



UNIVERSITY OF MASSACHUSETTS SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

Real Estate Impacts of the Plainridge Park Casino on Plainville and Surrounding Communities

September 18, 2018

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Acknowledgements

Support for this study came from the Massachusetts Gaming Commission under ISA MGC10500003UMS15A establishing the Social and Economic Impacts of Gambling in Massachusetts (SEIGMA) study. This multi-year project was competitively bid via the Massachusetts Gaming Commission Request for Response (MGC-RA-2012) for Research Services and awarded to the University of Massachusetts Amherst in April 2013.

SUGGESTED CITATION:

Renski, H. & Peake, T. (2018), *Real Estate Impacts of the Plainridge Park Casino on Plainville and Surrounding Communities*. Amherst, MA: University of Massachusetts Donahue Institute, Economic and Public Policy Research Group.

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Executive Summary

Background and Methods

This report focuses on the initial impacts of Plainridge Park Casino (PPC) on the residential, commercial, and industrial real estate markets for Plainville and its surrounding communities. It follows an earlier report that documented residential and commercial real estate trends prior to the opening of PPC. Our analysis uses several sources of secondary data, including property sales records from the Massachusetts Department of Revenue Division of Local Services, data on rental market conditions from the American Community Survey (ACS), the U.S. Census Bureau's Manufacturing and Construction Division, and proprietary data obtained from CoStar, the nation's largest provider of data on commercial properties, and Valassis Lists, a direct mail marketing firm.

Key Findings: Residential Real Estate Indicators

- Plainville's residential real estate market is relatively small and predominantly comprised of single-family homes with a scattering of condominiums. Multi-family home sales are rare.
- There has been an increase in single-family home and condominium sales following the awarding of the gaming license and opening of PPC in both Plainville and surrounding communities. However, this rise is consistent with historic and/or broader trends in the region and therefore unlikely to be purely attributable to PPC.
- There have been relatively few sales of single-family homes and condominiums near the casino development site in recent years. The location of residential home and condo sales has not noticeably changed since the opening or construction of PPC.
- We find no evidence that the opening of PPC has had a negative impact on area home and condo sales prices in either Plainville or surrounding communities.
- There has been a slight rise in the real sales price of single-family homes in Plainville and surrounding communities in the first year following the opening of PPC. However, this rise is comparable to regional and statewide trends and was not found to be statistically significant after controlling for trends and home characteristics.
- There has also been an increase in the real sales price of condominiums in Plainville and surrounding communities after the opening of PPC. However, this growth is generally consistent with trends that began before the awarding of the gaming license. Our statistical analysis finds weak evidence of a small casino-related bump in condominium selling prices in surrounding communities, but no effect on Plainville condominium prices.
- Building permits are an important indicator of future development, but their natural variability makes it difficult to distinguish possible impacts from serendipitous events. In Plainville, there was a rise in the number of multi-family permits that coincided with the awarding of the gaming license. But the rise was only temporary. There was no apparent impact on single-family permits.
- The value of single-family permits tends to be more stable than the number of permits. In Plainville, the awarding of the license and opening of PPC had no impact on the value of single-family permits. Surrounding communities saw a rise in the value of single-family permits. However, this rise was consistent with trends in the broader region and therefore difficult to attribute to PPC.

Key Findings: Commercial and Industrial Real Estate Indicators

- While the number of commercial and industrial buildings has increased slightly in recent years, the increase of commercial rentable building area has outpaced the increase in buildings, suggesting a tendency towards larger commercial spaces in new development, including PPC.

The opposite trend is true of Plainville's small industrial real estate market, where the limited growth in industrial buildings has still outpaced the growth of new industrial space.

- Vacancy rates in Plainville have remained consistently lower than those of its surrounding communities or Massachusetts as a whole, but the very small number of commercial properties in Plainville means that these rates are also much more volatile.
- Plainville and its surrounding communities tend to have average lease rates lower than the State average, although some surrounding communities have seen higher industrial lease rates.

Conclusion

Other than an increase in the amount of commercial space, the evidence suggests that the opening of PPC did not substantially change commercial or industrial real estate conditions in Plainville or its surrounding communities. This is unsurprising as the slot parlor component of PPC was developed on the site of an existing harness racing facility in a relatively remote part of the town, with no new buildings being occupied or displaced in the process. While some large increases or decreases have occurred across certain measures, historical levels of volatility make it impossible to tell whether PPC was a factor in those changes.

Real Estate Conditions in Plainville: Initial Impacts

This report examines the initial impacts of the Plainridge Park Casino (PPC) on the residential, commercial, and industrial real estate markets for Plainville and its surrounding communities. It follows the *Baseline Real Estate Conditions, Host Community Profile: Plainville* report that documented residential and commercial real estate trends prior to the opening of PPC.¹

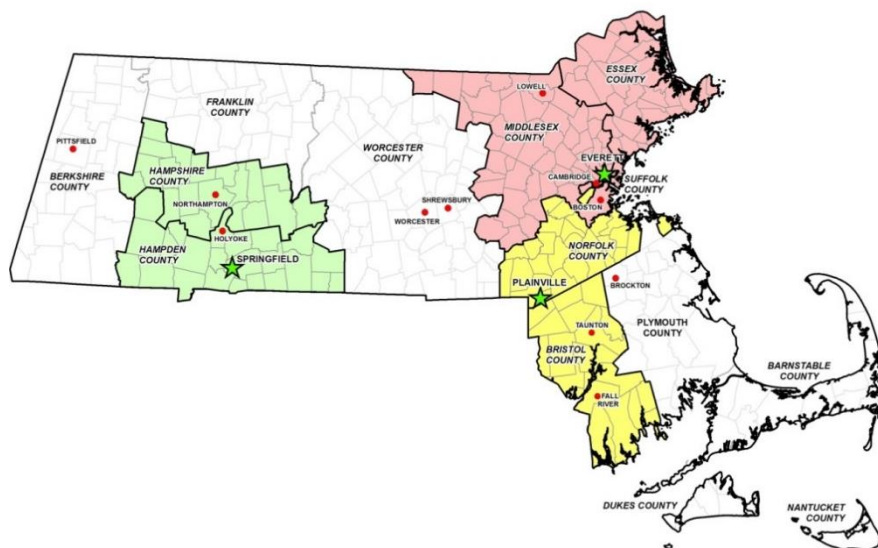
The purpose of this study is to document any notable changes to the area real estate market following the awarding of a slots gaming license to the Plainridge Racecourse in February 2014 and the subsequent opening of the expanded facility in June of 2015. Although PPC has been in operation for nearly three years, several of our major data sources only cover the period up to the end of 2016. For these indicators we focus on the initial impacts—approximately one year after opening. More recent data is available for other indicators (namely residential rents and commercial/industrial inventory), thus allowing us to measure those impacts over a longer time period.

Our impact evaluation uses a comparative approach. It considers changes in the host communities before and after the opening of the casino. It then compares these observed changes to other areas that are facing similar market conditions but are unlikely to be impacted by the development itself. This is necessary because other events that have little or nothing to do with the specific development, such as changes in national and state economic cycles, can have a considerable impact on local market conditions. Without accounting for these external forces, one can easily misattribute an apparent increase or decrease in property sales or values to the development. However, finding a suitable comparison group is difficult, especially given practical data limitations. Communities with similar market conditions are often neighbors and potentially subject to spillover impacts. Conversely, distant communities might provide a false baseline of comparison because they are not subject to similar market or regulatory conditions. For this report, we compare historic trends in Plainville and surrounding communities as designated by the Massachusetts Gaming Commission against communities in the Norfolk and Bristol Counties (i.e., the Immediate Region) and against the Commonwealth as a whole (Figure 1). While inclusive of Plainville, both the Immediate Region and the State stretch beyond the likely sphere of influence of the casino and the impacts of casino-related development are likely to be averaged-out. Still, we recognize that these are not ideal comparison groups, and we err on the side of caution in our interpretation of the evidence.

Even with these controls, it is inherently difficult to isolate the impacts of a single development from other events. Development does not take place in a vacuum, and new development is often attracted to a critical mass of complementary attractions and not just to a single project. Perhaps due to its proximity to New England's three largest cities (Boston, Worcester, and Providence, RI), the Plainville region has become home to several major retail and entertainment attractions in the past few decades. In addition to the pre-existing Plainridge Racecourse (opened in 1999), other prominent developments include the Xfinity Center in Mansfield (renovated in 2002), the Wrentham Village Premium Outlets (opened in 1997), and most notably Gillette Stadium (2002) and Patriot Place (2007) both located in Foxborough just a few miles northeast. While PPC may serve as an attraction in and of itself, it may also enhance the attractiveness of the region as a destination for live entertainment so that the whole is more than the simple sum of its parts.

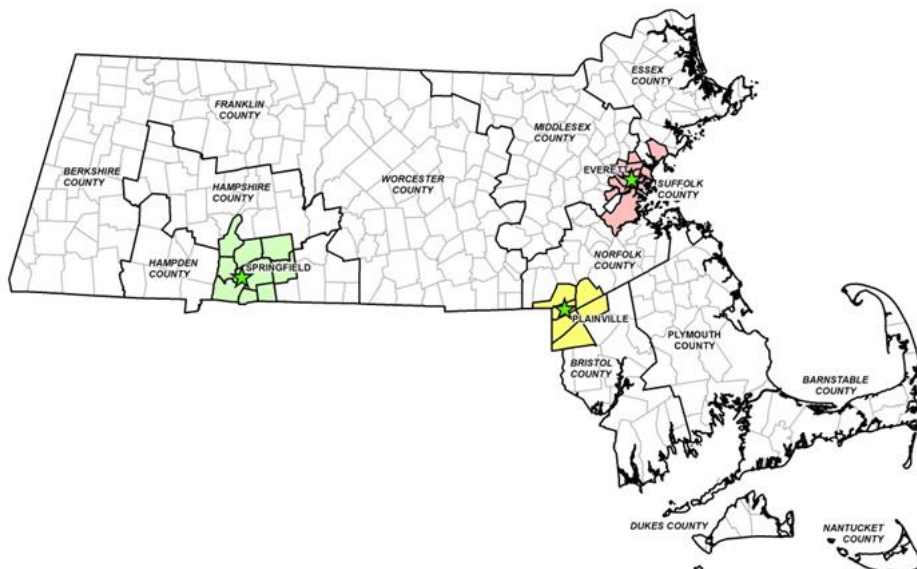
¹ A copy of the *Baseline Real Estate Conditions* report is available for viewing and download from [http://www.umass.edu/seigma/sites/default/files/Real%20Estate%20Profile%20Plainville_2016-08-30%20\(final\).pdf](http://www.umass.edu/seigma/sites/default/files/Real%20Estate%20Profile%20Plainville_2016-08-30%20(final).pdf)

Figure 1. Massachusetts Host Communities and their Immediate Regions



The impact of a new or expanded casino facility may spill beyond the borders of its host community. Thus, in addition to Plainville, we also track market conditions among nearby areas designated as “official surrounding communities” by the Massachusetts Gaming Commission. There are five surrounding communities in the Plainville region (Figure 2), making it impractical to report specific trends for each within the limited confines of this report. Here, we provide a brief summary of changes over time.

Figure 2. Massachusetts Host and Surrounding Communities



This report is divided into two major sections. The first covers the residential real estate market. The second covers the commercial and industrial real estate markets.

