# 2017 DIRECT OBSERVATION SURVEY OF MOTORCYCLE HELMET USE IN MICHIGAN



Prepared for: Office of Highway Safety Planning 7150 Harris Drive Dimondale, MI 48821

> Prepared by: Michigan State University East Lansing, MI

> Date: September 26, 2017





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**FINAL REPORT** 

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This report documents the res	sults of the 2017 direct observati	on survey of motorcycle helmet use in				
Michigan. Helmet use by motor	cycle drivers and passengers was	observed at 152 locations throughout 63				
Michigan counties during June,	July, and August of 2017. In additional second seco	tion to helmet use information, data were				
or not the motorcyclist was we	aring high-visibility gear. The 2017	7 statewide helmet use rate for Michigan				
was 71.4 percent, while the us	age rate for high-visibility gear wa	as 3.6 percent. This rate is substantially				
lower than the 99.4 percent helmet use rate observed in 2006 when all riders were required by law to weat						
a helmet, but is not statistically	a helmet, but is not statistically lower than the 73.0 percent helmet use rate observed in 2013, which is the					
belmet law in 2012 has substa	ntially reduced motorcycle belme	t use statewide there is no evidence of				
further declines in helmet use b	further declines in helmet use beyond that which was observed the vear following the repeal of the helmet					
law. Furthermore, motorcycle h	law. Furthermore, motorcycle helmet use rate in Michigan remains 6.4 percentage points higher than the					
65 percent helmet use rate (driv	vers only) observed nationwide in 2	2016.				

65 percent helmet use rate (drivers only) observed nationwide in 2016.						
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#### 1.0 INTRODUCTION

According to the National Highway Traffic Safety Administration (NHTSA), 4,976 motorcyclists died and approximately 88,000 were injured in motor vehicle crashes in the United States in 2015, which is the most recent year that national-level fatal crash data are available [1]. Motorcyclist fatalities increased consistently from 2001 to 2008, peaking at 5,312. Since then, fatalities have leveled off, with annual fatalities ranging from 4,469 to 4,986 during the period from 2009-2015, which is shown in Figure 1.



# Figure 1. Motorcycle Fatalities in the United States, 2001-2015 [Source: NHTSA and Fatal Accident Reporting System (FARS)]

Figure 2 displays trend for total motorcycle crashes and fatal motorcycle crashes in Michigan from 2006 - 2016. During that 11-year period, while total motorcycle crashes have decreased, motorcycle fatalities have generally increased, peaking in 2016. Noteworthy in the upward trend in motorcycle fatalities is the change in the motorcycle helmet law in Michigan. Prior to April 1, 2012, Michigan had a universal helmet law in place, which required all motorcyclists to wear United States Department of Transportation (USDOT) approved helmets. The enactment of Michigan Senate Bill (SB) 291 on April 1, 2012, effectively repealed the motorcycle helmet use law, by allowing motorcyclists to ride without a helmet if they: (1) carry \$20,000 in additional medical insurance; (2) are at least 21 years of age; and (3) have at least two years of riding experience or have passed a safety training test. As of August 2017, 19 states and the District of Columbia have universal helmet laws in place, while Michigan is one of 28 states with a partial helmet law [2]. Most states in this category require riders who are 17 and younger to be helmeted, while some of the others

states require riders to be 20 years old and younger to be helmeted. Illinois, Iowa, and New Hampshire are the only states that have no laws mandating helmet use. In the most recent four-year period (2013 to 2016) since the motorcycle helmet law was repealed, total motorcycle crashes in Michigan have decreased by 10.4 percent, while fatal crashes involving motorcycles have increased by 10.7 percent compared to the four-year period prior to the repeal of the helmet law (2008 to 2011).



Figure 2. Motorcycle Fatal Crashes and All Motorcycle-Involved Crashes in Michigan, 2006-2016 [Source: Michigan Traffic Crash Facts, MI OHSP]

The national use of DOT-compliant helmets increased from 61 percent in 2015 to 65 percent in 2016 [*3*]. The helmet use among passengers also increased, but more considerably. Helmet use for passengers increased from 46 percent in 2015 to 53 percent in 2016. This helmet use survey was part of the National Occupant Protection Use Survey (NOPUS) conducted by the National Center for Statistics and Analysis (NCSA) of NHTSA. None of these changes were statistically significant.

The most recent motorcycle helmet use survey in the State of Michigan was conducted during the summer of 2013 through funding from the Michigan Office of Highway Safety Planning (OHSP) [4]. In the 2013 survey, a total of 1,252 motorcycle riders were observed and the overall usage rate among all riders was 73.0 percent. This survey also involved the collection of data on the use of high visibility gear. Only 5.6 percent of riders were found to wear high visibility gear.

Observations of motorcycle helmet use in Michigan performed prior to the 2012 helmet law indicated a very high compliance rate (99.4 percent in 2006) [5]. With the legislative repeal of Michigan's helmet use law in 2012, the purpose of this study was to estimate the current statewide motorcycle helmet use rate and high visibility gear use rate. The results of this study will also be compared with prior helmet use statistics in

Michigan to allow for assessment of the changes in helmet use statistics over time. Further, these data may be used in combination with Michigan crash data to ascertain the safety and resultant economic impacts of this policy change.

The overall objective of this study was to estimate the statewide use rates of motorcycle helmets and high visibility gear by motorcyclists in Michigan. The specific objectives of this study were as follows:

- Select a methodology for collecting data from a representative sample of sites throughout the state, which would ensure reliable statewide statistics, in an economically feasible manner.
- Provide training to all staff conducting the observation surveys and conduct quality assurance/quality control (QA/QC) of the data collection efforts.
- Observe and record motorcycle helmet use and high visibility gear use for each driver and passenger along with other characteristics, including motorcycle type, gender, age, and race.
- Summarize and cross-tabulate the observational data in a spreadsheet format indicating overall helmet use, overall high visibility gear use, helmet use by time of day and day of week, helmet use by type of motorcycle and type of roadway, and helmet use by various demographic characteristics.

#### 2.0 METHODOLOGY

The observational survey for motorcycle helmet use was conducted in coordination with the 2017 statewide direct observation surveys of safety belt use. Additional observations were performed at designated locations with pole-mounted cameras, as well as through the use of dashboard cameras ("dash cams"). Since no specific guidelines are available for conducting motorcycle helmet use surveys, and because the motorcycle helmet use survey was conducted in conjunction with the statewide safety belt use surveys, the county sampling methodology largely followed the *Uniform Criteria for State Observational Surveys of Seat Belt Use* from Title 23, Part 1240.12 of the Code of Federal Regulations.

#### 2.1 Design of Study

The study area was selected in accordance with the *Uniform Criteria for State Observational Surveys of Seat Belt Use* from Title 23, Part 1240.12 of the Code of Federal Regulations, which states that data shall be obtained from a sample of counties representing at least 85 percent of the passenger vehicle crash-related fatalities. To that end, data for fatal crashes involving motorcyclists for the five-year period of 2011-2015, was obtained from Michigan Traffic Crash Facts to determine the necessary counties needed to achieve the 85 percent motorcycle fatal crash representation statewide. This period was utilized as it represented the most recent time period available at the time the sampling was performed.

#### 2.2 Data Collection Process

All motorcycles and mopeds were eligible for observation. The cover sheet and data collection form that were utilized during roadside observational surveys of motorcycles are shown in Appendix I. The cover sheet was designed to allow for documentation of descriptive site information, including: date, site location, site number, alternate site data, assigned traffic flow, number of lanes available and observed, start and end times for observations, and weather conditions. It should be noted that the cover sheet is universal and could be utilized for other observational studies such as direct observations of seat belt use. The observation form (Appendix I) was used during field observations to record the pertinent information about the motorcycle, driver, and passenger. An Excel version of this form was also utilized.

The driver of each motorcycle along with any passengers (if and when present) were observed for type of helmet use. In these surveys, both the rider and passenger were separately identified based on their gender, estimated age, and race. The rider age categories included those aged 16-29, 30-59, and 60 and over. The passenger age categories included those aged 0-15, 16-29, 30-59, and 60 and over. The rider and passenger races were categorized as white, black, other race, and unknown. The other race category consisted of those of Asian/Pacific Islander, and Native American, as well as Hispanic people of any race. The rider and passenger helmet use was classified as No Helmet, Full Helmet, Open Face (3/4) Helmet, or Half Shell Helmet. It should be noted that it was very difficult to discern demographic characteristics for riders wearing full helmets, as the rider's facial characteristics were typically obscured.

The observer also noted whether or not the rider and passenger had on some type of high visibility gear. High visibility gear consisted of florescent yellow, or orange colored helmets and/or apparel like vests, jackets, or pants that were florescent yellow or orange with a reflective strip. Motorcycles were categorized by type into ten groups: Standard, Touring, Cruiser, Chopper/Custom, Sport, Dual-purpose, Moped/Scooter, Trike, Other, or Unknown.

Three different survey methods were utilized to collect the data for motorcycle helmet use and high visibility gear use, which included:

- Observations made concurrently with statewide direct observation safety belt surveys. These
  observations were recorded directly to the data collection form and were later transferred to an Excel
  spreadsheet.
- 2) Observations made during review of video from pole mounted high definition cameras that were temporarily installed at pre-selected stationary locations. Video review was performed by a trained member of the project team, and the relevant data for each observed motorcycle was recorded into an Excel spreadsheet.
- 3) Observations made during review of video from dashboard cameras (i.e., "dash cams"). Video review was performed by a trained member of the project team, and the relevant data for each observed motorcycle were recorded into an Excel spreadsheet.

#### 2.3 Quality Control

The principal investigator and lead graduate student assistant from MSU served as the project QA/QC Monitors. Because the majority of the observations were recorded by video, this simplified the ability to verify the time, day, and location of each video recording, along with quality control checks for a random sample of observations from each data collector to ensure the accuracy with the scoring of the various attributes of the motorcycle, driver, and passenger (where present).

#### 3.0 SELECTION OF OBSERVATION LOCATIONS

The motorcycle helmet observations were performed at 152 locations within 63 counties statewide, which represented 85.3 percent of statewide motorcycle fatal crashes and 85.4 percent of statewide motorcycle registrations. Both freeways and non-freeway roadway locations were included. The full list of locations, including the observation method and the roadway facility type, is provided in Appendix II. Note that because the vehicle was in motion during the dashboard video collection, the motorcycle data were aggregated by county, roadway facility type, and day of week for the dashboard camera videos.

#### 3.1 Safety Belt Survey Sites

Motorcycle helmet surveys were conducted at roadside observation locations concurrently with the June 2017 statewide direct observation safety belt surveys. These roadside motorcycle surveys were only performed by observers who had received adequate training and were comfortable with performing the direct observation motorcycle surveys while concurrently performing the safety belt surveys. It should be noted that the primary data collection purpose at these sites was safety belt surveys, and therefore, most observers chose not to collect motorcycle related data, particularly at high traffic volume locations. Thus, observations made concurrently with the statewide direct observation safety belt surveys accounted for 11.3 percent of all motorcycle observations.

#### 3.2 Pole-Mounted Camera Sites

Motorcycle data were also collected through a review of videos obtained from pole mounted cameras temporarily installed on the roadside. This method accounted for 51.7 percent of the motorcycle observations. These locations were selected using a variety of methods, which included roadways near statewide safety belt survey locations, sites that were used during the 2013 helmet use survey, and other freeway and non-freeway locations with adequate motorcycle volumes. The camera set-up, as well an example of field-of-view, can be seen in Figure 3.



Figure 3. Typical Pole Mounted Video Camera Setup and Field of View

## 3.3 Dashboard Camera Sites

Members of the research team were also equipped with dash cams during the summer of 2017 (shown in Figure 4) to capture motorcycle observations while traveling to and from field work locations, as well as recording during employees' personal travel. This provided for two unique advantages over stationary camera setups: 1) a more geographically diverse sample of motorcycle observations was obtained, and 2) observations could be made during daily commuting and other non-project work periods, including periods that fell outside of the typical work-day period, such as early morning, evening, and weekend hours. Overall, 37.0 percent of observations were performed using dash cam.



Figure 4. Typical Dash Cam Setup and Field of View

#### 3.4 Data Collection Period

Motorcycle data collection began on June 2, 2017, and concluded on August 15, 2017. Motorcycle observational surveys conducted concurrently with statewide safety belt use surveys took place between June 7 and June 28, 2017. Additional data collection using the aforementioned video recording methods occurred throughout the summer at designated pole-mounted camera locations and through the use of dash-cams. The surveys were performed during daylight hours (6 AM - 9 PM) and across all days of the week.

#### 4.0 OBSERVER TRAINING

Data collection was performed by MSU student staff, many of whom have participated in prior safety belt use surveys. The training program for data collectors was conducted at MSU, beginning approximately two weeks prior to the first data collection period and included both classroom and field exercises. Each of these staff members has received or is pursuing an engineering degree and has been trained in general traffic data collection methods and procedures.

As a part of the training program, each member of the data collection team received a training manual comprised of the information received during the training session, the schedule for data collection, and all necessary field supplies. The training manual included descriptive text, which was supplemented by photographs of different helmet types, motorcycle types, and high visibility gear.

At the conclusion of the classroom training, the data collectors conducted their first field practice for both direct roadside observation and camera installation procedures at locations near the MSU campus. QA/QC monitors were available during this period to respond to questions and offer assistance to data collectors as needed. The data collectors were also trained for video review using a uniform sample of videos containing motorcycle observations with known characteristics. Each motorcycle within the training videos had been previously assessed by the project team for all relevant observational characteristics, including helmet use and type, high visibility gear use and type, motorcycle type, gender, and age. The data collector's performance on the training videos was then scored by the QC monitor. This video review training process was repeated until all primary characteristics (i.e., helmet use, helmet type, motorcycle type, and high visibility use) for motorcycle riders included in the training videos were scored correctly.

