Assessing the Impact of Gambling on Public Safety in Massachusetts Cities and Towns

Analysis of changes in police data after the first six months of operation at Plainridge Park Casino

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Important note

In any given time period, communities will experience fluctuations, many of them significant, in public safety issues, including calls for service, traffic collisions, and crime. The opening of a facility like Plainridge Park can occasion such changes, but so can dozens of other instigating factors, including serial offenders, other changes in the residential and business communities, weather, economy, and simple random fluctuations in the data.

A number of statistics are offered in this report that show increases and decreases in certain categories in Plainville and surrounding communities. In all cases, when aberrations have appeared, I have done my best to analyze them and determine their cause. Until analyzed, statistics that indicate notable increases or decreases in activity are simply *indicators* worthy of further analysis, and not proof of any particular "cause" of the changes. **No statistic offered in this report should be taken, by itself, as proof of a casino relationship**. Anyone who cites or reports the statistics without a thorough consideration of additional factors is using this report irresponsibly.



Executive summary

- The primary purpose of this report is to conduct an initial scan of the increases and decreases in activity in the communities surrounding Plainridge Park since the casino opened and to highlight issues in need of further analysis in subsequent reports.
- Data was collected from the records management systems of Plainville, Attleboro, Mansfield, North Attleborough, and Wrentham since 2010. July–December of 2015 (6 months after the opening of Plainridge Park on June 24) was compared to the same periods of previous years. Both crimes and noncrime calls for service were included.
- Overall crime was down in the communities, but there were significant various across communities and across crime categories within individual communities.
- Any significant increases were reported to the police agencies in the affected communities, where
 personnel studied those crime reports in detail and provided their assessments of whether the crimes
 were likely to be related to Plainridge Park. Rarely were we able to establish a casino relationship, and the
 general sense from the participating agencies was that they did not feel that Plainridge Park had
 contributed significantly to crime or calls for service. Two agencies cited a heroin epidemic as more likely
 causing their crime increases.
- Some of the variances can be explained by changes in reporting practices.

The following observed changes are *likely* to be related to Plainridge Park and will be studied in detail in the one-year report:

- Increases in **traffic-related calls for service** specifically in Plainville, concentrated on Route 1. These include disabled vehicles, complaints of improper or erratic driving, and suspicious activity. Although little data is available for these calls for service (they do not result in written reports), their geographic concentration suggests that they could be caused by the increased traffic up and down Route 1 since the opening of Plainridge Park. North Attleborough also had an increase in traffic complaints along Route 1. Similarly, an increase in "lost property" calls is likely to be related to the extra people in town.
- A general increase in traffic collisions in the area, again likely occasioned by increased traffic (although as covered below, we are in an era of record-low gas prices, which tends to increase driving in general). None of the contributing agencies had major increases, but all had small or modest increases. The State Police, meanwhile, saw more significant increases on areas of Route 495 and 1 that provide service to and from the casino. The issue needs to be researched more thoroughly in the one-year report, with comparisons to non-casino areas.

The following observed changes are *possibly* related to Plainridge Park and will be studied in detail in the one-year report:

- Significant increases in credit card fraud, particularly in Plainville, Attleboro, and Wrentham. We and the
 contributing agencies studied the incidents carefully and found them to be a mishmash of situations and
 locations with few commonalities and no explicit tie to the casino. But since so many agencies reported
 major increases, the category remains a cause for concern, and a more comprehensive study, with
 comparisons to other agencies in Massachusetts, is warranted.
- Increases in **fraud** and **identity theft** in Mansfield and North Attleborough. Preliminary indications are that these increases are due to changes in reporting practices, but as they complement increases in credit card fraud, we will study them in more detail.

A significant increase in drunk driving, particularly in North Attleborough. By the agency's own admission, the increase is likely to be related to changes in enforcement and coding practices. (Drunk driving "incidents" are usually reported when the police proactively make an arrest; increases are thus not necessarily an indicator of more drunk driving in the region.) However, this is one of the crimes of particular concern, and the one-year report will study it thoroughly using crash data in conjunction with police report data.

The following observed changes were reported by the participating agencies but are *unlikely* to be related to Plainridge Park for reasons stated.

- An overall increase in kidnapping in the region, from an average of 2.8 to a 2015 total of 7. The incidents were studied and were mostly custodial kidnappings with no relationship between them or to the casino.
- An area increase in stolen property offenses appears to be a statistical fluke with no commonalities.
- Two prostitution and drug incidents (from an area average of 0.2), both in Wrentham, were reviewed and the participants were not customers of Plainridge Park.
- Increases in vandalism and weapons offenses in Plainville could not be tied, through data or logic, to any casino relationship.
- A large increase in burglary in North Attleborough was attributed to two local serial offenders (both heroin addicts) with no casino-related motives.
- Increases in disorderly conduct, drunkenness, liquor law violations, and trespassing reported by North Attleborough were attributed by the agency to changes in reporting practices and not "real" increases. Since the increases were not experienced by other agencies and they began early in 2015, their explanation seems sensible.
- An increase in shoplifting and thefts from buildings at the Wrentham Premium Outlets suggests changes in security practices. No casino relationship could be determined.
- An increase in psychological calls for service in Attleboro was studied for a casino relationship but none
 could be determined.

Other notes:

- Both simple and aggravated assault were up slightly (but not significantly) in the region. Since we did not collect data on relationships between victims and offenders, it is difficult to analyze these increases. We will collect more data for the one-year report to confirm or refute concerns about increases in domestic violence, but we should note that if domestic violence does increase because of gambling issues, we would expect it to be diffused across the entire region, and not concentrated in the communities surrounding Plainridge Park. Police incident data from the contributing communities is probably not the best way to study this problem.
- There was no increase in hotel and motel crime, but then again there are hardly any hotels and motels in the contributing communities. To study any potential increase, we must collect data from the nearest hotel clusters in Foxborough and Franklin.
- Going into this study, many police officers and analysts hypothesized that if anything increased, it would
 be petty thefts of either cash or items quickly salable for cash, like mobile phones and jewelry. Such
 incidents would manifest themselves in thefts from vehicles, buildings, and persons. These crimes,
 however, were down across the region and in almost all individual communities.

Background and methodology

In 2014, the Massachusetts Gaming Commission, in an effort to better assess the impacts of new gaming facilities across the state, commissioned a series of efforts to study, assess, and prepare for the social and economic impacts of gambling. Primary work in this area is being done by the Social and Economic Impacts of Gambling in Massachusetts (SEIGMA) study at the University of Massachusetts Amherst School of Public Health & Health Sciences, drawing upon research and experiences in many other states. For public safety issues specifically, however, the MGC felt it best to contract with someone with direct experience analyzing the crime, call-for-service, and collision records collected daily by Commonwealth police agencies.

While many studies had attempted to study the effects of gambling on overall rates for serious crimes, aggregated annually, hardly any studies have attempted to analyze more specific and minute changes in public safety activity following the opening of casinos, including variations by hour, month, and season, changes in patterns and hot spots, and changes in non-crime activity such as traffic collisions and calls for service. The MGC was interested in the answers to these questions—in analyzing public safety at a level of detail that would actually help police agencies anticipate and respond to emerging and changing problems.

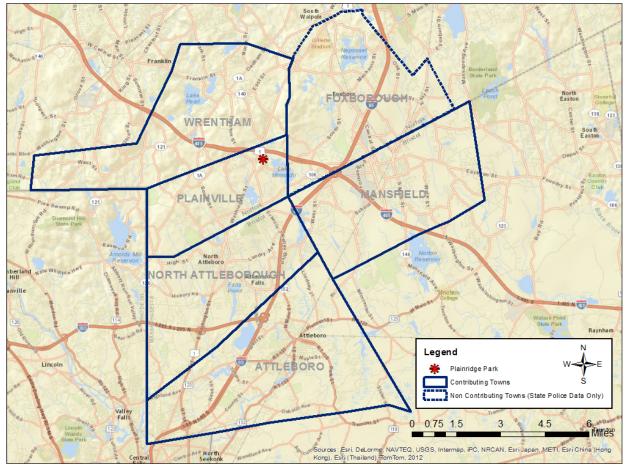


Figure 1: The area covered by this report.

In 2014, the MGC contracted with a career crime analyst, the author of this report, to extract data from the agencies likely to be affected by the opening of Plainridge Park in Plainville; to prepare a baseline analysis of public safety activity in the Plainville area for the past 5 years; and to design a process for assessing changes on a

quarterly basis after the opening of Plainridge Park. In August 2015, MGC released a report of "baseline" statistics for the Plainville area agencies, with annual totals of the types of crimes, calls for service, and collision data against which post-casino periods would be compared.

This is the first public report summarizing changes in crime, calls for service, and collisions between July 1 and December 31 of 2015 compared to the same period of previous years. The report offers both general statistics and detailed analysis of observed changes. The purpose of this report is no to "prove" whether Plainridge Park had an impact on crime in the surrounding community---as the literature review shows, it is too soon to make such a determination. For that reason, and for the purposes of this report, we do not even attempt a quasi-experimental design or any other quantitative research design that would allow us to draw conclusions to a specific level of statistical significance. This report, rather, provides an initial scan of the data for the purposes of:

- Providing an initial scan of post-casino activity in the surrounding communities.
- Highlighting notable increases and decreases that police agencies and their communities should be aware of, allowing them to employ effective prevention tactics.
- Raising research questions to tackle in more detail in further studies.
- Identifying issues that the Massachusetts Gaming Commission and partners may want to prioritize in their various programs and services.

This is only the first of a sequence of reports that will be issued in regular intervals after the introduction of each of the new casinos in Massachusetts.

Methodology

The data used in this report was extracted from the individual records management systems of the Plainville, Attleboro, Mansfield, North Attleborough, and Wrentham Police Departments. I first established an ODBC connection to each of these agencies' records management and computer-aided dispatch databases (Plainville, Wrentham, and North Attleborough use the Pamet records management system; Mansfield uses IMC; and Attleboro uses QED). I then connected to the databases via Microsoft Access, and used a series of "make table" queries to copy the data into Access data tables. I then copied the Access databases to my own computer, password-protecting them in the process, but leaving the originals on the agencies' networks so they could be updated by designated agency members when necessary. Appendix B lists the data fields collect from each system.

After extracting the data from each individual system, I combined each table into a series of "master" tables. This required translating each dataset into a common set of codes. The uniformities imposed by the NIBRS reporting system and the Massachusetts crash reporting system made the translations fairly easy for crime and crash tables; it was a bit more difficult for CAD tables, which have no uniform data structure from system to system or even among agencies using the same system.

incnum 🔻	agency +	dtreceived →	IncidentType -	OrigIncidentType -	Street -
15-15178	Mansfield	07/12/2015 18:38:00	Crime Enforcement		SCHOOL ST
2015000005935	Wrentham	07/12/2015 18:37:43	Traffic Collision		Washington Street
2015000018989	North Attleboro	07/12/2015 18:32:58	Domestic Dispute	Domestic	SOUTH WASHINGTON S
15072062	Attleboro	07/12/2015 18:31:54	Building Check	SEC CHK	OAKHILL AVE
2015000005934	Wrentham	07/12/2015 18:30:42	Disorderly		Premium Outlet Boulev
2015-0H3-003706	MSP	07/12/2015 18:30:00	Fire	Fire	RT 495 North, South of E
2015000003935	Plainville	07/12/2015 18:27:02	Lost Property	Lost and Found	Bacon Square
2015000005933	Wrentham	07/12/2015 18:26:57	Medical		Washington Street
2015000018988	North Attleboro	07/12/2015 18:26:12	Building Check	Building Check	HOMEWARD LN
15-15177	Mansfield	07/12/2015 18:26:00	Crime Enforcement		SOUTH MAIN ST
2015000005932	Wrentham	07/12/2015 18:25:54	General Service		Premium Outlet Boulev
2015000018987	North Attleboro	07/12/2015 18:25:29	Investigation	Investigation	SOUTH WASHINGTON S
15-15176	Mansfield	07/12/2015 18:17:00	Traffic Enforcement		MAPLE ST
2015-0H3-003705	MSP	07/12/2015 18:16:00	Road Conditions	Debris in Road	RT 295 South, South of E
15072061	Attleboro	07/12/2015 18:14:43	Suspicious Activity	SUSP PERS	PLEASANT ST
2015000018986	North Attleboro	07/12/2015 18:11:41	Traffic Collision	Accident NO/PI	CUMBERLAND AV

Figure 2: Data combined into a master call-for-service table.