Residential Real Estate

Residential Property Sales

Property sales are among the most direct indicators of changing real estate market conditions. They are often used to measure the impact of new development on surrounding areas. A sustained rise in the number and market values of properties following the construction of a new casino may signify successful neighborhood revitalization, as investors are willing to buy properties at higher prices. Conversely, a decline in property values may indicate the negative impacts resulting from possible fears of increased traffic, crime, noise, or other negative externalities.

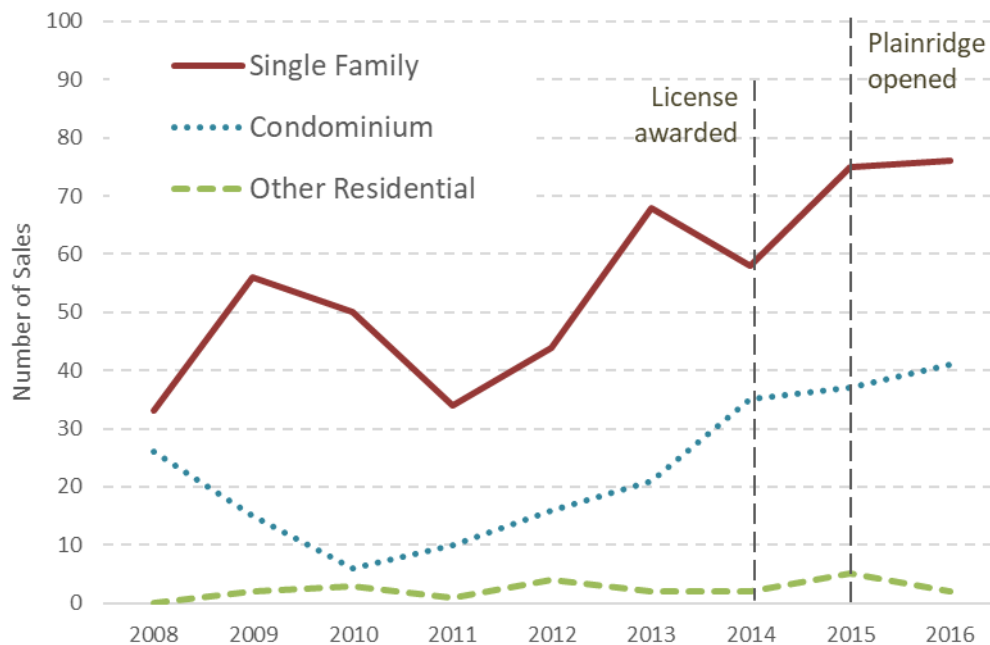
Our analysis uses property sales reported by the Massachusetts Department of Revenue (DOR) Division of Local Services. The DOR reports all verified property sales in the Commonwealth. Although the DOR database includes property sales of all types, we only include those classified as “arms-length” transactions. This eliminates sales between family members and other situations where the sales price is not a pure reflection of market value. The DOR database further identifies sales by the predominant land use classification of the property. We focus on several general types, namely: single-family residential, multi-family residential, and condominiums. We ignore other types of residential land uses, such as mobile homes and vacant lots as they are relatively rare.

We use the DOR database to track the number and market value of property sales in Plainville and its surrounding communities compared to the Immediate Region and State starting in 2008. Individual communities report this data to the DOR on a fiscal year basis, and there is up to a two-year lag for some. At the time of writing, the data covers property sales up to the 4th quarter of 2016. We also utilize detailed address data in the DOR database to examine sales trends at varying distances from the site of the casino.

Impacts on Residential Property Sales

The Plainville housing market is rather small and dominated by single-family homes. Seventy six single-family homes were sold during 2016, comprising 64% of all residential sales in Plainville (Figure 3). The bulk of the remainder are condominiums (34%) with 41 sales in 2016. Multi-family homes, apartment buildings, and other residential sales are an almost negligible component of the Plainville housing market. Therefore, our analysis focuses solely on single-family homes and condominiums.

Figure 3: Plainville, Number of Residential Property Sales by Type, 2008-2016



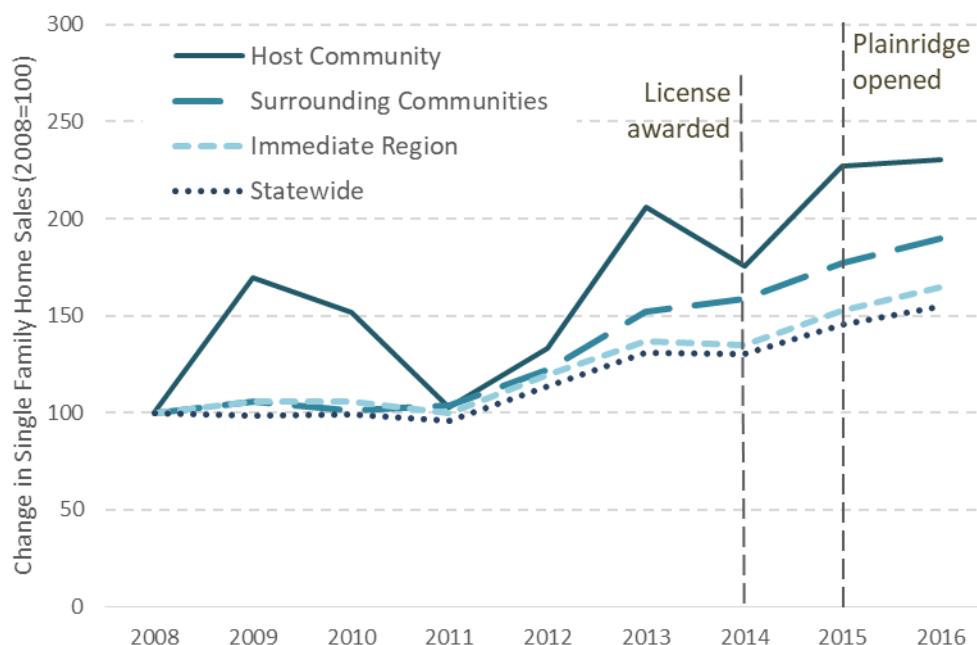
Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales

Because it is a small market, the number of home sales can be rather erratic from one year to the next. This makes it difficult to distinguish general trends from simple annual fluctuations. Nevertheless, we do not see strong evidence of either a sharp rise or decline in residential sales coinciding with the initial awarding of the casino license in 2014 or the official opening of PPC in 2015. The number of single-family homes sales in 2016 was similar to the year before and seems to be a continuation of a gradual upward trend that began in 2011—long before the gaming license was awarded. Condominium sales have also been on the rise in recent years, but, once again, we see no inflection point associated with the awarding of the license or the opening of PPC.

Comparing Plainville to other communities can help us determine whether the observed change in sales is due to local factors (namely the opening of PPC) as opposed to broader market trends. Figure 4 shows the percent change in single-family home and condominium sales for Plainville and its surrounding communities compared to the broader region and the State. We assume that although Plainville and its surrounding communities might be impacted by PPC, more distant communities would be less so. Therefore, we provide a benchmark for measuring casino-related impacts. However, the further away a community is, the more likely the housing market is subject to different market dynamics and may not necessarily make a good basis for comparison.

From 2014 to 2016, sales of single-family homes in Plainville increased at a faster rate than the surrounding communities or the State average (Figure 4). The volume of sales was particularly high in 2015, the year that PPC opened. This, in and of itself, does not necessarily reflect the influence of PPC. As previously noted, annual home sales in Plainville can be rather volatile and 2014 was a down-year for home sales in Plainville compared to the long-term trend. While it is difficult to attribute the rise in sales to PPC, we are quite confident that the casino did not dampen single-family home sales in Plainville. It also appears to have had little influence on home sales in surrounding communities, whose growth is nearly parallel to trends in the region and State.

Figure 4: Single-Family Home Sales in Plainville vs. the Region and State, 2008-2016

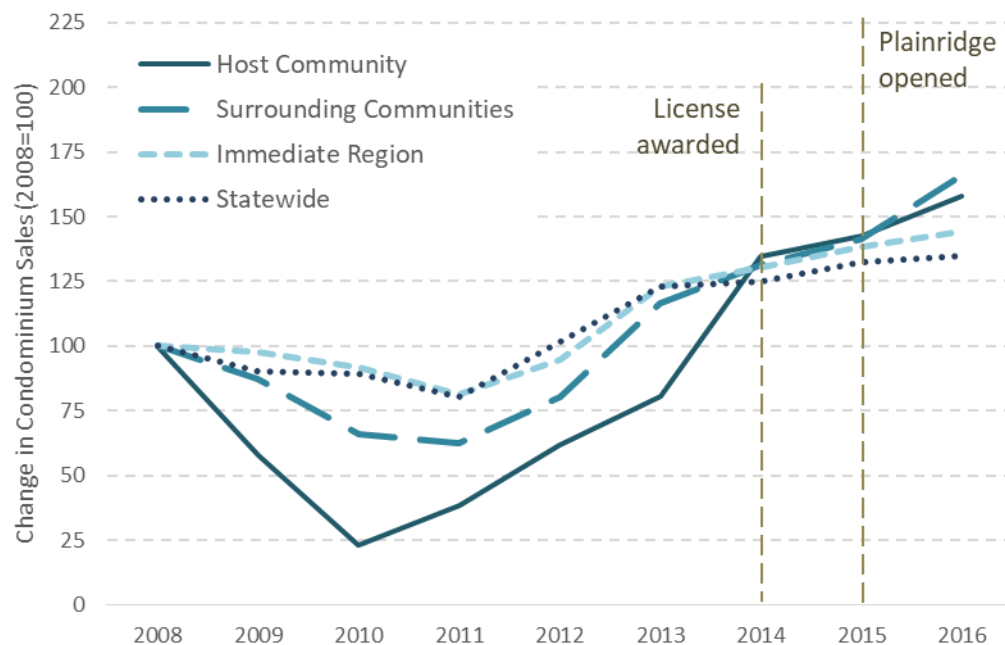


Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales

There has been a notable rise in condominium sales in Plainville and its surrounding communities following the opening of PPC (Figure 5). From 2015 to 2016, condominium sales rose by 11% in Plainville and by 17% in surrounding communities, compared to a rise of only 4% and 2% in the larger region and State. There was a sizable spike in condominium sales between 2013 and 2014—but this occurred before the license was awarded and cannot be attributed to PPC. The pace of condominium sales has slowed in the following years, although sales continue to grow at a faster pace than the region and State. The local growth in selling prices may be due to increased demand for housing by casino employees, most of whom may be interested in relatively more affordable housing options compared to single-family homes. However, the [*New Employee Survey at Plainridge Park Casino: Analysis of First Two Years of Data Collection*](#) report suggests that new employees will only have a minor impact on local housing demand.² Only 75 (~7.2%) of new PPC employees reported moving to the area to work at PPC. Of those, only 13 employees reported moving to Plainville and only 19 employees reported moving to a surrounding community.

² The *New Employee Survey* report can be downloaded from http://www.umass.edu/seigma/sites/default/files/PPC%20Employee%20Survey%20Report%202017-05-9_For%20Releasev2.pdf.

