	1.4	1.0	1.1	1.1	1.5	1.7	1.5	1.3	2.2
Stonington	0.8	0.9	0.7	1.0	1.5	1.4	0.9	1.4	1.1	0.6	1.0	0.8	0.8	1.7	1.7	1.6	0.6	1.5
Troop N	9.8	10.1	9.8	10.0	10.5	11.7	11.6	11.0	10.6	6.6	5.9	6.7	7.3	7.7	8.0	7.1	7.3	9.0
Bloomsburg	9.4	11.0	10.6	11.3	9.5	10.7	12.0	9.4	10.1	6.5	4.7	5.1	4.3	5.0	5.2	5.8	5.2	5.2
Fern Ridge	10.1	10.0	10.9	10.3	10.8	10.7	10.6	11.6	11.4	5.5	7.9	8.4	8.2	8.9	9.3	7.9	6.0	9.2
Hazleton	8.0	9.9	8.6	7.9	9.1	10.1	11.1	8.7	7.4	6.9	6.8	10.0	11.5	11.2	12.7	9.9	14.0	14.8
Lehighton	2.6	2.5	3.2	3.3	3.5	3.8	4.1	5.0	4.0	4.1	2.8	2.8	2.8	3.2	3.6	3.4	4.2	5.5
Swiftwater	11.7	13.3	13.7	15.4	15.6	17.0	16.2	16.1	15.7	8.0	7.0	6.3	7.9	7.9	8.1	8.1	8.3	9.5
Troop P	2.2	2.1	2.3	2.2	2.2	2.1	1.7	2.3	2.9	1.2	1.0	1.0	1.0	1.6	1.3	1.5	1.8	2.7
Laporte	1.2	0.7	1.0	1.0	0.8	0.7	0.6	1.3	1.2	0.4	0.6	0.7	0.3	0.6	0.3	0.3	0.6	1.7
Shickshinny	1.1	1.7	3.4	2.2	2.2	2.8	2.4	2.4	1.4	1.3	1.5	1.8	1.4	1.1	1.0	2.2	2.1	2.8
Towanda	0.8	1.3	0.5	1.3	0.8	1.2	1.0	1.1	1.1	0.9	0.5	0.4	0.7	0.7	0.7	0.8	1.0	1.9
Tunkhannock	1.1	0.7	0.8	1.1	0.9	1.8	1.5	1.0	1.3	1.9	1.2	1.2	1.3	3.0	2.2	2.7	1.2	1.5
Wyoming	5.0	4.6	4.7	5.3	5.5	5.3	5.5	5.0	5.6	1.9	1.3	1.2	1.8	2.8	3.4	3.8	3.8	3.9
Troop R	5.7	5.0	5.9	5.9	6.1	6.7	7.7	7.4	6.9	2.6	2.7	3.3	3.5	3.5	4.0	4.1	4.3	5.6
Blooming Grove	5.1	5.3	5.5	5.4	6.4	7.2	8.2	6.7	7.7	3.2	2.8	3.9	4.2	4.6	5.5	5.3	5.3	7.8
Dunmore	7.0	5.8	6.6	6.7	6.2	6.7	7.2	8.7	6.6	2.4	3.7	3.9	4.0	4.0	4.3	4.1	4.7	6.7
Gibson	9.5	8.3	9.1	8.8	8.6	8.5	10.4	9.6	9.5	3.3	2.6	3.1	3.6	2.6	2.7	4.0	4.0	4.4
Honesdale	2.3	2.1	2.2	2.8	3.4	3.1	2.8	3.1	2.3	1.8	1.8	2.0	2.1	2.0	2.3	2.0	2.6	2.9

Table 110.2: Traffic Stops By Race of Driver By Department, Troop, and Station – 2002-2010 (p. 2 of 5)

			0	% Stops	of Blacl	<b>x Drive</b> r	s					<u>%</u>	Stops of	f Hispar	nic Driv	vers		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA III																		
Troop A	3.4	3.6	3.0	2.8	3.1	3.4	3.2	3.3	3.7	0.6	0.4	0.4	0.3	0.4	0.7	0.5	0.5	0.8
Ebensburg	3.3	2.8	2.5	2.2	2.5	2.9	2.6	2.4	3.3	0.6	0.5	0.6	0.3	0.4	0.6	0.5	0.6	0.6
Greensburg	2.7	3.3	2.4	2.6	2.4	3.5	3.1	3.1	3.3	0.3	0.4	0.3	0.3	0.3	0.5	0.3	0.4	0.6
Indiana	3.4	3.1	3.3	3.3	4.1	3.4	3.9	4.2	4.3	1.4	0.3	0.4	0.2	0.5	1.3	0.9	0.6	1.5
Kiski Valley	5.9	7.9	5.2	4.6	5.7	4.6	4.6	5.0	5.0	0.6	0.4	0.6	0.3	0.5	0.5	0.4	0.5	0.6
Somerset (A)	0.7	1.1	1.6	1.2	1.3	2.5	1.1	1.3	1.0	0.4	0.2	0.3	0.3	0.2	0.5	0.1	0.4	0.5
Troop G	5.6	5.1	5.0	5.0	5.5	6.2	5.8	5.9	6.9	2.0	1.4	1.4	1.5	1.4	1.9	2.1	1.6	2.0
Bedford	5.0	4.2	4.1	4.2	5.2	6.1	4.3	6.1	6.4	0.6	1.2	0.8	0.9	1.0	1.2	1.2	1.9	1.7
Hollidaysburg	4.7	3.6	4.5	5.0	5.7	7.3	6.5	5.2	4.6	1.2	0.7	0.7	1.3	1.2	1.9	4.1	0.8	1.9
Huntingdon	2.5	1.7	2.0	2.1	2.1	2.4	3.6	1.4	2.4	1.2	0.5	0.6	0.6	0.4	0.7	0.9	0.3	0.7
Lewistown	2.9	4.0	4.5	3.8	3.5	4.3	4.4	5.3	4.6	1.3	1.8	1.9	1.8	1.9	1.6	2.0	2.1	2.6
McConnellsburg	15.5	13.6	13.1	12.0	13.4	14.1	12.2	11.9	14.4	2.5	2.1	1.8	1.2	2.1	2.3	2.1	1.9	2.0
Philipsburg	2.7	2.5	3.9	4.2	3.6	3.6	3.0	2.8	3.8	0.7	0.5	1.7	2.1	1.0	1.5	1.1	1.1	1.5
Rockview	7.6	5.5	4.6	5.0	4.4	5.9	5.9	5.9	5.8	4.8	2.4	2.4	2.0	1.6	2.7	2.7	2.4	2.4
Troop H	6.7	6.7	6.5	7.0	8.2	7.4	7.4	7.5	7.3	3.2	3.5	3.4	3.8	3.6	3.3	3.4	3.4	4.0
Carlisle	6.6	7.0	7.3	7.6	8.6	7.4	7.4	7.0	7.5	2.9	2.8	3.6	4.3	4.0	2.7	2.7	2.5	3.6
Chambersburg	7.7	6.1	5.8	6.1	5.7	6.4	7.1	5.7	6.1	3.5	3.4	3.3	4.2	3.3	3.6	3.9	3.5	3.9
Gettysburg	4.7	5.3	5.0	5.2	5.3	5.2	5.2	5.4	4.5	5.3	5.5	4.4	5.4	6.0	6.1	6.7	6.6	7.3
Harrisburg	7.1	7.3	7.2	8.9	9.4	9.3	9.8	11.4	10.2	3.4	3.9	4.2	4.3	5.0	5.6	5.9	5.1	5.6
Lykens	1.2	1.7	1.0	0.9	1.5	1.1	1.0	1.4	1.1	0.8	0.9	0.8	1.1	0.7	0.8	0.7	1.1	1.1
Newport	3.2	3.7	4.2	4.4	4.9	4.9	4.3	5.7	4.1	1.8	1.8	1.0	2.1	1.6	1.7	1.5	2.0	1.9
York	10.0	9.3	9.0	9.9	13.5	12.6	13.1	13.5	13.2	3.4	3.9	3.8	3.5	3.0	2.9	3.0	3.3	4.0

 Table 10.3: Traffic Stops By Race of Driver By Department, Troop, and Station – 2002-2010 (p. 3 of 5)