The Massachusetts State Police directly supplied me with datasets out of the agency's various reporting systems, including the statewide RAMS system that stores crashes, crimes, and other incidents for all barracks plus supplemental data kept by the Gaming Enforcement Unit assigned to Plainridge Park.

The Foxborough Police Department was invited several times to participate in this analysis but declined to submit the detailed data necessary for this analysis.

In August 2015, I issued a "baseline" report that aggregated annual crash, crime, and call-for-service data for each agency, offering a series of examples of what was possible with the baseline dataset. For the purposes of this report, activity observed in the region during the first six months of Plainridge Park's operations is compared against the baseline dataset. I highlighted a number of statistical anomalies worthy of investigation and analyzed them in more detail in the later section of this report. In many cases, this involved asking the participating agencies for more data or perspectives on the root causes of some observed increases.

Interpreting the statistics in this report

In most sections, this report compares July–December totals in 2015 to the same period in years prior, measuring change against an **average** (mean) number of incidents compared to 2015 in terms of the number of **standard deviations** from the average. Change is measured not in percentages, which is somewhat meaningless, but in **z-scores**.

The z-score represents the number of standard deviations from the average above or below which the 2015 figure falls. (It is calculated by subtracting the average from the 2015 figure and dividing by the standard deviation.) Consider the average and standard deviation together as creating a series of "windows" in which we might expect a certain percentage of the cases to fall. In a normal distribution, 68% of observations will fall within a one standard deviation "window" and 95% will fall within a 1.96 standard deviation window. Since we have only 5 years of past data, these specific percentages don't hold, but they come close. In the table below, for instance, we would expect at least 3 of the past 5 years of disabled vehicle calls to fall between 47.56 (57.8-10.24) and 68.04 (57.8+10.24), and they do. We would expect all of them (or, occasionally, all but one) to fall within two standard deviations: 37.32 to 78.28. Again, they do¹.

¹ Statisticians may object that we do not have enough past observations to establish a normal distribution, or for the significance levels associated with various z-scores to hold. These are valid criticisms. Unfortunately, there is no way out of the conundrum. It would be absurd to reach back dozens of years to collect enough annual totals to establish the true shape of the

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	194	224	173	197	241	205.8	23.93	226	0.84
Disabled Vehicle	48	46	67	72	56	57.8	10.24	85	2.65
Disorderly	91	82	87	89	105	90.8	7.70	97	0.80
General Service	240	187	152	169	205	190.6	30.39	196	0.18

When a score for 2015 is well above 2 standard deviations, as in the case of disabled vehicles here, two things are possible:

- 1. It is simply a random fluctuation. This is unlikely, but possible. In this case, we would only expect a z-score this high by random chance about 1% of the time, but given that we have hundreds of statistics in this report, such statistical flukes are bound to happen occasionally.
- 2. Some new factor has influenced the statistic to be unusually high in 2015. In such cases, the factor *could* be the presence of Plainridge Park. But it could also be dozens of other factors, including other new businesses, significant economic and demographic changes, changes in weather, or changes in police policies and practices. **High z-scores indicate categories worthy of further study, but only a more detailed analysis can establish the likelihood of a casino relationship**. We have conducted that more detailed analysis with each of the significantly-increased crimes and calls for service in this report, and have reported on the results.

Non-casino factors that may affect the statistics

Before reviewing the statistics and analysis in this report, it is important to cover several factors at work in the Plainville area that might skew the data. Controlling for these factors is somewhat difficult, but I will attempt to quantify their effects in the one-year report to be released in the fall of 2016 through the use of control areas.

- 1. Greater attention to accuracy in crime coding. Two of the participating agencies—North Attleborough and Mansfield—replaced or hired new personnel in charge of coding offenses. North Attleborough appointed a new person to maintain the accuracy of their crime reports (and related data) in September 2014; Mansfield hired a new crime analyst in September 2015. Both individuals found problems with the way many offense reports had been coded and classified before their employment and took steps to improve the data. Unfortunately, these improvements mean that more recent data is difficult to compare to past data. Specific issues are discussed in the relevant sections below.
- 2. A surge in the opiate epidemic. This trend is difficult to quantify, but many police agencies and communities in the northeast United States are reporting significant increases in crime and safety issues related to heroin and other opiates. Widely reported in the media,² this resurgence seems to have begun in late 2014 and has manifested itself in an increase in overdoses and heroin-motivated crime. In speaking about several of the increases in his community, a Wrentham Police lieutenant told me that he "would assume they are more related to the opiate epidemic than to the casino."

distribution, even if the agencies had such historical data, because we would be comparing 2015 with periods with radically different demographic and economic profiles for the jurisdiction. Our goal here in using the z-scores is not to establish statistical significance but to identify combinations of incident types and geographic areas worthy of further study to identify potential casino relationships. For such purposes, the z-core is a useful triaging tool.

² See, for instance: Seelye, K. Q. (2016, March 6). Heroin epidemic increasingly seeps into public view. *The New York Times*. Retrieved March 20, 2016, from http://www.nytimes.com/2016/03/07/us/heroin-epidemic-increasingly-seeps-into-public-view.html; Leonard, K. (2015, July 7). Heroin use skyrockets in U.S. Retrieved March 20, 2016 from U.S. News and World Report: http://www.usnews.com/news/blogs/data-mine/2015/07/07/heroin-use-skyrockets-in-us-cdc-says

3. Low fuel prices. With thousands of new visitors to an area, we might expect increases in traffic-related incidents, including collisions and complaints. These factors, however, are also influenced by the number of road miles driven by the population, which in turn is influenced by fuel prices. Such prices began a precipitous decline in June 2015, just as Plainridge Park opened, and continued to decline through the year, not hitting bottom until February 2016. This decrease likely contributed to an overall increase in driving in Massachusetts, which in turn may have contributed to an increase in traffic-related police issues.

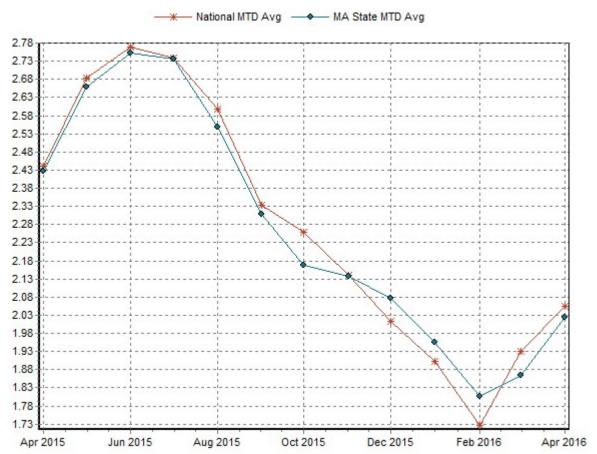


Figure 3: Average fuel prices in Massachusetts and the nation from April 2015 to April 2016. Source: American Automobile Association. (2016). Daily fuel gauge report: Massachusetts fuel prices. Retrieved April 3, 2016, from http://fuelgaugereport.aaa.com/states/

Acknowledgements

The analysis in this report would not have been possible without the cooperation and good will of the police executives and personnel in the Plainville area. Each executive evinced a sincere commitment to objective analysis of data and unfettered cooperation in providing that data. We owe a debt of gratitude to Chief James Alfred and Officer William McEvoy of the Plainville Police Department; Chief Kyle Heagney, Sergeant Kevin Blackwell, and crime analysts Lisa Schultz and Anthony Stevens of the Attleboro Police Department; Chief Ronald Sellon and crime analyst Erika Baburins of the Mansfield Police Department; Chief John Reilly, Captain Joseph DiRenzo, dispatcher Julie Cannata, and assistant IT director Steve Almeida of the North Attleborough Police Department; Chief James Anderson, Lieutenant George Labonte, and IT administrator Darrell True of the Wrentham Police Department; and Lieutenant Brian Connors and Lieutenant Matthew Murphy of the Massachusetts State Police. I am also indebted to my research assistant, Dawn Reeby, who conducted much of the qualitative analysis necessary to explain the increases and decreases seen in this report.

About the author

Christopher W. Bruce is a career crime analyst with previous service at the Cambridge Police Department (1994–2001) and the Danvers Police Department (2001–2010). He was president of the Massachusetts Association of Crime Analysts from 2000 to 2004 and has served in three roles in the International Association of Crime Analysts: vice president of administration (2000-2006), president (2007-2012), and vice president of membership (2016-present). He has served as an instructor in criminal justice and crime analysis topics at Suffolk University (2001–2010), Westfield State University (2009–2010), the University of Massachusetts Lowell (2009–2010), Middlesex Community College (2007–2011), Tiffin University (2006-present), and Western Oregon University (2010-present).

Christopher is an internationally-recognized expert in police data systems and police data analysis. He currently consults with the U.S. Department of Justice, Bureau of Justice Assistance; the U.S. Department of Justice, Office of Justice Programs; the U.S. Department of Transportation, National Highway Traffic Safety Administration; and the International Association of Directors of Law Enforcement Standards and Training. He is the contracted analytical director for NHTSA's Data-Driven Approaches to Crime and Traffic Safety (DDACTS) program, a subject matter expert for BJA's Smart Policing Initiative and its National Training and Technical Assistance Program, and a senior diagnostic specialist with the OJP's diagnostic center.

Historical review

Until 1979, when the Seminole Tribe opened a high-stakes bingo hall on reservation land near Fort Lauderdale, Florida, the question of whether casinos impact crime and disorder in surrounding communities was largely moot. The only large-scale casino gambling in the United States was concentrated in Las Vegas, Reno, and Atlantic City—cities that had grown up (or, in the case of Atlantic City, re-organized) around the presence of casinos, and in which it would have been impossible to separate crime and disorder caused by gambling from that caused by general tourist activities.

In 1976, Bryan v. Itasca County (426 U.S. 373) established that the state does not have the right to regulate activities on Native American land in absence of a specific United States law allowing them to do so. The ruling thus established a legal foundation for organized gambling on reservations and tribal lands. Early attempts by Native Americans were met with police raids and prosecution, but a series of court rulings found in favor of the tribes and ended the debate. By the mid-1990s, more than three dozen Indian casinos dotted the United States, many of them quite close to urban areas and thus likely to impact surrounding communities.

Casinos proved so profitable for Native American communities that states and communities began to look to gaming for sources of tax revenue and general economic growth. In 1989, South Dakota became the first state outside Nevada and New Jersey to legalize gambling when they allowed a commercial slot casino in Deadwood. Iowa legalized riverboat gambling the same year. Colorado and Illinois followed in 1990; Missouri and Louisiana in 1991; Mississippi in 1992; and Indiana in 1993.³ As of the time of this writing, 18 U.S. states allow some form of commercial casino gambling.

With this growth has, of course, come concerns about the impact of casinos, both at the individual level (alcoholism, compulsive gambling, and mental health) and the societal level (community crime, traffic issues, and the non-gaming economy). These fears, though not unfounded, were exacerbated by historical ties between gambling and organized crime as well as general mores in the United States that historically regarded gambling as a "vice." During the height of the Native American gaming debate, the president of the American Sheriffs Association said that gambling on Indian reservations would "open up new havens for organized crime in Indiana lands all over the country"; and an assistant U.S. Interior Secretary remarked that gambling is "known to be fraught with evil." Concerns over crime increases have been raised in every state considering the establishment or expansion of casino gaming, all the way through the Massachusetts legislation of 2011 and the subsequent repeal referendums.