Figure 5: Condominium Sales in Plainville vs. the Region and State, 2008-2016



Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales

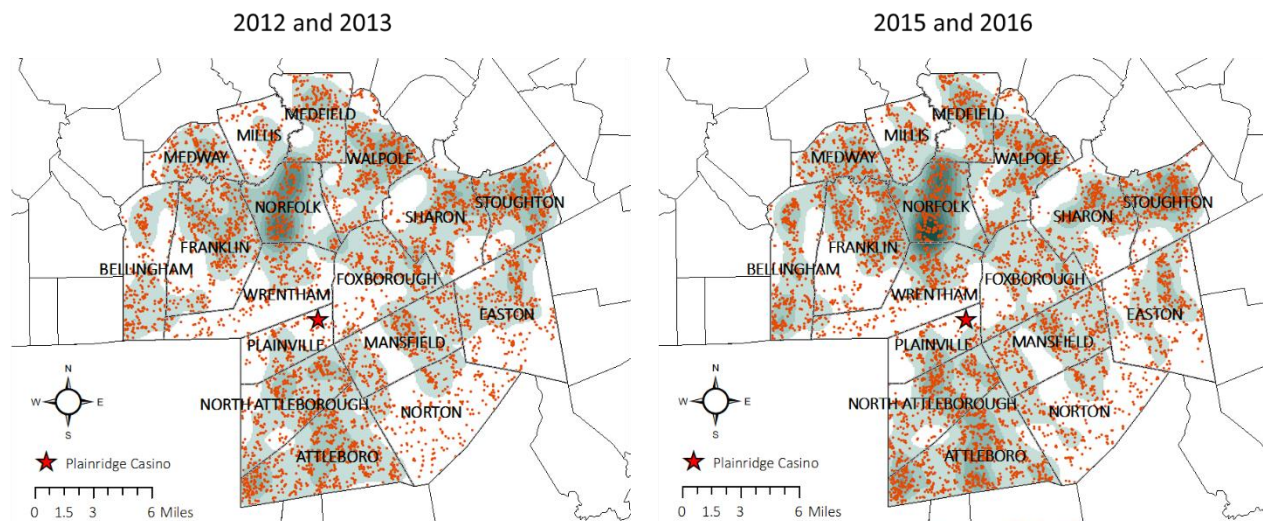
As a final component, we examine the location of single-family home and condominium sales in the Plainville region. With the aid of Geographic Information System (GIS) software, we identified the recent property sales in all Massachusetts communities within 10 miles of the proposed casino site. Using a multi-stage matching process, we were able to locate nearly 99% of the listed sales down to the latitude and longitude coordinates of individual parcels.³

Figure 6 shows the detailed location of single-family home and condominium sales for the two years before (2012-2013) and after (2015-2016) the awarding of the casino license to PPC in early 2014.⁴ Figure 7 provides similar maps for condominium sales. A few key points stand out. First, there is no noticeable shift in the pattern of single-family home or condominium sales after the opening of PPC. Second, there are relatively few single-family and condominium sales near the casino development site. The highest concentrations of single-family homes sales are to the north, most notably in Norfolk, Walpole, Sharon, and Stoughton. Lesser concentrations exist to the south in Attleboro and North Attleborough. Condominium sales are more scattered throughout the region, with notable concentrations in Norfolk, Stoughton, Franklin, and North Attleborough.

³ The location matching process involves joining the DOR L-3A database to GIS databases of individual parcels produced by MassGIS and the Boston Redevelopment Authority. These GIS databases are based on digitized parcel maps, which are linked to assessors' data and can be used to identify the latitude and longitude coordinates of every matched parcel. The vast majority (roughly 98%) of all sales were located to parcels in this first round. The remaining sales are located through street address matching using the Master Address File developed by MassGIS. Our final match rates were well in excess of 99%, an extremely high match rate for this type of work.

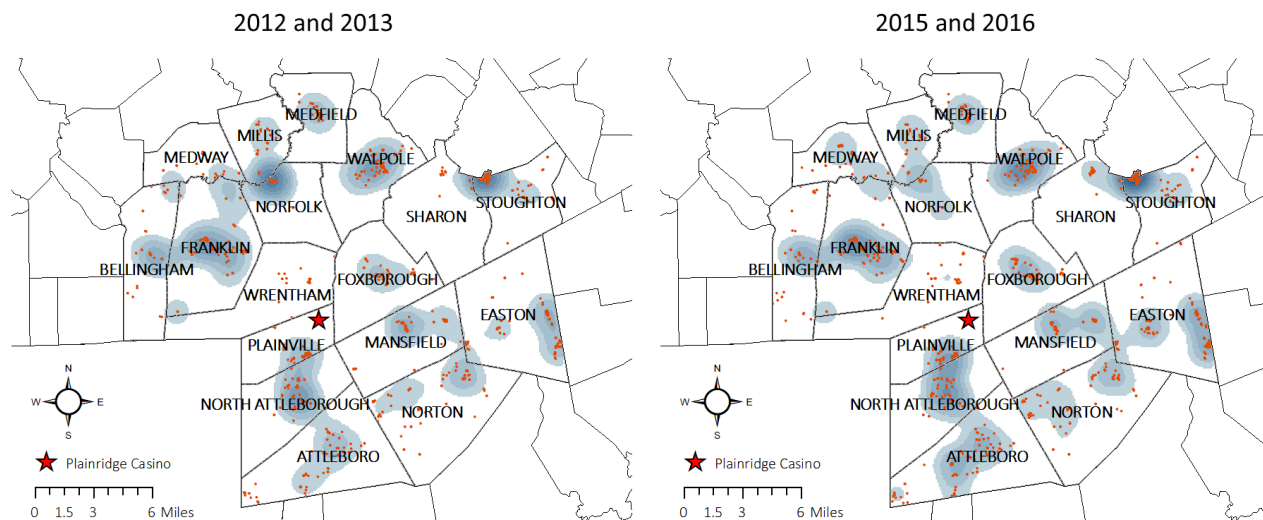
⁴ The datasets used in this report differ in their lag times, leading to different time periods being presented in figures and tables. All data is adjusted to 2014 dollars.

Figure 6: Location of Single-Family Home Sales, Before and After PPC License Awarded



Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales
 Note: Shaded areas have a relatively high density of sales

Figure 7: Location of Condominium Sales, Before and After PPC Opening



Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales
 Note: Shaded areas have a relatively high density of sales

Impacts on Median Sales Price of Residential Properties

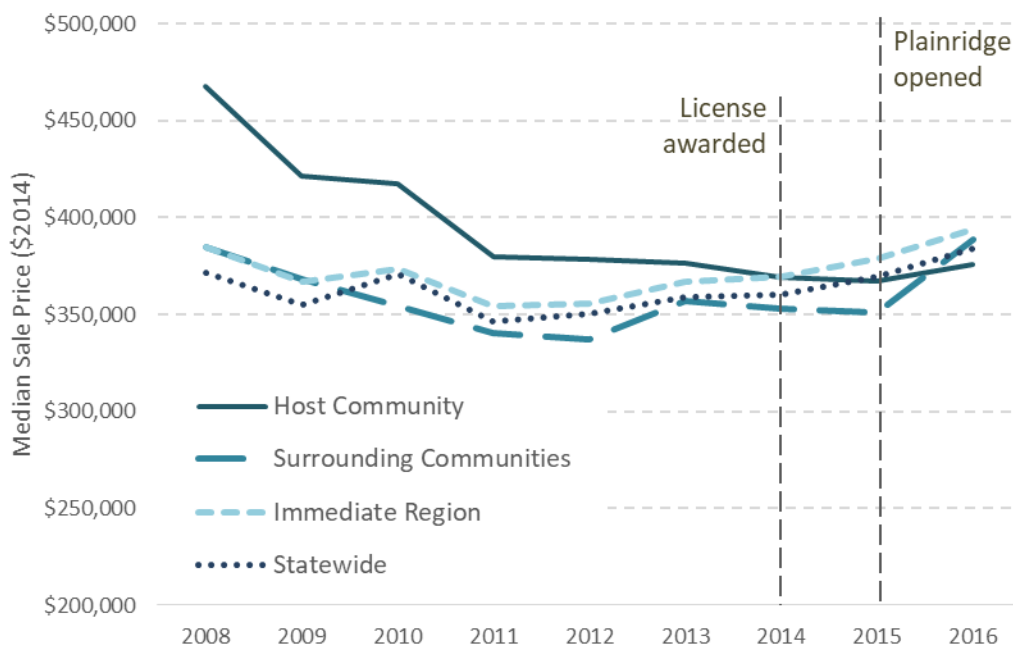
If PPC had an immediate impact on the local housing market, it is more likely to be reflected in changes in the sales price than in the number of sales. This is because the supply of housing is relatively fixed in the short-term. Nevertheless, the possible impacts on sale prices are rather unclear—whether net positive, negative, or neutral. On the one hand, some fear the new facility will diminish home values as a

result of increased traffic, noise, fear of crime, etc. On the other hand, PPC and related ancillary development may be viewed as a valued amenity that causes home prices to rise.

It appears that the opening of PPC has had little influence on the selling price of single-family homes in Plainville—negative or positive. The real median sales price of single-family homes in Plainville has been relatively flat in recent years, with housing prices moving neither up nor down following the licensing and opening of PPC. For example, in 2016, the median sales price of a Plainville home was \$375,720 (in 2014 dollars). This is nearly the same as 2013, the year before the casino license was awarded.

There is, however, a notable bump in the median selling price of single-family homes in surrounding communities following the opening of PPC. The real median sales price of homes in surrounding communities went from \$351,000 in 2015 to \$393,900 in 2016—an 11% single year increase. This is a much faster rate of growth than either the Immediate Region (6%) or State (4%). This is also somewhat a reversal of recent trends of slight decline in the sales price for area homes in surrounding communities.

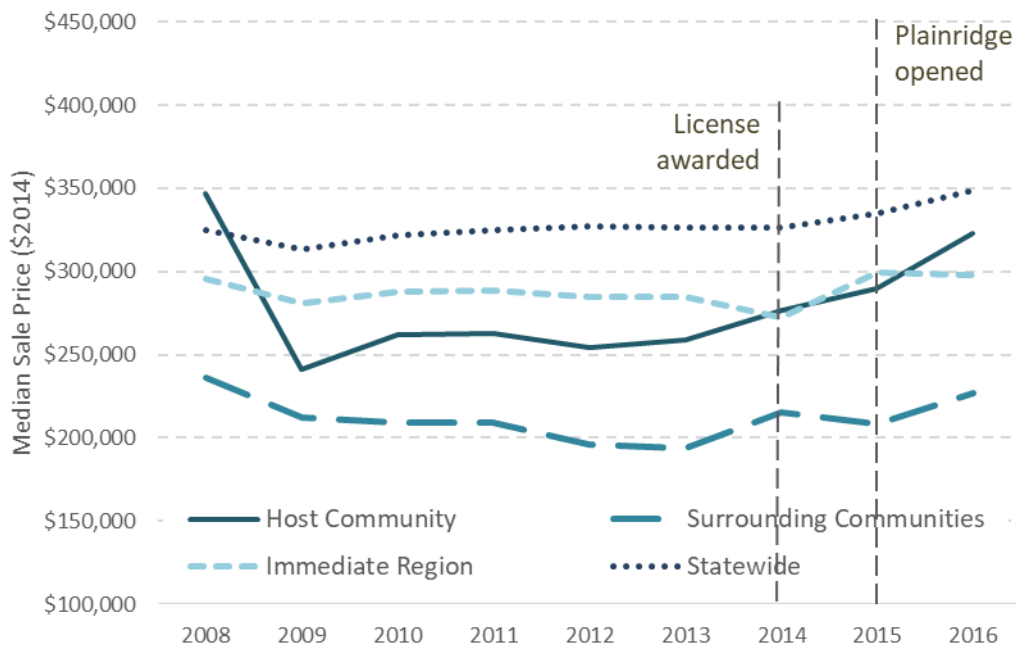
Figure 8: Single-Family Homes, Median Sales Price (2014 Dollars), 2008-2016



Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales

There has also been a rise in the price of area condominiums. In Plainville, the median sales price for condominiums rose by nearly \$33,000 (11%) in the year after the opening of PPC (Figure 9). Surrounding communities saw an increase of nearly \$20,000 (9%) during this same time. We do not find similar gains at the regional level where real sales prices actually declined over the same period.