#### 5.0 WEIGHTED STATEWIDE HELMET USE CALCULATION

The motorcycle observational data was entered into a spreadsheet by the observer at the conclusion of the data collection activities and verified for accuracy. A rider was considered helmeted if he/she was wearing a full, open face (3/4), or half shell helmet. The weighted statewide helmet use rate and 95 percent confidence interval was then computed according to the following procedures.

The first step was to determine the helmet use rate for each site by dividing the total number of helmeted riders (drivers and passengers) by the total number of riders observed. All sites were then combined across each stratum to arrive at a stratum-level use rates and variance. The variance for each stratum was determined by the following equation [*6*]:

$$Variance_{j} = \frac{n_{j}}{n_{j} - 1} \sum_{i=1}^{n_{j}} \left[ \left( \frac{g_{ij}}{\sum_{i=1}^{n_{j}} g_{ij}} \right)^{2} (r_{ij} - r_{j})^{2} \right]$$

Where,

n<sub>j</sub> = number of observation locations stratum j

g<sub>ij</sub> = number of observations at location i in stratum j

 $r_i$  = helmet use rate for location i in stratum j

r<sub>ij</sub> = overall helmet use rate for stratum j

The statewide motorcycle helmet use rates were calculated by weighting the stratum-level helmet use rates by the number of motorcycle registrations per stratum. The weights were determined based on the motorcycle registrations by county for 2017, which were obtained by OHSP from the Michigan Secretary of State Registration Database. Table 1 provides a summary for the registrations by county and stratum for the 63 counties utilized in the 2017 motorcycle helmet survey. These 63 counties are depicted by gray shading in the map displayed in Figure 5. Note that Table 1 also includes motorcycle fatal crashes by county for the period of 2011-2015, which, as previously mentioned, were used to establish the sampling frame. The total number of motorcycle registrations for the 63 counties observed within the four strata is 207,103, which represents 85.4 percent of Michigan's statewide motorcycle registrations, and is consistent with the minimum 85 percent target representation for statewide direct observation restraint use surveys. The weights were assigned as follows:

- Stratum 1 weight = 0.209 (43,347 divided by 207,103).
- Stratum 2 weight = 0.247 (51,065 divided by 207,103).
- Stratum 3 weight = 0.329 (68,095 divided by 207,103).
- Stratum 4 weight = 0.215 (44,596 divided by 207,103).

The sum of the weight factors for all four strata equaled 1.00. The weight factors are then multiplied by the helmet use percentages for each stratum divided by the total number of drivers and passengers observed in each stratum. The final percentage in each stratum was added together to provide an overall weighted helmet use. The overall statewide variance was calculated using the following formula:

$$Variance_{TOTAL} = \frac{\sum_{\forall j} \left( w_j^2 Var_j \right)}{\left( \sum_{\forall j} w_j \right)^2}$$

Where,

Var<sub>j</sub> = variance for stratum j.

wj = motorcycle registration weight factor for stratum j.

The 95 percent confidence interval is equal to the weighted helmet use rate  $\pm 1.96$  times the square root of the statewide variance expressed as a percent. The standard error of the estimate is equal to the square root of the statewide variance.

County Name	Registered Motorcycles	Percent Statewide	Motorcycle Fatal Crashes	Percent Statewide
Stratum 1				
Ingham	4,803	1.98	19	3.20
Kalamazoo	5,879	2.42	16	2.70
Oakland	25,923	10.69	37	6.24
Washtenaw	6,742	2.78	17	2.87
Total	43,347	17.87	89	15.01
Stratum 2				
Allegan	3,949	1.63	13	2.19
Bay	3,194	1.32	10	1.69
Calhoun	4,244	1.75	6	1.01
Eaton	3,261	1.34	7	1.18
Grand Traverse	2,369	0.98	7	1.18
Jackson	4,894	2.02	9	1.52
Kent	13,017	5.37	33	5.56
Livingston	6,393	2.64	20	3.37
Midland	2,606	1.07	2	0.34
Ottawa	7,138	2.94	10	1.69
Total	51,065	21.06	117	19.73

Table 1.	2017 Motorcycle Registrations and Motorcycle Fatal Crashes by County and Strata (Michigan	n
	Secretary of State Registration Database; Michigan Traffic Crash Facts Website)	

County Namo	Pagistared Materovales	Boroont Statowida	Motorovala Estal Crachas	Porcent Statewide
County Name	Registered Motorcycles	Percent Statewide	Woldreycle Falai Crashes	Fercent Statewide
Stratum 3	070	0.40		0.00
Alger	279	0.12	0	0.00
Antrim	887	0.37	1	0.17
Baraga	145	0.06	0	0.00
Barry	2,518	1.04	10	1.69
Benzie	617	0.25	1	0.17
Berrien	4,386	1.81	10	1.69
Branch	1,263	0.52	3	0.51
Charlevoix	965	0.40	0	0.00
Cheboygan	861	0.36	4	0.67
Chippewa	943	0.39	0	0.00
Clare	970	0.40	6	1.01
Clinton	2,052	0.85	4	0.67
Crawford	513	0.21	2	0.34
Delta	1,105	0.46	3	0.51
Dickinson	920	0.38	3	0.51
Emmet	1,029	0.42	0	0.00
Genesee	9,842	4.06	16	2.70
Gladwin	873	0.36	1	0.17
Gogebic	372	0.15	0	0.00
Gratiot	1.170	0.48	0	0.00
Houghton	720	0.30	2	0.34
Ionia	2 000	0.82	8	1.35
Iron	347	0.14	1	0.17
Isabella	1.306	0.54	3	0.51
Kalkaska	689	0.28	0	0.00
Koweenaw	66	0.20	0	0.00
	127	0.00	0	0.00
Mackinac	316	0.03	1	0.00
Manistee	801	0.13	0	0.17
Marquette	1 709	0.37	4	0.00
Mogosto	1,709	0.70	4	0.07
Monominoo	921	0.42	4	0.07
Montcolm	2 120	0.34	5	0.17
Nowaya	2,120	0.07	3	0.04
Ontenagen	1,009	0.78	1	1.10
Ontonagon	200	0.08	2	0.34
Osceola	648	0.27	2	0.34
Oscoda	355	0.15	1	0.17
Otsego	770	0.32	2	0.34
Presque Isle	403	0.17	1	0.17
Saginaw	4,244	1.75	14	2.36
St Clair	5,293	2.18	18	3.04
St Joseph	2,355	0.97	4	0.67
Sanilac	1,500	0.62	1	0.17
Schoolcraft	314	0.13	1	0.17
Shiawassee	2,518	1.04	6	1.01
Van Buren	2,726	1.12	8	1.35
Wexford	1,025	0.42	1	0.17
Total	68,095	28.08	161	27.15
Stratum 4				
Macomb	18,025	7.43	42	7.08
Wayne	26,571	10.96	97	16.36
Total	44,596	18.39	139	23.44
Total Strata	207,103	85.40	506	85.33



Figure 5. 63-Counties Included in the 2017 Direct Observation Motorcycle Helmet Use Survey

#### 6.0 RESULTS AND CONCLUSIONS

The direct observation survey was performed between June 2, 2017 and August 15, 2017. During this period, a total of 2,033 riders were observed on 1,772 motorcycles at 152 observation sites throughout the state of Michigan. The observations were obtained based on a random probability-based sample occurring during daylight periods across all days of the week and within counties that collectively represent at least 85 percent of fatal motorcycle crashes and motorcycle registrations. This total sample was consequently utilized to calculate the statewide helmet use rate estimate.

#### 6.1 Motorcycle Helmet Use Rates

The statewide helmet use rate (as determined through the random sampling scheme) is shown in Table 2. The statewide use rate was calculated based upon the procedures described in Section 5.2 "Weighted Statewide Helmet Use Calculations" of this report.

Observation Sample	Number of Observations	Motorcycle Helmet Use Rate*	Standard Error
63-County Statewide	2,033	71.4% ± 2.9%	1.5%

Table 2. 2017 Statewide Motorcycle Helmet Use Rate

\* Weighted Motorcycle Helmet Usage ± 95% Confidence Interval

These results show that the statewide motorcycle helmet use rate is 71.4 percent. This rate represents a marked decrease from the 99.4 percent use rate observed during the 2006 survey, which was performed prior to the repeal of the Michigan helmet use law in 2012 [4]. This rate is also slightly (but not statistically) lower than the previous survey conducted in 2013, one year after the Michigan helmet use law was repealed, during which the helmet use rate was found to be 73.0 percent. Furthermore, the 71.4 percent helmet use rate observed is also similar to the helmet use rate among crash-involved motorcyclists, which was found to be 68.4 percent in 2016 [7].

A comparison of fatal motorcycle crashes for the most recent four-year periods before (2008-2011) and after (2013-2016) the repeal of the helmet law in 2012 shows a 10.7 percent increase (497 vs 449) in motorcycle fatal crashes in the period after the law was repealed. This is even more significant when considering that total motorcycle crashes have decreased by 10.4 percent between the two time periods. Thus, it appears that the repeal of the Michigan helmet use law has resulted in more severe injury outcomes during motorcycle crashes. This finding is supported by research on injury outcomes for motorcycle crashes [8].

In addition to providing statewide use rates, use rates were also compared with respect to demographics

and other pertinent characteristics in order to better understand factors that may contribute to differences in use rates. Tables 3 through 5 present use rates by select motorcycle and rider characteristics. These tables present aggregate, unweighted summaries that combine the helmet use data across all locations.

Table 3 shows a summary of the helmet types observed for each motorcycle type. These data show that helmet use was lowest among riders of mopeds at 25.7 percent. This result is expected as mopeds are only observed on low speed streets, typically near college campuses. Helmet use was highest among sport bike riders, who had a user rate of 93.8 percent. Overall, full helmets were more commonly observed (26.4 percent of all riders) than half shell helmets (18.3 percent) or open face helmets (20.3 percent). Full helmets were most frequently worn by riders on sport bikes, followed by those on dual-purpose motorcycles. Open face helmets were most prevalent among those on trike motorcycles. Half shells were worn most frequently by those on touring motorcycles and cruisers.

Meterovolo	Number of	Helmet Type				Helmet Type Helme	
Туре	Riders Observed	Full Helmet	Open Face (3/4)	Half Shell	Unknown	No Helmet	Use Rate (percent)
Touring	1,018	15.3%	24.3%	21.9%	8.5%	30.0%	70.0%
Cruiser	505	18.2%	18.6%	22.8%	8.5%	31.9%	68.1%
Sport	194	87.1%	2.1%	0.0%	4.6%	6.2%	93.8%
Standard	141	53.2%	13.5%	12.8%	2.8%	17.7%	82.3%
Trike	96	20.8%	42.7%	13.5%	5.2%	17.7%	82.3%
Moped	35	14.3%	5.7%	5.7%	0.0%	74.3%	25.7%
Dual	20	60.0%	20.0%	0.0%	5.0%	15.0%	85.0%
Unknown	12	33.3%	0.0%	0.0%	16.7%	50.0%	50.0%
Chopper	11	36.4%	9.1%	9.1%	0.0%	45.5%	54.5%
Other	1	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Total	2,033	26.4%	20.3%	18.3%	7.4%	27.6%	72.4%

Table 3. 2017 Percent of Helmet Use by Helmet Type and Motorcycle Type

Table 4 summarizes helmet use for riders by the day of the week, time of the day, and roadway type. Table 5 presents helmet use by various demographic characteristics, including gender, age race, and riding position.

Day of the Week	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)
Sunday	341	235	68.9%
Monday	129	92	71.3%
Tuesday	261	203	77.8%
Wednesday	166	134	80.7%
Thursday	162	125	77.2%
Friday	549	394	71.8%
Saturday	425	289	68.0%
Total	2,033	1,472	72.4%
Time of Day	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)
6-7am	2	2	100.0%
7-8am	10	6	60.0%
8-9am	25	23	92.0%
9-10am	53	43	81.1%
10-11am	74	55	74.3%
11-12pm	30	24	80.0%
12-1pm	346	232	67.1%
1-2pm	340	255	75.0%
2-3pm	236	167	70.8%
3-4pm	231	170	73.6%
4-5pm	190	137	72.1%
5-6pm	225	167	74.2%
6-7pm	151	114	75.5%
7-8pm	98	63	64.3%
8-9pm	17	13	76.5%
9-10pm	5	1	20.0%
Total	2,033	1,472	72.4%
Facility Type	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)
Freeway	537	415	77.3%
Non-freeway	1,496	1,057	70.7%
Total	2,033	1,472	72.4%

# Table 4. 2017 Statewide Motorcycle Helmet Use Summary by Day of Week, Time of Day, and Type of<br/>Roadway

Helmet use rates were highest on Wednesdays (80.7 percent) and lowest on Saturdays and Sundays (68.0 and 68.9 percent, respectively). This was an expected result, as recreational riding typically occurs more frequently on weekends. Afternoon periods tended to have lower helmet use rates than morning periods, but this result was not consistent. As expected, due to higher speeds and greater travel distances, helmet use was higher on freeways compared to non-freeways.

Gender	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)	
Male	1,389	918	66.1%	
Female	238	170	71.4%	
Unknown	406	384	94.6%	
Total	2,033	1,472	72.4%	
Age	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)	
0-15	11	6	54.5%	
16-29	277	187	67.5%	
30-59	983	601	61.1%	
60+	182	133	73.1%	
Unknown	580	545	94.0%	
Total	2,033	1,472	72.4%	
Race	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)	
White	1,498	985	65.8%	
Black	42	24	57.1%	
Other	12	5	41.7%	
Unknown	481	458	95.2%	
Total	2,033	1,472	72.4%	
Riding Position	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)	
Driver	1,772	1,279	72.2%	
Passenger	261	193	73.9%	
Total	2,033	1,472	72.4%	

Table 5. 2017 Statewide Motorcycle Helmet Use Summary by Gender, Age, Race, and Riding Position

Females (71.4 percent) had a higher use rate than males (66.1 percent). Riders ages 60 and older had the highest helmet use rate (73.1 percent), while riders ages 0-15 had the lowest use rates (54.5 percent), although this age group included only a small sample or riders. Motorcycle riders identified as black had a lower use rate (57.1 percent) than those identified as white (65.8 percent). Helmet use rates were relatively consistent between drivers and passengers. Please note that the relatively high number of riders in the "unknown" demographic categories was most often due to the difficulties associated with observing such information for riders wearing full helmets. As it is difficult to identify race, gender and age for motorcyclists wearing full protective gear, it is not surprising to see high helmet use rates for riders categorized as unknown. Thus, because of this downward bias in helmet use across the demographic categories, the helmet use statistics by gender, age, and race, should only be considered for relative comparisons between the various categories.