			(	% Stops	of Black	x Drivei	S					%	Stops of	f Hispai	nic Driv	vers		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA IV																		
Troop C	6.5	6.3	6.4	6.1	6.5	5.4	4.8	5.6	5.4	3.3	2.9	3.3	2.8	3.1	2.7	2.4	2.5	2.6
Clarion	10.3	10.4	10.2	12.0	12.1	9.4	9.2	10.0	9.2	5.2	4.9	5.5	5.7	5.4	4.8	4.6	4.5	4.7
Clearfield	9.1	8.2	6.8	7.8	9.2	7.5	8.1	8.9	8.2	3.6	3.0	3.7	3.4	4.3	3.7	3.9	4.0	4.0
Dubois	8.7	9.1	10.2	9.0	8.9	9.5	7.3	8.8	7.5	5.5	5.1	4.7	5.2	5.4	4.7	3.7	3.4	3.0
Kane	1.6	0.8	2.4	1.7	1.4	1.1	1.3	2.0	2.1	0.8	0.5	1.1	0.3	0.8	1.1	0.7	1.2	1.5
Punxsutawney	3.3	3.1	3.1	3.0	1.6	2.7	1.5	1.6	2.6	1.4	1.4	1.5	0.8	0.7	1.1	1.1	0.5	1.1
Ridgway	1.9	1.8	2.5	1.4	0.9	1.3	1.0	1.2	1.4	0.9	0.9	1.9	0.7	0.6	0.9	0.5	0.9	0.8
Tionesta	0.5	0.6	1.9	0.9	1.2	2.5	2.2	1.2	1.1	0.7	0.2	0.5	0.1	0.6	0.8	0.4	0.4	0.7
Troop D	6.0	5.4	5.7	6.3	7.4	6.0	5.9	6.0	6.8	1.3	0.9	1.4	1.2	1.5	1.3	1.0	0.9	1.2
Beaver	6.9	6.8	6.6	6.7	8.3	7.8	8.3	6.4	8.6	0.7	0.3	0.5	0.3	0.5	0.7	1.0	0.6	0.7
Butler	3.3	2.9	3.1	4.0	3.7	3.0	3.1	4.0	4.1	1.2	0.5	0.4	0.4	1.0	0.7	0.5	0.7	0.8
Kittanning	3.7	5.0	5.5	6.4	6.5	5.1	4.5	4.8	7.3	0.4	0.4	0.5	0.7	0.8	0.9	1.1	0.6	0.7
Mercer	10.0	8.9	9.3	9.6	13.3	9.2	9.4	8.9	8.5	4.0	3.2	5.3	4.6	5.0	4.7	2.6	2.4	2.6
New Castle	6.7	6.0	5.4	6.3	7.5	6.4	6.1	6.2	5.8	0.3	0.3	0.5	0.5	0.4	0.6	0.3	0.6	1.1
Troop E	4.7	4.3	4.3	5.2	4.8	4.3	4.2	4.0	4.4	1.0	1.1	1.1	1.2	1.5	1.2	1.4	1.5	1.4
Corry	0.8	1.9	3.0	0.8	1.0	0.7	0.9	1.1	1.0	0.3	0.3	0.6	0.5	0.5	0.0	0.3	0.5	0.9
Erie	5.9	4.9	5.2	5.2	5.6	4.8	4.8	5.3	4.7	1.7	1.4	1.4	1.4	1.8	1.0	1.6	1.7	2.1
Franklin	1.7	1.0	2.5	4.9	3.2	2.7	3.5	2.8	3.3	0.7	0.6	1.2	1.8	2.0	1.8	2.0	3.2	1.3
Girard	6.2	6.2	5.3	6.1	5.5	5.1	5.0	4.7	4.7	1.3	1.8	1.3	1.5	1.7	1.5	2.0	2.0	1.6
Meadville	6.2	5.6	5.8	6.7	6.4	5.8	6.4	4.2	5.6	1.0	0.8	1.2	1.1	1.5	1.4	1.2	0.9	0.9
Warren	0.6	0.5	0.4	0.4	0.8	0.9	0.5	0.6	1.2	0.4	0.4	0.3	0.1	0.4	0.6	0.5	0.6	0.6

 Table 10.4: Traffic Stops By Race of Driver By Department, Troop, and Station – 2002-2010 (p. 4 of 5)

			0	% Stops	of Black	x Driver	S					%	Stops o	f Hispa	nic Driv	vers		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
Troop B	6.5	6.9	6.6	6.7	6.7	6.6	7.3	6.2	6.2	0.7	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.7
Belle Vernon	6.9	6.7	8.0	9.3	6.5	7.4	8.1	6.1	6.4	1.2	0.7	1.0	1.3	1.2	0.8	1.0	0.9	0.9
Pittsburgh	7.6	8.3	8.4	8.4	9.0	7.9	9.1	8.2	8.2	0.8	0.8	0.9	0.6	0.8	1.0	0.9	0.8	1.1
Uniontown	5.6	5.9	5.7	5.3	4.7	5.5	6.4	5.3	5.6	0.3	0.3	0.2	0.1	0.1	0.3	0.3	0.2	0.4
Washington	6.1	7.1	6.2	6.2	7.4	6.6	6.5	6.4	5.8	1.0	0.5	0.8	0.6	0.6	0.6	0.7	0.7	0.9
Waynesburg	5.0	4.2	3.8	4.8	4.6	4.4	4.4	3.8	5.4	0.6	0.7	0.8	0.6	0.6	1.6	1.1	0.3	0.7
Bureau of Patrol																		
Troop T	11.6	11.6	12.0	11.5	12.2	12.2	12.3	12.4	12.1	2.9	2.9	3.1	3.0	3.1	3.1	3.3	3.6	3.9
Bowmansville	12.8	12.5	13.0	12.2	12.4	12.6	13.6	13.4	13.7	4.5	4.4	4.4	4.3	5.1	4.7	4.6	5.3	5.7
Everett	13.9	14.2	15.1	14.6	15.4	15.1	14.7	14.6	14.3	2.8	2.9	3.3	3.3	3.3	3.1	3.3	3.5	3.4
Gibsonia	11.6	9.6	10.3	10.3	10.2	9.7	9.0	9.6	9.6	1.7	1.9	1.9	1.7	2.2	1.6	1.6	1.5	2.0
King of Prussia	9.9	10.2	10.5	10.2	10.5	10.1	11.6	12.4	11.9	4.0	3.9	4.2	4.4	4.6	5.5	5.8	5.6	5.4
New Stanton	9.0	8.7	10.7	10.8	11.1	10.3	8.9	9.2	9.1	1.1	1.1	1.4	1.7	1.7	1.5	1.2	1.1	1.6
Newville	12.8	13.2	12.3	11.2	13.1	12.9	12.3	11.2	12.6	3.3	3.4	3.5	3.2	3.0	3.2	3.2	2.9	3.6
Pocono	6.0	6.5	7.9	6.7	7.6	8.9	9.0	8.9	9.1	2.9	2.3	2.4	2.8	2.8	3.0	3.0	3.8	4.4
Somerset (T)	15.2	14.9	14.5	13.7	14.7	15.3	16.1	16.9	15.9	2.9	2.9	3.5	2.8	3.0	3.3	2.8	3.4	3.9

 Table 10.5: Traffic Stops By Race of Driver By Department, Troop, and Station – 2002-2010 (p. 5 of 5)

				<u>%</u>	Warnin	gs							0	% Citatio	ns			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I																		
Troop J	29.2	29.5	30.3	25.6	27.3	27.9	27.9	31.6	33.6	86.7	88.3	89.7	92.5	92.3	94.6	94.2	93.7	88.9
Troop K	29.7	31.9	35.3	33.6	40.5	40.2	39.2	44.3	40.1	84.4	83.4	83.7	84.1	82.8	84.2	87.5	85.1	88.6
Troop L	31.6	30.2	28.9	28.0	31.3	32.1	31.2	32.4	31.2	81.5	83.0	85.9	88.3	88.3	86.5	85.8	88.3	88.1
Troop M	33.5	34.7	40.6	35.9	33.7	37.7	41.3	38.8	33.6	78.0	78.4	74.6	82.7	82.5	81.1	81.7	82.8	82.7
AKEA II Troop E	18 /	17.6	15.6	16.2	21.6	267	26.4	23.0	18.0	88.2	00.4	01.2	01.7	88.0	867	84.6	86.5	01.6
Troop N	21.7	20.8	10.0	10.2	10.2	20.7	10.6	23.0	21.0	80.2 88 0	90.4 80.5	91.2	91.7	01.5	80.7	04.0	00.5	91.0
Troop N	21.7	20.0	19.9	19.0	19.2	21.5	19.0	22.5	21.9	00.9 01.7	09.J	91.9	95.1	91.J	09.J	91.0	90.0	94.0
Troop P	27.0	20.1	20.2	20.0	25.2	28.5	54.0 20.1	27.4	19.8	81.7	84.4	80.0	80.2	80.0	85.0	81.5	83.8	90.3
Troop R	20.5	18.1	16.8	15.4	16.1	21.1	28.1	30.2	27.0	89.0	92.8	93.2	94.2	94.2	92.4	88.5	87.5	89.8
AREA III																		
Troop A	33.9	31.3	25.9	27.3	28.2	29.9	32.2	32.3	25.8	84.3	85.9	89.9	90.0	86.9	87.2	87.6	85.2	89.2
Troop G	35.5	36.1	30.4	29.9	37.5	37.6	35.7	35.4	28.8	75.1	76.7	84.1	84.5	75.7	75.5	79.2	79.2	86.6
Troop H	24.6	25.2	22.2	23.8	21.3	16.5	20.0	23.7	27.4	81.3	81.8	85.5	86.8	88.7	91.3	90.0	88.5	88.1
ARFA IV																		
Troop C	34 5	33.8	31.9	33.0	33.0	29.9	32.6	35.4	37.9	79.4	80.5	81.1	80.6	794	81.2	81.6	78 3	87.1
Troop D	48.4	42.6	39.3	37.1	43.2	42.6	38.5	34.2	31.2	65.8	72.5	77.3	79.8	75.3	77.8	82.3	85.8	78.5
Troop E	46.7	37.4	34.6	31.3	34.5	39.3	38.8	39.7	37.6	65.3	75.7	79.1	83.2	80.3	76.9	77.6	76.4	78.5
Troop B	23.1	23.4	22.1	24.7	23.6	19.1	25.3	23.5	24.9	86.6	87.5	89.7	89.7	92.1	94.9	95.1	94.3	92.0
Bureau of Patrol																		
Troop T	14.6	13.4	10.6	12.9	12.2	11.7	11.9	13.8	15.5	90.2	91.5	94.2	94.1	94.7	95.5	95.1	93.1	92.7