Figure 9: Condominiums, Median Sales Price (2014 Dollars), 2008-2016



Source: MA Department of Revenue, Division of Local Services, LA-3 Real Estate Sales

Table 1 provides a summary of single-family home and condo sales for the host community as well as the five officially designated surrounding communities as compared to the Immediate Region and State. There is no consistent pattern to changes in property sales in Plainville and its surrounding communities before and after the awarding of the license and opening of PPC. The single-family home prices in three communities (Mansfield, Attleboro, and Foxborough) sold at much higher prices after the opening of PPC compared to the larger region, while homes in Plainville, Wrentham, and North Attleborough sold for relatively less. For example, in Mansfield, home prices increased by nearly \$60,000 between 2013 and 2016, compared to a regional median increase of \$26,700. In Plainville, by contrast, the real median sales price declined by \$27,819 less than the regional median. The sales price of condominiums in Plainville and surrounding communities all rose compared to the larger region. This is especially true for Foxborough, where the median price of condominiums rose by more than eight times the regional median before and after the opening of PPC.

Table 1: Residential Housing Sales Summary, Plainville and Surrounding Communities

| | Single-Family Homes | | | Condominiums | | |
|-------------------------|-------------------------|-------------------------------------|---|-------------------------|-------------------------------------|---|
| | Number of Sales in 2016 | Median Sales Price in 2016 (\$2014) | Change in Real Median Sales Price 2013-2016 | Number of Sales in 2016 | Median Sales Price in 2016 (\$2014) | Change in Real Median Sales Price 2013-2016 |
| Massachusetts | 49,221 | \$383,800 | \$24,760 | 21,738 | \$348,450 | \$131,190 |
| Immediate Region | 9,981 | \$393,900 | \$26,700 | 3,253 | \$297,849 | \$13,269 |
| Plainville | 76 | \$375,720 | -\$1,119 | 41 | \$323,200 | \$64,120 |
| Surrounding Communities | | | | | | |
| Attleboro | 417 | \$328,250 | \$58,460 | 107 | \$227,250 | \$55,890 |
| Foxborough | 157 | \$433,189 | \$41,509 | 44 | \$361,075 | \$126,475 |
| Mansfield | 196 | \$451,975 | \$59,683 | 59 | \$232,300 | \$19,681 |
| North Attleborough | 252 | \$363,045 | -\$19,966 | 76 | \$210,585 | \$20,865 |
| Wrentham | 154 | \$515,100 | \$5,100 | 23 | \$242,299 | \$31,159 |

Multivariate Statistical Analysis of Housing Prices

Thus far, there is little evidence that the opening of PPC has had a negative effect on the sales prices of either single-family homes or condominiums. There is some evidence that it may have had a positive influence on single-family homes sales in surrounding communities and area condominiums, but it is difficult to distinguish the impacts of PPC from underlying trends in housing prices.

To help distinguish the impacts of PPC on Plainville and its surrounding communities, we developed a linear regression model that estimates the change in the sales price of area properties while controlling for underlying trends in housing prices as well as other property and area-specific factors that influence sales price, but are not related to the opening of the casino. Our model is a variant of the Adjusted Interrupted Time Series (AITS) model described by Galster et al. (2004).⁵

Our dependent variable is the sales price of regional homes that sold between 2011 and 2016 standardized to 2014 dollars.⁶ We control for parcel size, the size of the home, the number of rooms, and the year the home was built. The model also includes a linear time variable to measure the general (upward or downward) trend in real housing prices from one year to the next as well as categorical (i.e. dummy) variables to capture seasonal fluctuations in housing prices as measured on a quarterly basis.

⁵ The primary difference with the original AITS formulation is that our model does not include additional variables to capture changes in the trajectory of housing prices in the impact area following the opening of PPC. This is because we currently only have one year of post-impact data and these variables require a longer post-impact period to accurately establish a trend. This will be addressed in future versions of the model and future reports.

⁶ We focus on sales after 2011 to avoid the lingering downward influence of the recession on the real estate market.

We also include variables to account for overall differences in the average price of housing in the host and surrounding communities as measured against sales in outlying communities in the region—which serve as a defacto control group in our model. Lastly, we include several variables designed to measure the change in housing prices before and after the opening of PPC.⁷

The results of our statistical model appear in Table 2. We developed separate models for single-family homes and condominiums given that these are fundamentally different markets. The total number of observations reflects the total number of sales of each housing type in the region. The R-Squared value is a measure of overall model fit, interpreted as the percentage of the total variation in the sales prices that is explained by the combined set of independent variables. In this case, the independent variables explain 21% of the sale price of single-family homes and 40% of the sale price for condominiums. This is an acceptable level of fit given the limited number of explanatory variables at our disposal.

Table 2: Regression Analysis of Initial Impacts

| | Single-Family Homes | | | Condominiums | | |
|-----------------------------------|----------------------------|-----------|-------|---------------------|-----------|-------|
| Mean Dependent Variable | 432,197 | | | 249,749 | | |
| Number of Observations | 18,937 | | | 4,420 | | |
| R-squared | 0.21 | | | 0.40 | | |
| Adjusted R-squared | 0.21 | | | 0.39 | | |
| F-Statistic | 410.55 | | | 240.23 | | |
| Prob(F-statistic) | 0 | | | 0 | | |
| Log likelihood | -253,971 | | | -56,514 | | |
| Akaike info criterion | 508,069 | | | 113,137 | | |
| Variable | Estimate | Std.Error | Prob. | Estimate | Std.Error | Prob. |
| Constant | 559,998 | 7,507.07 | 0.000 | 373,857 | 12,014.00 | 0.000 |
| Parcel Size | -0.01 | 0.04 | 0.893 | 5.52 | 2.25 | 0.014 |
| Building Area | 11.27 | 0.31 | 0.000 | 55.57 | 1.22 | 0.000 |
| Number of Rooms | 12,383.7 | 382.21 | 0.000 | 718.0 | 90.43 | 0.000 |
| Year Built | -148 | 2.79 | 0.000 | -117 | 5.36 | 0.000 |
| Time Trend | 2,196 | 193.97 | 0.000 | 433 | 213.51 | 0.042 |
| Quarter 1 (Jan to Mar) | 1,914 | 4,018.66 | 0.634 | -2,697 | 4,209.13 | 0.522 |
| Quarter 2 (Apr to June) | 20,986 | 3,305.39 | 0.000 | 371 | 3,611.09 | 0.918 |
| Quarter 3 (July to Aug) | 20,719 | 3,174.73 | 0.000 | 9,300 | 3,525.89 | 0.008 |
| Host Community | -90,173 | 10,753.40 | 0.000 | -63,380 | 9,758.14 | 0.000 |
| Neighboring Community | -78,048 | 3,066.87 | 0.000 | -98,734 | 3,738.07 | 0.000 |
| After Casino Opening, Host | -20,233 | 18,787.40 | 0.282 | 14,370 | 16,974.30 | 0.397 |
| After Casino Opening, Surrounding | 1,096 | 5,166.02 | 0.832 | 9,877 | 5,981.97 | 0.099 |

⁷ We chose to model before and after impacts based on the timing of the opening of PPC as opposed to the date when the license was awarded. This is because of our assumption that the primary *initial* impact on residential housing markets is more likely to stem from those moving to area to work at the casino rather than from indirect factors (such as long-term redevelopment). The [New Employee Survey at Plainridge Park Casino](#) report shows that most new hiring at PPC was during the months immediately preceding the opening.

The core of the analysis lies in the interpretation of the individual coefficient estimates that measure the real dollar change in home prices for each one unit change in the independent variable. It also includes an estimate of the statistical significance of each coefficient measured as the probability that the estimate rejects the null hypothesis that there is no association between the dependent and independent variables (“Prob.”). Most of the variables serve as controls and are of only limited interest in and of themselves. Larger houses with more rooms and newer houses tend to be sold at higher prices. Somewhat surprisingly, total parcel size is only associated with higher condominium prices. For single-family homes, the coefficient of parcel size is small and has a high probability of being due purely to random chance. The time variable captures the general growth of real sales prices since 2011 and the dummy variables for the 1st, 2nd, and 3rd quarter measure seasonal price differences against the 4th quarter (which is withheld from the model and thus serves as the reference group). In the case of single-family homes, sales in the 2nd quarter (April through June) are \$20,986 higher than they were between October and December and \$20,719 higher in the 3rd quarter (July through September) compared to the 4th quarter. For condominiums, only prices in the 3rd quarter were significantly higher than those in the 4th quarter. The dummy variables representing sales in the host and surrounding communities show that single-family and condominium prices are considerably lower in Plainville and surrounding communities compared to more distant communities in the region.

The key results are those that measure sale prices after the opening of PPC in both the host and surrounding communities (“After Casino Opening”). None of these measures are statistically significant at conventional threshold levels (usually a probability value of .05 or less), meaning that the opening of PPC appears not to have had a notable influence (positive or negative) on the sales price of single-family homes or condominiums, compared to sales in more distant parts of the region. Only the change in the price of condominiums in surrounding communities comes close to an acceptable level of statistical significance, which appears to show that condominiums in surrounding communities sold (on average) for \$9,877 more than condos in more distant communities after the opening of PPC.

The Residential Rental Market

Rentals are a relatively small component of the Plainville housing market, with 172 rental units comprising roughly 26% of occupied housing units compared to the statewide average of 37%. The size of Plainville’s rental market is generally comparable to other communities in the area—ranging from 127 units in Wrentham to 451 units in Attleboro. The vast majority of Plainville renters live in multi-unit structures—such as apartment buildings with more than two units.

The data on rental market conditions is not as robust as property sales. The most comprehensive source is the American Community Survey (ACS) produced by the U.S. Census Bureau. While collected on annual basis, the ACS pools data across multiple years to ensure a sufficient sample size for reporting smaller areas. The data for most Massachusetts municipalities is only available in five-year groupings, the most recent release being data pooled from 2012 to 2016. Thus, this data cannot be used to track year-to-year changes in market conditions nor can it be used to compare direct impacts as it currently straddles the period when PPC opened. It will be a few more years before the Census Bureau releases data measured entirely after the opening of PPC. Nevertheless, the ACS data is still useful for providing a general sense of changes in the local rental market and to help validate data collected from other sources. The ACS reports both contract rents, the amount that tenants pay each month to their landlords, as well as gross rents, which attempts to account for the fact that some contract rents include utilities while others do not.

We focus on gross rents, which are likely more indicative of the true costs of rental housing. There was a very small drop in real monthly gross rents in Plainville between the five year 2007/2011 period and the 2012/2016 period, which is generally consistent with broader regional trends. Attleboro, North Attleborough, and Mansfield also witnessed a decline in real rental prices, most notably North Attleborough. By contrast, Wrentham and Foxborough saw a rise in rental rates.