#### 6.2 High-Visibility Gear Use

The helmet use survey also included an assessment of the utilization of high-visibility gear among riders, which is summarized in Table 6 based on motorcycle type, gender, age, race, and riding position. It should be noted that observers only assessed if the rider was wearing any type of high-visibility gear. The specific type of high-visibility gear that was worn was not recorded. It should be noted that one observer did not collect data regarding the use of high visibility gear while performing concurrent safety belt survey observations, which resulted in the lower number of observations for high visibility gear use compared to helmet use.

Motorcycle Type	Number of Riders Observed	Number of Riders Wearing Hi-Vis. Equip.	Rate of High- Vis. Equip. Use (percent)
Standard	130	4	3.1%
Touring	950	29	3.1%
Cruiser	472	15	3.2%
Chopper	7	0	0.0%
Other	1	0	0.0%
Sport	181	13	7.2%
Dual	20	0	0.0%
Moped	34	0	0.0%
Trike	96	8	8.3%
Unknown	6	0	0.0%
Total	1,897	69	3.6%
Gender	Number of Riders Observed	Number of Riders Wearing Hi-Vis. Equip.	Rate of High- Vis. Equip. Use (percent)
Male	1,284	37	2.9%
Female	213	7	3.3%
Unknown	400	25	6.3%
Total	1,897	69	3.6%
Age	Number of Riders Observed	Number of Riders Wearing Hi-Vis. Equip.	Rate of High- Vis. Equip. Use (percent)
0-15	6	0	0.0%
16-29	249	9	3.6%
30-59	904	28	3.1%
60+	176	2	1.1%
Unknown	562	30	5.3%
Total	1,897	69	3.6%
Race	Number of Riders Observed	Number of Riders Wearing Hi-Vis. Equip.	Rate of High- Vis. Equip. Use (percent)
White	1,375	40	2.9%
Black	41	1	2.4%
Other	12	0	0.0%
Unknown	469	28	6.0%
Total	1,897	69	3.6%
Riding Position	Number of Riders Observed	Number of Riders Wearing Hi-Vis. Equip.	Rate of High- Vis. Equip. Use (percent)
Driver	1,658	60	3.6%
Passenger	239	9	3.8%
Total	1.897	69	3.6%

# Table 6. 2017 Statewide High-Visibility Gear Use Summary by Motorcycle Type, Gender, Age,Race, and Riding Position

High-visibility gear was used by only 3.6 percent of riders. Sport and trike motorcycles had the highest percentage of riders wearing high-visibility gear at 7.2 percent and 8.3 percent, respectively. Female riders and riders aged 16-29 were observed to more frequently utilize high visibility gear.

Table 7 displays a summary of the helmet use rates based on the use of high-visibility gear. Not surprisingly, helmets were used at a much higher rate (84.1 percent) by users of high-visibility gear than riders not wearing high visibility gear (72.4 percent).

Use of High-Visibility Gear	Number of Riders Observed	Number of Riders Helmeted	Helmet Use Rate (percent)
Used	69	58	84.1%
Not Used	1,828	1,324	72.4%

Table 7. 2017 Helmet Use by High-Visibility Gear Use

#### 6.3 Conclusions

The 2017 overall statewide helmet use rate among motorcycle riders in Michigan was 71.4 percent. This rate is substantially lower than the 99.4 percent helmet use rate observed in 2006 when all riders were required by law to wear a helmet [5], but is not statistically lower than the 73.0 percent helmet use rate observed in 2013, which is the year following the repeal of the Michigan helmet law [4]. Thus, while the repeal of the Michigan motorcycle helmet law in 2012 has substantially reduced motorcycle helmet use statewide, there is no evidence of further declines in helmet use beyond that which was observed the year following the repeal of the helmet law. Furthermore, motorcycle helmet use rate in Michigan remains 6.4 percentage points higher than the 65 percent helmet use rate (drivers only) observed in the nationwide NOPUS survey in 2016, although this gap is closing as nationwide helmet use has been increasing recently. The percentage of riders wearing high-visibility gear was 3.6 percent, which is a concern because non-helmeted riders were also less likely to wear such equipment, introducing additional risk for this group.

Based upon these findings, continued efforts are warranted to encourage the use of both motorcycle helmets and high-visibility gear. Such efforts may include educational campaigns targeted towards those groups that exhibited the lowest use rates. Given the strong support from empirical research, these campaigns should emphasize the documented safety benefits associated with the use of helmets and high-visibility gear.

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# APPENDIX I – DATA COLLECTION COVER SHEET AND OBSERVATION FORM

# DIRECT OBSERVATION SURVEY COVER SHEET

Date: 2017	Observers Name:	
Survey Type:		
Safety Belt (	CRD/Booster Seat	Motorcycle Helmet
Site Identification:		
Site Location:		
Site Number:		
CityCounty:	Stratum	
Alternate Site Information:		
Is this an alternate site? No (Circle one)	Yes	
If yes, please provide a reason for using an alte	ernate site from the reserve list:	
Site Description:		
Assigned traffic flow: North South East	West	
Number of lanes observed:		
Total number of lanes in this direction:		
Weather Conditions: Clear	Light Fog Light Rain	
Site Start and End Time (total obs. period must	last EXACTLY 60 min):	
Start time:am/pm   E	nd time:am/pm	
Sample Sizes		
Safety Bely Survey:		
60 Minute Volume Count (for lanes being obser	ved):Vehicles	
Number of Observations Recorded in 60 min:	Vehicles	
CRD/Booster Seat Survey:		
Total Number of Children Observed in 60 min:	Children	
Motorcycle Helmet Use Survey:		
Number of Observations Recorded in 60 min:	Motorcycles	

		MOTORCY	CLE TYPE:		
<ul><li>Standard</li><li>Sport</li></ul>		Couring Cruiser	oter D	Thopper/Custom	□ Other □ Unknown
	RID	ER		PASSI	ENGER
HIGH- VISIBILITY HELMET USE:			HIGH- VISIBILITY		HELMET USE:
□ No □ Yes	□ Full Hel □ Half She	met □ Open Face (3/4) 11 □ No Helmet	□ No □ Yes	☐ Full He ☐ Half Sh	elmet
AGE:	GENDER:	GENDER: RACE:		GENDER:	RACE:
<ul> <li>□ 16-29</li> <li>□ 30-59</li> <li>□ 60+</li> <li>□ Unknown</li> </ul>	<ul> <li>Male</li> <li>Female</li> <li>Unknown</li> </ul>	<ul> <li>White</li> <li>Black</li> <li>Other Race</li> <li>Unknown</li> </ul>	<ul> <li>16-29</li> <li>30-59</li> <li>60+</li> <li>Unknown</li> </ul>	<ul> <li>Male</li> <li>Female</li> <li>Unknown</li> </ul>	<ul> <li>White</li> <li>Black</li> <li>Other Race</li> <li>Unknown</li> </ul>

	MOTORCYCLE TYPE:								
□ Standard	$\Box$ Touring $\Box$ Cruiser			$\Box$ C	hopper/Custom	Other			
□ Sport		Dual-Purpose 🗌 Mop	ed/Scoot	ter 🗆 T	rike	Unknown			
	RID	ER			PASSE	ENGER			
HIGH- VISIBILITY HELMET USE:				HIGH- VISIBILITY	HELMET USE:				
□ No □ Yes	<ul> <li>□ Full Helmet</li> <li>□ Open Face (3/4)</li> <li>□ Half Shell</li> <li>□ No Helmet</li> </ul>			<ul><li>No</li><li>Yes</li></ul>	<ul> <li>Full Helmet</li> <li>Open Face (3/4) Face</li> <li>Half Shell</li> <li>No Helmet</li> </ul>				
AGE:	GENDER:	NDER: RACE:		AGE:	<b>GENDER:</b>	RACE:			
□ 16-29 □ 30-59		<ul><li>White</li><li>Black</li></ul>		<ul><li>16-29</li><li>30-59</li></ul>		□ White □ Black			
<ul><li>60+</li><li>Unknown</li></ul>	□ Female	<ul><li>Other Race</li><li>Unknown</li></ul>		<ul><li>☐ 60+</li><li>☐ Unknown</li></ul>	□ Female	<ul><li>Other Race</li><li>Unknown</li></ul>			

		MOTORCY	CLE TYPE:		
<ul><li>Standard</li><li>Sport</li></ul>		Couring Cruiser	oter D	hopper/Custom	□ Other □ Unknown
	RID	ER		PASSI	ENGER
HIGH- VISIBILITY HELMET USE:			HIGH- VISIBILITY		HELMET USE:
□ No □ Yes	□ Full Hel □ Half She	met □ Open Face (3/4) Il □ No Helmet	□ No □ Yes	□ Full He	elmet
AGE:	GENDER:	ENDER: RACE:		GENDER:	RACE:
<ul> <li>□ 16-29</li> <li>□ 30-59</li> <li>□ 60+</li> <li>□ Unknown</li> </ul>	□ Male □ Female □ Unknown	<ul> <li>White</li> <li>Black</li> <li>Other Race</li> <li>Unknown</li> </ul>	<ul> <li>16-29</li> <li>30-59</li> <li>60+</li> <li>Unknown</li> </ul>	<ul> <li>Male</li> <li>Female</li> <li>Unknown</li> </ul>	<ul> <li>White</li> <li>Black</li> <li>Other Race</li> <li>Unknown</li> </ul>