Not until the 1980s could these fears be confirmed or refuted with quasi-experimental studies and hard data. Among the first to study the relationship between casinos and urban crime was Niagara University researcher Jay Albanese. Using crime totals reported by the Atlantic City Police Department to the U.S. Federal Bureau of Investigation between 1978 and 1982, he found that although "index" crimes (murder, rape, robbery, aggravated assault, burglary, theft, and auto theft) increased significantly over the period, these increases disappeared when he controlled for population increases during the same period. While the growth of casinos had undoubtedly led to the population increases as well, on a *per capita* basis, crime did not significantly increase. "Based on this analysis of the Atlantic City experience," he concluded, "the advent of casino gambling has no direct effect on serious crime."

³ For most of this summary, I am indebted to Fenich, G. G. (1996). A chronology of (legal) gaming in the U.S. *Gaming Research & Review Journal* 3(2): 65–78.

 $^{^4}$ Indian gambling may attract organized crime, foes say. (1987, June 19). The Spokane Chronicle, p. 12.

⁵ Albanese, J. S. (1985). The effect of casino gambling on crime. Federal Probation 49(2): 39–44.

Studies since Albanese's have been mixed however, often even in the same study. For instance, a 2001 study by Ohio State University PhD candidate Jeremy M. Wilson found that after the passage of Indiana's riverboat gambling legislation, the considered crimes—including FBI index offenses, public intoxication, drunk driving, disorderly conduct, and prostitution—did not increase at all in Hammond, but aggravated assaults and thefts in the area around Rising Sun.⁶ For every study indicating that casinos have caused an increase in crime in one area, an opposite study shows no increase in another.

Only as the body of literature has grown is it possible to discern key differences in the study areas. A "casino" is not the same thing across all geographies and demographics. There are variances in the types of casinos, size of casinos, types of gaming offered at casinos, other types of amenities and recreation offered at casinos, and the nature of the geography in which they are built, from dense, impoverished urban areas to the (literal) middle of the woods. Differences between the means of accessing the casinos, the surrounding road network, and the existing crime rate all have potential parts to play in any increases or decreases in crime and other social harms. As part of its efforts to investigate the impact of casinos on crime, disorder, and traffic issues, Massachusetts will offer several very different testing grounds, including a slots-only parlor directly off a highway in a moderate-to-low populated area of the state (the subject of the present study), a full-service casino in an urban area easily accessible by public transportation, and a full-service casino in a high-poverty, high-crime city. It is possible that each location will generate vastly different results. Acknowledgement of these complex variables came in a 2003 study by B. Grant Stitt, Mark Nichols, and David Giacopassi. Studying both Part 1 ("index") and Part 2 crimes across six casino communities and six non-casino communities, the researchers found widely varying results, from significant increases in casino communities to significant decreases. They ultimately conclude that "crime does not inevitably increase with the introduction of a casino" and "the effects of casinos on crime appear to be related to a variety of variables which are only poorly understood."7

Studies have also highlighted the danger of drawing conclusions too quickly. A landmark 2006 study by Earl L. Grinols and David B. Mustard, again using FBI part one crime statistics, this time comparing more than 3,000 casino and non-casino counties, found that the opening of casinos initially correlated with a decrease in crime, followed by a year of stability, followed by several years of increases. The findings suggest that the community—including the criminal community—takes time to adapt to the presence of the casino. This has implications for the Massachusetts project and suggests that repeated evaluations in subsequent years are necessary to truly assess the impact of casinos. No long-term conclusions should be drawn from a single-year study and particularly not a six-month study.

Throughout the history of casino-crime impact research, one major weakness has been the inability to analyze data beyond summary figures reported by police agencies annually to the FBI. Knowing that a community had 150 robberies in a given year tells us far less than having individual records of all 150 robberies, including time, location, victim, offender, and *modus operandi* factors. The former allows us to determine the presence of general increases and decreases; the latter allows us to identify *patterns* within the data. Researchers have generally failed to collect such incident-level data for what I suspect are three reasons: 1) the inability of many police agencies to extract the necessary data from their data systems; 2) the need to obtain cooperation from the agencies even if they had the ability; and 3) the difficulty involved in combining the data from multiple police agencies into a common format.

Perhaps the only study to have collected such specific data, allowing the researchers to look at individual crime locations instead of city- or county-level statistics, was conducted in 2014 by Lallen T. Johnson and Jerry H. Ratcliffe. Looking at crime incident data in the Fishtown neighborhood of Philadelphia 96 months after the opening of SugarHouse Casino, they found no effect on violent street crime, vehicle crime, drug crime, or residential burglary in the surrounding community—in fact, most of these crimes actually decreased, suggesting a possible

⁶ Wilson, J. M. (2001). Riverboat gambling and crime in Indiana: An empirical investigation. *Crime and delinquency* 47(4): 610–640.

⁷ Stitt, B. G., Nichols, M., & Giacopassi, D. (2003). Does the presence of casinos increase crime? An examination of casino and control communities. *Crime & Delinquency* 49(2): 253–284.

diffusion of benefits from the extra police and security presence at the new facility. Vehicle crime in the neighborhoods surrounding Fishtown increased, however, suggesting a possible displacement effect.⁸ The researchers were able to collect such detailed information because they had a longstanding personal relationship and research partnership with the Philadelphia Police Department and a familiarity with its data systems. It is on this type of study that we have modeled the present project—at least in terms of data collection—pulling incident-level data on crimes and calls for service from the data systems of the contributing police departments, thus giving us the ability to answer far more questions than simply "how many."

Another major deficiency in previous casino research is any establishment of the relationship between crime and casinos *as casinos* and not simply as large entertainment venues that draw thousands of visitors. In other words, even studies that show an increase in crime after the introduction of a casino dot not necessarily establish that gambling itself is a factor in those increase. Routine activities theory suggests that any facility that draws people to an area—shopping centers movie theaters, hotels, restaurants and bars, spots complexes—creates more potential interactions between offenders and victims, both at the facility and in the surrounding area. A study showing that crime in a city or county increased after the introduction of a casino answers only one question; the other question is whether crime would have also increased if the city had built a minor-league sports stadium instead.

Finally, partly because of the inability of previous researchers to collect incident-level data from police agencies, previous studies have tended to focus solely on crime and not on any other police-related issues that affect communities, including traffic collisions and non-criminal disorder, suspicious activity, disputes, and other demands for police service. We were determined to study all such factors in the present project.

Thus, despite a fair amount of previous research into casinos' effects on crime, we begin this project with something of a blank slate, owing to the fact that:

- Previous research has found wildly varying results, from significant decreases to no change to significant increases.
- By the admission of researchers who have studied the impact of casinos, whether crime increases or decreases is related to a large number of poorly-understood variables.
- Previous research has generally considered only serious crime, generally ignoring less-serious crime and non-crime issues.
- Previous research has generally been based on annual summary statistics rather than incident-level data that considers a multitude of factor, including day, month, time, specific location, victim and offender factors, and property factors.
- Previous research has generally failed to establish a causal relationship between increases caused specifically by gambling versus those caused by any complex that draws large numbers of people.

This series of studies will not necessarily solve all of these problems, but it does have the advantage of being an ongoing series, considering multiple installations over multiple time periods, rather than a one-time study. Most important, it has the advantage of collecting incident-level data on both crime and non-crime issues, thus allowing for a far greater depth of analysis.

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⁸ Johnson, L. T., & Ratcliffe, J. H. (2014). A partial test of the impact of a casino on neighborhood crime. *Security Journal* advance online publication, 30 June 2014; doi:10.1057/sj.2014.28.

Incidents at Plainridge Park

Both the Massachusetts State Police and the Plainville Police Department respond to incidents occurring at Plainridge Park specifically, including the casino interior, exterior, parking lot, and street directly in front. Statistics below, covering the first three months of Plainridge Park's opening, are offered for both agencies, with the understanding that there is overlap between the two sets of data (i.e., for a certain percentage of incidents, both agencies responded). There is currently no way to deconflict the overlaps and provide an overall total for all incidents occurring at the site.

These statistics are an initial scan from the perspective of the reporting agencies and should not replace a more thorough analysis, with a more complete dataset, from the Investigations and Enforcement Bureau.

Incidents at Plainridge Park reported to the Plainville Police Department

Crimes, July-December 2015

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bad checks		1					1
Burglary		1			1		2
Drug offenses		2	3		1	1	7
Drunkenness	1		2				3
Other theft	1		1	1			3
Stolen property offenses			1	1			2
Theft from building	1	3	2	2	1		9
Trespassing	1			1			2
Vandalism		1		1			2
Total	4	8	9	6	3	1	31

Calls for service, July-December 2015

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Administrative	34	29	30	32	31	30	186
Animal complaint		2		1			3
Assist other agency		1	2	1		1	5
Crime enforcement			1		1		2
Disabled vehicle	2	3	4		1	1	11
Disorderly conduct	1	4		2	1	1	9
Domestic dispute			1	1	1		3
General service	3	2	6	1	6	1	19
Liquor laws	2						2
Lost property	1	1					2
Medical		1					1
Missing person	1						1
Prisoner transport	1	1			2	2	6
Suspicious activity	17	11	13	12	14	7	74
Traffic collision	3	4	2		1	4	14

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Theft	3	5	2	3	2		15
Traffic complaint	11	6	9	5	3	3	37
Traffic offenses		1	2	1	2	1	7
Trespassing	2					1	3
Vehicle stop	7	4	3	5	4	10	33
Warrant service			1				1
Youth disorder		1					1
Total	88	76	76	64	69	62	435

Incidents at Plainridge Park reported to the State Police RAMS database

Crimes, July-December 2015

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Disorderly conduct	1				1		2
Drug offenses	1	1	4	2			8
Drunkenness					1		1
Motor vehicle offenses	1		2	1	1		5
Other theft		1	3	1			5
Shoplifting			1				1
Simple assault			1				1
Stolen property offenses	1			1			2
Theft from persons	1	1		1			3
Trespassing	1					1	2
Vandalism	1		1		1	1	4
All other	5	5	8	6	4	3	18
Total	12	8	20	12	8	5	65

Calls for service, July-December 2015

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
911 hangup or error		2	1		1	1	5
Abandoned vehicle			1				1
Administrative			1				1
Alarm	1	1	1				3
All other	9	5	8	10	7	6	45
Animal complaint		2	1				3
Assist other agency	3	8	13	9	15	3	51
Building check	28	38	40	29	25	39	199
Burglary	1	1					2
Disabled vehicle			3	1	3	1	8
Disorderly conduct	17	11	9	7	10	5	59
Domestic dispute		1		1	1	1	4
Drugs		4	4	3	1		12
Field interview		1		1			2

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Fire			2	1			3
General service	1	3	2	1	1		8
Investigation	3	3	7	5	11	9	38
Liquor		1			1		2
Lost property	3	6		1		1	11
Medical	11	20	20	11	7	4	73
Missing person		1	1				2
Other theft	7	3	6	7		3	26
Prisoner transport	1	1	1		3		6
Sexual assault			1				1
Suspicious activity	9	24	12	15	13	14	87
Threats or harassment	1					1	2
Traffic complaint						1	1
Traffic enforcement	1			2			3
Trespassing	2						2
Vandalism	2			1	1	1	5
Vehicle stop			1		2		3
Well-being check	1	1	4	2		1	9
Total	101	137	139	107	102	91	677

Incidents at Plainridge Park reported by the Gaming Enforcement Unit

The following statistics were compiled by the Gaming Enforcement Unit from July through November of 2015. These numbers should be considered the most authoritative of the sources for total figures at Plainridge Park; however, they might exclude some activity in the exterior reported to the Plainville Police. These numbers were supplied in summary form (statistics only) and are thus not subject to further analysis.