# Table 10.2: Warnings and Citations 2002-2010 by Troop for All Drivers

				<u>%</u>	Arreste	<u>ed</u>							9	<b>%</b> Search	ed			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I																		
Troop J	0.8	0.9	0.8	2.1	3.6	3.8	3.8	4.1	7.2	1.0	1.5	2.3	3.5	3.3	2.9	1.6	2.2	4.8
Troop K	0.9	1.0	0.9	1.4	2.0	2.7	2.6	2.6	4.3	2.4	2.2	1.9	1.7	2.6	3.8	4.5	5.8	5.8
Troop L	0.8	0.6	0.6	0.8	1.6	1.2	1.4	1.7	2.1	0.8	1.0	0.7	0.6	0.8	0.6	0.6	0.7	1.4
Troop M	0.5	0.5	0.4	0.8	1.7	2.0	2.6	2.3	5.4	1.2	0.8	0.7	1.6	1.6	2.0	1.8	1.9	2.5
AREA II																		
Troop F	0.3	0.2	0.1	0.4	1.0	1.1	1.1	1.1	3.7	0.3	0.3	0.2	0.4	0.7	1.1	0.8	0.7	0.5
Troop N	0.3	0.2	0.4	0.7	0.9	1.4	0.9	1.2	3.8	0.5	0.4	0.4	0.7	0.8	1.5	0.7	1.0	1.0
Troop P	0.6	0.2	0.7	0.6	0.8	0.8	1.0	1.4	1.4	0.4	0.5	0.8	1.0	0.7	0.8	1.0	0.7	0.5
Troop R	0.4	0.3	0.4	0.8	0.9	0.9	1.4	1.4	3.1	0.9	0.6	0.6	1.4	1.6	1.6	1.8	1.9	2.1
AREA III																		
Troop A	0.9	0.5	0.5	1.1	2.3	1.8	1.1	1.6	1.9	0.9	0.4	0.7	1.2	1.4	1.5	0.8	1.0	0.9
Troop G	0.8	0.7	0.6	0.8	1.3	1.1	0.6	0.7	2.4	0.5	0.6	0.5	0.6	0.7	1.0	0.7	0.6	0.6
Troop H	1.0	0.9	0.9	1.2	2.1	1.8	1.9	2.3	4.2	1.1	1.1	1.5	1.8	1.7	1.1	1.2	1.2	1.2
AREA IV																		
Troop C	0.4	03	03	0.5	11	0.9	0.9	11	15	0.6	0.5	05	0.9	0.8	0.6	04	03	0.6
Troop D	1.3	0.5	0.5	1.7	3.3	1.9	1.8	1.9	3.8	1.2	0.7	1.4	2.8	3.7	2.4	1.3	1.4	1.5
Troop E	1.1	0.6	0.4	0.9	1.7	1.7	2.1	1.9	4.8	0.9	0.5	0.4	0.5	0.9	0.8	0.6	0.6	0.6
Troop B	0.7	0.9	0.8	0.9	1.5	1.8	1.6	1.8	4.3	0.7	0.8	0.8	1.0	1.0	1.1	1.2	0.9	1.1
Bureau of Patrol							Ť											
Troop T	0.2	0.1	0.1	0.2	0.7	0.5	0.1	0.2	1.0	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2

## Table 10.3: Arrests and Searches 2002-2010 by Troop for All Drivers

					White								<u>N</u>	Non-Whit	<u>e</u>			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I																		
Troop J	28.8	29.5	29.3	24.9	26.3	26.5	26.7	30.4	33.6	31.2	30.0	34.0	28.2	30.8	32.8	32.0	35.4	33.5
Troop K	30.0	31.6	35.0	33.7	39.8	38.9	37.2	41.4	36.7	29.2	33.2	36.4	33.1	42.1	43.1	42.3	48.9	44.9
Troop L	32.2	30.6	29.6	28.1	31.5	32.0	31.3	32.5	31.5	27.5	27.8	25.5	27.8	30.2	33.0	30.9	32.0	30.0
Troop M	34.5	35.8	42.0	35.8	33.3	37.6	42.0	39.5	33.3	29.9	30.1	35.3	36.3	34.7	37.8	39.1	36.8	34.3
AREA II																		
Troop F	19.6	18.5	16.3	16.8	22.0	26.7	27.0	23.6	18.5	9.7	10.3	9.3	9.4	18.4	26.1	21.7	17.9	14.0
Troop N	22.5	21.7	20.8	20.5	19.9	20.1	18.7	22.2	22.1	19.0	17.4	16.8	17.4	16.8	24.8	22.6	23.5	21.4
Troop P	27.7	26.2	26.4	26.3	25.4	28.7	34.9	28.0	20.4	16.1	22.4	20.8	19.3	20.4	20.1	26.6	17.8	12.6
Troop R	21.2	18.6	17.2	15.5	16.1	21.4	28.0	30.3	27.4	16.9	14.6	14.9	14.7	16.2	19.7	29.0	29.6	35.4
AREA III																		
Troop A	33.9	31.1	25.7	27.3	28.0	29.9	32.2	32.5	25.7	34.3	35.8	29.4	38.5	32.1	30.0	31.9	38.4	25.9
Troop G	37.6	37.5	31.5	30.8	38.6	37.7	35.5	35.7	29.1	20.0	23.7	19.6	21.4	28.3	36.5	37.4	32.9	26.8
Troop H	25.1	25.2	22.5	23.7	21.3	16.6	20.0	23.9	27.5	20.7	24.6	19.9	24.4	21.5	15.8	20.1	22.2	26.6
AREA IV																		
Troop C	36.7	36.4	34.3	34.7	34.5	31.6	34.6	37.6	39.6	22.1	19.8	18.7	23.0	23.7	18.5	17.8	19.9	26.9
Troop D	48.7	43.0	39.0	36.7	42.2	42.5	38.4	34.1	31.3	45.9	38.4	42.4	41.1	51.8	43.8	39.4	35.1	29.7
Troop E	48.0	38.3	35.5	32.2	35.2	40.3	39.8	39.8	37.9	36.1	28.3	25.5	23.3	28.0	29.8	28.7	38.8	34.5
Troop B	23.1	23.4	22.4	24.5	23.4	18.7	25.0	23.5	24.7	22.2	23.4	19.6	26.8	25.9	22.2	28.3	24.2	26.7
Bur of Patrol																		
Troop T	15.0	13.7	10.8	12.8	12.4	12.0	12.2	13.9	15.5	12.8	12.1	9.9	13.2	11.6	11.0	11.1	13.5	15.4
						-												