APPENDIX II - 2017 MICHIGAN MOTORCYCLE OBSERVATION SITES AND HELMET USE DATA

3AppDenbcanNon-boxApple on participantDenb	Stratum	County	Type of Observation	Facility Type	Observation Site	Actual Total # of Obs	Actual Helmeted # of Obs	% Helmet Use
10.KnownNon-wei0.000 (Mathematicant)0.00.0000.0002Alaya0.KnownAlaya Non-weise/Netakou0.10.00.00030.KnownNon-weiAlaya Non-weise/Netakou0.10.00.00030.KnownNon-weiMathema Non-weise/Netakou0.20.00.00030.KnownNon-weiMathema Non-weise/Netakou0.20.00.00030.KnownNon-weiMathema Non-weise/Netakou0.00.00.00030.KnownNon-weiMathema Non-weise/Netakou0.00.00.030.KnownNon-weiMathema Non-weise/Netakou0.00.00.030.KnownNon-weiNon-weise/Netakou0.00.00.00.030.KnownNon-weiNon-weise/Netakou0.00.00.00.00.030.KnownNon-weise/Netakou0.00.00.00.00.00.00.030.KnownNon-weise/Netakou0.00.00.00.00.00.00.00.030.KnownNon-weise/Netakou0.0<	3	Alger	Dash Cam	Non-freeway	Alger Non-freeway Weekday	29	28	96.55%
1     Name     Name <t< td=""><td>2</td><td>Allegan</td><td>Concurrent</td><td>Non-freeway</td><td>US-31 and Cental Ave</td><td>1</td><td>0</td><td>0.00%</td></t<>	2	Allegan	Concurrent	Non-freeway	US-31 and Cental Ave	1	0	0.00%
1AnimaBankanBankanManima	2	Allegan	Dash Cam	Freeway	Allegan Freeway Weekend	4	3	75.00%
1AxiomDath CamNon-freewoyAxiam Non-freewoyNon	2	Allegan	Dash Cam	Non-freeway	Allegan Non-freeway Weekday	1	0	0.00%
1BangaConcursoNon-feesoryUGB-14 MAM3330.3010.00%3BangaDahl CasNon-feesoryMAT /V State SQ MA-43 (S Bouxhout)2.2100.00%2BaryOcal CasNon-feesoryMAT /V State SQ MA-43 (S Bouxhout)1.10.00.00%3BaronDahl CasNon-feesoryMarch Non-feesory Workdry0.10.00.00%3BaronDahl CasNon-feesoryBaron kon-feesory Morechanty0.00.00.00%3BaronConcursoNon-feesoryBaron kon-feesory Morechanty0.40.00.00%3BaronConcursoNon-feesoryBaron kon-feesory Morechanty0.40.00.00%3BaronConcursoNon-feesory1.44 and Sayers Hol0.10.10.00%3CahloonConcursoNon-feesory1.44 and Sayers Hol0.10.10.00%3CahloonConcursoNon-feesory1.44 and Sayers Hol0.10.10.00%3CahloonConcursoNon-feesory1.44 and Sayers Hol0.10.10.00%3CahloonConcursoNon-feesory1.44 and Sayers Hol0.10.10.03CahloonConcursoNon-feesory1.441.441.441.443CahloonConcursoNon-feesory1.411.411.443CahloonNon-feesory1.411.411.411.41	3	Antrim	Dash Cam	Non-freeway	Antrim Non-freeway Weekday	1	1	100.00%
SeriesDath CamNon-fraveryBaraga Non-fravery Weekday122000000003RamyCancurntNon-fraveryBNN (Neare Non-fravery Weekday)100.20.000003BerseDath CamNon-fraveryBerse Non-fravery Weekday0.00.00000.00003BerseDath CamNon-fraveryBerse Non-fravery Weekday0.00.00000.00003BerseDath CamNon-fraveryBerse Non-fravery Weekday0.00.00000.00003BersenCocurntNon-fraveryBerse Non-fravery Weekday0.00.00000.00003BersenCocurntNon-fraveryBersen Non-fravery Weekday0.00.00000.00003BersenCocurntNon-fraveryBersen Non-fravery Weekday0.10.00000.00003CarbouCocurntNon-fraveryCocurnt0.00000.00000.00003CarbouCocurntNon-fraveryCocurnt0.00000.00000.00003CarbouCocurntNon-fraveryCocurnt0.00000.00000.00003CarbouCocurntNon-fraveryCocurnt0.00000.00000.00003CarbouCocurntNon-fraveryCocurnt0.00000.00000.00003CarbouCocurntNon-fraveryNon-fravery0.00000.00000.00003CarbouDath CarbouNon-fraveryNon-fr	3	Baraga	Concurrent	Non-freeway	US-41 & M-38	3	3	100.00%
Samy         Concurrent         Non-Treeway         M-37 (W State S) S M-43 (S Boachway S)         2         2         0000%           2         Bay         Dath Cam         Non-Treeway         Bay Non-Treeway Weeklay         9         8         88.85%           3         Bencie         Dath Cam         Non-Treeway         Bencie Non-Treeway         104 and Sawyer R4         1         1         100.00%           3         Berrien         Concurrent         Non-Treeway         1-164 and Sawyer R4         1         1         100.00%           3         Berrien         Concurrent         Non-Treeway         1-169 and Hager Shore Rd         4         2         50.00%           2         Cahoun         Concurrent         Non-Treeway         Wickman Rd and Hill Brady Rd         1         1         00.00%           2         Cahoun         Concurrent         Non-Treeway         Cahoun Non-Treeway         Cahoun Non-Treeway         1.68 and Hill Brady Rd         1         0         0.00%           2         Cahoun         Concurrent         Non-Treeway         Cahoun Non-Treeway         Cahoun Non-Treeway         1.68 and Hill Shady Rd         1         0.00%           3         Chareona         Danah Cam         Non-Treeway         Cah	3	Baraga	Dash Cam	Non-freeway	Baraga Non-freeway Weekday	2	2	100.00%
2         Bay         Dash Cam         Non-freeway         Bay Non-freeway Weakday         1         0         0.00%           3         Bercie         Dash Cam         Non-freeway         Bercie Non-freeway Weakday         9         8.889%           3         Berrien         Cancurrent         Non-freeway         1-94 and Sayor Rd         1         1         1000%           3         Berrien         Concurrent         Non-freeway         1-196 and Hagar Shore Rd         4.4         2         66.67%           3         Berrien         Concurrent         Non-freeway         1-196 and Magar Shore Rd         4.4         2         66.67%           3         Berrien         Concurrent         Non-freeway         1-196 and Mo         1         1         100.00%           2         Carboun         Concurrent         Non-freeway         Concurrent         Non-freeway         1         0         0.00%           3         Chateroca         Dash Cam         Non-freeway         Chateroca         1         0         0.00%           3         Chateroca         Dash Cam         Non-freeway         Chateroca         1         0.00%           3         Chateroca         Dash Cam         Non-freeway <td>3</td> <td>Barry</td> <td>Concurrent</td> <td>Non-freeway</td> <td>M-37 (W State St) &amp; M-43 (S Broadway St)</td> <td>2</td> <td>2</td> <td>100.00%</td>	3	Barry	Concurrent	Non-freeway	M-37 (W State St) & M-43 (S Broadway St)	2	2	100.00%
3         Bencie         Dash Cam         Non-freeway         Bencie Non-freeway Weekned         9         8         885%.           3         Bencie         Dash Cam         Non-freeway         1-140 and Sayor Rd         1         1         100.00%.           3         Bernien         Concurret         Non-freeway         1-140 and Sayor Rd         4         2         50.00%.           3         Barneh         Concurret         Non-freeway         1-190 and Hagar Shore Rd         4         2         50.00%.           3         Cahoun         Concurret         Non-freeway         1-69 and M69 E         1         1         100.00%.           2         Cahoun         Concurret         Non-freeway         Mote Ana Rd and Hill Back RN         1         1         100.00%.           2         Cahoun         Dana Cam         Non-freeway         Chathore Non-freeway Weeklay         19         7         25.84%.           3         Chabogan         Daah Cam         Non-freeway         Chathore Non-freeway Weeklay         23         16         65.7%.           3         Chabogan         Daah Cam         Freeway         Chathore Non-freeway Weeklay         23         16         50.0%.           3         C	2	Bay	Dash Cam	Non-freeway	Bay Non-freeway Weekday	1	0	0.00%
3         Benzie         Dash Can         Non-freeway         Benzie Non-freeway Weekand         6         60         6000%           3         Bernien         Concurrent         Non-freeway         1-94 and Swayer Rd         1         1         10000%           3         Branch         Concurrent         Non-freeway         1-96 and Hogs Store Rd         3         2         66.07%           2         Cahoun         Concurrent         Non-freeway         H-96 and Mole E         1         1         100.07%           2         Cahoun         Concurrent         Non-freeway         M-96 and Holl Branck Mol         1         1         100.07%           2         Cahoun         Concurrent         Non-freeway         M-96 and E Burn Okh Rd         22         10.0         45.64%           2         Cahoun         Dash Cam         Non-freeway         Chabrowick Mon-freeway Weekday         3         2         66.67%           3         Chare         Dash Cam         Non-freeway         Chabrowick Mon-freeway Weekday         2         16         69.57%           3         Chare         Dash Cam         Non-freeway         Chabrowick Mon-freeway Weekday         2         1         50.00%           3 <t< td=""><td>3</td><td>Benzie</td><td>Dash Cam</td><td>Non-freeway</td><td>Benzie Non-freeway Weekday</td><td>9</td><td>8</td><td>88.89%</td></t<>	3	Benzie	Dash Cam	Non-freeway	Benzie Non-freeway Weekday	9	8	88.89%
3         Berrien         Concurrent         Non-freeway         1-94 and Sawyer Rd         1         1         100.00%           3         Berrien         Concurrent         Non-freeway         1-168 and Hogger Shore Rd         4         2         50.00%           3         Branch         Cancurrent         Non-freeway         1-98 and M0 E         1         1         100.00%           2         Calhoun         Concurrent         Non-freeway         M-98 and M0 E         1         1         100.00%           2         Galhoun         Concurrent         Non-freeway         M-98 and M0 E         1         0         0.00%           2         Galhoun         Dan Cam         Non-freeway         Chalhoucy Mosh Mod         3         2         6.63%           3         Chalycox         Danh Cam         Non-freeway         Chalhoucy Mosh Mod         3         2         16         6.53%           3         Chalycox         Danh Cam         Non-freeway         Chalycoxy Mosk Mod         1         1         100.00%           3         Chare         Danh Cam         Non-freeway         Chare Freeway Wosk Mod         1         1         100.00%           3         Chare         Danh Cam <td>3</td> <td>Benzie</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Benzie Non-freeway Weekend</td> <td>6</td> <td>6</td> <td>100.00%</td>	3	Benzie	Dash Cam	Non-freeway	Benzie Non-freeway Weekend	6	6	100.00%
3         Berrinn         Concurrent         Non-freeway         1-158 and Hagar Shore Rd         4         2         50.00%           3         Branch         Concurrent         Non-freeway         1-66 and MoDE         1         1         100.00%           2         Calhoun         Concurrent         Non-freeway         W Dickman R and Hilf Brady Rd N         1         1         100.00%           2         Calhoun         Dant Cancurrent         Non-freeway         Calhoun Non-freeway Weekday         1         0         0.667%           3         Cheborgan         Dash Cam         Non-freeway         Calhoun Non-freeway Weekday         3         2         66.67%           3         Cheborgan         Dash Cam         Non-freeway         Calhoun Non-freeway Weekday         3         2         16         8.57%           3         Chrogewa         Dash Cam         Freeway         Chare Freeway Weekday         23         16         8.57%           3         Chare         Dash Cam         Freeway         Chare Freeway Weekday         23         16         8.57%           3         Chare         Dash Cam         Freeway         Chare Non-freeway Weekday         5         3         60.00%           3	3	Berrien	Concurrent	Non-freeway	I-94 and Sawyer Rd	1	1	100.00%
3BranchConcurrentNon-freeway1-68 and Chicago SI3268.67%2CahounConcurrentNon-freewayI-69 and M 60 E111100.00%2CahounConcurrentNon-freewayW Dickman Rd and Hill Brady Rd N22104.50%2CahounDaut CamNon-freewayM Gé and E Bur Oak Rd22104.50%3ChaftwoixDast CamNon-freewayM Gé and E Bur Oak Rd22104.50%3ChaftwoixDast CamNon-freewayChaftwoix Non-freeway Weekday3126.67%3ChaftwoixDast CamNon-freewayChaftwoix Non-freeway Weekday23166.57%3ChareDast CamFreewayChaftwoix Non-freeway Weekday23166.57%3ClareDast CamFreewayClare Freeway Weekday23116.00%3ClareDast CamNon-freewayClare Freeway Weekday23166.57%3ClareDast CamNon-freewayClare Non-freeway Weekday14110.00%3ClareDast CamNon-freewayClare Non-freeway Weekday442250.0%3ClaroDast CamNon-freewayClare Non-freeway Weekday151066.7%3ClaroDast CamNon-freewayClare Non-freeway Weekday15100.0%3ClaroDast CamNon-freewayC	3	Berrien	Concurrent	Non-freeway	I-196 and Hagar Shore Rd	4	2	50.00%
2         Cahoun         Consument         Non-freeway         W Dickman R and Mit Brady Rd N         1         1         100.00%           2         Cahoun         Consument         Non-freeway         W Dickman R and Mith Brady Rd N         1         1         100.00%           2         Cahoun         Consument         Non-freeway         M 66 and E bur Oak Rd         22         100         65.87%           3         Chalcoux         Dash Cam         Non-freeway         Chalcoux Non-freeway Weekday         13         2         66.67%           3         Cheboygan         Dash Cam         Freeway         Cheboygan Freeway Weekday         19         7         36.84%           3         Cheboygan         Dash Cam         Freeway         Charlewak Nen-freeway Weekday         22         1         60.07%           3         Chare         Dash Cam         Non-freeway         Clare Freeway Weekday         5         3         60.07%           3         Chare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         4         2         53         60.07%           3         Chare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         15         10         0.67% <tr< td=""><td>3</td><td>Branch</td><td>Concurrent</td><td>Non-freeway</td><td>I-69 and Chicago St</td><td>3</td><td>2</td><td>66.67%</td></tr<>	3	Branch	Concurrent	Non-freeway	I-69 and Chicago St	3	2	66.67%