Table 3: Real Median Rents (monthly), 2014 dollars

| Area | Contract Rent (\$2014) | | | Gross Rent (\$2014) | | |
|-------------------------|------------------------|---------|--------|---------------------|---------|--------|
| | 2007/11 | 2012/16 | Change | 2007/11 | 2012/16 | Change |
| Plainville | \$1,136 | \$1,099 | -\$37 | \$1,210 | \$1,198 | -\$12 |
| Immediate Region | | | | | | |
| Bristol County | \$968 | \$982 | \$14 | \$1,111 | \$1,102 | -\$9 |
| Norfolk County | \$1,210 | \$1,206 | -\$4 | \$1,355 | \$1,343 | -\$12 |
| Massachusetts | \$991 | \$988 | -\$3 | \$1,151 | \$1,129 | -\$22 |
| Surrounding Communities | | | | | | |
| Attleboro | \$887 | \$874 | -\$13 | \$1,045 | \$991 | -\$54 |
| Foxborough | \$1,211 | \$1,253 | \$42 | \$1,280 | \$1,375 | \$95 |
| Mansfield | \$1,124 | \$1,094 | -\$30 | \$1,224 | \$1,170 | -\$54 |
| North Attleborough | \$936 | \$880 | -\$56 | \$1,082 | \$975 | -\$107 |
| Wrentham | \$909 | \$1,039 | \$130 | \$1,048 | \$1,096 | \$48 |

Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

Note: The most recent American Community Survey (ACS) data was for 2012/16 at the time of writing

Residential Rent Prices Over Time

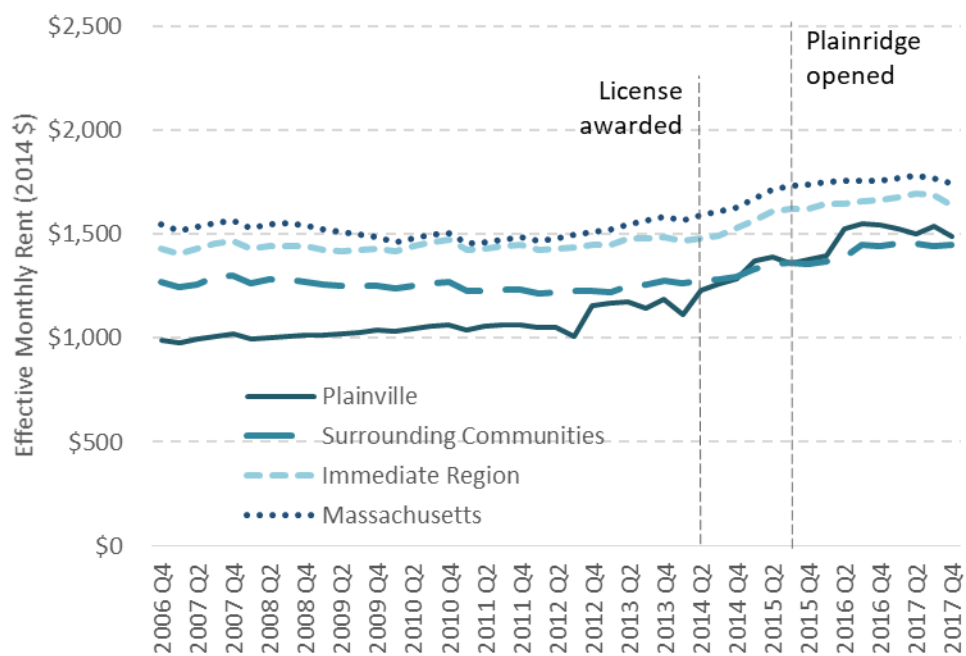
To track changes in the cost of rental housing, we turn to a proprietary database provided by CoStar. CoStar describes itself as the nation's largest provider of data on commercial properties. It also owns and operates the online rental listing service Apartments.com, arguably the largest and most comprehensive real-time source of data on national and local rentals. It reports average rents on a quarterly basis with almost no lag, making it ideal for closely monitoring changing market conditions. CoStar also reports both average "reported" rents and average "effective" rents. Effective rents are more akin to ACS-defined gross rents because they attempt to account for the fact that some contract rents include utilities while others do not. Unless otherwise stated, we focus our review on effective rents.

While expansive, detailed, and timely, CoStar is not a representative sample as is the ACS. Furthermore, CoStar is somewhat opaque in describing its data collection and estimation methods, so it is difficult to identify possible biases in the data or how sensitive the reported data is to changing market conditions at the ground level. We do know that CoStar primarily lists rentals in multi-unit structures managed by property management services (i.e., apartment buildings) and likely misses rentals of single-family homes. This may create a considerable bias and undercounting in communities, such as Plainville, where

multi-unit apartment buildings are relatively rare. From our previous study of baseline conditions, we know that past CoStar data on median effective rents in Plainville was consistent with ACS estimates of gross monthly rent. However, the statewide and regional averages reported by CoStar were much higher. This may be because CoStar focuses on rentals in multi-unit buildings, which may be more expensive, or because it is based on advertised listings whereas the ACS asks tenants how much they actually pay in monthly rent, which may be less than the market rate. If the latter is true, then CoStar may actually be a more sensitive leading indicator of changes in rental markets than data gathered from the ACS.

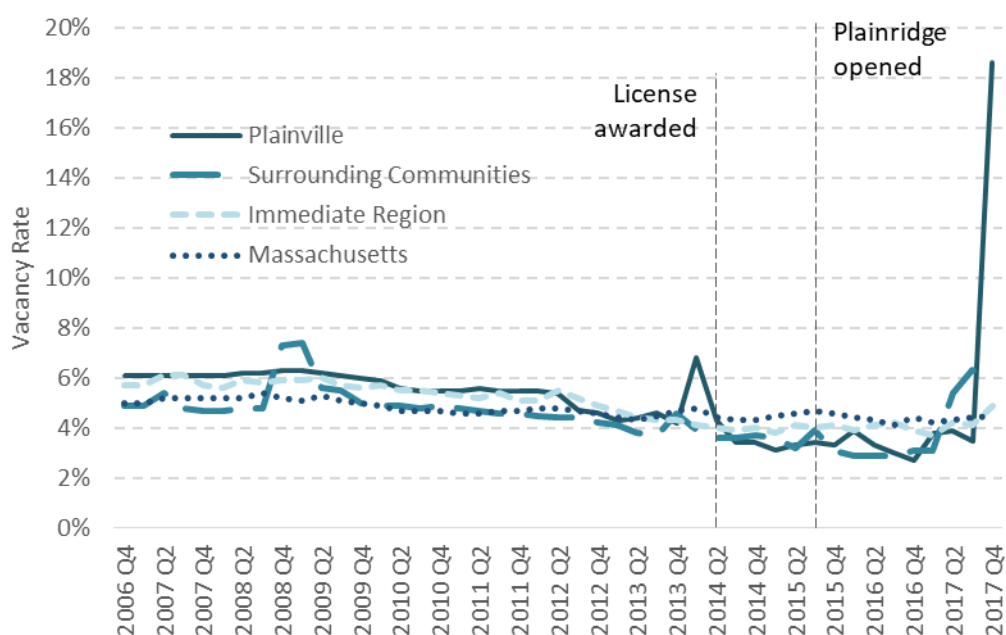
Assuming that CoStar provides a valid, albeit incomplete, indicator of changing rental market conditions, we proceed with our investigation of recent trends in rental prices relative to the State. Effective monthly rents in Plainville and surrounding communities are lower than the State average and have been on a general upward trend since 2011 (Figure 10). Rents have also been slightly higher in the months following the opening of PPC, otherwise they have plateaued since 2016. Rising rents coincide with declining rental vacancy rates in Plainville and surrounding communities (Figure 11). However, rental vacancy rates in Plainville spiked in the 4th quarter of 2017. According to Co-star, this spike coincides with the addition of nearly 250 new rentals on the market. Vacancy rates should decline as these new units begin to fill.

Figure 10: Effective Monthly Rents, Plainville vs. the Immediate Region and State, 2006-2017



Source: The CoStar Group Inc.

Figure 11: Rental Vacancy Rates, Plainville vs. the Immediate Region and State, 2006-2017



Source: The CoStar Group Inc.

Building Permits

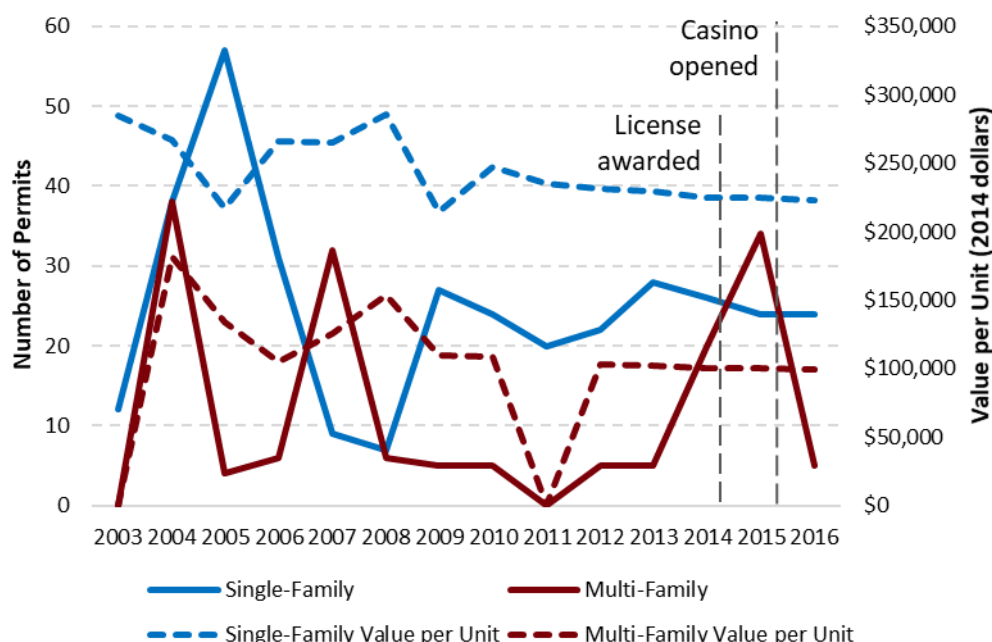
The final section of our analysis of residential real estate conditions examines recent trends in residential building permits. Building permits are an important prerequisite for new development. Municipal officials, demographic forecasters, and real estate analysts alike monitor building permit applications in order to get a sense of changing population trends two or three years in advance.

The data on building permits comes from the U.S. Census Bureau’s Manufacturing and Construction Division. For every individual community in Massachusetts, the Census Bureau reports the number of permits and their approximate value. However, the survey only covers residential permits, although it does distinguish single- from multiple-family permits. These figures should be considered estimates and not a complete count. Communities often do not report their permits, in which case the Census Bureau imputes (i.e. makes a statistical estimate of) the missing values using past values and other related variables.

One must exercise particular caution when considering building permit trends, especially at the town level. Even with imputation, the number of building permits issued can vary greatly from year to year. A single-large scale development can create abrupt bumps and dips in annual permitting trends. Permits, like the real estate market more generally, are also sensitive to broader economic conditions and business cycles—making it difficult to establish a regular “baseline” trend that can later be used to measure impacts. With these important caveats in mind, we proceed with our examination of recent trends.