Table 10.4: Traffic Stop WARNINGS by Race/Ethnicity 2002-2010 – Troop Level

					<u>White</u>								N	on-Whit	<u>e</u>			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I	060	00.1	00.6	02.4	0.0	04.4	02.0	00.6	00.6	064	00.7	00.0	000	02.1	05.0	05.1	0.4.1	00.0
Troop J	86.8	88.1	89.6	92.4	92.0	94.4	93.9	93.6	88.6	86.4	89.5	90.2	92.9	93.1	95.0	95.1	94.1	89.9
Troop K	83.9	83.0	83.2	83.3	81.6	84.6	87.7	85.0	87.7	85.8	84.8	84.9	86.2	85.7	83.5	87.0	85.2	89.9
Troop L	80.7	82.6	85.5	88.1	88.1	86.7	86.1	88.4	88.0	85.9	85.0	87.9	89.4	89.6	85.5	84.4	87.7	88.9
Troop M	77.2	77.6	73.3	82.4	82.8	80.6	81.3	82.2	82.4	81.3	82.0	79.3	83.5	81.6	82.6	83.0	84.5	83.7
											*							
AREA II										·								
Troop F	87.4	90.0	90.8	91.2	88.3	84.4	84.1	86.1	91.1	94.4	94.8	95.7	96.6	93.6	84.4	88.3	89.8	95.4
Troop N	87.8	88.8	91.6	92.8	90.9	90.2	91.9	90.7	93.7	92.0	92.4	92.8	94.1	93.7	87.2	90.8	90.3	94.9
Troop P	81.3	84.3	85.8	86.0	86.5	84.9	81.2	83.4	89.9	89.5	86.3	88.9	89.4	88.2	89.0	88.4	90.8	95.8
Troop R	88.7	92.5	92.9	94.2	94.3	92.4	89.0	87.7	89.7	90.4	95.0	94.6	94.8	93.7	92.3	86.0	86.3	90.3
AREA III																		
Troop A	84.3	85.9	89.9	89.9	87.0	87.4	87.6	85.0	89.2	84.7	85.8	89.9	92.0	85.5	83.5	87.6	88.7	89.5
Troop G	73.5	75.5	83.3	83.9	74.9	75.7	79.5	78.9	86.2	87.6	87.1	91.2	90.0	82.7	74.3	76.5	82.2	88.9
Troop H	80.9	91.6	85.1	86.7	88.6	91.0	89.7	87.9	87.4	84.3	83.3	88.1	87.5	89.1	92.9	92.1	91.9	91.9
AREA IV																		
Troop C	77.6	78.7	79.4	79.4	78.3	79.9	80.2	76.6	78.1	89.1	90.8	91.0	88.3	86.3	90.0	91.7	90.0	88.6
Troop D	65.4	72.1	77.6	79.8	76.3	78.3	82.4	85.9	87.1	69.0	77.0	73.9	79.6	67.3	73.0	81.7	84.8	86.7
Troop E	64.2	75.1	78.4	82.5	79.7	76.2	77.0	76.5	78.3	74.7	82.7	86.2	90.2	85.7	83.7	84.2	76.0	81.0
Troop B	86.5	87.3	89.3	89.7	92.1	94.9	95.0	94.3	92.0	89.2	88.9	93.2	90.1	91.9	94.4	95.1	93.9	92.3
1																		
<b>Bur of Patrol</b>																		
Troop T	89.7	91.3	94.2	94.3	94.6	95.4	94.9	93.1	92.7	91.8	92.3	94.4	93.6	95.1	95.8	95.8	92.8	92.7

## Table 10.5: Traffic Stop CITATIONS by Race/Ethnicity 2002-2010 – Troop Level

					White								N	on-Whit	<u>e</u>			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I																		
Troop J	0.6	0.8	0.7	1.9	3.5	3.6	3.4	3.6	6.6	1.4	1.0	0.9	2.8	3.9	4.4	5.2	5.6	9.3
Troop K	0.9	1.0	0.9	1.2	2.0	2.5	2.6	2.7	4.4	1.0	1.2	0.9	1.8	2.0	3.1	2.8	2.5	4.2
Troop L	0.8	0.5	0.7	0.8	1.6	1.3	1.4	1.8	2.1	1.0	1.0	0.4	0.9	1.3	1.0	1.3	1.3	2.1
Troop M	0.5	0.4	0.3	0.7	1.6	2.1	2.7	2.3	5.8	0.5	0.8	0.5	1.0	1.9	1.8	2.4	2.2	4.4
ADEA II											*							
AREA II Troop F	03	0.1	0.1	0.4	1.0	13	1.0	11	37	0.4	0.2	0.2	0.4	13	12	1.4	1.0	3.4
Troop N	0.5	0.1	0.1	0.4	1.0	1.5	1.0	1.1	3.7	0.4	0.2	0.2	0.4	0.6	1.2	0.7	1.0	3.4
Troop P	0.4	0.2	0.4	0.0	0.8	0.8	1.0	1.1	1.0	0.1	0.1	22	1.2	13	1.4	1.2	1.5	1.1
Troop R	0.3	0.2	0.0	0.8	1.0	0.8	1.5	1.4	3.1	0.0	0.5	0.5	0.7	0.8	1.0	1.2	1.2	3.3
-																		
AREA III																		
Troop A	1.0	0.5	0.5	1.1	2.3	1.9	1.2	1.5	1.9	0.2	0.4	0.4	0.9	2.9	1.4	0.9	1.9	1.7
Troop G	0.8	0.7	0.6	0.9	1.3	1.2	0.6	0.7	2.5	0.5	0.5	0.3	0.5	0.7	0.7	0.8	0.7	1.5
Troop H	0.9	0.9	0.9	1.2	2.1	1.7	1.9	2.1	4.0	1.7	1.2	0.9	1.2	2.2	2.4	2.1	3.0	5.2
AREA IV																		
Troop C	0.4	0.3	0.3	0.5	1.1	1.0	1.0	1.2	1.5	0.2	0.1	0.1	0.3	0.7	0.4	0.5	0.2	1.0
Troop D	1.3	0.5	0.5	1.6	3.2	1.9	1.8	1.9	3.8	1.4	0.7	0.5	2.5	3.5	2.2	1.9	1.8	3.2
Troop E	1.1	0.6	0.4	1.0	1.8	1.8	2.2	1.9	4.9	0.6	0.4	0.3	0.3	1.1	0.9	1.1	1.9	3.9
Troop B	0.8	0.9	0.9	0.9	1.5	1.7	1.5	1.7	4.3	0.4	0.5	0.4	1.2	1.6	1.8	2.0	1.8	4.4
Rur of Patrol				0.1	0.0	0.5	0.1	0.2	0.6	03	03	0.2	0.4	0.6	04	0.2	04	23

### Table 10.6: Traffic Stop ARRESTS by Race/Ethnicity 2002-2010 – Troop Level

					<b>White</b>								N	on-Whit	<u>e</u>			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA I																		
Troop J	0.9	1.3	2.0	2.6	2.7	2.5	1.2	1.6	4.0	1.8	2.3	3.7	6.5	5.5	3.8	2.9	3.9	7.1
Troop K	1.7	1.4	1.6	1.3	1.6	2.5	3.3	4.5	4.9	4.1	4.6	2.8	2.9	4.8	5.8	6.3	7.8	7.0
Troop L	0.6	0.7	0.4	0.4	0.6	0.4	0.4	0.6	1.1	2.2	2.6	2.3	1.7	2.0	1.5	1.7	1.7	3.1
Troop M	0.7	0.5	0.5	1.0	0.9	1.3	1.2	1.4	2.2	3.1	2.1	1.8	3.8	3.8	3.4	3.7	3.3	3.4
AREA II	0.0	0.0	0.0	0.4	0.5	0.0	0.6	0.6		0.5		0.0	0.5	1.0		2.4	1.6	1.0
Troop F	0.3	0.3	0.2	0.4	0.5	0.8	0.6	0.6	0.4	0.5	0.4	0.8	0.6	1.8	2.2	2.4	1.6	1.0
Troop N	0.4	0.3	0.3	0.5	0.6	0.8	0.4	0.7	0.9	0.9	0.8	0.8	1./	1./	3.5	1.6	1.9	1.4
Troop P	0.4	0.4	0.7	0.9	0.6	0.7	1.0	0.7	0.4	0.3	2.2	4.4	3.6	3.4	1.8	1.8	1.0	0.5
Troop R	0.8	0.6	0.5	1.1	1.4	1.2	1.2	1.4	1.5	1.4	0.8	1.1	3.1	2.7	3.6	4.5	4.0	4.9
AREA III																		
Troop A	0.8	0.4	0.6	1.1	1.2	1.2	0.7	0.8	0.8	1.4	1.1	3.0	4.2	4.7	4.9	2.1	3.2	2.5
Troop G	0.4	0.5	0.4	0.5	0.5	0.5	0.3	0.5	0.5	1.0	1.3	1.5	1.5	2.2	4.5	4.0	1.8	1.6
Troop H	0.9	0.9	1.2	1.5	1.3	0.8	0.8	0.9	1.0	1.9	2.3	3.1	3.7	4.0	2.4	3.3	2.9	2.9
ARFA IV																		
Troop C	04	03	03	0.6	0.5	0.4	03	03	03	16	13	16	31	2.4	15	0.9	0.8	2.1
Troop D	1.0	0.5	1.1	2.3	3.2	2.0	1.1	1.2	1.2	3.6	2.6	4.5	7.5	7.4	6.1	3.3	2.9	3.2
Troop E	0.9	0.6	0.3	0.5	0.7	0.7	0.5	0.4	0.4	0.8	0.3	1.3	0.5	1.8	1.4	1.0	1.8	1.9
Troop B	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.7	0.9	1.5	2.6	2.8	3.5	2.5	3.4	3.8	2.5	2.6
Bur of Patrol												- <b>-</b>					- <b>-</b>	
Troop T	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.6	0.6	0.7	0.8	0.6	0.4	0.5	0.7	0.7