No distinction is made in this data between crimes and other incident types.

Crimes and other incidents. July-December 2015

Crime Type	Jul	Aug	Sep	Oct	Nov	Dec	Total
Assistance to security	67	55	47	33	32		234
Assistance to other agency	28	35	34	27	28		152
Burglary	2	1			1		4
Forgery	2						2
Fugitive from justice			1				1
Identity theft	3						3
Theft, fraud, embezzlement	11	7	10	11	11		50
Missing persons	4	3	3	2	1		13
Drug investigations	2	5	10	7	7		31
Intoxicated persons	16	13	13	9	9		60
Suspicious persons	16	32	19	27	19		113
Medical	13	15	16	10	7		61
Total	176	174	173	138	123		784

Comparison of Plainridge Park to similar-sized facilities, July-December 2015

Crimes and key non-crime calls for service

Crime Type	Plainridge Park ⁹	Mansfield Xfinity Center	Taunton Street shopping center, Plainville	Bristol Place shopping center, Attleboro
Sexual assault		1		
Aggravated assault		6	1	1
Simple assault		19	3	2
Bad checks	1	1		
Burglary	2	2		
Credit card fraud			3	1
Fraud/Forgery				2
Auto theft				1
Disorderly conduct		21		5
Drug offenses	7	8	1	3
Drunkenness	3	173		
Other theft/shoplifting	3	5	2	11
Stolen property offenses	2	1	1	1
Thefts from buildings	9	1	1	2
Thefts from vehicles			3	4
Trespassing	2	9		2
Vandalism	2	5	3	1
Weapon violations			1	1
Total crime reports	31	252	19	37
Disabled vehicle	11	2	22	5
Disorder	9		19	12
Domestic dispute	3		6	3
General service	19	4	20	9
Suspicious activity	74	1	76	27
Traffic collision	14	8	33	66
Traffic complaint	37		35	8

It is relatively difficult to come up with facilities exactly comparable to each other given variances in traffic, operating hours, regularity of operation, and the types of goods and services offered. The table above doesn't serve as a direct comparison, since we do not have figures on the number of visitors to each location. Rather, it serves as a reminder that the types of crimes and calls for service experienced at Plainridge Park are akin to those experienced by any large facility that draws thousands of visitors per year.

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⁹ Plainridge Park figures are as reported to the Plainville Police Department. Although not indicative of all activity at the location, this provides the best "apples to apples" comparison since the comparison venues, like the Plainville Police figures for Plainridge Park, are based on police reporting practices and do not include incident reports taken by State Police or private security agencies at the same venues.

General crime statistics

The following figures note changes in the region and for individual agencies in the months of July–December of 2015 compared to past years. These figures do not count activity specifically at Plainridge Park, as they are meant to help assess notable changes in the surrounding community.

The "Z" score is a figure that indicates where the figure stands in 2015 compared to its normal deviation or variance. Scores higher than 2 or lower than -2 generally indicate some outside factor at work. Notable increases, as well as some moderate increases, are analyzed after the statistics.

The figures below do not apply a "hierarchy rule"—all offenses reported in an incident are counted.

Crimes reported to Plainville, Attleboro, North Attleborough, Mansfield and Wrentham, July-December

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Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Murder	1	2	2	0	0	0.8	0.98	0	-0.82
Sexual assault	21	30	27	18	18	22.8	4.87	30	1.48
Robbery	29	20	24	12	7	18.4	7.96	8	-1.31
Aggravated assault	77	88	68	63	60	71.2	10.19	77	0.57
Simple assault	270	238	267	248	294	263.4	19.37	293	1.53
Kidnapping	5	4	4	1	0	2.8	1.94	7	2.17
Violent crime	402	382	392	342	379	379.4	20.37	415	1.75
Burglary	251	302	251	239	200	248.6	32.61	234	-0.45
Purse snatching	4	3	1	1	1	2	1.26	1	-0.79
Shoplifting	295	222	283	289	284	274.6	26.64	285	0.39
Theft from building	106	132	107	110	97	110.4	11.64	81	-2.53
Theft from machine	3	0	0	1	0	0.8	1.17	1	0.17
Theft from person	1	8	1	7	4	4.2	2.93	3	-0.41
Theft from vehicles	156	230	143	156	212	179.4	34.77	125	-1.56
Theft of veh. parts	25	24	19	49	23	28.0	10.7	25	-0.28
Other theft	387	498	465	575	561	497.2	68.27	513	0.23
Auto theft	61	69	58	55	43	57.2	8.49	33	-2.85
Arson	8	5	2	5	5	5.0	1.90	3	-1.05
Bad checks	14	12	25	11	10	14.4	5.46	11	-0.62
Credit card fraud	49	54	51	53	38	49.0	5.76	92	7.46
Employee theft	17	24	12	10	11	14.8	5.19	15	0.04
Forgery	23	40	55	40	33	38.2	10.46	33	-0.50
Fraud	48	48	58	72	46	54.4	9.75	73	1.91
Identity theft	18	22	41	27	28	27.2	7.78	41	1.77
Stolen property off.	26	13	46	22	22	25.8	10.96	23	-0.26
Vandalism	276	306	275	263	213	266.6	30.32	274	0.24
Property crime	1768	2012	1893	1985	1831	1897.8	91.63	1866	-0.35
Drugs	110	104	93	121	112	108.0	9.27	80	-3.02

[&]quot;All other" are typically motor vehicle offenses.

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Drunk driving	102	111	108	92	114	105.4	7.79	133	3.54
Disorderly	176	151	161	174	139	160.2	13.96	159	-0.09
Drunkenness	280	251	293	291	399	302.8	50.38	225	-1.54
Family offenses	245	227	227	180	229	221.6	21.87	228	0.29
Liquor laws	247	173	224	152	104	180.0	51.06	70	-2.15
Pornography	1	3	7	5	6	4.4	2.15	6	0.74
Prostitution	1	0	0	0	0	0.2	0.40	2	4.50
Threats	108	104	100	78	68	91.6	15.72	61	-1.95
Trespassing	29	33	42	38	41	36.6	4.92	32	-0.93
Weapon offenses	18	21	14	22	18	18.6	2.80	19	0.14
All other	1159	1160	1180	1217	1207	1184.6	23.80	843	-14.35
Total offenses*	3489	3579	3556	3483	3444	3510.0	49.81	3304	-4.14

^{*}Does not include "all other."

Overall crime in the area decreased significantly from previous years, driven by significant decreases In reported alcohol-related crimes like **drunkenness** and **liquor law violations** (although these are based heavily on police enforcement activity and should not be necessarily taken as a sign that actual activity decreased) and modest decreases in property crime. Overall violent crime increased slightly but with no specific identified casino relationships. Overall property crime decreased slightly with a few notable categorical exceptions.

The increase in **kidnapping** is an odd fluke for the area, made up mostly of unusual figures in Plainville and Mansfield (which normally have none). A review of the incidents suggests no relationship among them—they are primarily custodial kidnappings involving different families—and there is no casino relationship.

The "increase" in **prostitution** is a case of small numbers (an average of 0.2 per year versus 2 incidents in 2015) leading to big changes, but we looked closely at the incidents because an increase in prostitution is one of the "fears" often attributed to casinos. Both incidents occurred in Wrentham, both in October, and both at a motel fairly close to Plainridge Park. Wrentham reported that the participants did not seem to be in the area to use the casino.

A fairly large increase in **drunk driving** incidents is largely attributable to North Attleborough alone, although several other communities had slight increases. Spatial analysis of the incidents does show a heavy degree of clustering along Route 1 between Plainridge Park and the Rhode Island border. It is important to understand, however, that the number of drunk driving "incidents" reported by a police department is heavily influenced by that police department's own activities. Extra enforcement produces more arrests irrespective of the actual number of drunk drivers. The issue is also complicated by what seems to be a change in reporting practices at the North Attleborough Police Department, discussed below.

A troubling and significant increase in **credit card fraud** occurred. Every agency but Mansfield saw an uptick, and in the case of Plainville, Attleboro, and Wrentham, the increase was far higher than random fluctuations would allow. We could not find a specific casino relationship to the increase, yet its universality and significance makes it a crime worth continuing to watch. We will analyze the crime fully in the one-year report.

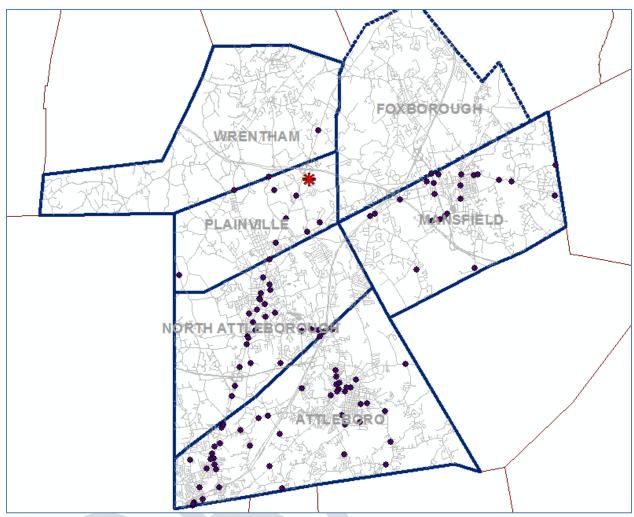


Figure 4: Reported drunk driving incidents from July to December of 2015.

Crimes reported to Plainville, July-December

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Sexual assault	1	2	2	1	2	1.6	0.49	1	-1.22
Robbery	0	1	2	1	1	1.0	0.63	0	-1.58
Aggravated assault	4	4	4	0	2	2.8	1.60	5	1.38
Simple assault	15	11	12	3	9	10.0	4.00	8	-0.50
Kidnapping	0	0	0	0	0	0.0	0.00	3	NC
Violent crime	20	18	20	5	14	15.4	5.64	17	0.28
Burglary	17	13	19	16	22	17.4	3.01	17	-0.13
Shoplifting	9	13	20	12	12	13.2	3.66	10	-0.88
Theft from building	4	11	9	13	13	10.0	3.35	8	-0.60
Theft from vehicles	13	50	8	21	29	24.2	14.74	4	-1.37
Theft of veh. parts	2	4	2	1	2	2.2	0.98	3	0.82
Other theft	7	15	22	10	7	12.2	5.71	9	-0.56
Auto theft	2	3	3	3	3	2.8	0.40	2	-2.00
Arson	1	0	0	0	0	0.2	0.40	0	-0.50

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Bad checks	1	0	3	1	1	1.2	0.98	0	-1.22
Credit card fraud	7	3	3	7	7	5.4	1.96	12	3.37
Employee theft	0	2	0	0	0	0.4	0.80	0	-0.50
Forgery	2	2	4	6	1	3.0	1.79	1	-1.12
Fraud	1	1	1	1	2	1.2	0.40	1	-0.50
Stolen property off	1	0	1	0	0	0.4	0.49	3	5.31
Vandalism	14	24	16	2 6	17	19.4	4.72	33	2.88
Property crime	82	141	111	118	116	113.6	18.87	106	-0.40
Drugs	3	6	5	5	6	5.0	1.10	4	-0.91
Drunk driving	8	11	7	7	14	9.4	2.73	11	0.59
Disorderly	2	1	0	2	1	1.2	0.75	0	-1.60
Drunkenness	11	11	8	6	6	8.4	2.24	6	-1.07
Family offenses	0	0	2	2	2	1.2	0.98	3	1.84
Liquor laws	2	1	4	1	2	2.0	1.10	1	-0.91
Threats	1	1	4	0	2	1.6	1.36	1	-0.44
Trespassing	4	5	4	5	1	3.8	1.47	1	-1.91
Weapon offenses	0	2	0	2	1	1.0	0.89	4	3.35
All other	4	4	5	4	2	3.8	0.98	10	6.33
Total offenses*	133	197	165	153	165	162.6	20.80	154	-0.41

^{*}Does not count "All other" offenses.