2CalhounConcurrentNon-freewayW Dickman Rd and Hill Brady Rd N11100.00%2CalhounConcurrentNon-freewayM-66 and E Bur Cak Rd2.21045.45%2CalhounDash CamNon-freewayCalhoun Non-freeway Weekday3.12.066.67%3ChebroyanDash CamNon-freewayChebroyan Freeway Weekday1.97.08.84%3ChebroyanDash CamNon-freewayChebroyan Freeway Weekday2.31.669.57%3ClareDash CamFreewayClare Freeway Weekday2.31.669.57%3ClareDash CamFreewayClare Freeway Weekday2.31.669.57%3ClareDash CamFreewayClare Freeway Weekday5.360.00%3ClareDash CamNon-freewayClare Freeway Weekday5.360.00%3ClareDash CamNon-freewayClare Freeway Weekday1.51.066.67%3ClareDash CamNon-freewayClare Freeway Weekday1.51.066.67%3ClintonDash CamNon-freewayClare Freeway Weekday1.51.066.67%3ClintonDash CamNon-freewayClare Freeway Weekday1.51.066.67%3ClintonDash CamNon-freewayClare Freeway Weekday1.51.00.03ClintonDash CamNon-freewayClinton Non-free	2	Calhoun	Concurrent	Non-freeway	I- 69 and M 60 E	1	1	100.00%
2         Cathoun         Concurrent         Non-freeway         M-66 and E Bur Oak Rd         22         10         45.45%           2         Cahoun         Dash Cam         Non-freeway         Cahoun Non-freeway Weekday         1         0         0.00%           3         Chafeoxin         Dash Cam         Non-freeway         Chafeoxin Non-freeway Weekday         3         2         66.7%           3         Chafeoxin         Dash Cam         Freeway         Chippewa Non-freeway Weekday         23         16         69.57%           3         Clare         Dash Cam         Freeway         Chippewa Non-freeway Weekday         23         16         69.57%           3         Clare         Dash Cam         Non-freeway         Clare Freeway Weekday         2         1         50.00%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         5         3         60.00%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         15         10         65.7%           3         Clinton         Desh Cam         Non-freeway         Clare Non-freeway Weekday         1         1         10.00%           3	2	Calhoun	Concurrent	Non-freeway	W Dickman Rd and Hill Brady Rd N	1	1	100.00%
2         Cathoun         Dash Cam         Non-freeway         Cathoun Non-freeway Weekday         1         0         0.00%           3         Chatevoix         Dash Cam         Non-freeway         Chadroxox Non-freeway Weekday         3         2         66.67%           3         Chebrogan         Dash Cam         Freeway         Chebrogan Freeway Weekday         19         7         36.84%           3         Chipewa         Dash Cam         Non-freeway         Charonov Weekday         23         16         69.57%           3         Clare         Dash Cam         Non-freeway         Clare Freeway Weekday         2         1         60.07%           3         Clare         Dash Cam         Non-freeway         Clare Freeway Weekday         5         3         60.07%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         5         3         60.07%           3         Clinton         Dash Cam         Non-freeway         Clare Non-freeway Weekday         1         1         100.07%           3         Clinton         Dash Cam         Non-freeway         Clinton Non-freeway Weekday         8         6         75.07%           3         Clinton </td <td>2</td> <td>Calhoun</td> <td>Concurrent</td> <td>Non-freeway</td> <td>M-66 and E Burr Oak Rd</td> <td>22</td> <td>10</td> <td>45.45%</td>	2	Calhoun	Concurrent	Non-freeway	M-66 and E Burr Oak Rd	22	10	45.45%
3         Charlwork         Dash Cam         Non-freeway         Charlwork Non-freeway Weekday         3         2         66.67%           3         Chebogan         Dash Cam         Freeway         Chebogan Freeway Weekday         19         7         36.84%           3         Chappewa         Dash Cam         Freeway         Chippewa Non-freeway Weekday         23         16         69.57%           3         Clare         Dash Cam         Freeway         Clare Freeway Weekday         2         1         50.05%           3         Clare         Dash Cam         Freeway         Clare Freeway Weekday         5         3         60.07%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         5         3         60.07%           3         Claro         Dash Cam         Non-freeway         Clare Non-freeway Weekday         15         10         66.67%           3         Cliron         Dash Cam         Freeway         Cliron Non-freeway Weekend         1         1         100.00%           3         Cliron         Dash Cam         Non-freeway         Cliron Non-freeway Weekend         5         5         100.00%           3         Cliron	2	Calhoun	Dash Cam	Non-freeway	Calhoun Non-freeway Weekday	1	0	0.00%
3         Cheboygan         Dash Cam         Freeway         Cheboygan Freeway Weekday         19         7         36.84%           3         Chippewa         Dash Cam         Non-freeway         Chippewa Non-freeway Weekday         23         116         69.57%           3         Clare         Dash Cam         Freeway         Clare Freeway Weekday         2         1         50.00%           3         Clare         Dash Cam         Non-freeway         Clare Freeway Weekday         2         1         0.00%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         4         2         5         3         60.00%           3         Claro         Deash Cam         Non-freeway         Clare Non-freeway Weekday         4         2         5         3         60.00%           3         Clinton         Dash Cam         Non-freeway         Clinton Freeway Weekday         15         10         0.66.7%           3         Clinton         Dash Cam         Non-freeway         Clinton Non-freeway Weekday         16         1         100.00%           3         Clinton         Dash Cam         Non-freeway         Clinton Non-freeway Weekday         1         1	3	Charlevoix	Dash Cam	Non-freeway	Charlevoix Non-freeway Weekday	3	2	66.67%
3         Chippewa         Dash Cam         Non-freeway         Chippewa Non-freeway Weekday         23         16         69.57%           3         Clare         Dash Cam         Freeway         Clare Freeway Weekday         2         1         50.00%           3         Clare         Dash Cam         Freeway         Clare Freeway Weekday         2         1         60.00%           3         Clare         Dash Cam         Non-freeway         Clare Non-freeway Weekday         5         3         60.00%           3         Cliron         Dash Cam         Non-freeway         Clare Non-freeway Weekday         4         2         50.00%           3         Cliron         Pole-Mount         Freeway         Clinton Non-freeway Weekday         15         10         66.67%           3         Cliron         Dash Cam         Non-freeway         Cliron Non-freeway Weekday         8         6         75.07%           3         Cliron         Dash Cam         Non-freeway         Cliron Non-freeway Weekday         8         8         100.00%           3         Cliron         Dash Cam         Non-freeway         Cliron Non-freeway Weekday         1         1         100.00%           3         Cliron	3	Cheboygan	Dash Cam	Freeway	Cheboygan Freeway Weekday	19	7	36.84%
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3DickinsonDash CamNon-freewayDickinson Non-freeway Weekday11100.00%2EatonPole-MountNon-freewayM-99 and S Waverly Rd10660.00%2EatonPole-MountNon-freewayEB M-43 and M-100282278.57%2EatonDash CamFreewayEaton Freeway Weekday22100.00%2EatonDash CamNon-freewayEaton Freeway Weekday22100.00%2EatonDash CamNon-freewayEaton Non-freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday5480.00%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday242395.83%3GogebicDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GrandDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday11100.00%3GratiotConcurrentNon-freewayGratiot Traverse Non-freeway Weekday200.00%3GratiotDash CamNon-freewayGratiot Traverse Non-freeway Weekday11100.00%3 <t< td=""><td>3</td><td>Delta</td><td>Dash Cam</td><td>Non-freeway</td><td>Delta Non-freeway Weekday</td><td>3</td><td>3</td><td>100.00%</td></t<>	3	Delta	Dash Cam	Non-freeway	Delta Non-freeway Weekday	3	3	100.00%
2EatonPole-MountNon-freewayM-99 and S Waverly Rd10660.00%2EatonPole-MountNon-freewayEB M-43 and M-100282278.57%2EatonDash CamFreewayEaton Freeway Weekday22100.00%2EatonDash CamNon-freewayEaton Freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday191052.63%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday55100.00%3GladwinDash CamNon-freewayGenesee Non-freeway Weekday55100.00%3GladwinDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamNon-freewayGratiot Treeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Treeway Weekday11100.00%3Gratio	3	Dickinson	Dash Cam	Non-freeway	Dickinson Non-freeway Weekday	1	1	100.00%
2EatonPole-MountNon-freewayEB M-43 and M-100282278.57%2EatonDash CamFreewayEaton Freeway Weekday22100.00%2EatonDash CamNon-freewayEaton Freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday5480.00%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GladwinDash CamNon-freewayGogebic Non-freeway Weekday55100.00%3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday88100.00%3Gratiot<	2	Eaton	Pole-Mount	Non-freeway	M-99 and S Waverly Rd	10	6	60.00%
2EatonDash CamFreewayEaton Freeway Weekday22100.00%2EatonDash CamNon-freewayEaton Non-freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday5480.00%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday55100.00%3GladwinDash CamNon-freewayGenesee Non-freeway Weekday55100.00%3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GratiotDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GratiotDash CamNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3Gratiot <td>2</td> <td>Eaton</td> <td>Pole-Mount</td> <td>Non-freeway</td> <td>EB M-43 and M-100</td> <td>28</td> <td>22</td> <td>78.57%</td>	2	Eaton	Pole-Mount	Non-freeway	EB M-43 and M-100	28	22	78.57%
2EatonDash CamNon-freewayEaton Non-freeway Weekday191052.63%3EmmetDash CamNon-freewayEmmet Non-freeway Weekday5480.00%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GladwinDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GladwinDash CamNon-freewayGladwin Non-freeway Weekday55100.00%3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday4125.00%3Grand TraverseDash CamNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11 <td< td=""><td>2</td><td>Eaton</td><td>Dash Cam</td><td>Freeway</td><td>Eaton Freeway Weekday</td><td>2</td><td>2</td><td>100.00%</td></td<>	2	Eaton	Dash Cam	Freeway	Eaton Freeway Weekday	2	2	100.00%
3EmmetDash CamNon-freewayEmmet Non-freeway Weekday5480.00%3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GladwinDash CamNon-freewayGladwin Non-freeway Weekday55100.00%3GladwinDash CamNon-freewayGladwin Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00% </td <td>2</td> <td>Eaton</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Eaton Non-freeway Weekday</td> <td>19</td> <td>10</td> <td>52.63%</td>	2	Eaton	Dash Cam	Non-freeway	Eaton Non-freeway Weekday	19	10	52.63%
3GeneseeDash CamNon-freewayGenesee Non-freeway Weekday17847.06%3GladwinDash CamNon-freewayGladwin Non-freeway Weekday55100.00%3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GratiotConcurrentNon-freewayGrand Traverse Non-freeway Weekday4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamNon-freewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11 </td <td>3</td> <td>Emmet</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Emmet Non-freeway Weekday</td> <td>5</td> <td>4</td> <td>80.00%</td>	3	Emmet	Dash Cam	Non-freeway	Emmet Non-freeway Weekday	5	4	80.00%
3GladwinDash CamNon-freewayGladwin Non-freeway Weekday55100.00%3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%3GratiotDash CamNon-freewayGrand Traverse Non-freeway Weekday4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%	3	Genesee	Dash Cam	Non-freeway	Genesee Non-freeway Weekday	17	8	47.06%
3GogebicDash CamNon-freewayGogebic Non-freeway Weekday242395.83%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekend4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%	3	Gladwin	Dash Cam	Non-freeway	Gladwin Non-freeway Weekday	5	5	100.00%
2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekday200.00%2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekend4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%	3	Gogebic	Dash Cam	Non-freeway	Gogebic Non-freeway Weekday	24	23	95.83%
2Grand TraverseDash CamNon-freewayGrand Traverse Non-freeway Weekend4125.00%3GratiotConcurrentNon-freewayM-46 (W Washington St) & N Main St11100.00%3GratiotDash CamFreewayGratiot Freeway Weekday88100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%3GratiotDash CamNon-freewayGratiot Non-freeway Weekday11100.00%	2	Grand	Dash Cam	Non-freeway	Grand Traverse Non-freeway Weekday	2	0	0.00%
Image: Second fractionNon-freewayMethod fractionMethod frac	2	Grand	Dash Cam	Non-freeway	Grand Traverse Non-freeway Weekend	4	1	25.00%
3     Gratiot     Dash Cam     Freeway     Gratiot Freeway Weekday     8     8     100.00%       3     Gratiot     Dash Cam     Non-freeway     Gratiot Non-freeway Weekday     1     1     100.00%	2	Gratiot	Concurrent	Non-freeway	M-46 (W Washington St) & N Main St	1	1	100.00%
3     Gratiot     Dash Cam     Non-freeway     Gratiot Non-freeway Weekday     1     1     100.00%       0     Opticity     Desh Cam     Non-freeway     Opticity     Control     Control <td>3</td> <td>Gratiot</td> <td>Dash Com</td> <td>Freeway</td> <td>Gratiot Freeway Weekday</td> <td>8</td> <td>8</td> <td>100.00%</td>	3	Gratiot	Dash Com	Freeway	Gratiot Freeway Weekday	8	8	100.00%
	3	Gratiot	Dash Cam	Non-freeway	Gratiot Non-freeway Weekday	1	1	100.00%
I Gratiot I Dash Cam I Non-treeway I Gratiot Non-treeway Weekend I 3 I 3 I 100.00%	3	Gratiot	Dash Cam	Non-freeway	Gratiot Non-freeway Weekend	3	3	100.00%