### Table 10.7: Traffic Stop SEARCHES by Race/Ethnicity 2002-2010 – Troop Level

				<u>%</u>	Warnir	ngs							%	o Citatio	ons			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
PSP Dept.	27.0	26.2	24.9	24.6	25.7	26.0	27.6	28.3	26.5	82.8	84.5	86.4	88.1	87.2	87.4	87.6	86.6	88.5
AREA I																		
Troop J																		
Avondale	35.5	37.9	34.8	36.2	41.5	42.7	41.9	43.6	42.2	95.6	90.8	91.4	92.5	90.5	94.9	95.3	90.8	83.8
Embreeville	39.8	31.6	32.7	25.7	22.7	22.6	23.7	24.8	27.0	73.9	84.4	87.8	94.2	95.9	97.1	94.4	94.2	86.8
Ephrata	16.6	16.0	17.9	21.5	18.4	19.8	26.9	28.2	29.1	91.2	93.0	94.4	91.9	95.7	96.6	94.3	95.5	94.6
Lancaster	21.9	23.4	27.0	17.6	21.8	20.1	19.5	30.5	34.6	85.9	86.8	87.3	91.4	89.3	90.3	92.9	94.8	94.7
Troop K																		
Media	29.9	29.8	37.3	39.3	40.1	47.3	46.2	49.0	34.0	81.4	81.0	75.7	75.0	79.1	75.7	78.5	72.9	81.7
Philadelphia	20.8	28.8	29.7	26.7	39.6	34.9	36.6	43.1	43.5	93.2	87.7	88.2	87.8	85.6	88.3	89.8	90.6	91.2
Skippack	38.0	37.4	37.1	36.1	42.6	46.5	44.2	40.7	31.1	81.8	82.7	87.8	88.6	82.5	84	87.5	84.4	85.6
Troop L																		
Frackville	28.5	35.7	38.8	36.5	29.8	28.4	25.1	29.3	33.2	81.3	78.6	84.0	84.1	89.9	89.6	88.4	91.3	88.2
Hamburg	37.0	31.5	28.9	35.3	25.3	31.4	29.9	31.2	36.4	88.2	90.6	89.8	92.5	93.1	90.5	92.5	94.0	92.6
Jonestown	26.7	25.3	23.7	19.3	30.2	32.1	29.1	30.2	23.6	81.8	82.1	85.0	88.0	85.6	81.7	80.9	81.9	88.6
Reading	20.8	25.9	25.0	27.7	36.4	34.6	36.9	37.2	36.8	87.1	83.5	87.9	85.8	86.7	86.6	86.3	91.1	89.2
Schuyl. Haven	57.4	40.4	36.9	32.1	36.3	32.9	34.6	36.4	41.4	62.7	80.5	81.8	87.9	87.3	89.2	86.4	89.0	78.9
Troop M																		
Belfast	38.5	29.6	32.9	27.0	24.5	22.5	25.8	25.0	23.8	74.7	80.6	79.1	85.8	86.7	88.6	87.0	84.0	83.8
Bethlehem	31.0	31.6	29.1	30.5	31.7	31.3	37.4	33.2	33.2	79.8	80.4	85.8	87.7	86.4	89.6	84.3	88.0	80.8
Dublin	44.2	54.7	60.5	49.8	40.5	48.9	51.9	53.9	33.5	70.5	67.6	66.1	81.2	84.9	74.9	78.8	76.9	81.6
Fogelsville	32.7	32.4	33.9	36.1	31.9	39.7	48.5	44.2	36.3	79.5	80.1	77.3	79.5	80.9	78.4	77.1	78.6	81.2
Trevose	20.5	19.2	48.8	36.9	41.8	41.1	33.2	34.7	38.2	85.8	86.5	61.7	79.5	73.9	79.5	86.2	87.9	86.2

## Table 10.8: Warnings and Citations 2002-2010 by Station for All Drivers (p.1 of 5)

	0			<u>%</u>	Warnir	igs					,		<u>%</u>	Citatio	ons			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA II																		
Troop F																		
Coudersport	49.2	52.0	40.9	38.4	38.7	51.2	53.5	40.5	31.4	61.3	65.5	70.4	72.4	75.1	63.8	59.8	68.1	80.4
Emporium	37.0	33.8	25.2	24.0	24.2	35.1	32.9	38.3	31.0	79.3	82.3	84.3	84.8	83.8	73.7	74.8	73.7	80.4
Lamar	10.8	10.0	11.1	8.5	13.0	24.6	24.1	17.7	16.0	93.3	93.5	93.9	96.6	95.9	85.1	86.1	85.2	90.3
Mansfield	25.8	23.9	34.4	29.0	34.1	44.4	40.3	31.8	23.6	82.3	86.3	78.7	84.8	82.1	70.3	73.0	78.4	89.1
Milton	8.4	9.3	6.6	12.3	15.2	16.5	12.7	14.1	14.8	96.3	97.7	98.9	97.6	97.2	93	96.7	96.4	95.8
Montoursville	10.1	10.4	8.9	8.0	9.8	15.9	15.2	18.3	17.4	94.6	94.7	95.1	95.5	93.3	90.2	91.7	91.3	92.4
Selinsgrove	7.6	6.1	7.0	5.5	11.0	19.5	22.4	16.1	11.9	95.3	97.4	96.4	96.8	91.6	91.7	89.4	92.2	95.3
Stonington	45.5	42.4	41.1	45.9	38.9	31.7	28.4	35.2	23.3	70.9	78.8	80.4	82.6	84.0	86.2	87.3	84.9	90.5
Troop N									-									
Bloomsburg	23.7	16.1	10.8	12.2	17.0	16.5	13.8	17.3	10.5	95.8	97.2	96.6	93.1	89.4	95	97.3	90.5	93.9
Fern Ridge	10.0	17.2	9.4	9.3	11.6	13.7	8.2	16.2	20.1	93.9	92.7	98.2	96.5	90.9	95	95.5	93.9	92.5
Hazleton	24.7	17.6	13.4	15.1	17.5	22	29.4	27.7	18.5	84.2	88.7	92.4	93.0	92.3	88.7	85.8	88.9	94.5
Lehighton	37.0	35.8	35.2	31.9	23.8	21.4	14.1	21.5	30.1	77.5	82.0	88.2	92.9	91.2	88.4	92.8	89.3	95.6
Swiftwater	19.8	19.4	29.6	25.9	22.6	27.3	31.4	29.0	29.2	89.0	87.7	85.8	91.6	92.5	84.8	86.9	89.5	94.5
Troop P																		
Laporte	39.0	35.0	30.4	25.5	27.3	26.8	23.1	26.4	24.3	70.1	80.0	87.2	84.7	84.3	83.6	85.8	78.5	84.7
Shickshinny	28.4	24.4	25.1	27.3	22.0	23.6	26.3	32.8	36.4	86.6	85.4	83.0	83.2	86.6	91.4	92.9	84.8	85.7
Towanda	41.7	34.2	24.0	35.1	37.7	36.6	54.4	45.0	34.1	66.5	78.4	89.0	83.5	79.7	78.2	66.3	72.3	83.2
Tunkhannock	26.4	30.4	49.3	31.2	26.4	29.9	24.2	22.2	23.5	84.3	78.8	68.8	82.3	88.1	88.0	94.9	91.6	90.6
Wyoming	12.3	13.5	12.6	9.2	8.9	12.1	9.2	7.6	5.5	93.5	93.7	94.2	95.7	96.2	95.4	96.7	97.1	97.6
Troop R																		
Blooming Grove	23.6	19.1	19.2	18.3	22.8	31.4	39.8	36.6	29.9	87.8	93.2	95.4	96.4	94.9	88.5	86.9	90.5	93.4
Dunmore	15.8	17.0	16.2	15.7	18.5	20.1	24.2	34.3	32.8	92.0	92.9	91.1	93.8	91.4	92.6	86.3	80.5	84.1
Gibson	22.2	25.3	17.9	15.2	9.2	14.5	23.0	24.6	23.2	91.3	93.4	94.3	94.2	95.2	94.5	89.6	88.2	90.1
Honesdale	25.8	14.5	13.8	12.1	10.9	15.8	20.6	25.0	20.6	81.5	91.9	92.0	92.8	97.0	95.9	94.2	91.9	93.6

Table 10.8: Warnings and Citations 2002-2010 by Station for All Drivers – 2002-2010 (p. 2 of 5)