An increase in **kidnapping**, while odd, all involves custodial abductions at residences and shows no casino relationship. Similarly, the increase in **stolen property** and **weapons** offenses seems to be flukes with no relationship among incidents, all involving Plainville residents. (The numbers were small to begin with.)

Plainville was one of the agencies to show a major increase in **credit card fraud**, discussed above.

Crimes reported to Attleboro, July-December

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Murder	0	1	1	0	0	0.4	0.49	0	-0.82
Sexual assault	17	23	17	10	9	15.2	5.15	19	0.74
Robbery	22	14	17	7	3	12.6	6.83	7	-0.82
Aggravated assault	50	67	43	37	31	45.6	12.42	38	-0.61
Simple assault	137	157	146	137	160	147.4	9.69	155	0.78
Kidnapping	4	3	3	1	0	2.2	1.47	2	-0.14
Violent crime	230	265	227	192	203	223.4	25.26	221	-0.10
Burglary	110	142	107	91	80	106.0	21.04	116	0.48
Purse snatching	1	0	0	0	0	0.2	0.40	0	-0.50
Shoplifting	122	82	115	126	110	111.0	15.52	99	-0.77
Theft from building	61	71	56	61	56	61.0	5.48	43	-3.29
Theft from machine	3	0	0	0	0	0.6	1.20	1	0.33
Theft from persons	0	5	0	0	1	1.2	1.94	1	-0.10
Theft from vehicles	85	91	100	84	54	82.8	15.48	74	-0.57
Theft of veh. Parts	17	16	16	47	18	22.8	12.12	22	-0.07

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Other theft	157	246	262	370	374	281.8	81.89	354	0.88
Auto theft	31	42	33	36	23	33.0	6.23	16	-2.73
Arson	4	4	2	2	3	3.0	0.89	0	-3.35
Bad checks	6	5	15	3	5	6.8	4.21	3	-0.90
Credit card fraud	14	15	17	20	14	16.0	2.28	36	8.77
Employee theft	5	5	2	2	5	3.8	1.47	3	-0.54
Forgery	11	23	30	14	17	19.0	6.78	15	-0.59
Fraud	29	29	36	42	22	31.6	6.83	33	0.20
Identity theft	12	11	29	16	20	17.6	6.53	21	0.52
Stolen property off	7	7	24	14	11	12.6	6.28	10	-0.41
Vandalism	162	185	165	163	123	159.6	20.16	151	-0.43
Property crime	837	979	1009	1091	936	970.4	83.77	998	0.33
Drugs	49	33	59	68	51	52.0	11.63	43	-0.77
Drunk driving	58	67	61	52	63	60.2	5.04	51	-1.83
Disorderly	138	115	118	110	85	113.2	17.01	109	-0.25
Drunkenness	1	1	0	0	0	0.4	0.49	0	-0.82
Family offenses	238	214	215	174	213	210.8	20.62	218	0.35
Liquor laws	16	31	25	25	13	22.0	6.57	19	-0.46
Pornography	0	3	3	4	4	2.8	1.47	3	0.14
Prostitution	1	0	0	0	0	0.2	0.40	0	-0.50
Threats	66	72	64	40	39	56.2	13.89	36	-1.45
Trespassing	12	15	19	16	19	16.2	2.64	19	1.06
Weapon offenses	14	16	10	18	11	13.8	2.99	11	-0.94
All other	519	527	561	517	608	546.4	34.64	495	-1.48
Total offenses*	1660	1811	1810	1790	1637	1741.6	76.73	1728	-0.18

^{*}Does not include "All other."

Attleboro showed no significance increases in crimes during this period, with the exception of **credit card fraud**. It was one of several agencies to see this increase. It did not have any other offense types that even approached a significant increase. While it had a few that decreased, almost all offenses were well within normal tolerances.

Crimes reported to Mansfield, July-December

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Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z		
Murder	0	1	1	0	0	0.4	0.49	0	-0.82		
Sexual assault	3	2	5	7	5	4.4	1.74	7	1.49		
Robbery	5	3	4	0	2	2.8	1.72	0	-1.63		
Aggravated assault	20	17	17	23	13	18.0	3.35	22	1.20		
Simple assault	65	49	77	82	83	71.2	12.81	74	0.22		
Kidnapping	1	1	1	0	0	0.6	0.49	2	2.86		
Violent crime	94	73	105	112	103	97.4	13.48	105	0.56		
Burglary	89	119	109	93	49	91.8	23.99	32	-2.49		
Purse snatching	1	1	1	0	1	0.8	0.40	1	0.50		
Shoplifting	46	19	29	29	22	29.0	9.36	16	-1.39		
Theft from building	33	46	41	35	22	35.4	8.11	21	-1.77		

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Theft from persons	0	3	1	3	2	1.8	1.17	1	-0.69
Theft from vehicles	1	1	0	0	0	0.4	0.49	1	1.22
Theft of veh. Parts	0	0	1	0	0	0.2	0.40	0	-0.50
Other theft	102	97	81	87	68	87.0	12.02	54	-2.75
Auto theft	16	17	17	9	5	12.8	4.92	7	-1.18
Arson	3	1	0	3	1	1.6	1.20	2	0.33
Bad checks	3	5	3	3	4	3.6	0.80	2	-2.00
Credit card fraud	7	18	15	11	11	12.4	3.77	8	-1.17
Employee theft	4	2	3	0	2	2.2	1.33	0	-1.66
Forgery	6	13	16	15	7	11.4	4.13	12	0.15
Fraud	17	18	20	25	17	19.4	3.01	29	3.19
Identity theft	5	11	12	3	8	7.8	3.43	17	2.68
Stolen property off	15	6	20	8	10	11.8	5.08	9	-0.55
Vandalism	65	87	84	67	50	70.6	13.54	43	-2.04
Property crime	413	464	453	391	279	400.0	66.02	255	-2.20
Drugs	43	56	25	43	41	41.6	9.87	20	-2.19
Drunk driving	21	25	27	29	24	25.2	2.71	30	1.77
Disorderly	30	35	42	60	45	42.4	10.25	34	-0.82
Drunkenness	264	231	280	277	374	285.2	47.68	196	-1.87
Family offenses	7	13	10	2	14	9.2	4.35	0	-2.11
Liquor laws	228	138	193	126	89	154.8	49.52	45	-2.22
Pornography	1	0	4	1	1	1.4	1.36	2	0.44
Threats	25	28	30	37	22	28.4	5.08	19	-1.85
Trespassing	13	13	19	16	20	16.2	2.93	10	-2.12
Weapon offenses	4	3	4	2	5	3.6	1.02	4	0.39
All other	604	601	575	684	587	610.2	38.33	312	-7.78
Total offenses*	1143	1080	1193	1096	1017	1105.8	59.39	720	-6.50

^{*}Does not include "all other."

Mansfield reported the largest decreases in crime during the period, with massive declines in total property crime and most drug and alcohol-related crime. The agency hired a full-time analyst in the fall of 2015 and is undertaking a systematic review of the data and past reporting practices to ensure the accuracy of these figures, so it is not impossible that they may change slightly in future reports.

The analyst in question reviewed all incidents of **kidnapping**, **fraud**, and **identity theft** and reported that she could find no patterns that would indicate a relationship to Plainridge Park. It is likely that the increase in the latter two categories are related to improved reporting practices, though we will study them in greater detail for the one-year report.

Crimes reported to North Attleborough, July-December

				<u> </u>					
Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Sexual assault	0	3	1	0	1	1.0	1.10	2	0.91
Robbery	2	1	1	4	1	1.8	1.17	0	-1.54
Aggravated assault	1	0	0	0	11	2.4	4.32	9	1.53
Simple assault	52	21	32	18	33	31.2	11.96	47	1.32

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Violent crime	55	25	34	22	46	36.4	12.50	58	1.73
Burglary	19	22	12	17	38	21.6	8.82	52	3.45
Purse snatching	2	2	0	1	0	1.0	0.89	0	-1.12
Shoplifting	101	100	109	101	113	104.8	5.23	106	0.23
Theft from building	8	4	1	0	1	2.8	2.93	2	-0.27
Theft from machine	0	0	0	1	0	0.2	0.40	0	-0.50
Theft from persons	1	0	0	0	0	0.2	0.40	0	-0.50
Theft from vehicles	57	88	35	38	93	62.2	24.36	38	-0.99
Theft of veh. Parts	6	4	0	0	1	2.2	2.40	0	-0.92
Other theft	44	62	63	51	81	60.2	12.58	62	0.14
Auto theft	11	7	3	4	8	6.6	2.87	6	-0.21
Arson	0	0	0	0	0	0.0	0.00	1	NC
Bad checks	4	2	4	4	0	2.8	1.60	5	1.38
Credit card fraud	20	18	16	12	3	13.8	6.01	23	1.53
Employee theft	8	15	7	4	1	7.0	4.69	8	0.21
Forgery	3	2	5	2	2	2.8	1.17	4	1.03
Fraud	1	0	0	0	0	0.2	0.40	5	12.00
Vandalism	17	3	3	0	20	8.6	8.21	37	3.46
Property crime	302	329	258	235	361	297.0	45.85	349	1.13
Drugs	9	7	2	1	9	5.6	3.44	6	0.12
Drunk driving	11	4	8	3	8	6.8	2.93	40	11.35
Disorderly	5	0	0	0	7	2.4	3.01	16	4.52
Drunkenness	0	0	0	0	12	2.4	4.80	20	3.67
Family offenses	0	0	0	0	0	0.0	0.00	6	NC
Liquor laws	1	2	0	0	0	0.6	0.80	5	5.50
Threats	13	1	1	0	5	4.0	4.82	5	0.21
Trespassing	0	0	0	0	1	0.2	0.40	2	4.50
Weapon offenses	0	0	0	0	1	0.2	0.40	0	-0.50
All other	1	0	0	0	3	0.8	1.17	20	16.46
Total offenses*	397	368	303	261	450	355.8	67.07	509	2.28

^{*}Does not include "all other" offenses.

North Attleborough was the one agency to report large and consistent increases in crime during this period, though there reasons to regard many of these increases with skepticism. In September 2014, a new individual took over the position responsible for coding crimes for reporting to the state and, after some research and training, found that the agency's crime coding practices had not been following state or national standards. She instituted improved coding measures starting in January 2015, which of course affects the period of this report. Most of the crimes that show increases in the second half of the year also showed increases during the first half, which would not be expected if the inciting factor behind the increase was Plainridge Park.

Because of the large number of increased crimes, we spent the most time with North Attleborough, studying individual incidents and reading report narratives to rule in or out a casino relationship.

Burglary was not affected by previous reporting practices and seems to reflect a real increase. The agency experienced two major burglary *series* in the second half of 2015 (a series involves multiple crimes connected to the same offender). Both serial offenders were heroin addicts from the local area, and there was no indication that

they were committing the crimes for casino purposes. Nor was there any overt casino relationship in the other reports we reviewed.

North Attleborough attributed the increases in **fraud**, **vandalism**, **trespassing**, **liquor laws**, **drunk driving** and **disorderly conduct** to a failure to correctly report these figures in previous years. Where other agencies did not report similar increases, the agency's explanation seems sensible and suggests no casino relationship despite the increase. However, we will revisit the issue—particularly in respect to drunk driving—for the one-year report.

In at least one way, we have *good* data from North Attleborough: it was the only agency to implement and use a "casino-related" crime code in the records management system. This code flagged three incidents in the fall of 2015: one drunk driving arrest, one theft of personal property between a married couple, and one "erratic operator" complaint.