Whether considering the number of residential permits issued or their average value, there is little evidence to suggest that PPC has led to either a rise or decline in residential permits.⁸ Neither the timing of the award announcement or the opening of the casino is associated with a spike or dip in permits (Figure 12). The one possible exception is for the number of multi-family permits, which experienced a sharp rise in 2014 commensurate with the awarding of the expanded gaming license. It is difficult to attribute this to the opening of PPC, however, as the number of multi-family permits is highly volatile. Furthermore, the rise in multi-family permits was only temporary, dipping back down to just a mere handful in 2016.

Figure 12: Plainville, Number and Per Unit Value of Residential Building Permits, 2003-2016



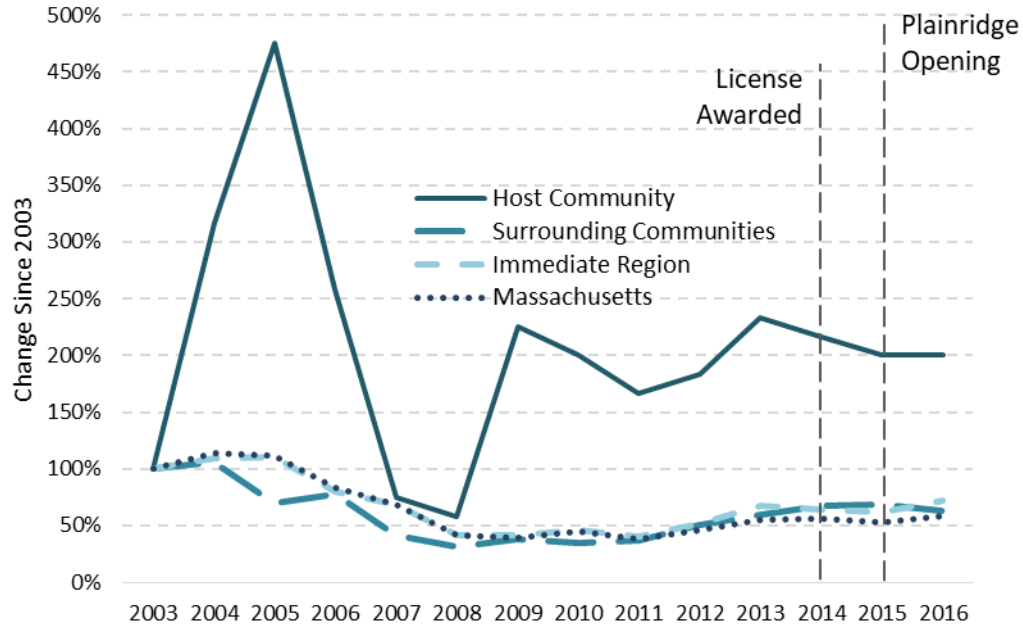
Source: U.S. Census Bureau, Residential Construction Branch

To help put these trends into context, we compare the annual change in single-family residential building permits in Plainville and surrounding communities against regional (i.e., Norfolk and Bristol Counties) and statewide trends. Multi-family permits are too volatile to warrant comparison.

Although higher than its base value in 2003, the number of single-family permits issued in Plainville and surrounding communities have remained fairly steady in recent years (Figure 13), even declining slightly since 2013 (just prior to when the casino was awarded its license). The average value of permits issued in Plainville has also held steady over the past few years (Figure 14). By contrast, the value of single-family permits in surrounding communities has risen since the opening of PPC. However, it is difficult to attribute this purely to PPC as more distant communities in the region have experienced a similar trend.

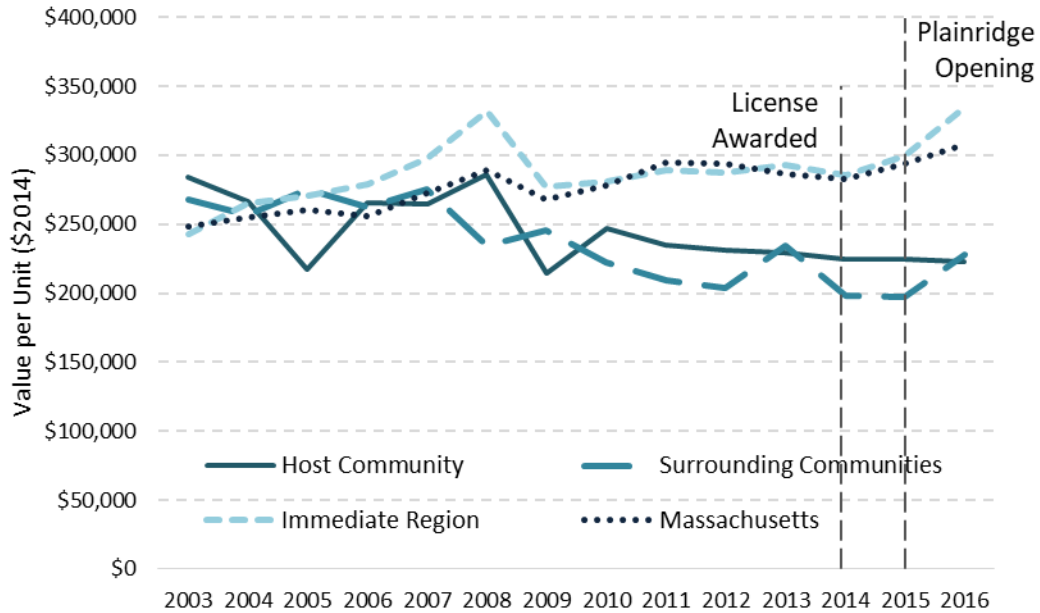
⁸ We measure the value of residential permits as the total value of permits divided by the number of units (not permits). This makes it easier to compare values when grossly different numbers of units are covered under a single permit.

Figure 13: Change in Single-Family Building Permits, 2003-2016



Source: U.S. Census Bureau, Residential Construction Branch

Figure 14: Average Value of Single-Family Building Permits, 2003-2016



Source: U.S. Census Bureau, Residential Construction Branch

Table 4 provides a summary of building permit activity in Plainville and its surrounding communities. Again, the irregular nature of building permits confounds comparisons at the municipal level, and the data on multi-family permits was deemed too sparse to include. We also find no consistent pattern of increase or decrease before and after the opening of PPC relative to the overall region. Two

communities (Attleboro and Foxborough) issued notably higher numbers of single-family permits after the opening of PPC relative to the regional average, while permitting in North Attleborough and Plainville was far below the regional average. Only Mansfield had an increase in the value of the permits issued that was on par with the larger region.

Table 4: Single-Family Building Permit Summary, Plainville and Surrounding Communities

| Area | Number (2016) | Single-Family Building Permits | | |
|-------------------------|------------------|---|---------------------------------------|---------------------------------|
| | | Percent Change in Number 2013-2016 | Value per unit in 2016 (\$2014) | Change in Value 2013-2016 |
| Massachusetts | 7,100 | -30% | \$286,347 | \$38,405 |
| Immediate Region | 1,561 | 6% | \$334,520 | \$41,699 |
| Plainville | 24 | -14% | \$222,618 | -\$6,746 |
| Surrounding Communities | | | | |
| Attleboro | 57 | 68% | \$160,624 | \$4,496 |
| Foxborough | 34 | 26% | \$267,145 | -\$54,239 |
| Mansfield | 26 | -7% | \$270,577 | \$45,990 |
| North Attleborough | 29 | -42% | \$207,715 | -\$10,523 |
| Wrentham | 51 | 9% | \$268,190 | \$5,551 |

Source: U.S. Census Bureau, Residential Construction Branch

Commercial and Industrial Real Estate

The market for commercial and industrial real estate is another important indicator of the health and nature of an area's economy. This section of the report analyzes Plainville's commercial and industrial real estate inventory, the extent to which that space is utilized, and the price of the space. As before, we focus on whether there have been any observable changes following the opening of PPC.

The section makes extensive use of data from CoStar (described in the previous section) to provide information on indicators not generally tracked in publicly available data sources. CoStar data are available for most of Massachusetts on a quarterly basis from 2008 to present.⁹ This analysis will cover the 10-year period between the 1st quarter of 2008 and the last quarter of 2017.¹⁰

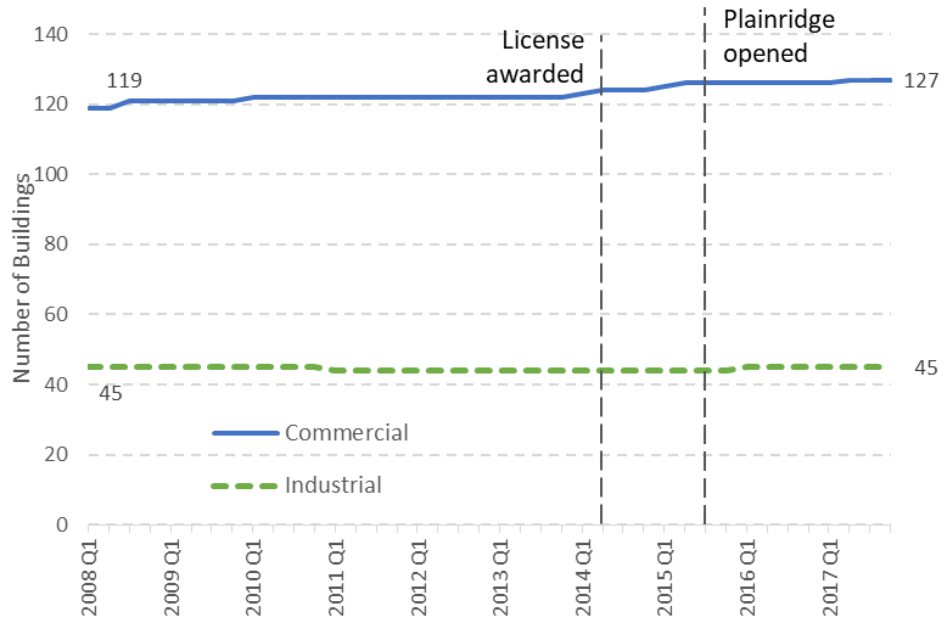
Inventory

The commercial and industrial business stock of Plainville has changed very little over the years. The town had a total of 172 commercial and industrial buildings at the end of 2017. Over the 10 years studied, Plainville's commercial building stock rose from 119 to 127 buildings, while its industrial building stock fell slightly before returning to 45 buildings (Figure 15).

⁹ For more information about CoStar Group Inc. and the CoStar database, please visit <http://www.costar.com/>. The data used for this analysis is not available for download without a CoStar subscription.

¹⁰ We define commercial real estate as any real estate that CoStar defined as Office, Retail, Flex, Hospitality, Health Care, or Sports & Recreation. Industrial real estate is any real estate that CoStar defines as Industrial. These definitions were chosen to best approximate MA DOR classifications.