3No.pl. No.pl. No.	Stratum	County	Type of Observation	Facility Type	Observation Site	Actual Total # of Obs	Actual Helmeted # of Obs	% Helmet Use
1IndumPoskborPressoURLP and Landon plandIndexIndexPoskborPoskborPoskbor1IngumPoskbor <td>3</td> <td>Houghton</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Houghton Non-freeway Weekday</td> <td>36</td> <td>28</td> <td>77.78%</td>	3	Houghton	Dash Cam	Non-freeway	Houghton Non-freeway Weekday	36	28	77.78%
1IndumPachamaFormalCalina of Calong MachageCalina of Calong MachageCalina Machage <t< td=""><td>1</td><td>Ingham</td><td>Pole-Mount</td><td>Freeway</td><td>US-127 and Dunckel Road</td><td>96</td><td>83</td><td>86.46%</td></t<>	1	Ingham	Pole-Mount	Freeway	US-127 and Dunckel Road	96	83	86.46%
1InghomParkabadNereardCalina or Carchology Meeded1.90.20.40%1InghanSachanFreeuryInghan Fereury Weeded111.00%1InghanSachanFreeuryInghan Fereury Weeded1.010.46%7.5%1InghanSachanFreeuryInghan Fereury Weeded3.00.46%0.60%3InghanSachanFreeuryInghan Fereury Weeded3.00.6%0.6%3InghanSachanFreeuryInghan Fereury Weeded3.00.6%0.6%3InghanSachanFreeuryInghan Fereury Weeded3.00.6%0.6%3InghanSachanFreeuryInghan Fereury Weeded3.00.6%0.6%3InghanSachanSachanSachan0.6%0.6%0.6%0.6%3InghanSachanSachanSachan0.6%0.6%0.6%0.6%0.6%3InghanSachanSachanSachan0.6%0.6%0.6%0.6%0.6%0.6%0.6%0.6%3InghanSachanSachanSachanSachan0.6% <t< td=""><td>1</td><td>Ingham</td><td>Pole-Mount</td><td>Freeway</td><td>I-96 and College Road</td><td>67</td><td>51</td><td>76.12%</td></t<>	1	Ingham	Pole-Mount	Freeway	I-96 and College Road	67	51	76.12%
1IndramDabCasFreewyIndram Freewy Weskard999000001DabCasFreewyIndram Knorteewy Weskard6.14.110.00011Indram ControlDabCasKorteewyIndram Knorteewy Weskard7.28.86.03IohanDabCasKorteewyIohan Knorteewy Weskard7.28.80.06.03IohanDabCasKorteewyIohan Knorteewy Weskard6.80.00.00.03IshanDabCasKorteewyIohan Knorteewy Weskard6.80.00.00.03IshanDabCasKorteewyIohan Knorteewy Weskard6.80.00.00.03IshanDabCasKorteewyIohan Knorteewy Weskard6.10.00.00.03IshanDabCasKorteewyIohan Knorteewy0.10.00.00.04JackanConcurreNorteewyIohan Knorteewy0.10.00.00.05JackanConcurreNorteewyIohan Knorteewy0.10.00.00.06KairaranConcurreNorteewyIohan Knorteewy0.10.00.00.07KairaranConcurreNorteewyIohan Knorteewy0.10.00.00.01KairaranConcurreNorteewyIohan Knorteewy0.10.00.00.01KairaranConcurreNorteewy <t< td=""><td>1</td><td>Ingham</td><td>Pole-Mount</td><td>Non-freeway</td><td>Collins and Technology Rd</td><td>3</td><td>2</td><td>66.67%</td></t<>	1	Ingham	Pole-Mount	Non-freeway	Collins and Technology Rd	3	2	66.67%
1InduaDaab CarFerroranyIndupam Faceway/Veckand11101InduaDaab CarNon-freewayNon-freeway/Veckand33003VininDaab CarFreewayNon-freeway/Veckand330003ImanDacharerNon-freeway/Veckand3300	1	Ingham	Dash Cam	Freeway	Ingham Freeway Weekday	9	9	100.00%
1IndramDabCasMonferencyHigham Non-freency Weekday61464675.1%1IngramDabCasFreencyInternet Meekandy3.23.360.00%3InfonDabCasFreencyInternet Meekandy3.20.00.00%3InfonDabCasNon-freencyInternet Meekandy6.60.00%3InfonDabCasFreencyInternet Meenany Weekandy6.60.00%3InfonDabCasFreencyInternet Meenany Weekandy6.60.00%3InfonDabCasFreencyInternet Meenany Weekandy0.20.00.00%3InfondDabCasNon-freencyMonferency Weekandy0.10.00.00%3JakasConcurretNon-freencyMonferency Weekandy0.10.00.00%3JakasConcurretNon-freencyMonferency Weekandy0.10.00.01KalarazoConcurretNon-freencyMonferency Weekandy0.10.00.01KalarazoConcurretNon-freencyMonferency Weekandy0.10.00.01KalarazoConcurretNon-freencyMonferency Weekandy0.10.00.01KalarazoConcurretNon-freencyMonferency Weekandy0.10.00.01KalarazoConcurretNon-freencyMonferencyMonferency0.00.01Kalarazo	1	Ingham	Dash Cam	Freeway	Ingham Freeway Weekend	1	1	100.00%
1InduaData CanNon-freewyIndus hom-freewy Weekard128.88.63IonaData CanNon-freewyIona Freewy Weekard3.83.30.0003IsabaData CanNon-freewyNon-freewy Weekard6.60.0003IsabaData CanNon-freewyIsabale Isochewsy Weekard7.60.20.0003IsabaData CanNon-freewyIsabale Isochewsy Weekard7.60.20.0003IsabaleCanuretNon-freewyIsabale Isochewsy Weekard7.60.20.0003JacksonCanuretNon-freewyJackson Kontewsy Weekard1.00.0000.0003JacksonCanuretNon-freewyJackson Kontewsy Weekard1.00.0000.0001KalarazoCanuretNon-freewyJackson Kontewsy Weekard1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.0001KalarazoCanuretNon-freewyMada Ston Stan1.00.0000.	1	Ingham	Dash Cam	Non-freeway	Ingham Non-freeway Weekday	61	46	75.41%
3IonaDan CamFreewayIona Freeway Weekand331000%3InoDan CamNon-freewayIon Non-freewayIon Non-freewayIon Non-freewayNon-Non-freewayNon-St	1	Ingham	Dash Cam	Non-freeway	Ingham Non-freeway Weekend	12	8	66.67%
3IronConcurrentNon-freewayN 4th Ave (M 189) & US-2200.00%,3IronData CamNon-freewayInon Non-freeway Weekday6610.00%,3IsabellaData CamFreewayIsabella Persav, Weekday722100.00%,3IsabellaData CamNon-freewayM50 and US-177200.00%,2JacksonConcurrentNon-freewayM50 and US-177200.00%,3JacksonData CamNon-freewayJackson Non-freeway100.00%,1KalamazooConcurrentNon-freewayJackson Non-freeway100.00%,1KalamazooConcurrentNon-freewayM-48 Infrayan Ave) and X50 S N333100.00%,1KalamazooConcurrentNon-freewayM-48 Infrayan Ave) and X50 S N3342.85%,1KalamazooConcurrentNon-freewayM-48 Infrayan Ave) and X50 S N4250.00%,1KalamazooConcurrentNon-freewayM-48 Infrayan Avel Avel Avel Avel Avel Avel Avel Avel	3	Ionia	Dash Cam	Freeway	Ionia Freeway Weekend	3	3	100.00%
3IronDeah CamNon-freewayIron Non-freeway Weekday666000%3IsabelaData CamFreewayIsabela Freeway Weekday5510000%2JackonConcurretNon-freewayIsabela Freeway Weekday220000%2JackonConcurretNon-freewayUS-127 But (Cooper 3) and Washington SI100.00%2JackonConcurretNon-freewayUS-127 But (Cooper 3) and Washington SI100.00%2JackonConcurretNon-freewayUS-127 But (Cooper 3) and Washington SI100.00%1KalamazoConcurretNon-freewayUS-137 and Washington SI1100.00%1KalamazoConcurretNon-freewayUS-137 and Washington SI1100.00%1KalamazoConcurretNon-freewayUS-137 and Washington SI4250.00%1KalamazoConcurretNon-freewayHal-137 and Washington SI4250.00%1KalamazoConcurretNon-freewayKalamazo Nan-freeway200.00%2KertConcurretNon-freewayKalamazo Nan-freeway55550.00%2KertDah-GamNon-freewayKalamazo Nan-freeway55550.00%2KertDah-GamNon-freewayKalamazo Nan-freeway55555.00%2<	3	Iron	Concurrent	Non-freeway	N 4th Ave (M-189) & US-2	2	0	0.00%
3         Isabella         Dach Cam         Freeway         Isabella Piceway Weekday         5         6         0000%           3         Isabella         Dach Cam         Non-Treeway         Isabella Ronf.reway Weekday         2         2         100.00%           2         Jackon         Concurrent         Non-Treeway         US-127 Bus (Cooper St) and Washington St         1         0         0.00%           2         Jackon         Desh Cam         Non-Treeway         US-127 Bus (Cooper St) and Washington St         1         0         0.00%           1         Kalamazoo         Concurrent         Non-Treeway         I-48.6 (E Mchigan Ave) and NR Res St         1         1         100.00%           1         Kalamazoo         Concurrent         Non-Treeway         I-54.3 and VCente Ave         1         0         0.00%           1         Kalamazoo         Concurrent         Non-Treeway         I-54 and Portage At         2         0         0.00%           1         Kalamazoo         Concurrent         Non-Treeway         Kalakaka Non-Treeway Weekday         2         1         50.00%           1         Kalamazoo         Dash Cam         Non-Treeway         Kalakaka Non-Treeway Weekday         2         1         0.00% <td>3</td> <td>Iron</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Iron Non-freeway Weekday</td> <td>6</td> <td>6</td> <td>100.00%</td>	3	Iron	Dash Cam	Non-freeway	Iron Non-freeway Weekday	6	6	100.00%
3         Isabella         Dash Cam         Non-freeway         Isabella Non-freeway         M 50 and US-127         2         0         0.00%           2         Jackson         Concurrent         Non-freeway         U3-127 Bus (Cooper S) and Washington S1         1         0         0.00%           1         Kalamazoo         Concurrent         Non-freeway         Judscon Non-freeway         M-96 (E Michigan Ave) and SSIn S1N         3         3         100.00%           1         Kalamazoo         Concurrent         Non-freeway         M-96 (E Michigan Ave) and SSIn S1N         3         3         22.88%           1         Kalamazoo         Concurrent         Non-freeway         US-131 and W Cathra Ave         1         1         100.00%           1         Kalamazoo         Concurrent         Non-freeway         US-131 and W Cathra Ave         1         2         50.00%           1         Kalamazoo         Concurrent         Non-freeway         US-131 and W Cathra Ave         1         2         5         0.00%           3         Kalamazoo         Concurrent         Non-freeway         Kalamazoo         Non-freeway         Kalamazoo         Dash Can         Non-freeway         Witson Ave SM and Hall S SM         5         33         60.00	3	Isabella	Dash Cam	Freeway	Isabella Freeway Weekday	5	5	100.00%
2         Jackson         Concurrent         Non-freeway         M-S0 and US-127         2         0         0.00%           2         Jackson         Concurrent         Non-freeway         UJ-127 But (Cooper S0) and Wathington Bt         1         0         0.00%           2         Jackson         Dash Cam         Non-freeway         M-66 (E Mchigan Ave) and 35th St         3         0.000%           1         Kalamazco         Concurrent         Non-freeway         M-43 and Solon St         1         1         100.00%           1         Kalamazco         Concurrent         Non-freeway         U-51 and V Centre Ave         1         0.000%           1         Kalamazco         Concurrent         Non-freeway         U-51 and V Centre Ave         1         0.000%           1         Kalamazco         Concurrent         Non-freeway         U-51 and V Centre Ave         1         0.00%         0.00%           1         Kalamazco         Dash Cam         Non-freeway         Kalamazco Non-freeway         U-51 and V Centre Ave         2         0         0.00%           2         Kent         Dash Cam         Non-freeway         Kalamazco Non-freeway V Centre Ave         5         10.00%           2         Kent	3	Isabella	Dash Cam	Non-freeway	Isabella Non-freeway Weekend	2	2	100.00%
2JacksonConcurrentNon-freewayUS-127 Bus (Cooper SI) and Washington SI100.00%1KalamazooConcurretNon-freewayJackson Non-freewayWeskend100.00%1KalamazooConcurretNon-freewayM-96 (E Michigan Ave) and 35th SI N33100.00%1KalamazooConcurretNon-freewayI-44 Bus (W Kalamazoo Ave) and Nose SI110.00%1KalamazooConcurretNon-freewayI-44 Bus (W Kalamazoo Ave) and N Edwards SI420.00%1KalamazooConcurretNon-freewayI-144 Bus (W Kalamazoo Ave) and N Edwards SI420.00%1KalamazooConcurretNon-freewayI-44 and Portage RA420.00%1KalamazooConcurretNon-freewayKalakana Non-freeway Weskday210.00%2KentPale CamNon-freewayKalakana Non-freeway Weskday210.00%2KentPale CamNon-freewayKalamazoo Non-freeway Weskday210.00%2KentPale CamNon-freewayKalamazoo Non-freeway Weskday210.00%2KentPale CamNon-freewayKalamazoo Non-freeway Weskday210.00%2KentPale CamNon-freewayKalamazoo Non-freeway Weskday3330.00%2LivingtonPale CamNon-freewayKent Freeway Weskday <td>2</td> <td>Jackson</td> <td>Concurrent</td> <td>Non-freeway</td> <td>M-50 and US-127</td> <td>2</td> <td>0</td> <td>0.00%</td>	2	Jackson	Concurrent	Non-freeway	M-50 and US-127	2	0	0.00%
2         Jackson         Dash Cam         Non-freeway         Jackson Non-freeway         M-98 (E Michigan Awa) and Sifts SN         3         3         100.00%           1         Kalamazoo         Concurrent         Non-freeway         I-94 Bas (W Kalamazoo Awa) and Sifts SN         3         3         100.00%           1         Kalamazoo         Concurrent         Non-freeway         I-94 Bas (W Kalamazoo Awa) and Sifts SN         3         42.66%           1         Kalamazoo         Concurrent         Non-freeway         I-94 Bas (E Michigan Awa) and N Edwards St         4         2         50.00%           1         Kalamazoo         Concurrent         Non-freeway         I-94 Bas (E Michigan Awa) and N Edwards St         4         2         50.00%           1         Kalamazoo         Concurrent         Non-freeway         Kalamazoo Non-freeway         2         1         50.00%           1         Kalamazoo         Dash Cam         Non-freeway         Kalamazoo Non-freeway         2         1         50.00%           2         Kent         Dash Cam         Non-freeway         Kalakash Non-freeway Weekday         2         1         50.00%           2         Kent         Dash Cam         Non-freeway         Kent Non-freeway Weekday	2	Jackson	Concurrent	Non-freeway	US-127 Bus (Cooper St) and Washington St	1	0	0.00%
1         Kalamazoo         Concurrent         Non-freeway         IM-96 (E Michigan Ave) and Stih St N         3         3         100.00%           1         Kalamazoo         Concurrent         Non-freeway         IM-94 Bus (W Kalamazoo Ave) and N Rose St         1         1         1         100.00%           1         Kalamazoo         Concurrent         Non-freeway         IM-31 and Stoin St         7         3         42.86%           1         Kalamazoo         Concurrent         Non-freeway         IM-31 and M Carret Ave         1         0         0.00%           1         Kalamazoo         Concurrent         Non-freeway         IM-4 and Portage Rd.         4         2         50.00%           1         Kalamazoo         Dash Cam         Non-freeway         Kalamazoo Non-freeway Weekday         2         1         50.00%           3         Kalkaska         Dash Cam         Non-freeway         Wilson Ave SW and Hall St SW         55         33         60.00%           2         Kert         Dash Cam         Non-freeway         Wilson Ave SW and Hall St SW         55         33         60.00%           3         Keevenzw         Concurrent         Non-freeway         Kent Freeway Weekday         1         0	2	Jackson	Dash Cam	Non-freeway	Jackson Non-freeway Weekend	1	0	0.00%
1         Kalamazoo         Concurrent         Non-freeway         I-94 Bus (W Kalamazoo Ave) and N Rose St         1         1         1         100.00%           1         Kalamazoo         Concurrent         Non-freeway         US-33 and W Centra Ave         7         3         42.86%           1         Kalamazoo         Concurrent         Non-freeway         US-33 and W Centra Ave         1         0         0.00%           1         Kalamazoo         Concurrent         Non-freeway         L-94 Bus (E Michigan Ave) and N Edwards St         4         2         0.00%           1         Kalamazoo         Concurrent         Non-freeway         Kalamazoo Non-freeway         2         0         0.00%           3         Kalakaka         Dash Cam         Non-freeway         Kalakaka Non-freeway Weekday         2         1         50.00%           2         Kent         Dash Cam         Non-freeway         Wilson Ave SW and Hail St SW         55         100.00%           3         Kent         Dash Cam         Non-freeway         US-41 and Burbletown Rd         8         5         55.5%           2         Livingston         Dash Cam         Freeway         Livingston Non-freeway Weekday         2         0.0         0.0%	1	Kalamazoo	Concurrent	Non-freeway	M-96 (E Michigan Ave) and 35th St N	3	3	100.00%
1KalumazonConcurrentNon-freewayM-43 and Solon St7342.8%1KalumazonConcurrentNon-freewayUS-131 and W Centre Ave100.00%1KalumazonConcurrentNon-freewayI-94 Baic (E Michigan Ave) and N Edwards St4250.00%1KalumazonConcurrentNon-freewayI-94 and Portage Rd.4260.00%3KalumazonDash CamNon-freewayKalumazon Non-freeway Weekday200.00%3KakaskaDash CamNon-freewayWision Ave SW and Hall St SW553360.03%2KentDash CamNon-freewayWision Ave SW and Hall St SW553360.03%2KentDash CamFreewayUS-41 and Bumbletown Rd8562.50%3KewenawConcurrentNon-freewayUS-41 and Bumbletown Rd8555.56%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamNon-freewayUsed Non-freeway Weekday77100.00%3JuccDash CamNon-freewayLivingston Non-freeway Weekday611168.75%2LivingstonDash CamNon-freewayMackinac Non-freeway Weekday611168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday161062.55%3Mackin	1	Kalamazoo	Concurrent	Non-freeway	I-94 Bus (W Kalamazoo Ave) and N Rose St	1	1	100.00%
1         Kalamazoo         Concurrent         Non-freeway         LUS-131 and W Centre Ave         1         0         0.00%           1         Kalamazoo         Concurrent         Non-freeway         I-94 Bus (E Michigan Ave) and N Edwards St         4         2         50.00%           1         Kalamazoo         Concurrent         Non-freeway         Kalamazoo Non-freeway         2         0         0.00%           3         Kalkaska         Dash Cam         Non-freeway         Kalamazoo Non-freeway Weekday         2         1         50.00%           2         Kent         Pole-Mourt         Non-freeway         Walson Ave SW and Hall St SW         55         3.3         60.00%           2         Kent         Dash Cam         Non-freeway         Wetkend         1         0         0.00%           3         Kewesnaw         Concurrent         Non-freeway         Wetkend         1         0         0.00%           3         Kewesnaw         Concurrent         Non-freeway         Ukingston Freeway Vetkend         1         0         0.00%           2         Livingston         Dash Cam         Freeway         Livingston Freeway Weekday         7         7         100.00%           3	1	Kalamazoo	Concurrent	Non-freeway	M-43 and Solon St	7	3	42.86%
1         Kalamazoo         Concurrent         Non-freeway         1-94 Bus (E Michigan Ave) and N Edwards St         4         2         50.0%           1         Kalamazoo         Concurrent         Non-freeway         I-94 and Portage Rd.         4         2         60.0%           1         Kalamazoo         Dash Cam         Non-freeway         Kalamazoo Non-freeway Weekday         2         0         0.00%           3         Kalkaska         Dash Cam         Non-freeway         Kalakas Non-freeway Weekday         2         1         50.00%           2         Kent         Dash Cam         Freeway         Kent Treeway Weekday         5         33         60.00%           2         Kent         Dash Cam         Non-freeway         Kent Treeway Weekday         1         0         0.00%           3         Kerveenaw         Concurrent         Non-freeway         US-41 and Bumbletown Rd         8         5         62.50%           2         Livingston         Dash Cam         Freeway         Livingston Freeway Weekday         7         7         100.00%           2         Livingston         Dash Cam         Non-freeway         Livingston Freeway Weekday         7         7         100.00%           2<	1	Kalamazoo	Concurrent	Non-freeway	US-131 and W Centre Ave	1	0	0.00%