Crimes reported to Wrentham, July-December

crimes reported	A CO VVIC	iitiiaiii,	July L	CCCIIID	<u> </u>				
Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Sexual assault	0	0	2	0	1	0.6	0.80	1	0.50
Robbery	0	1	0	1	0	0.2	0.49	1	1.22
Aggravated assault	2	0	4	3	3	2.4	1.36	3	0.44
Simple assault	1	0	0	8	9	3.6	4.03	9	1.34
Violent crime	3	1	6	11	13	6.8	4.58	14	1.57
Burglary	16	6	4	22	11	11.8	6.58	17	0.79
Shoplifting	17	8	10	21	27	16.6	7.00	54	5.34
Theft from building	0	0	0	1	5	1.2	1.94	7	2.99
Theft from persons	0	0	0	4	1	1.0	1.55	1	0.00
Theft from vehicles	0	0	0	13	36	9.8	14.03	8	-0.13
Theft of veh. parts	0	0	0	1	2	0.6	0.80	0	-0.75
Other theft	77	78	37	57	31	56.0	19.56	34	-1.13
Auto theft	1	0	2	3	4	2.0	1.41	2	0.00
Arson	0	0	0	0	1	0.2	0.40	0	-0.50
Bad checks	0	0	0	0	0	0.0	0.00	1	NC
Credit card fraud	1	0	0	3	3	1.4	1.36	13	8.55
Employee theft	0	0	0	4	3	1.4	1.74	4	1.49
Forgery	1	0	0	3	6	2.0	2.28	1	-0.44
Fraud	0	0	1	4	5	2.0	2.10	5	1.43
Identity theft	0	0	0	7	0	1.4	2.80	0	-0.50
Stolen property off	3	0	1	0	1	1.0	1.10	1	0.00
Vandalism	18	7	7	7	3	8.4	5.04	10	0.32
Property crime	134	99	62	150	139	116.8	32.28	158	1.28
Drugs	6	2	2	4	5	3.8	1.60	7	2.00
Drunk driving	4	4	5	1	5	3.8	1.47	1	-1.91
Disorderly	1	0	1	2	1	1.0	0.63	0	-1.58
Drunkenness	4	8	5	8	7	6.4	1.62	3	-2.09
Prostitution	0	0	0	0	0	0.0	0.00	2	NC
Family offenses	0	0	0	2	0	0.4	0.80	0	-0.50
Liquor laws	0	1	2	0	0	0.6	0.80	0	-0.75
Threats	3	2	1	1	0	1.4	1.02	0	-1.37

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Trespassing	0	0	0	1	0	0.2	0.40	0	-0.50
All other	31	28	39	12	7	23.4	12.01	6	-1.45
Total offenses	155	117	84	180	170	141.2	35.73	183	1.17

Wrentham saw a large increase in **shoplifting** during this period, with every incident at the Wrentham Village Premium Outlets, most involving clothing. This location is also responsible for the higher-than-average **theft from** building incidents (6 of the 7 incidents in the latter half of 2015 occurred here), which appears to be theft of employees' mobile phones and cash at the various stores. The shoplifting increase, at least, started during the first six months of 2015 and seems to be related to improved security or different security practices at the outlets; a Wrentham police lieutenant reviewed the associated reports and could find no evidence linking the increase to the casino.

Wrentham was one of the agencies to report a significant increase in credit card fraud, as discussed above.

The "increase" in both **drug offenses** and **prostitution** (the numbers are quite small; Wrentham hardly ever has incidents of either) are related to a pair of arrests that occurred at a local motel in October. A Wrentham police lieutenant reviewed the reports and reported no evidence that the participants (who came from the south shore) were in the area for casino purposes. Nonetheless, it will be worth continuing to monitor activity at the motel since it could potentially service Plainridge Park clientele and might see a long-term increase in activity.

Calls-for-service statistics

Selected calls for service in Plainville, Attleboro, Mansfield, North Attleborough, and Wrentham

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	2525	2856	2376	2442	2415	2522.8	173.62	2384	-0.80
Disabled Vehicle	928	750	898	819	882	855.4	63.60	927	1.13
Disorderly	1967	1957	1757	1580	1672	1786.6	153.80	1587	-1.30
General Service	2408	2579	2581	2271	2898	2647.4	169.99	2700	0.31
Lost Property	72	58	62	70	95	71.4	12.86	108	2.85
Medical	847	971	1122	873	889	940.4	99.82	900	-0.40
Psychological	150	154	183	205	188	176.0	20.95	219	2.05
Suspicious Activity	2740	3088	3063	3323	3007	3044.2	186.51	3322	1.49
Traffic Collision	2158	2028	2028	2042	1946	2040.4	67.90	2149	1.60
Traffic Complaint	796	938	874	663	773	808.8	93.43	930	1.30

The only call types to increase significantly in the area involved lost property and calls for psychological issues. **Lost property** reports can involve a variety of items, including wallets, vehicle license plates, drivers' licenses, passports, and mobile phones. Incidents are usually reported as such when there is no indication of theft. Quite often, the victim does not know where the item was lost, so many of the reports bear the address of a police department or the victim's residence.

Lost property reports would be expected at a large facility with a lot of activity, such as a casino. However, since these statistics do not include activity at Plainridge Park itself, it's hard to know what to make of the increase. Incidents do not often result in a written report, leaving very little data to analyze. Lost property incidents also increased during the first six months of the year (87 from an average of 59), suggesting a non-casino cause behind the trend.

Most of the increase in **psychological** calls for service is accounted for by the Attleboro Police Department and is discussed there.

Selected calls for service in Plainville

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	194	224	173	197	241	205.8	23.93	226	0.84
Disabled Vehicle	48	46	67	72	56	57.8	10.24	85	2.65
Disorderly	91	82	87	89	105	90.8	7.70	97	0.80
General Service	240	187	152	169	205	190.6	30.39	196	0.18
Lost Property	18	20	24	24	24	22.0	2.53	36	5.53
Medical	5	4	6	2	4	4.2	1.33	1	-2.41
Psychological	17	11	8	14	14	12.8	3.06	14	0.39
Suspicious Activity	316	326	279	326	348	319.0	22.57	411	4.08
Traffic Collision	151	155	145	161	171	156.6	8.89	164	0.83
Traffic Complaint	129	125	91	115	125	117.0	13.80	164	3.41

Plainville had the most increases in calls for service among the five agencies, which makes sense as the host community. Moreover, the types of calls for service that increased are precisely the types that one would expect

given an increased number of people and vehicles in town, including disabled vehicles, complaints of erratic drivers and improper parking, reports of suspicious vehicles and people, and reports of lost property. 34% of suspicious activity reports, 50% of traffic complaints, and 48% of disabled vehicle calls occurred on Washington Street, which hosts the casino, in all cases more than double the volume and percentages of the previous year.

Since these incident types do not result in full written reports, it is difficult to determine specifically what they involve, but we will undertake a thorough review of dispatcher's notes for the one-year report. Preliminary analysis, however, suggests that Plainridge Park has led to increased traffic on Washington Street and thus increased traffic-related calls for service.

Selected calls for service in Attleboro

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	759	1008	803	818	667	811.0	111.68	699	-1.00
Disabled Vehicle	290	258	275	288	300	282.2	14.48	277	-0.36
Disorderly	1088	1080	911	832	855	953.2	109.88	808	-1.32
General Service	1043	1133	1283	1350	1028	1167.4	128.68	813	-2.75
Lost Property	33	22	21	24	46	29.2	9.41	44	1.57
Medical	255	313	726	490	478	452.4	164.51	521	0.42
Psychological	126	130	161	173	162	150.4	18.81	190	2.11
Suspicious Activity	1323	1537	1556	1721	1153	1458	198.12	1435	-0.12
Traffic Collision	1010	921	883	874	870	911.6	52.41	941	0.56
Traffic Complaint	324	444	423	181	204	315.2	108.32	278	-0.34

Attleboro was the one agency to report a significant increase in **psychological** calls for service, a category that includes a variety of incident types, including individuals undergoing breakdowns, having suicidal thoughts, or experiencing hallucinations or delusions. Attleboro's crime analyst reviewed the incidents and "found that the majority of [them] are crisis calls for individuals expressing suicidal [thoughts]" and that a review of the available documentation "reveals no mention of keywords of interest such as 'casino' or 'gambling' or 'Plainridge.'" Although mental health issues are important to study in areas influenced by a casino, we would not expect issues to manifest themselves so rapidly or necessarily in the form of police calls for service. Coupled with the analyst's review, a casino relationship seems unlikely.

Selected calls for service in Mansfield

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	507	509	490	470	488	492.8	14.25	504	0.79
Disabled Vehicle	193	173	177	184	148	175.0	15.11	176	0.07
Disorderly	244	259	264	254	268	257.8	8.35	263	0.62
General Service	743	828	733	777	661	748.4	54.88	580	-3.07
Medical	5	7	4	8	8	6.4	1.62	7	0.37
Psychological	4	11	14	18	12	11.8	4.58	15	0.70
Suspicious Activity	405	459	531	454	477	465.2	40.64	461	-0.10
Traffic Collision	375	337	330	333	331	341.2	17.07	361	1.16
Traffic Complaint	74	84	76	67	119	84.0	18.32	116	1.75

Mansfield did not have any statistically significant increases in calls for service during the second half of 2015, but it was one of many agencies to see a general increase in **traffic complaints**, reported mostly as "improper operation" by the agency's CAD system. (These reflect calls from citizens of improper operation, not traffic stops by the police.) A study of the incidents and locations shows hot spots in residential areas and around Mansfield

Crossing. Mansfield's crime analyst looked at the listed incidents and could find nothing tying them to the casino. However, the incidents did not start to increase until July (they were average from January to June), and several other agencies in the area reported a general increase, so the category is worth continued study.

The decrease in "general service" calls is tied to a major reduction in assistance with child safety seats. Whether this is because of program cuts at the police department or changes in the way such activity is recorded, there does not seem to be any casino relationship.

Selected calls for service in North Attleborough

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	599	700	589	644	654	637.2	40.14	590	-1.18
Disabled Vehicle	282	201	186	158	167	198.8	44.20	182	-0.38
Disorderly	431	434	394	337	370	393.2	36.85	307	-2.34
General Service	336	367	308	352	901	452.8	224.95	1012	2.49
Medical	166	197	186	152	174	175.0	15.59	110	-4.17
Suspicious Activity	477	574	507	578	776	582.4	104.27	694	1.07
Traffic Collision	516	521	543	553	486	523.8	23.32	540	0.69
Traffic Complaint	222	217	237	252	259	237.4	16.33	272	2.12

Almost all of the increase in **general service** calls involves participation in community car washes at 348 East Washington Street and thus shows no casino relationship.

North Attleborough was one of many departments to see an increase in **traffic complaints**, a mixture of erratic operator calls and complaints of parking violations. Although the available data shows no specific casino relationship, the limited nature of CAD data collected for such incidents leaves several possibilities open, including the possibility that an overall increase in traffic through town has led to more complaints of dangerous, erratic, or other troublesome drivers. A map of incidents supports this possibility, indicating most incidents concentrate on Route 1, which would serve as the city's major travel route to and from Plainridge Park. As with other traffic complaints in the region, this issue is worthy of more detailed analysis in the one year report.

Selected calls for service in Wrentham

Crime Type	2010	2011	2012	2013	2014	Avg.	St. Dev.	2015	Z
Alarm	466	415	321	313	365	376.0	57.85	365	-0.19
Disabled Vehicle	112	71	191	117	211	140.4	52.37	196	1.06
Disorderly	111	102	101	68	72	90.8	17.38	103	0.70
General Service	45	63	103	123	103	87.4	28.80	80	-0.26
Lost Property	21	16	17	22	25	20.2	3.31	26	1.75
Medical	416	449	200	221	225	302.2	107.24	260	-0.39
Psychological	3	2	0	0	0	1.0	1.26	0	-0.79
Suspicious Activity	217	190	186	241	252	217.2	26.42	247	1.13
Traffic Collision	104	94	126	120	87	106.2	14.86	129	1.53
Traffic Complaint	47	67	46	48	65	54.6	9.35	63	0.90

Wrentham was the only department to show no significant changes one way or the other in the measured call for service categories. A slight increase in **traffic collisions** is almost entirely made up of incidents at the Wrentham Village Premium Outlets.