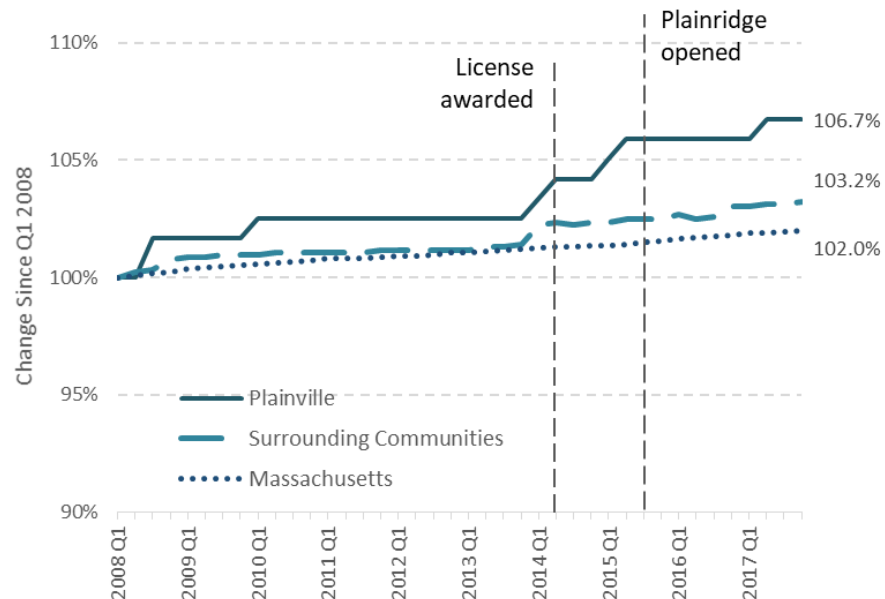
Figure 15: Plainville, Number of Commercial and Industrial Buildings, 2008-2017



Source: The CoStar Group Inc.

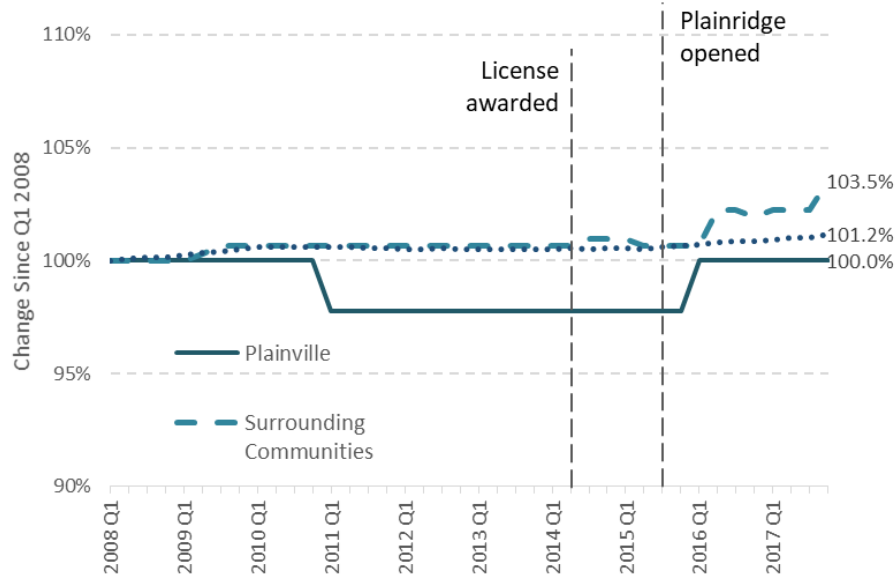
Although only a small number of buildings, the relative growth in Plainville's inventory is interesting within the context of surrounding communities and the Commonwealth. Plainville witnessed a notable relative jump in its commercial inventory coinciding with the construction phase of PPC (Figure 16). The single new industrial building was added just after the opening (Figure 17).

Figure 16: Number of Commercial Buildings, 2008-2017



Source: The CoStar Group Inc.

Figure 17: Number of Industrial Buildings, 2008-2017

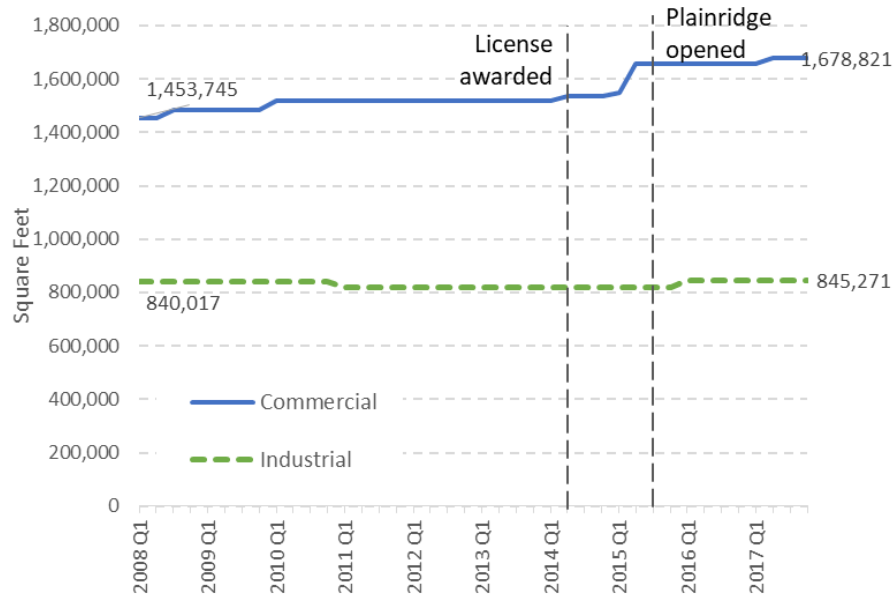


Source: The CoStar Group Inc.

Buildings can vary dramatically in their size and significance to the supply of available and usable space. Another way to examine an area's building inventory is rentable building area (RBA), measured as the usable area (in square feet) of an area's building stock, including associated common areas.

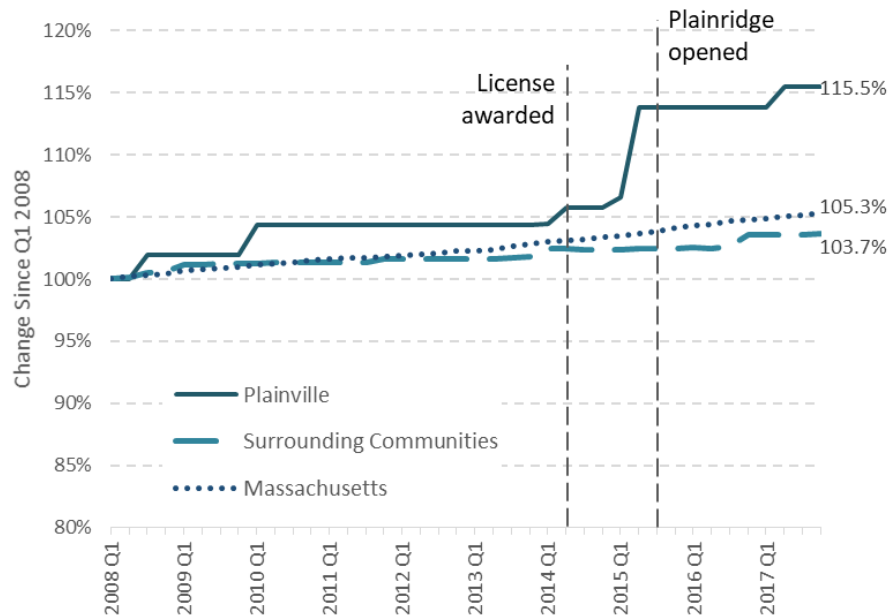
In Plainville, commercial buildings comprise a larger share of the city's rentable building area as well as a larger share of the total number of buildings compared to industrial buildings (Figure 18). Plainville added capacity to its commercial RBA between 2008 and 2017—some of which can be attributed to PPC itself (Figure 19). The newly constructed buildings are likely larger than the average size of existing commercial buildings in Plainville as evidenced by RBA rising faster than the number of buildings.

Figure 18: Plainville Rentable Building Area, 2008-2017



Source: The CoStar Group Inc.

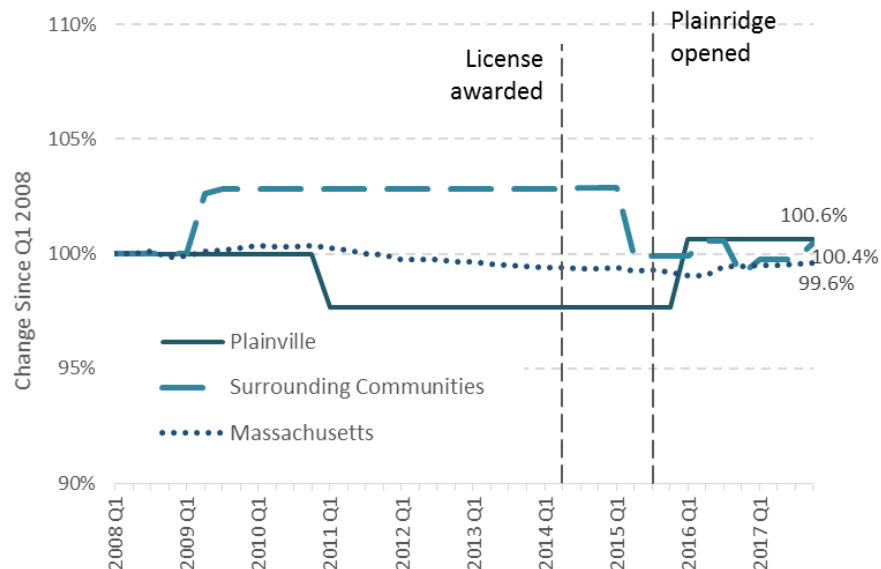
Figure 19: Commercial Rentable Building Area, 2008-2017



Source: The CoStar Group Inc.

Industrial RBA in Plainville fell in the 1st quarter of 2011, but has risen slightly in the years after the opening of PPC (Figure 20). Plainville's recent growth in industrial RBA is in keeping with trends in surrounding communities and the Commonwealth, which has also seen little change in industrial RBA in the last decade.

Figure 20: Industrial Rentable Building Area, 2008-2017



Source: The CoStar Group Inc.

Surrounding Community Building Counts and Rentable Building Area

Table 5 reports changes in the number of buildings and RBA for Massachusetts, Plainville, and individual surrounding communities. At 6.7%, Plainville is one of three area communities to exceed the Commonwealth's growth rate in commercial buildings since the beginning of 2008, with only Wrentham exceeding it. Since the beginning of PPC's construction in the 2nd quarter of 2014, Plainville's growth in terms of both buildings and real buildable area significantly exceeded that of both the State and its surrounding communities, with at least some of that growth being attributable to PPC.

Table 5: Commercial Inventory, Plainville and Surrounding Communities

| Commercial Inventory, Plainville and Surrounding Communities, 2008-2017 | Number of Buildings (Q4 2017) | Percent Change, Q1 2008-Q4 2017 | Percent Change, Q2 2014-Q4 2017 | Rentable Building Area (Square Feet, Q4 2017) | Percent Change, Q1 2008-Q4 2017 | Percent Change, Q2 2014-Q4 2017 |
|---|-------------------------------|---------------------------------|---------------------------------|---|---------------------------------|---------------------------------|
| Massachusetts | 49,602 | 2.0% | 0.7% | 990,782,674 | 5.3% | 2.1% |
| Plainville | 127 | 6.7% | 2.4% | 1,678,821 | 15.5% | 9.2% |
| Surrounding Communities | | | | | | |
| Attleboro | 318 | 1.3% | 0.6% | 4,694,449 | 1.1% | 0.6% |
| Foxborough | 186 | 5.1% | 0.5% | 6,926,334 | 6.1% | 2.3% |
| Mansfield | 191 | 3.8% | 1.1% | 3,969,105 | 2.2% | 0.8% |
| North Attleborough | 195 | 2.1% | 1.6% | 4,392,038 | 2.6% | 0.9% |
| Wrentham | 73 | 9.0% | 0.0% | 1,256,675 | 9.9% | 0.0% |

Source: The CoStar Group Inc.