				%	Warnin	igs							<u>%</u>	Citatio	ons			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA III																		
Troop A																		
Ebensburg	19.2	20.3	18.6	19.5	18.3	22.9	25.8	25.3	24.1	91.0	87.1	87.4	91.7	91.2	86.2	85.9	84.5	89.5
Greensburg	35.0	30.7	26.7	25.3	26.2	39.2	46.2	45.2	36.5	89.4	92.0	95.3	91.8	90.5	87.3	84.3	79.4	83.4
Indiana	34.6	29.9	22.8	28.1	28.3	27.7	29.5	30.1	25.8	78.8	87.6	91.4	90.0	85.9	88.9	88.4	83.4	88.5
Kiski Valley	48.6	44.4	31.6	35.6	34.8	26.3	25.9	21.2	11.8	76.4	77.5	87.9	89.5	83.7	88.8	89.1	91.0	96.0
Somerset (A)	33.1	36.5	34.4	33.5	46.8	34	35.4	41.5	29.9	79.0	76.5	82.1	84.3	73.9	84.3	92.9	92.0	91.2
Troop G																		
Bedford	39.1	36.4	34.2	44.0	49.1	47	43.5	48.4	23.0	72.2	72.6	75.8	75.2	68.6	67.1	73.1	67.6	88.4
Hollidaysburg	52.4	44.8	35.6	33.0	56.4	44	46.4	46.7	48.6	66.1	74.8	83.8	80.2	62.2	73.8	68.5	79.4	80.0
Huntingdon	35.7	37.8	30.9	29.6	46.1	55.1	49.4	44.4	38.9	77.4	76.5	84.9	86.2	73.6	61.6	88.8	68.1	75.9
Lewistown	36.6	36.1	34.2	32.0	48.9	37.7	25.4	23.4	13.4	72.4	73.6	78.1	83.0	63.9	78	62.9	91.4	95.1
McConnellsburg	29.6	34.0	15.1	13.3	22.1	31.8	50.5	51.1	40.2	77.0	77.8	92.9	93.8	86.3	79.4	80.3	69.3	84.7
Philipsburg	44.2	49.8	37.0	29.5	40.6	47.1	35.4	34.6	33.6	69.7	71.1	86.9	88.5	80.3	72.4	87.5	80.0	83.9
Rockview	23.6	24.6	23.6	25.9	18.2	20.4	22.5	9.4	10.5	83.2	83.9	87.5	86.8	87.4	83.8	94.8	93.9	93.7
Troop H									_									
11000 11																		
Carlisle	17.8	17.0	16.0	20.3	19.8	11.0	12.3	17.4	23.2	89.2	90.1	91.8	92.4	92.7	94.7	94.8	90.7	88.3
Chambersburg	39.5	36.4	28.8	23.9	19.8	23.6	35.0	37.7	31.1	68.7	71.1	81.6	86.1	89.7	90.3	89.9	89.8	88.1
Gettysburg	46.6	44.3	46.5	38.1	36.7	29.8	30.6	31.3	30.4	61.5	62.8	59.5	68.4	70.6	76.5	74.9	79.9	81.8
Harrisburg	18.4	19.3	12.6	17.2	21.1	13.6	19.8	22.8	23.4	86.6	88.0	93.4	92.7	91.8	94.5	92.9	92.1	93.3
Lykens	33.6	35.8	32.3	30.7	37.8	30.5	33.7	35.6	42.8	78.3	81.4	88.2	87.0	77.7	77	73.2	71.1	69.7
Newport	17.4	14.1	11.8	17.2	16.1	11.4	12.5	19.6	27.5	87.9	89.5	93.5	91.4	90.8	95.1	94.8	93.6	95.2
York	17.5	20.0	17.4	25.1	16.7	12.2	11.9	15.4	22.9	85.0	84.6	87.4	85.2	90.4	93.8	94.1	93.2	93.9

Table 10.8: Warnings and Citations 2002-2010 by Station for All Drivers – 2002-2010 (p. 3 of 5)

				<u>%</u>	Warniı	ngs							<u>%</u>	<b>Citati</b> o	ons			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA IV																		
Troop C											$\frown$							
Clarion	40.0	37.2	38.3	40.2	39.2	32.2	33.5	41.2	45.9	73.4	78.5	75.2	77.2	74.6	79.5	80.2	73.9	75.0
Clearfield	21.9	25.7	18.9	16.6	18.1	17.4	20.4	21.3	18.8	88.9	88.0	94.3	95.2	90.9	91.1	94.1	95.4	93.2
Dubois	27.4	21.1	24.0	25.8	26.8	20.4	23.0	23.7	35.8	84.1	87.0	85.7	84.3	83.4	87.3	86.9	85.3	83.2
Kane	31.6	34.4	32.8	27.5	34.1	40.1	40.4	40.3	47.5	90.9	82.8	81.3	83.3	79.3	69.6	76.6	75.3	81.0
Punxsutawney	34.2	37.0	36.9	31.1	29.1	26.6	44.9	50.5	47.0	80.5	77.0	77.0	81.0	83.0	85.4	72.9	64.7	69.4
Ridgway	39.4	40.0	28.0	35.4	38.2	34	29.3	33.5	33.7	78.8	79.2	85.5	79.2	74.8	79.1	80.7	73.6	77.0
Tionesta	58.4	57.5	59.4	58.7	57.3	52.5	52.7	62.7	41.7	55.7	59.5	54.8	58.2	61.3	64.6	66.2	57.2	69.6
Troop D									F.									
Beaver	57.7	52.6	44.6	37.7	50.9	47.3	28.7	25.3	29.6	53.6	61.6	72.2	78.2	70.1	71.8	92.2	92.6	92.4
Butler	40.7	39.2	30.2	28.8	32.8	47.9	51.2	53.2	41.0	71.0	75.5	84.1	85.8	85.3	81	76.7	82.6	84.4
Kittanning	49.9	43.9	41.9	42.7	44.3	42.2	32.6	29.9	26.1	67.6	71.1	75.4	74.7	70.0	73.9	77.8	81.0	85.2
Mercer	40.1	35.9	44.9	40.0	56.0	47.8	45.2	36.9	27.8	80.2	80.6	75.2	83.2	66.8	71.8	80.6	81.3	87.5
New Castle	59.1	44.0	38.5	39.6	36.1	29.7	25.2	19.0	24.2	51.4	72.0	76.0	74.0	82.6	87	88.3	91.3	89.6
Troop E																		
Corry	52.5	45.8	41.8	42.5	42.7	34	34.9	47.2	40.9	61.7	70.5	71.7	71.0	71.2	74.7	76.8	66.6	73.6
Erie	38.1	26.3	26.4	36.3	34.3	42.6	41.5	40.5	38.9	69.9	82.1	83.9	85.9	80.7	78.9	79.3	78.6	79.8
Franklin	63.2	61.8	57.2	51.1	56.3	66.4	61.4	65.2	47.5	54.9	58.8	64.2	68.2	66.5	56.8	64.3	60.8	71.0
Girard	42.5	28.8	27.9	30.1	27.1	33.3	34.1	37.3	30.5	71.9	84.1	87.6	84.8	86.0	83.5	81.1	83.2	86.8
Meadville	47.9	48.0	32.0	19.7	25.1	28.8	26.5	30.7	36.3	61.8	66.6	78.6	89.5	87.4	82.9	83.3	79.1	78.3
Warren	57.8	32.1	29.5	30.2	40.2	38.5	41.1	41.4	41.8	55.3	78.9	80.9	79.4	72.5	76.9	72.3	70.8	69.9

Table 10.8: Warnings and Citations 2002-2010 by Station for All Drivers – 2002-2010 (p. 4 of 5)

				%	Warnir	igs							<u>%</u>	Citatio	ons			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
Troop B																		
Belle Vernon	25.6	20.8	22.1	19.6	20.2	22.8	25.4	19.1	28.3	92.0	91.5	93.8	95.2	94.4	94.6	96.2	98.1	93.1
Pittsburgh	10.8	13.9	14.8	26.7	21.9	14.4	31.0	20.4	21.7	95.2	95.3	95.0	91.0	94.2	97.8	97.1	97.7	95.9
Uniontown	37.8	41.2	33.9	31.8	21.2	19.6	25.1	25.9	32.1	74.0	70.2	76.5	81.2	89.3	92	91.3	88.8	88.1
Washington	18.4	21.4	16.3	12.4	17.0	14.1	12.6	15.8	12.6	87.7	86.3	91.3	93.5	92.6	96	97.0	96.5	94.5
Waynesburg	40.3	33.3	28.5	36.4	51.1	57.2	56.2	51.8	23.7	75.0	84.5	92.7	93.1	90.6	87.6	90.5	91.3	92.8
Bureau of Patrol Troop T																		
Bowmansville	11.5	8.1	5.7	9.7	8.0	6.8	8.9	11.2	8.6	93.1	96.2	97.9	98.1	96.7	95.4	98.1	94.1	95.0
Everett	15.9	11.8	12.4	11.6	9.6	8.3	10.1	9.1	9.3	90.1	93.6	93.2	93.6	94.3	95.4	94.9	95.4	96.4
Gibsonia	22.6	26.1	13.4	15.4	14.8	16.5	13.8	12.1	18.5	83.4	82.5	94.2	92.9	92.0	92.4	92.9	94.2	94.6
King of Prussia	19.7	19.4	12.3	14.3	8.8	11.4	16.2	23.6	31.0	86.7	87.5	92.2	90.6	94.4	94.6	92.3	85.4	85.1
New Stanton	15.6	13.5	15.0	16.1	10.6	12.0	10.7	12.2	15.2	90.0	92.1	91.8	93.0	94.9	95.4	94.6	93.6	94.4
Newville	13.6	11.5	10.2	17.2	27.9	21.0	17.7	16.5	10.6	91.5	92.4	93.4	94.9	95.0	96.3	96.9	97.7	96.9
Pocono	16.4	11.7	10.2	10.9	14.1	10.3	9.6	15.7	19.1	86.1	91.2	94.7	94.7	93.5	94.1	94.7	91.7	87.7
Somerset (T)	7.4	7.2	4.4	5.4	5.5	5.9	5.4	11.4	13.4	95.0	94.5	97.2	96.1	96.5	95.9	96.0	91.1	91.4

Table 10.8: Warnings and Citations 2002-2010 by Station for All Drivers – 2002-2010 (p. 5 of 5)