State police statistics

The State Police provided crime and incident data for Plainville, Foxborough, Mansfield, Attleboro, North Attleborough, and Wrentham, but only for 2013–2015. The amount of historical data is not enough to establish statistical significance, but it's still worth looking at the comparative figures. They generally show decreases in offenses between previous years in 2015.

As with Plainville, the numbers below exclude activity at 301 Washington Street (Plainridge Park) specifically, as they are covered in an earlier section. The purpose of this analysis is to help determine if activity has increase in areas *around* Plainridge Park.

Crimes, July–December

Crime Type	2013	2014	2015
Aggravated assault	2	1	3
Disorderly conduct	10	6	7
Drug offenses	10	13	2
Drunk driving	16	25	20
Drunkenness	45	26	30
Liquor laws	11	13	7
Motor vehicle offenses	216	185	109
Other thefts	4	0	1
Simple assault	10	5	7
Stolen property	2	2	1
Threats	3	0	0
Trespassing	2	0	1
Vandalism	3	1	0
Weapon offenses	1	1	1
All other	111	81	76
Total	447	359	265

The overall number of crimes reported to the State Police decreased significantly in the latter half of 2015 compared to the previous years, and no crime was higher in 2015 than in both of the previous two years.

Non-crime incidents, July-December

Crime Type	2013	2014	2015
Abandoned vehicle	6	3	3
Administrative	10	0	3
Alarm	1	3	3
Animal complaint	28	21	19
Assist other agency	76	47	58
Building check	65	59	391
Crime enforcement	75	71	123
Death	23	17	18
Disabled vehicle	580	467	352

Crime Type	2013	2014	2015
Disorderly	66	34	51
Domestic dispute	10	8	4
Fire	71	44	45
General service	17	9	11
Investigation	51	27	34
Lost property	9	1	1
Medical	43	40	38
Missing person	4	0	6
Recovered stolen vehicle	4	5	4
Road conditions	149	121	108
Suspicious activity	34	22	19
Traffic complaint	117	96	60
Traffic enforcement	38	23	8
Vehicle stop	266	233	130
Warrant service	1	5	5
Well-being check	4	4	2
All other	56	27	24
Total calls for service ¹⁰	1911	1466	1614
Total reactive calls for service ¹¹	1416	1053	927

During this period, the only call for service types to show three-year highs in 2015 are crime enforcement and building checks, both of which are proactive and police-generated. Both call types almost all (>80%) involve rest areas and weigh stations off the region's highways.

Call types that we would have expected to increase due to increased traffic—traffic complaints, and disabled vehicles, suspicious activity—were all lower than previous years, although traffic collisions (as below) were slightly above normal.

Traffic collisions, July-December, by town

Town	2013	2014	2015
Plainville	24	36	21
Attleboro	124	105	154
Foxborough	155	167	166
Mansfield	104	93	106
North Attleborough	71	72	73
Wrentham	64	69	72
Total	542	552	592

The State Police reported a slight increase in traffic collisions in the region during the second half of 2015 when compared to previous years, although without more data it is difficult to determine the significance of the increase. The increase affected both injury and property-damage collisions.

¹⁰ Total calls for service includes some activities previously covered in the "crimes" section and thus is higher than the sum of the selected call-for-service categories listed here.

¹¹ This total makes up the call types that are almost all citizen-generated, excluding traffic enforcement, crime enforcement, building checks, investigations, and vehicle stops.

Traffic collisions, July-December, by injury level

Level	2013	2014	2015
Fatal	13	18	17
Personal injury	102	91	120
Property damage only	417	435	448
Other/uncategorized	10	8	7
Total	542	552	592

Traffic collisions, July-December, by highway segment*

Index	Road	2013	2014	2015
1	495 east of 95 (Mansfield)	34	36	46
2	495 bet. 1 and 95 (Foxborough, Plainville)	5	7	10
3	1 bet. 95 and 295 (Plainville, N. Attleborough)	1	0	0
4	295 (Attleboro, N. Attleborough)	15	13	16
5	1 south of 295 (Attleboro, N. Attleborough)	10	14	2 3
6	95 south of 295 (Attleboro)	93	79	94
7	95 bet. 495 and 295 (Mansfield, N. Attleborough)	41	49	38
8	95 north of 495 (Foxborough)	56	65	49
9	1 north of 495 (Wrentham, Foxborough)	12	24	23
10	495 west of 1 (Wrentham)	79	79	77
11	1A (Wrentham)	4	1	5

^{*}Not all crash locations could be geo-coded, so the total of these segments is smaller than the total number of collisions.

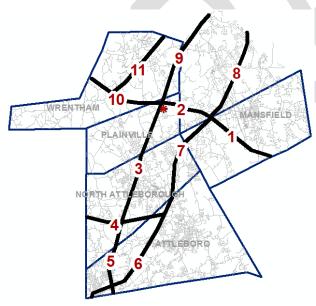


Figure 5: Road segments in the table above, with index numbers.

An analysis of the specific locations of the collisions could only be partly completed given a limited ability to plot the incidents (only 2/3 had coordinates assigned) and an inability to establish directionality. The most increased segments were on 495 east of Route 1 and Route 1 north of the Rhode Island border going through Attleboro. All three of these increases could be consistent with increased traffic heading to or from Plainridge Park—and consistent in general with an increase in traffic caused by any new facility. This hypothesis is particularly bolstered by the fact that none of these street segments showed increases during the first half of 2015.

While perhaps significant, the increase is nonetheless not very large, amounting to about 4 collisions per month on the identified segments and less than 8 per month for the region as a whole. Given the total amount of extra traffic on state roads that Plainridge Park likely brought to the area, the *per capita* figure (if we had traffic counts) would likely how that the risk of crashes had held steady or even decreased during the period.

Appendix A: Abbreviations and definitions

Acronyms and abbreviations

CAD	Computer-aided Dispatch (system)	A police database that holds information about police dispatches to calls for service, including incidents discovered by police officers. Some but not all of the incidents reported in CAD are crimes and have longer records in the RMS.
IBR	Incident-based reporting	See NIBRS.
MGC	Massachusetts Gaming Commission	The commonwealth agency charged with overseeing and regulating gaming in Massachusetts
FBI	Federal Bureau of Investigation	National investigative agency, part of the U.S. Department of Justice, in charge of collecting national crime statistics.
IACA	International Association of Crime Analysts	A global nonprofit professional association that provides training, literature, and networking to individuals who analyze crime data.
MACA	Massachusetts Association of Crime Analysts	A nonprofit professional association that provides training, literature, and networking to individuals who analyze crime data in New England.
NIBRS	National Incident-based Reporting System	FBI program for data collection that supersedes UCR. Collects more specific data about a wider variety of crimes. With only a few exceptions, all Massachusetts agencies report to NIBRS and all Massachusetts RMS vendors have implemented NIBRS coding standards.
ODBC	Open Database Connectivity	A technology developed by Microsoft that allows any application that uses a database to connect to any database source. The primary mechanism by which we can extract data from police CAD and RMS databases.
RMS	Records Management System	A police data system that stores information about crimes and offenders. See also CAD.
SEIGMA	Social and Economic Impacts of Gaming in Massachusetts	A multi-year research project hosted by the University of Massachusetts Amherst School of Public and Health Sciences. The SEIGMA project has a much broader mandate for its study than just crime.
UCR	Uniform Crime Reporting (program)	National program for the reporting of crime statistics to the FBI. Captures only summary data about a limited number of crime types. Contrast with NIBRS.

Crime definitions

The following are definitions of the crime categories used in this report. These are mostly drawn without modification from the FBI's definitions for NIBRS crime categories. In almost all cases, *attempts* to commit these crimes are counted equally with completed offenses. These crimes must, of course, be reported to the police to be included in this report.

Aggravated Assault: An attack by one person upon another for the purpose of inflicting severe bodily injury. Aggravated assault is either accompanied by the use of a deadly weapon (e.g., gun, knife, club) or some mechanism that would result in serious harm (e.g., pushing someone down a staircase), or by serious injury even with a weapon that isn't normally "deadly" (e.g., punching someone and breaking his jaw). If the incident involved neither a deadly weapon nor serious injury, it's coded as a simple assault instead.

Arson: Intentional burning of a structure, vehicle, or personal property.

Auto theft: Thefts of vehicles capable of operating under their own power, including automobiles, trucks, buses, motorcycles, and snowmobiles.

Bad checks: The issuance of checks on accounts with insufficient funds. This type of crime is typically only reported by police when an arrest is made or an individual is charged.

Burglary: Unlawful entry of a structure, including residences, commercial buildings, and government buildings. The entry does not have to occur by force (e.g., a "break-in"). The usual motive for burglary is to steal something inside, but this isn't a necessary part of the definition.

Counterfeiting/forgery: Use or possession of an altered, copied, or imitated negotiable or non-negotiable instrument, including U.S. currency, checks, and money orders.

Credit card fraud: Use of a stolen credit card or credit card data to obtain goods or services.

Disorderly: Disorderly conduct that rises to the level of a criminal charge.

Drug offenses: Manufacturing, sale, trafficking, transporting, or possession of controlled substances. Typically, "incidents" of such crime are arrests, as the only way such incidents are reported is when they are discovered by the police.

Drunk driving: Operation of a motor vehicle while intoxicated; usually while above a state-designated legal blood alcohol level. As with many of the drug and alcohol categories, such incidents are only reported when discovered by the police, usually resulting in an arrest.

Drunkenness: Naturally, not all incidents of intoxication are a police matter. Police incidents that fall into this category are usually incidents of either public intoxication or individuals so dangerously intoxicated that they are placed into protective custody until sober.

Employee theft: Also, "embezzlement." Theft of an employer's property by an employee.

Family offenses: Unlawful, nonviolent acts by a family member that threaten the physical, mental, or economic well-being of another family member and are not classified under any other category. This category is only reported when someone is charged, and it almost always involves violations of restraining orders.

Forgery: Forgery of personal checks, business checks, U.S. currency, or similar negotiable and nonnegotiable documents.

Fraud. Theft of property by lying in such a way that convinces a victim to surrender money or goods. It is theft through some kind of scheme, "con game," or ruse.

Identity theft: Representation of oneself as another (actual) person, or use of another person's identifying information to obtain goods or services, housing, medical care, or status.

Kidnapping: The abduction of one person by another, whether through force or guile. Most incidents coded as such as "custodial" kidnappings involving a parent taking a child in violation of a custodial agreement.

Liquor law violations: Illegal manufacturing, sale, possession, or consumption of intoxicating drinks, often because the offender is below the legal age.

Murder: the killing of one person by another, including non-negligent homicides.

Other thefts: A general category that includes thefts of services (e.g., gas drive-offs), thefts from persons (e.g., pocket-picking), thefts from outdoor public areas. Essentially, any non-burglary, non-robbery theft that is not covered in one of the "theft" or "shoplifting" categories (below) is categorized here.

Pornography: Possession, sale, or manufacturing of illegal pornography. Since pornography is legal in Massachusetts, such incidents generally involve minors, either as the subjects or recipients of the pornography.

Prostitution: Promotion or participation of sexual activities for profit. As with drug offenses, most "incidents" of prostitution are arrests, as the crime is rarely reported except when discovered by the police.

Purse snatching: A theft in which an offender grabs a purse off the arm of the victim. If any significant force, violence, or threats are employed, this crime becomes a robbery.

Robbery: Taking or attempting to take anything of value from another person by force or violence or threat of force or violence. "Muggings" and "hold-ups" are examples of robberies. A robbery requires a direct confrontation between the offender and victim; houses and buildings cannot be "robbed."