1KalamazooConcurrentNon-freewayI-94 and Portage Rd.4250.0%1KalamazooDash CamNon-freewayKalamazoo Non-freeway Weekday200.00%3KalkaskaDash CamNon-freewayKalkaska Non-freeway Weekday2150.0%2KentDash CamNon-freewayWilson Ave SW and Hall St SW553360.00%2KentDash CamNon-freewayWilson Ave SW and Hall St SW553360.00%2KentDash CamNon-freewayKent Freeway Weekdand55100.00%3KevenawConcurentNon-freewayUS-41 and Bumbletown Rd8562.50%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%3KevenawConcurentNon-freewayLivingston Freeway Weekday77100.00%3LivingstonDash CamFreewayLivingston Non-freeway Weekday77100.00%3MackinacDash CamNon-freewayMackinac Non-freeway4480.95%4180.95%4MacombPole-MountNon-freewayWachac Non-freeway Weekday161180.75%3MachinacDash CamNon-freewayMachinac Non-freeway Weekday161062.55%4MacombPole-MountNon-freewayMachinac Non-freeway Weekday16100.00%3Manitee<	1	Kalamazoo	Concurrent	Non-freeway	I-94 Bus (E Michigan Ave) and N Edwards St	4	2	50.00%
1KalamazooDash CanNon-freewayKalamazoo Non-freeway Weekday200.00%3KalkaskaDash CanNon-freewayKalkaska Non-freeway Weekday2150.00%2KentDash CanNon-freewayWilson Ave SW and Hall St SW553360.00%2KentDash CanFreewayKent Freeway Weekday553360.00%2KentDash CanNon-freewayKent Non-freeway Weekdand55100.00%3KeweenawConcurrentNon-freewayKent Non-freeway Weekdand100.00%3KeweenawConcurrentNon-freewayLivingston Freeway Uekday200.00%2LivingstonDash CanFreewayLivingston Non-freeway Weekday77100.05%3LuceDash CanNon-freewayLucingston Non-freeway Weekday161168.75%3MackinacDash CanNon-freewayMackinac Non-freeway Weekday161168.75%3MackinacDash CanNon-freewayMackinac Non-freeway Weekday161062.57%4MacombPole-MountNon-freewayMackinac Non-freeway Weekday161062.57%3MackinacDash CanNon-freewayMackinac Non-freeway Weekday161062.57%3MacinacDash CanNon-freewayMackinac Non-freeway Weekday16100.00%3Marcue	1	Kalamazoo	Concurrent	Non-freeway	I-94 and Portage Rd.	4	2	50.00%
3KalkaskaDash CamNon-freewayKalkaska Non-freeway Weekday2150.0%2KentPole-MountNon-freewayWilson Ave SW and Hall SI SW553360.0%2KentDash CamFreewayKent Freeway Weekend55100.00%3KewenawConcurrentNon-freewayKent Non-freeway Weekend100.00%3KewenawConcurrentNon-freewayUS-41 and Burbletown Rd8562.50%2LivingstonDash CamFreewayLivingston Freeway Weekend9555.5%2LivingstonDash CamFreewayLivingston Freeway Weekend9555.5%2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday77100.00%3LuceDash CamNon-freewayLivingston Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayWackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayMackinac Non-freeway Weekday161062.50%3MarcuetteDash CamNon-freewayMastee Non-freeway Weekday161062.50%3MarcuetteDash CamNon-freewayMastee Non-freeway Weekday161062.50%3MarcuetteDash CamNon-freewayMastee Non-freeway Weekday161062.50%3Marcuette <td>1</td> <td>Kalamazoo</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Kalamazoo Non-freeway Weekday</td> <td>2</td> <td>0</td> <td>0.00%</td>	1	Kalamazoo	Dash Cam	Non-freeway	Kalamazoo Non-freeway Weekday	2	0	0.00%
2         Kent         Pole-Mount         Non-freeway         Wilson Ave SW and Hall St SW         55         33         60.00%           2         Kent         Dash Cam         Freeway         Kent Freeway Weekend         5         5         100.00%           3         Kewt         Dash Cam         Non-freeway         US-41 and Bumbletown Rd         8         5         62.50%           2         Livingston         Dash Cam         Freeway         Livingston Freeway Weekday         2         0         0.00%           2         Livingston         Dash Cam         Freeway         Livingston Freeway Weekday         2         0         0.00%           2         Livingston         Dash Cam         Non-freeway         Livingston Freeway Weekday         7         7         100.00%           3         Mackinac         Dash Cam         Non-freeway         Mackinac Non-freeway Weekday         42         34         80.95%           4         Macomb         Pole-Mount         Non-freeway         Mackinac Non-freeway Weekday         42         34         80.95%           3         Mackinac         Dash Cam         Non-freeway         Machinac Non-freeway Weekday         16         10         62.50%           3	3	Kalkaska	Dash Cam	Non-freeway	Kalkaska Non-freeway Weekday	2	1	50.00%
2KentDash CamFreewayKent Freeway Weekend55100.00%2KentDash CamNon-freewayKent Non-freeway Weekend100.00%3KeweenawConcurrentNon-freewayUS-41 and Bumbletown Rd8562.50%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamFreewayLivingston Freeway Weekday77100.00%2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday77100.00%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayMackinac Non-freeway Weekday161062.50%3MarcineDash CamNon-freewayMasitee Non-freeway Weekday161062.50%3MarcuteDash CamNon-freewayManistee Non-freeway Weekday161062.50%3MarcuteDash CamNon-freewayManistee Non-freeway Weekday161060.00%3MarcuteDash CamNon-freewayMacitate Non-freeway Weekday16100.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday111100.00%3Menominee	2	Kent	Pole-Mount	Non-freeway	Wilson Ave SW and Hall St SW	55	33	60.00%
2KentDash CamNon-freewayKent Non-freeway Weekend100.00%3KeweenawConcurrentNon-freewayUS-41 and Bumbletown Rd8562.50%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamNon-freewayLivingston Freeway Weekday77100.00%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayWan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayMasitee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMecotal Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMecotal Non-freeway Weekday16100.00%3MenomineeDash CamNon-freewayMecotal Non-freeway Weekday16100.00%3MenomineeDash CamNon-freewayMecotal Non-freeway11100.00%3Menomin	2	Kent	Dash Cam	Freeway	Kent Freeway Weekend	5	5	100.00%
3KeweenawConcurrentNon-freewayUS-41 and Bumbletown Rd8562.50%2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamFreewayLivingston Freeway Weekday9555.56%2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday77100.00%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayWan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayMaristee Non-freeway Weekday161062.50%3ManisteeDash CamNon-freewayMariguette Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday16100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday111100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday44250.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekday111100.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday141285.71% <td>2</td> <td>Kent</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Kent Non-freeway Weekend</td> <td>1</td> <td>0</td> <td>0.00%</td>	2	Kent	Dash Cam	Non-freeway	Kent Non-freeway Weekend	1	0	0.00%
2LivingstonDash CamFreewayLivingston Freeway Weekday200.00%2LivingstonDash CamFreewayLivingston Freeway Weekday9555.56%2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday7777100.00%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayWan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayMaristee Non-freeway Weekday161062.50%3ManisteeDash CamNon-freewayMaristee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday16100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday111100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday44250.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday141285.71%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday141250.00% <td>3</td> <td>Keweenaw</td> <td>Concurrent</td> <td>Non-freeway</td> <td>US-41 and Bumbletown Rd</td> <td>8</td> <td>5</td> <td>62.50%</td>	3	Keweenaw	Concurrent	Non-freeway	US-41 and Bumbletown Rd	8	5	62.50%
2LivingstonDash CamFreewayLivingston Freeway Weekend9555.5%2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday77100.0%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayMackinac Non-freeway Weekday19736.84%3ManisteDash CamNon-freewayMarguette Anon-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarguette Non-freeway Weekday161000.00%3MercentaDash CamNon-freewayMarguette Non-freeway Weekday111000.00%3MercentaDash CamNon-freewayMercenta Non-freeway Weekday16100.00%3MercentaDash CamNon-freewayMercenta Non-freeway Weekday11100.00%3MenomineeDash CamNon-freewayMercenta Non-freeway Weekday14250.00%3MenomineeDash CamNon-freewayMidland Non-freeway Weekday11763.64%3MenomineeDash CamNon-freewayMidland Non-freeway Weekday11763.64% <td>2</td> <td>Livingston</td> <td>Dash Cam</td> <td>Freeway</td> <td>Livingston Freeway Weekday</td> <td>2</td> <td>0</td> <td>0.00%</td>	2	Livingston	Dash Cam	Freeway	Livingston Freeway Weekday	2	0	0.00%
2LivingstonDash CamNon-freewayLivingston Non-freeway Weekday77100.00%3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MouttNon-freewayWan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MouttNon-freewayM-59 (Hall Rd) and Romeo Plank Rd19736.84%3ManisteeDash CamNon-freewayManistee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquete Non-freeway Weekday16100.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday11100.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekday4250.00%3MenomineeDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd11736.64%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11736.64%3MendamineeDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd11736.64%3MontcalmDash CamNon-freewayM-20 and N Evergreen Dr22100.00%3NewayoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St </td <td>2</td> <td>Livingston</td> <td>Dash Cam</td> <td>Freeway</td> <td>Livingston Freeway Weekend</td> <td>9</td> <td>5</td> <td>55.56%</td>	2	Livingston	Dash Cam	Freeway	Livingston Freeway Weekend	9	5	55.56%
3LuceDash CamNon-freewayLuce Non-freeway Weekday161168.75%3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayVan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayM-59 (Hall Rd) and Romeo Plank Rd19736.84%3ManisteeDash CamNon-freewayManistee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday16100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday16100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday16100.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekday11100.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday4250.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday111100.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday11763.64%2MidlandDash CamNon-freewayMecosta Non-freeway Weekday11763.64%3MontcalmDash CamNon-freewayMidland Non-freeway Weekday11763.64% </td <td>2</td> <td>Livingston</td> <td>Dash Cam</td> <td>Non-freeway</td> <td>Livingston Non-freeway Weekday</td> <td>7</td> <td>7</td> <td>100.00%</td>	2	Livingston	Dash Cam	Non-freeway	Livingston Non-freeway Weekday	7	7	100.00%
3MackinacDash CamNon-freewayMackinac Non-freeway Weekday423480.95%4MacombPole-MountNon-freewayVan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayM-59 (Hall Rd) and Romeo Plank Rd19736.84%3ManisteeDash CamNon-freewayMaristee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMaristee Non-freeway Weekday16100.00%3MacotatDash CamNon-freewayMecosta Non-freeway Weekday11100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekday110.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekday4250.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekday4250.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday4250.00%3MenomineeDash CamNon-freewayMecosta Non-freeway Weekday411100.00%3MenomineeDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd111763.64%3MontcalmDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd111763.64%3MontcalmDash CamNon-freewayM-20 and N Evergreen Dr2 <t< td=""><td>3</td><td>Luce</td><td>Dash Cam</td><td>Non-freeway</td><td>Luce Non-freeway Weekday</td><td>16</td><td>11</td><td>68.75%</td></t<>	3	Luce	Dash Cam	Non-freeway	Luce Non-freeway Weekday	16	11	68.75%
4MacombPole-MountNon-freewayVan Dyke and M-53 (Van Dyke Fwy)392871.79%4MacombPole-MountNon-freewayM-59 (Hall Rd) and Romeo Plank Rd19736.84%3MaristeeDash CamNon-freewayMaristee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday161060.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekend11100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MenomineeConcurrentNon-freewayMecosta Non-freeway Weekend11100.00%3MenomineeConcurrentNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%3MontcalmDash CamNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr)22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr10	3	Mackinac	Dash Cam	Non-freeway	Mackinac Non-freeway Weekday	42	34	80.95%
4MacombPole-MountNon-freewayM-59 (Hall Rd) and Romeo Plank Rd19736.84%3ManisteeDash CamNon-freewayManistee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekday11100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MenomineeConcurrentNon-freewayUS-2 & US-4111100.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMontcalm Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr)22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave1077.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00% <tr<< td=""><td>4</td><td>Macomb</td><td>Pole-Mount</td><td>Non-freeway</td><td>Van Dyke and M-53 (Van Dyke Fwy)</td><td>39</td><td>28</td><td>71.79%</td></tr<<>	4	Macomb	Pole-Mount	Non-freeway	Van Dyke and M-53 (Van Dyke Fwy)	39	28	71.79%
3ManisteeDash CamNon-freewayManistee Non-freeway Weekday161062.50%3MarquetteDash CamNon-freewayMarquette Non-freeway Weekend11100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MenomineeConcurrentNon-freewayUS-2 & US-4111100.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMontcalm Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3MontcalmDash CamNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00% <td< td=""><td>4</td><td>Macomb</td><td>Pole-Mount</td><td>Non-freeway</td><td>M-59 (Hall Rd) and Romeo Plank Rd</td><td>19</td><td>7</td><td>36.84%</td></td<>	4	Macomb	Pole-Mount	Non-freeway	M-59 (Hall Rd) and Romeo Plank Rd	19	7	36.84%
3MarquetteDash CamNon-freewayMarquette Non-freeway Weekend11100.00%3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MenomineeConcurrentNon-freewayUS-2 & US-4111100.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekend4250.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMontalm Non-freeway Weekday141285.71%3MontalmDash CamNon-freewayMontalm Non-freeway Weekday11763.64%3MontalmDash CamNon-freewayMontalm Non-freeway Weekday11763.64%3MontalmDash CamNon-freewayMontalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St222100.00%3NewaygoDash CamNon-freewayM-82 and Mason Dr100.00%<	3	Manistee	Dash Cam	Non-freeway	Manistee Non-freeway Weekday	16	10	62.50%
3MecostaDash CamNon-freewayMecosta Non-freeway Weekend100.00%3MenomineeConcurrentNon-freewayUS-2 & US-4111100.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMoltcalm Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-41 (Woodward Ave) and L69618147778%	3	Marquette	Dash Cam	Non-freeway	Marguette Non-freeway Weekend	1	1	100.00%
3MenomineeConcurrentNon-freewayUS-2 & US-4111100.00%3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%3MontcalmDash CamNon-freewayMidland Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and I-696181477.78%	3	Mecosta	Dash Cam	Non-freeway	Mecosta Non-freeway Weekend	1	0	0.00%
3MenomineeDash CamNon-freewayMenominee Non-freeway Weekday4250.00%2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMidland Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoDash CamNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and I-696181477.78%	3	Menominee	Concurrent	Non-freeway	US-2 & US-41	1	1	100.00%
2MidlandConcurrentNon-freewayM-20 (Isabella Rd) and S Meridian Rd11763.64%2MidlandDash CamNon-freewayMidland Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoDash CamNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and I-696181477.78%	3	Menominee	Dash Cam	Non-freeway	Menominee Non-freeway Weekday	4	2	50.00%
2MidlandDash CamNon-freewayMidland Non-freeway Weekday141285.71%3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and L696181477.78%	2	Midland	Concurrent	Non-freeway	M-20 (Isabella Rd) and S Meridian Rd	11	7	63.64%
3MontcalmDash CamNon-freewayMontcalm Non-freeway Weekday11763.64%3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoDash CamNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and I-696181477.78%	2	Midland	Dash Cam	Non-freeway	Midland Non-freeway Weekday	14	12	85.71%
3NewaygoConcurrentNon-freewayM-20 and N Evergreen Dr22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Wilcox Ave10770.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-37 (Evergreen Dr) and Curve St22100.00%3NewaygoConcurrentNon-freewayM-82 and Mason Dr100.00%3NewaygoDash CamNon-freewayNewaygo Non-freeway Weekday11545.45%1OaklandPole-MountNon-freewayM-1 (Woodward Ave) and I-696181477.78%	3	Montcalm	Dash Cam	Non-freeway	Montcalm Non-freeway Weekday	11	7	63.64%
3       Newaygo       Concurrent       Non-freeway       M-37 (Evergreen Dr) and Wilcox Ave       10       7       70.00%         3       Newaygo       Concurrent       Non-freeway       M-37 (Evergreen Dr) and Curve St       2       2       100.00%         3       Newaygo       Concurrent       Non-freeway       M-37 (Evergreen Dr) and Curve St       2       2       100.00%         3       Newaygo       Concurrent       Non-freeway       M-82 and Mason Dr       1       0       0.00%         3       Newaygo       Dash Cam       Non-freeway       Newaygo Non-freeway Weekday       11       5       45.45%         1       Oakland       Pole-Mount       Non-freeway       M-1 (Woodward Ave) and I-696       18       14       77.78%	3	Newaygo	Concurrent	Non-freeway	M-20 and N Evergreen Dr	2	2	100.00%
3     Newaygo     Concurrent     Non-freeway     M-37 (Evergreen Dr) and Curve St     2     2     100.00%       3     Newaygo     Concurrent     Non-freeway     M-37 (Evergreen Dr) and Curve St     2     2     100.00%       3     Newaygo     Concurrent     Non-freeway     M-82 and Mason Dr     1     0     0.00%       3     Newaygo     Dash Cam     Non-freeway     Newaygo Non-freeway Weekday     11     5     45.45%       1     Oakland     Pole-Mount     Non-freeway     M-1 (Woodward Ave) and I-696     18     14     77.78%	3	Newaygo	Concurrent	Non-freeway	M-37 (Evergreen Dr) and Wilcox Ave	- 10	7	70.00%
1     Newaygo     Concurrent     Non-freeway     M-82 and Mason Dr     1     0     0.00%       3     Newaygo     Dash Cam     Non-freeway     Newaygo Non-freeway Weekday     11     5     45.45%       1     Oakland     Pole-Mount     Non-freeway     M-1 (Woodward Ave) and I-696     18     14     77.78%	3	Newaygo	Concurrent	Non-freeway	M-37 (Evergreen Dr) and Curve St	2	2	100.00%
1     Oakland     Point Source     Non-freeway     Newaygo Non-freeway Weekday     11     5     45.45%       1     Oakland     Pole-Mount     Non-freeway     M-1 (Woodward Ave) and I-696     18     14     77.78%	3	Newaygo	Concurrent	Non-freeway	M-82 and Mason Dr	- 1	0	0.00%
1         Oakland         Point formation         M-1 (Woodward Ave) and I-696         18         14         77 78/.	3	Newaygo	Dash Cam	Non-freeway	Newayoo Non-freeway Weekday	11	5	45 45%
	1	Oakland	Pole-Mount	Non-freeway	M-1 (Woodward Ave) and I-696	18	14	77.78%