				<u>%</u>	6 Arrest	ts			,				%	Search	ies			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
PSP Dept.	0.6	0.5	0.4	0.8	1.5	1.5	1.3	1.4	3.0	0.8	0.7	0.8	1.1	1.2	1.2	1.1	1.1	1.3
AREA I											$\bigwedge$							
Troop J																		
Avondale	0.7	0.5	0.4	1.7	2.6	2.1	2.5	4.4	7.4	1.0	1.6	2.1	2.9	2.5	2.5	1.9	3.9	6.6
Embreeville	0.9	0.7	0.4	1.5	2.7	3	2.3	2.9	8.9	1.6	1.3	2.3	3.7	3.2	3.4	1.9	1.9	6.9
Ephrata	0.6	1.2	0.8	0.7	0.8	0.7	1.5	3.5	3.0	0.9	1.1	0.9	0.7	1.0	0.7	0.9	1.5	1.9
Lancaster	0.9	1.5	1.6	3.5	6.2	8	6.7	5.3	6.8	0.8	1.8	3.4	4.8	4.8	3.5	1.2	1.4	2.1
Troop K																		
Media	1.0	1.5	1.4	2.1	2.1	3.6	4.5	3.8	82	3.0	3.5	3.1	2.7	2.9	6.8	8.3	8.1	11.5
Philadelphia	0.7	0.8	0.5	1.1	1.2	2.2	1.9	1.8	3.4	1.8	1.5	1.6	1.5	2.9	3	3.8	5.0	4.7
Skippack	0.9	0.6	0.6	1.1	3.3	2.8	4.1	4.0	3.8	1.7	1.2	1.0	1.2	1.6	1.7	3.0	4.8	3.2
Troop L																		
Frackville	1.0	0.7	0.5	0.2	0.6	2.6	2.4	1.5	2.3	0.8	1.7	0.7	0.9	0.3	0.7	0.8	0.7	1.1
Hamburg	0.6	0.2	0.5	0.2	0.8	0.2	0.1	0.4	0.5	0.1	0.0	0.3	0.1	0.2		0.3	0.1	0.1
Jonestown	1.3	0.8	1.1	1.5	3.6	1.9	2.6	2.9	2.2	1.8	2.0	1.2	0.6	1.9	1.3	1.2	1.1	1.7
Reading	0.5	0.5	0.3	1.2	1.3	1	0.7	1.5	3.0	0.4	0.4	0.4	1.5	0.8	0.6	0.1	1.1	2.0
Schuyl. Haven	0.8	0.4	0.4	0.1	0.4	0.4	0.6	1.1	1.9	0.5	0.2	0.6	0.5	0.3	0.1	0.2	0.3	1.6
Troop M																		
Belfast	0.2	0.4	0.3	0.4	1.9	1.4	1.0	0.9	2.2	1.2	0.4	0.6	0.9	1.0	1.6	0.9	1.0	1.3
Bethlehem	0.5	0.6	0.3	0.4	2.3	2.1	2.8	2.7	10.8	1.0	0.9	0.4	1.0	2.0	2.2	4.3	2.5	3.6
Dublin	0.7	0.3	0.3	1.0	1.7	2.7	3.8	3.4	9.5	0.9	0.6	0.4	1.0	1.8	1.8	1.0	2.2	3.1
Fogelsville	0.4	0.4	0.5	1.0	1.2	2.1	1.4	1.2	3.1	1.4	0.8	1.4	3.2	1.9	2.6	2.3	2.3	3.0
Trevose	0.7	0.8	0.3	1.2	2.2	1.2	4.4	3.2	5.3	1.3	1.4	0.8	1.0	0.9	0.9	1.6	1.5	1.9

## Table 10.9: Arrests and Searches 2002-2010 by Station for All Drivers (p.1 of 5)

				<u>%</u>	6 Arrest	ts			-				%	Search	ies			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA II																		
Troop F																		
Coudersport	0.7	0.4	0.1	0.5	1.4	1.4	1.7	1.4	3.9	1.0	1.0	0.1	0.4	0.3	0.4	0.5	0.6	0.4
Emporium	0.0	0.1	0.0	0.0	0.2	0.8	0.5	0.4	2.1	0.2	0.1	0.0	0.3	0.7	0.8	0.3	0.0	0.1
Lamar	0.2	0.0	0.1	0.2	0.4	2.2	1.3	1.8	4.7	0.2	0.2	0.2	0.2	0.1	0.5	0.7	0.4	0.2
Mansfield	0.5	0.2	0.1	0.1	0.2	0.9	1.3	1.3	3.3	0.3	0.1	0.3	0.1	0.1	1.1	0.8	0.6	0.3
Milton	0.3	0.0	0.0	0.4	0.7	0.6	0.2	0.3	5.7	0.3	0.3	0.1	0.2	0.8	1	0.2	0.3	0.6
Montoursville	0.2	0.2	0.0	0.7	2.0	1.5	1.1	1.3	3.5	0.3	0.4	0.3	0.5	1.4	1.6	2.3	1.5	0.7
Selinsgrove	0.2	0.0	0.1	0.5	1.5	1.6	1.1	0.4	1.2	0.3	0.1	0.3	0.6	1.0	0.4	0.4	0.4	0.3
Stonington	0.3	0.8	0.2	0.3	1.0	1.0	1.6	1.8	3.4	0.0	0.2	0.2	0.6	0.7	1.3	1.9	1.8	0.9
Troop N																		
Bloomsburg	0.2	0.2	0.1	0.2	0.4	0.5	0.3	0.2	1.2	0.1	0.0	0.2	0.4	0.5	0.7	0.2	0.2	0.2
Fern Ridge	1.0	0.4	1.6	3.2	3.6	0.9	1.0	0.4	1.9	0.3	0.4	0.1	0.6	1.4	0.4	0.1	0.3	0.3
Hazleton	0.2	0.1	0.2	0.3	0.4	1.4	0.7	1.2	10.1	0.6	0.3	0.7	1.0	0.9	2.6	2.2	1.9	0.8
Lehighton	0.8	0.1	0.1	0.2	0.9	1.4	0.7	1.6	1.8	0.3	0.4	0.1	0.1	0.3	0.3	0.1	1.2	1.5
Swiftwater	0.1	0.1	0.1	0.3	0.7	2.2	1.4	2.4	_4.5	0.7	0.6	0.7	1.1	1.1	2.6	1.2	1.4	2.2
Troop P																		
Laporte	0.8	0.1	1.0	0.3	0.2	1	0.3	0.6	1.4	0.2	0.1	0.3	0.3	0.0	0.3	0.1	1.1	1.0
Shickshinny	0.4	0.7	0.3	0.7	2.1	1.7	1.5	0.9	1.7	0.1	0.0	0.3	0.7	0.5	0.4	0.2	0.9	0.3
Towanda	0.8	0.1	0.4	0.4	0.7	0.1	0.6	0.9	1.1	0.7	0.8	1.5	1.0	0.8	1.2	1.8	1.6	0.4
Tunkhannock	0.9	0.6	2.0	2.0	1.0	1.7	1.6	6.7	4.3	0.4	0.4	0.5	2.7	0.8	1.1	0.6	0.0	0.2
Wyoming	0.3	0.1	0.2	0.2	0.5	0.8	2.1	0.4	0.6	0.4	0.8	1.1	0.8	1.1	0.6	1.1	0.1	0.3
Troop R																		
Blooming Grove	0.4	0.3	0.0	0.4	0.4	0.6	1.6	1.7	7.0	1.0	0.5	0.5	1.5	1.4	1.6	1.8	2.2	1.6
Dunmore	0.1	0.1	0.1	0.5	0.7	0.9	1.2	0.9	1.3	0.7	0.6	0.6	1.0	1.3	1.7	2.0	1.7	2.5
Gibson	0.3	0.4	1.3	2.5	2.5	1.1	1.0	1.3	1.9	0.8	0.4	0.5	1.8	1.1	1.1	1.4	1.6	2.6
Honesdale	0.8	0.3	0.3	0.4	0.4	1	2.2	1.7	2.9	1.4	0.8	1.0	1.7	2.7	2.4	2.1	2.0	1.4

Table 10.9: Arrests and Searches 2002-2010 by Station for All Drivers – 2002-2010 (p. 2 of 5)