Sexual assault: Any sexual act directed against another person (of either sex), either by force or otherwise against the person's will, or non-forcibly but when the victim is incapable of giving consent because of temporary or permanent mental or physical incapacity. This category combines rapes, indecent assaults, molestation, and sexual penetration with an object.

Shoplifting: Thefts of items offered for sale at retail establishments.

Simple assault: An assault that does not involve a dangerous weapon and does not result in significant injury.

Stolen property offenses: Possession or sale of property previously stolen including motor vehicles and personal property. Often, the person possessing the property is the one who stole it in the first place, but this category is used when the actual thief cannot be determined.

Thefts from buildings: Thefts of items from commercial or government buildings open to the public, where such entry does not constitute burglary. This often takes the form of thefts of employees' property at businesses open to the public.

Thefts from machines: Thefts from coin-operated machines, either for the coins or for the products inside.

Thefts from persons: Thefts of personal property from the direct control of the owner. These often take the form of pocket-pickings or thefts of or from diners' purses at restaurants. If any force, violence, or threats are employed, this crime becomes a robbery.

Thefts from vehicles: Thefts of items from motor vehicles. The category includes breaking into vehicles (e.g., smashing a window), unlocked entry, and thefts of items from a vehicle's exterior, such as pickup truck beds. Note that thefts of vehicle parts are in a separate category.

Thefts of vehicle parts: Theft of parts or accessories from motor vehicles, including wheels, license plates, and engine parts.

Threats: Threats to commit physical violence by one person against another. If any weapon is actually displayed or employed, or if an assault is actually attempted, the crime is categorized as a simple or aggravated assault instead.

Trespassing: Illegal entry to a non-public part of a residence or business. Such entry is rarely to the *interior* of the property, or it would be coded as burglary instead. Most reportable incidents of trespassing are either after notice (e.g., a repeat shoplifter who is ordered not to return to a store) or at posted locations (e.g., construction sites, abandoned buildings).

Vandalism: Destruction or defacement of public property, buildings, vehicles, or personal property.

Weapon offenses: Possession, sale, or manufacturing of illegal weapons. This is often an additional offense discovered by police during arrests for other crimes.

Offense types by associated crime category

Offense	Category
Aggravated Assault	Violent Crime
All Other	Other Crime
Arson	Property Crime
Auto Theft	Property Crime
Bad Checks	Property Crime
Burglary	Property Crime
Credit Card Fraud	Property Crime
Disorderly	Societal Crime
Drug Equipment Offense	Drug/Alcohol Crime
Drug Offense	Drug/Alcohol Crime
Drunk Driving	Drug/Alcohol Crime
Drunkenness	Drug/Alcohol Crime
Employee Theft	Property Crime
Extortion	Property Crime
Family Offenses	Other Crime
Forgery	Property Crime
Fraud/Con Games	Property Crime
Gambling	Societal Crime
Identity Theft	Property Crime
Kidnapping	Violent Crime

Offense	Category
Liquor Law Violations	Drug/Alcohol Crime
Murder	Violent Crime
Other Thefts	Property Crime
Peeping Tom	Other Crime
Pornography	Societal Crime
Prostitution	Societal Crime
Robbery	Violent Crime
Runaway	Other Crime
Sexual Assault	Violent Crime
Shoplifting	Property Crime
Simple Assault	Violent Crime
Statutory Rape	Other Crime
Stolen Property Offense	Property Crime
Thefts from Buildings	Property Crime
Thefts from Vehicles	Property Crime
Thefts of Vehicle Parts	Property Crime
Threats	Other Crime
Trespassing	Other Crime
Vandalism	Property Crime
Weapon Offenses	Societal Crime

Call for service definitions

Calls for service include both criminal and noncriminal police incidents and activities. In the case of criminal activities, such incidents receive a longer, more detailed report in the police records management system, and it so it makes more sense to analyze them using the crime categories above than in their original call-for-service form. Thus, the only incident types we have selected for analysis in this report are noncriminal. Definitions of those types appear below. Because the police officer does not usually write a full report for calls for service, the dataset available for analysis is more limited.

Administrative: A wide variety of call types that have to do with the administration of a police department, such as delivery of documents to businesses or other government facilities, attendance at meetings, vehicle maintenance, or even meal breaks. Agencies use their call-for-service systems to document such activities so that, later, they can determine what a particular officer or unit was doing at a particular time, although the incidents are not truly "calls for service." Practices differ significantly between police agencies as to what is reported under this category, and it is generally not useful for analysis.

Alarm: A burglar, panic, or medical alarm that required a response but (probably) turned out to be false or would have a different final code.

Animal complaint: Calls involving sick, dangerous, or wild animals, animals in danger (e.g., left in a hot or cold car), or loose or noisy pets.

Assist other agency: A call type that involves rendering aid to a neighboring police or other government agency for any number of purposes, including serious crimes, fire and medical issues, and traffic issues.

Crime enforcement: Any number of pro-active police activities meant to deter crime, generally taking the form of a "directed patrol" to a particular location during a peak time for criminal activity (based either on citizen complaints or internal analysis). Though not a technical "call for service," such incidents are recorded in the CAD database to document the officer's activity.

Disabled vehicle: A call for service for a vehicle suffering physical or mechanical trouble, usually broken down in an active roadway.

Disorderly conduct: Any of a variety of types of disorderly conduct and excessive noise.

Domestic dispute: A dispute between family members, spouses, or intimate partners that has not risen to the level of physical violence.

General service: Minor calls for service that involve rendering aid to residents and visitors for a variety of issues such as giving directions, installing car seats, dealing with lockouts, and providing physical aid.

Lost property: Calls for service involving lost personal property such as wallets and mobile phones. If there is any indication of theft, these incidents are typically reported under the appropriate crime category.

Medical aid: All calls for medical aids except unattended deaths and overdoses. Police responses only are included in the figures in this report.

Missing person: a runaway or other missing person.

Prisoner transport: documentation of a police agency transporting an arrested person from one facility to another.

Psychological issue: Calls for service involving individuals with mental health issues.

Suspicious activity: Any suspicious person, vehicle, or other activity, whether identified by an officer or citizen.

Traffic collision: A collision involving at least one motor vehicle.

Traffic complaint: Complaint about reckless driving, illegal or unsafe parking, or other traffic issues.

Trespassing: Trespassing on private or public property.

Vehicle stop: An officer pulls over a vehicle for a moving or equipment violation.

Warrant service: a call type that documents the service, or attempted service, of an arrest warrant or search warrant. The category is entirely police-directed.

Youth disorder: Disorderly incidents involving youths congregating, skateboarding, making noise, and so forth.



Appendix B: Data schematic and fields

To synthesize data from the region's police agencies, I created a master database architecture into which to funnel cleaned and converted data from each individual agency's computer-aided dispatch (CAD) and records management systems (RMS).

Understanding the data schema means understanding how police record data. All "incidents" to which police respond—including crimes, traffic collisions, noise, disorder, and self-initiated activities like building checks and traffic enforcement—are stored in the computer-aided dispatch (CAD) file as "calls for service" (even though many of the incidents do not technically result from calls). Such data is generally entered by the dispatcher as the call is received and progresses. This database is primarily concerned with recording basic information about the incident, including the date, time, location, incident type, and who responded. It does not contain detailed information about what happened in the incident, although some basic contextual information can often be found in the dispatcher's notes (which we, as per agreement with the local agencies, did not collect).

A subset of these calls-for-service, generally all crimes and any other incident in which something significant happens that the officer wants to fully document, becomes a records in the records management system (RMS). This is the police officer's full report of the incident, to include the dates and times of occurrence, locations, involved individuals and businesses, involved vehicles, property stolen and damaged, and a full narrative. We collected as much non-personally-identifiable data as possible from this system. We did not collect the narrative, as it by nature contains much confidential and personally-identifiable data.

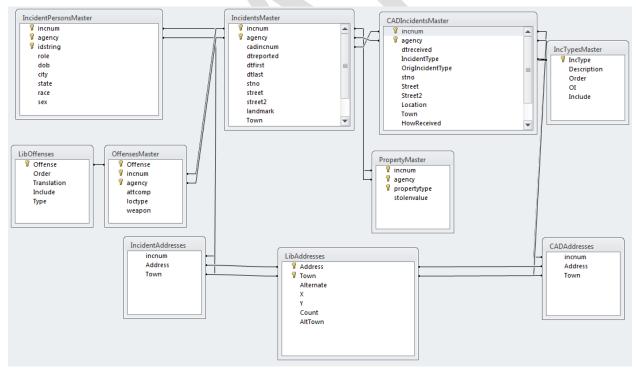


Table relationships in the combined database.

There are differences among different CAD and RMS vendors about how this data is stored. Fortunately, all five agencies involved in this project adhere to National Incident-Based Reporting System (NIBRS) standards for the collection of crime data, making it relatively easy to fuse the five datasets. There is no such national standard for CAD data, although most systems track the same fields. They do not track the same incident type codes, so the different code libraries used by the five agencies had to be translated into a common "master" code table.

The resulting database consists of 5 vital data tables, 3 vital code tables, and 2 vital queries (views). These are:

- **IncidentsMaster:** a table that combines core crime incident data from each of the agencies, to include time, date, and location of the crime.
- **IncidentPersonsMaster:** a table that combines data about individuals involved in police incidents, including the involvement type (role), date of birth, race, sex, and town of residence.
- OffensesMaster: a table that records each offense committed in each incident.
- **LibOffenses**: a library table that stores key data for each offense type, including the overall category (violent, property, drug/alcohol) and whether to include it in the analysis.
- IncdentProperty: a table combining data about stolen and damaged property in each incident.
- **CADIncidentsMaster**: a table storing the core call-for-service data from each of the agencies, to include time, date, and address of the call for service.
- **LibIncTypesMaster:** a library table storing all the call-for-service incident type codes considered by the database. Other tables convert the incident type libraries used by each agency to one of the "master" codes.
- **IncidentAddresses:** a view that concatenates address data (street number, street, intersecting street) for data stored in the "IncidentsMaster" table.
- **CADAddresses:** a view that concatenates address data (street number, street, intersecting street) for data stored in the "CADIncidentsMaster" table.
- **LibAddresses:** a library table that converts each address to X and Y coordinates. This was generated by a long process of both automatically and manually geocoding the data from the contributing agencies.

To populate these tables, the following data elements were collected from each agency's CAD and records management system (RMS). The period of extraction was from January 1, 2010:

From the main CAD table

- Incident/CAD number
- Report date and time
- Call type
- Call location (all related fields)
- Type of service (police/fire/ems)
- How call received (e.g., 911, officer-initiated)
- Once developed, any fields that indicate a "casino-related" flag.

From the main crime/incident table

- Case/incident ID
- Related CAD number
- Reported date and time
- Earliest date and time occurred
- Latest date and time occurred
- Incident location (all related fields)

From the crime/incident offense and weapons tables:

- Case/incident ID
- Offense type and related IBR code
- Attempted/completed code
- Location type
- Weapon codes
- Drug type and activity codes

From the crime/incident associated persons/suspects tables:

- Case/incident ID
- Person role
- Person race
- Person sex
- Person DOB
- Person town of residence
- Person state of residence
- Relationship

From the crime/incident associated property table:

- Case/incident ID
- Property involvement (stolen, damaged, etc.)
- Property type
- Property make
- Property model
- Property value
- Property description

From the crime/incident associated vehicles table:

- Case/incident ID
- Vehicle role
- Vehicle make
- Vehicle model
- Vehicle model year
- Vehicle registration state

From the master crash table:

- Crash ID
- Related CAD number
- Reported date and time
- Crash location (all related fields)
- Crash type
- First harmful event
- Signal device codes
- Roadway type and condition codes
- Weather condition codes