Stratum	County	Type of Observation	Facility Type	Observation Site	Actual Total # of Obs	Actual Helmeted # of Obs	% Helmet Use
1	Oakland	Pole-Mount	Non-freeway	M-59 (Highland Rd) and Lakena St	68	53	77.94%
1	Oakland	Pole-Mount	Freeway	I-75 and Stephenson Hwy	74	61	82.43%
1	Oakland	Concurrent	Non-freeway	I-96 and Milford Rd	2	1	50.00%
1	Oakland	Concurrent	Non-freeway	M-59 and Hickory Ridge Rd	18	15	83.33%
1	Oakland	Concurrent	Non-freeway	M-5 and W 13 Mile Rd	20	12	60.00%
1	Oakland	Concurrent	Non-freeway	I-696 and Orchard Lake Rd	12	12	100.00%
1	Oakland	Concurrent	Non-freeway	M-1 (Woodward Ave) and W 12 Mile Rd	15	10	66.67%
1	Oakland	Dash Cam	Freeway	Oakland Freeway Weekday	1	1	100.00%
1	Oakland	Dash Cam	Freeway	Oakland Freeway Weekend	2	2	100.00%
1	Oakland	Dash Cam	Non-freeway	Oakland Non-freeway Weekday	1	0	0.00%
1	Oakland	Dash Cam	Non-freeway	Oakland Non-freeway Weekend	1	0	0.00%
3	Ontonagon	Concurrent	Non-freeway	M-28 and US-45	2	2	100.00%
3	Ontonagon	Dash Cam	Non-freeway	Ontonagon Non-freeway Weekday	7	7	100.00%
3	Osceola	Dash Cam	Non-freeway	Osceola Non-freeway Weekday	16	10	62.50%
3	Oscoda	Pole-Mount	Non-freeway	M-72 and 14th St	7	7	100.00%
3	Otsego	Dash Cam	Non-freeway	Otsego Non-freeway Weekday	1	1	100.00%
2	Ottawa	Pole-Mount	Non-freeway	US-31 (W Olive Rd) and M-45	46	35	76.09%
2	Ottawa	Dash Cam	Freeway	Ottawa Freeway Weekend	6	5	83.33%
2	Ottawa	Dash Cam	Non-freeway	Ottawa Non-freeway Weekend	1	0	0.00%
3	Presque Isle	Concurrent	Non-freeway	M 33 & Washington Ave	7	2	28.57%
3	Presque Isle	Dash Cam	Non-freeway	Presque Isle Non-freeway Weekday	7	7	100.00%
3	Saginaw	Concurrent	Non-freeway	M-83 (Gera Rd) and E Holland Rd	2	2	100.00%
3	Saginaw	Concurrent	Non-freeway	M-81 and W Vassar Rd/M-15	2	2	100.00%
3	Saginaw	Dash Cam	Non-freeway	Saginaw Non-freeway Weekday	11	8	72.73%
3	Sanilac	Concurrent	Non-freeway	M-53 and W Marlette Rd	1	1	100.00%
3	Sanilac	Concurrent	Non-freeway	M-19 and Maple Valley St.	4	3	75.00%
3	Sanilac	Concurrent	Non-freeway	M-19 (S Elk St) and E Sanilac Rd	4	2	50.00%
3	Schoolcraft	Dash Cam	Non-freeway	Schoolcraft Non-freeway Weekday	58	49	84.48%
3	Shiawassee	Dash Cam	Non-freeway	Shiawassee Non-freeway Weekday	4	3	75.00%
3	St. Clair	Concurrent	Non-freeway	M-29 and Bethuy Rd	4	4	100.00%
3	St. Clair	Concurrent	Non-freeway	I- 94 and Fred W Moore Highway	1	1	100.00%
3	St. Clair	Concurrent	Non-freeway	I- 94 and Gratiot Rd	3	3	100.00%
3	St. Clair	Concurrent	Non-freeway	I- 94 and Gratiot Rd	2	2	100.00%
3	St. Clair	Concurrent	Non-freeway	I-94 Bus (Gratiot Blvd) and Huron Blvd	5	5	100.00%
3	St. Clair	Concurrent	Non-freeway	M-136 (Beard Rd) and North Rd	3	1	33.33%
3	St. Joseph	Concurrent	Non-freeway	US-12 and M-62	1	0	0.00%
3	St. Joseph	Concurrent	Non-freeway	US-131 and N Washington St	1	1	100.00%
3	St. Joseph	Concurrent	Non-freeway	M-66 and S Centerville Rd	11	4	36.36%
3	Van Buren	Concurrent	Non-freeway	M-43 and M 40	8	5	62.50%
3	Van Buren	Concurrent	Non-freeway	I-196 and 32nd Ave	2	0	0.00%
3	Van Buren	Dash Cam	Non-freeway	Van Buren Non-freeway Weekday	8	1	12.50%
3	Van Buren	Dash Cam	Non-freeway	Van Buren Non-freeway Weekend	7	5	71.43%
1	Washtenaw	Pole-Mount	Non-freeway	Carpenter Rd and E Arkona Rd	10	7	70.00%
1	Washtenaw	Pole-Mount	Non-freeway	S State St and I-94	12	11	91.67%
4	Wayne	Pole-Mount	Freeway	I-275 and Plymouth Road	42	35	83.33%
4	Wavne	Pole-Mount	Freeway	M-14 and Schoolcraft Road	23	19	82.61%
4	Wavne	Pole-Mount	Freeway	I-94 and Morton Tavlor Road	54	28	51.85%
4	Wavne	Pole-Mount	Non-freeway	Hines Drive and Stark Road	309	211	68.28%
4	Wayne	Dash Cam	Freeway	Wayne Freeway Weekday	7	5	71.43%

Stratum	County	Type of Observation	Facility Type	Observation Site	Actual Total # of Obs	Actual Helmeted # of Obs	% Helmet Use
4	Wayne	Dash Cam	Freeway	Wayne Freeway Weekend	13	10	76.92%
4	Wayne	Dash Cam	Non-freeway	Wayne Non-freeway Weekday	33	20	60.61%
4	Wayne	Dash Cam	Non-freeway	Wayne Non-freeway Weekend	33	22	66.67%
3	Wexford	Dash Cam	Freeway	Wexford Freeway Weekday	3	1	33.33%
3	Wexford	Dash Cam	Non-freeway	Wexford Non-freeway Weekday	14	10	71.43%
3	Wexford	Dash Cam	Non-freeway	Wexford Non-freeway Weekend	4	3	75.00%