				9	6 Arres	t <u>s</u>							<u>%</u>	Search	ies			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA III																		
Troop A																		
Ebensburg	1.0	0.8	1.5	2.2	2.8	2.2	1.5	2.1	3.5	0.4	0.4	0.9	1.0	1.0	1	0.3	0.3	0.5
Greensburg	0.6	0.0	0.0	0.6	2.1	1.9	1.4	1.4	1.7	0.6	0.2	0.4	1.5	1.9	2.1	0.7	1.0	0.9
Indiana	1.1	0.4	0.2	1.0	2.3	1.7	0.4	0.8	1.6	1.2	0.6	0.8	2.0	1.5	1.2	0.7	0.6	0.6
Kiski Valley	0.3	0.2	0.1	0.5	1.2	0.8	1.3	2.0	1.0	1.0	0.5	0.7	0.7	1.5	1.2	2.1	2.4	1.4
Somerset (A)	2.5	1.6	0.8	1.0	3.1	2.9	1.0	1.9	2.4	1.7	0.7	1.2	0.6	0.7	2	0.4	0.6	0.8
Troop G																		
Bedford	1.2	1.1	0.8	1.0	1.0	1.5	0.4	1.0	1.8	0.2	0.4	0.4	0.4	0.7	0.5	0.2	1.3	0.7
Hollidaysburg	0.9	0.8	1.3	1.6	1.7	0.6	0.5	0.5	1.6	0.8	1.9	1.2	1.9	2.2	2.8	3.6	0.6	0.8
Huntingdon	3.9	2.9	1.5	1.5	1.9	1.6	1.0	1.2	1.9	0.4	0.6	0.5	0.5	0.8	1.1	0.8	0.5	1.1
Lewistown	0.2	0.4	0.3	0.5	1.1	1.5	0.9	0.6	7.9	0.4	0.6	0.5	0.6	0.3	0.5	0.8	0.6	0.2
McConnellsburg	0.4	0.2	0.0	0.3	0.7	0.3	0.3	0.6	0.6	0.4	0.3	0.5	0.3	0.3	0.5	0.1	0.6	0.7
Philipsburg	0.1	0.1	0.1	0.5	1.6	1	0.7	0.7	0.7	0.1	0.1	0.1	0.4	0.2	0.3	0.1	0.0	0.3
Rockview	0.3	0.0	0.1	0.6	1.3	1.2	0.4	0.4	1.3	0.7	0.3	0.4	0.2	0.4	1.1	0.5	0.5	0.7
Troop H																		
Carlisle	0.3	0.0	0.4	1.2	1.9	1.2	3.3	3.4	3.9	1.0	0.7	1.3	2.6	2.4	1.1	1.0	1.4	1.2
Chambersburg	2.1	2.7	1.5	2.1	1.7	2.1	1.0	0.7	2.3	2.7	2.6	3.0	2.8	1.3	1.2	1.5	1.1	1.4
Gettysburg	1.0	0.4	0.5	0.9	5.3	0.8	2.8	2.0	2.6	0.2	0.3	1.2	1.3	2.8	2.1	1.1	1.1	1.0
Harrisburg	0.2	0.1	0.0	0.3	1.1	0.5	1.0	1.5	4.3	0.3	0.5	0.5	1.4	1.4	0.8	1.3	1.1	1.0
Lykens	0.7	0.2	0.2	0.9	3.7	0.4	1.0	1.8	2.1	0.5	0.7	1.4	0.9	1.3	0.5	0.7	1.5	0.8
Newport	0.3	1.1	0.7	1.2	0.8	1.3	0.5	3.9	12.1	0.4	0.3	0.2	1.7	1.3	0.4	0.3	0.5	0.8
York	1.9	1.4	1.9	1.3	2.3	1.7	1.8	1.2	3.6	1.6	1.5	1.5	0.9	1.0	1.3	1.9	1.2	2.2

Table 10.9: Arrests and Searches 2002-2010 by Station for All Drivers – 2002-2010 (p. 3 of 5)

				9/	6 Arres	ts							%	Search	nes			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
AREA IV																		
Troop C											$\frown$							
Clarion	0.8	0.2	0.1	0.3	0.8	1.1	0.4	0.2	1.0	1.3	0.9	0.9	1.7	1.3	0.8	0.5	0.7	0.5
Clearfield	0.0	0.0	0.1	0.5	1.0	0.7	0.3	0.3	0.5	0.7	0.3	0.5	0.8	0.8	0.4	0.2	0.3	0.5
Dubois	0.3	0.0	0.0	0.3	0.8	0.9	0.6	0.7	1.9	0.5	0.3	0.5	1.0	0.7	0.2	0.2	0.2	0.3
Kane	0.3	1.4	0.8	1.4	2.3	1.8	2.6	4.0	2.8	0.9	0.6	0.5	1.5	1.4	1.4	1.9	0.3	0.3
Punxsutawney	0.3	0.2	0.3	0.6	1.0	1.1	1.0	1.8	2.9	0.3	0.3	0.2	0.3	0.3	0.5	0.3	0.6	1.6
Ridgway	0.2	0.3	0.7	0.4	1.2	0.7	1.6	1.0	0.8	0.1	0.5	0.3	0.7	0.6	0.2	0.1	0.3	0.3
Tionesta	0.6	0.7	0.4	0.1	1.1	0.8	0.5	0.5	1.2	0.2	0.3	0.0	0.1	0.1	0.7	0.3	0.1	0.1
Troop D																		
Beaver	1.4	0.6	0.4	0.4	1.1	1.2	1.3	1.3	1.6	0.3	0.4	0.4	1.1	1.6	3.2	1.4	0.6	0.7
Butler	1.6	0.7	0.7	1.1	2.3	2.6	2.2	3.5	6.4	0.7	0.6	0.8	0.9	1.6	2	1.0	1.0	1.1
Kittanning	1.4	0.8	0.7	4.5	5.9	2.5	2.0	2.4	5.1	2.2	0.7	1.8	7.1	9.6	4	2.7	3.2	3.6
Mercer	0.4	0.2	0.3	0.9	5.1	3.1	0.3	0.5	3.0	2.7	1.4	2.5	2.3	2.5	2.6	1.1	1.6	0.9
New Castle	1.5	0.1	0.1	0.4	1.0	0.7	2.9	1.4	1.9	0.5	0.3	1.4	1.0	1.3	0.8	0.4	1.1	0.8
Troop E																		
Corry	0.6	0.7	0.3	2.5	3.1	1.7	1.9	3.1	4.3	0.3	0.3	0.2	0.1	0.1		0.3	0.6	0.2
Erie	0.1	0.0	0.1	0.1	1.1	2.2	2.8	2.5	5.3	0.8	0.2	0.3	0.5	2.0	1.5	0.5	0.9	1.0
Franklin	0.2	0.6	0.3	0.6	1.3	2.1	2.4	1.6	7.8	0.4	0.6	0.4	0.4	0.2	0.6	0.4	0.5	0.6
Girard	0.3	0.4	0.4	1.0	2.5	1.2	2.1	2.0	3.0	0.4	0.5	0.6	0.2	0.4	0.6	0.9	0.4	0.1
Meadville	2.9	1.5	0.7	0.9	1.4	1.2	0.4	1.1	4.7	1.8	1.0	0.6	0.7	0.8	0.7	0.4	0.4	0.7
Warren	1.5	0.9	0.6	1.6	2.5	1.9	3.9	2.9	5.8	0.6	0.8	0.4	1.0	1.0	1.6	1.0	0.8	0.4

Table 10.9: Arrests and Searches 2002-2010 by Station for All Drivers – 2002-2010 (p. 4 of 5)

				9	6 Arrest	ts							<u>%</u>	Search	nes			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	2003	2004	2005	2006	2007	2008	2009	2010
Troop B																		
Belle Vernon	2.3	2.7	4.5	2.4	2.0	0.8	1.6	0.5	4.5	0.2	0.4	0.6	1.5	0.9	1.5	1.4	0.4	0.3
Pittsburgh	0.5	0.2	0.0	1.0	1.6	0.7	0.5	0.5	1.7	0.2	0.6	0.9	0.9	0.8	0.6	0.6	0.6	0.6
Uniontown	0.5	0.8	0.3	0.9	2.0	3.7	3.5	4.3	6.3	1.0	1.5	1.7	1.3	1.0	2.2	2.4	1.5	1.2
Washington	0.2	0.3	0.0	0.1	0.8	1.1	0.9	0.4	2.2	1.0	0.8	0.5	0.3	0.9	0.7	0.5	0.8	1.6
Waynesburg	1.3	1.1	0.2	1.0	1.6	2.8	1.1	1.9	5.2	1.3	0.7	0.5	1.2	1.8	1.3	1.3	0.9	1.5
Bureau of Patrol Troop T																		
Bowmansville	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.3	0.3	0.3	0.1	0.0	0.1	0.2	0.2	0.5	0.5	0.3
Everett	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.2	0.0
Gibsonia	0.0	0.0	0.0	0.2	4.0	3.5	0.0	0.2	2.2	0.2	0.2	0.4	0.6	0.4	0.2	0.1	0.1	0.2
King of Prussia	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.5	0.2	0.2	0.1	0.1	0.2	0.3	0.1	0.4	0.5	0.5
New Stanton	0.2	0.1	0.1	0.1	1.1	0.1	0.1	0.2	1.6	0.2	0.1	0.1	0.3	0.1	0.2	0.1	0.3	0.1
Newville	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	3.3	0.4	0.5	0.2	0.1	0.3	0.2	0.0	0.2	0.4
Pocono	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.2
Somerset (T)	0.3	0.2	0.2	0.4	0.2	0.0	0.2	0.1	0.2	0.7	0.7	1.1	1.2	0.6	0.4	0.3	0.2	0.2

Table 10.9: Arrests and Searches 2002-2010 by Station for All Drivers – 2002-2010 (p. 5 of 5)