For industrial properties, Plainville experienced no change in the number industrial buildings between 2008 and 2017 (Table 6). Plainville experienced a slower gain in RBA than any of its surrounding communities except Attleboro, which experienced a decrease in industrial RBA. Massachusetts lost RBA

during the same period, but in terms of percent change, the loss was less severe than the loss in Attleboro. Most of Plainville's industrial growth occurred after the start of PPC's construction, with the area actually losing industrial buildings and RBA between 2008 and 2014. However, it is unclear if there is any relationship between recent industrial developments and the casino.

Table 6: Industrial Inventory, Plainville and Surrounding Communities

| Industrial Inventory, Plainville and Surrounding Communities, 2008-2017 | Number of Buildings (Q4 2017) | Percent Change, Q1 2008-Q4 2017 | Percent Change, Q2 2014-Q4 2017 | Rentable Building Area (Square Feet, Q4 2017) | Percent Change, Q1 2008-Q4 2017 | Percent Change, Q2 2014-Q4 2017 |
|---|-------------------------------|---------------------------------|---------------------------------|---|---------------------------------|---------------------------------|
| Massachusetts | 11,013 | 1.2% | 0.6% | 416,118,399 | -0.4% | 0.2% |
| Plainville | 45 | 0.0% | 2.3% | 845,271 | 0.6% | 3.1% |
| Surrounding Communities | | | | | | |
| Attleboro | 118 | -1.7% | -1.7% | 4,746,792 | -11.2% | -11.2% |
| Foxborough | 48 | 4.3% | 2.1% | 1,273,870 | 7.4% | 4.7% |
| Mansfield | 50 | 2.0% | 0.0% | 5,455,011 | 8.7% | 1.6% |
| North Attleborough | 73 | 5.8% | 5.8% | 1,595,776 | 6.1% | 6.1% |
| Wrentham | 34 | 21.4% | 21.4% | 418,312 | 11.7% | 11.7% |

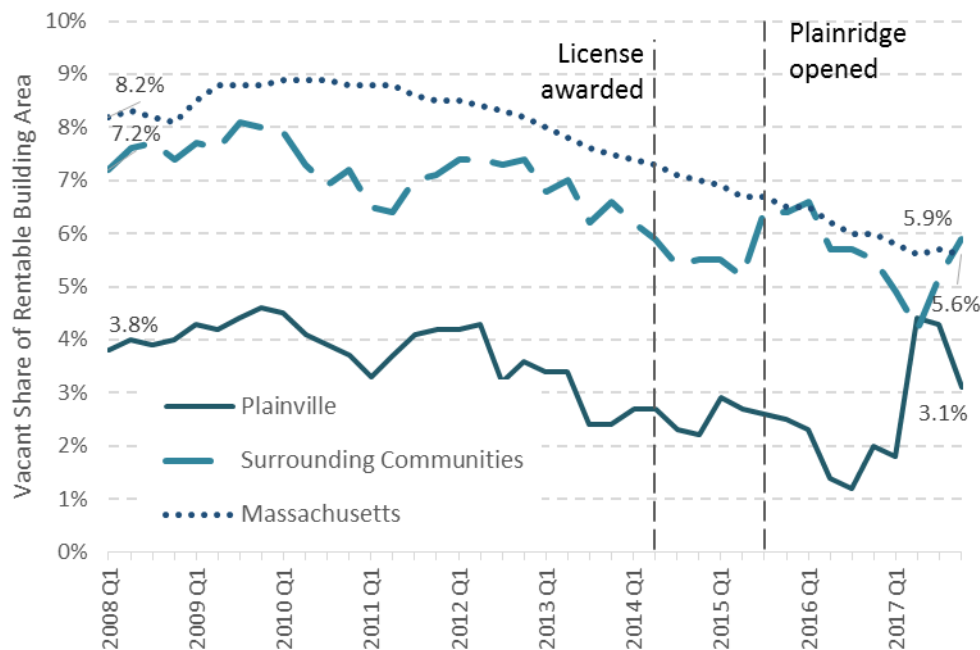
Source: The CoStar Group Inc.

Vacancy and Absorption

Our next set of metrics considers how available space is being utilized. First, we consider vacancy rates. A vacancy rate is the percentage of rentable building area that is not currently in use. Vacancy rates as calculated by CoStar may not take into account abandoned buildings that are not on the market and thus may underestimate true vacancy rates in some distressed communities with considerable blight.

Due to its small size, even minor changes in the supply and demand of space in Plainville can generate relatively large fluctuations in yearly vacancy rates. Nevertheless, commercial vacancy rates in Plainville are far below those of surrounding communities and the Commonwealth (Figure 21). Furthermore, Plainville's commercial vacancy rate has been consistently below that of the State and surrounding communities throughout the study period, suggesting an intensive use of commercial space in Plainville that predated the development of PPC. The commercial market has been getting even tighter in recent years. Plainville's commercial vacancy fell from 3.8% in the 4th quarter of 2008 to 3.1% in the 4th quarter of 2017.

Figure 21: Commercial Vacancy Rates, 2008-2017



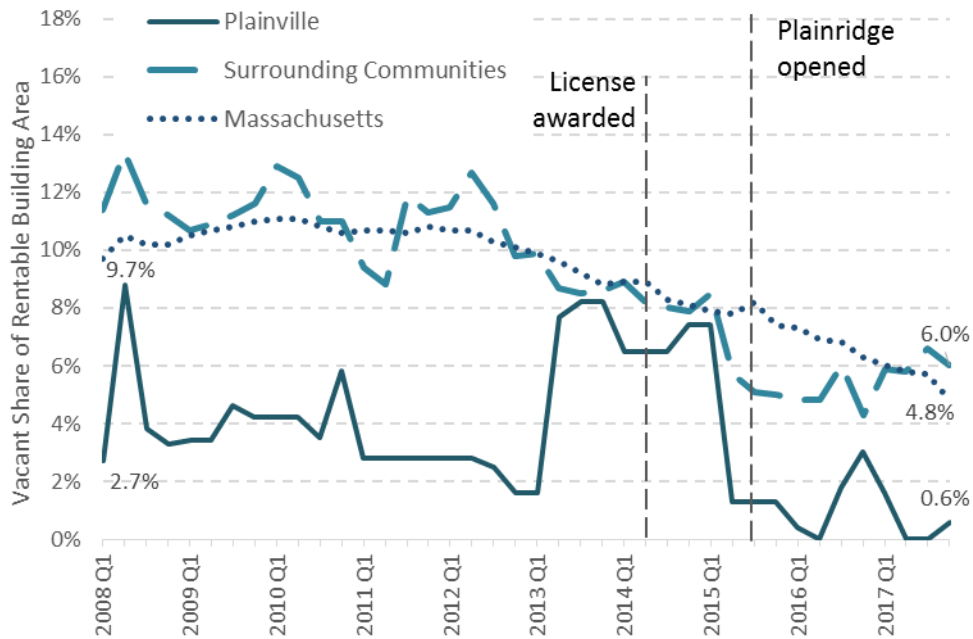
Source: The CoStar Group Inc.

Note: Vacancy rate is calculated as the share of unused rentable building area.

Plainville's industrial vacancy rate is even more volatile than the commercial rate. It has also remained lower than in the surrounding communities or the Commonwealth as a whole throughout the study period (Figure 22). Aside from a temporary spike in 2008, Plainville's industrial vacancy rate declined for most of the study period to a low of less than 2% in 2013. Vacancy rates spiked again in 2013 and have remained high for about two years, before falling again around the time that PPC opened for business. Plainville's industrial vacancy rate currently sits at 0.6%, considerably lower than the rates of the surrounding communities or the Commonwealth.

Next, we consider net absorption. Net absorption is defined as the net change in occupied space in an area's rentable building area from one quarter to the next. It measures the difference between rentable building area that is newly occupied and the rentable building area that is no longer occupied since the last period. Because net absorption is presented in terms of square feet, not as a share of rentable building area, it captures changes in the market that may not be detected by the vacancy rate alone. For example, a vacant building that is taken off of the market entirely would cause a fall in the vacancy rate, but no corresponding change in net absorption. Analysis typically considers several consecutive quarters of high positive net absorption as indicative of shrinking supply of available space and sends a signal to developers that the market is ripe for construction. Net absorption is measured quarterly, so each point measures the net change in occupied rentable building area during that quarter. Zero net absorption indicates no change from the previous quarter. Although typically measured in square feet, Figure 23 and Figure 24 report net absorption in standardized units (i.e., each divided by its standard deviation) to allow for comparison across Plainville, surrounding communities, and the State.

Figure 22: Industrial Vacancy Rates, 2008-2017

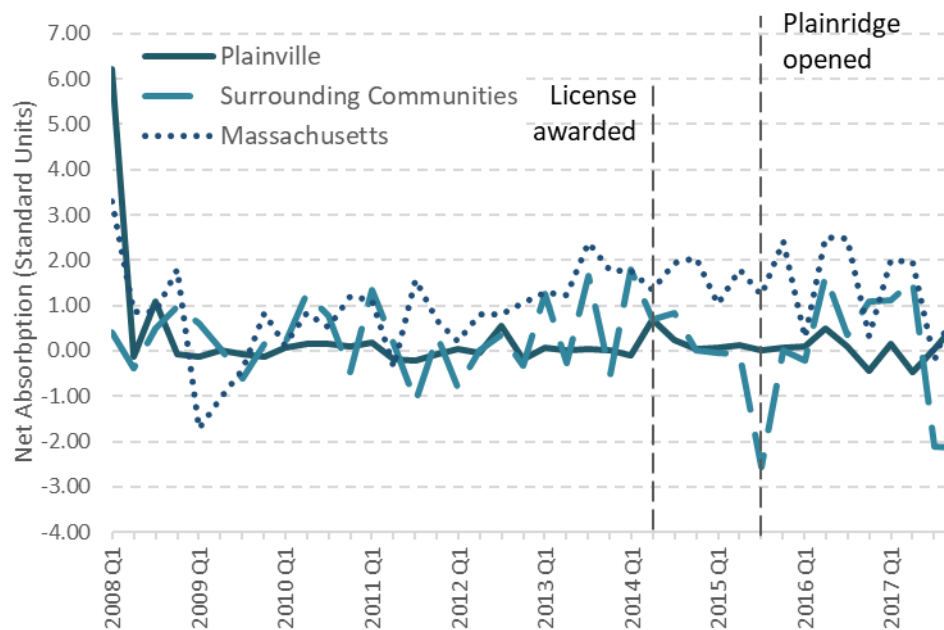


Source: The CoStar Group Inc.

In Plainville, commercial net absorption has hovered fairly close to zero in most quarters since a positive spike in the 1st quarter of 2008 (Figure 23). On the whole, the trend in Plainville has been positive, with 27 of the 40 quarters showing gains in occupied RBA and a net increase of 241,555 square feet in occupied RBA since 2008. Massachusetts saw much more significant trends during this same period, with 35 of the 40 quarters showing positive net absorption and an increase of roughly 53 million more square feet of occupied commercial RBA since the 1st quarter of 2008.

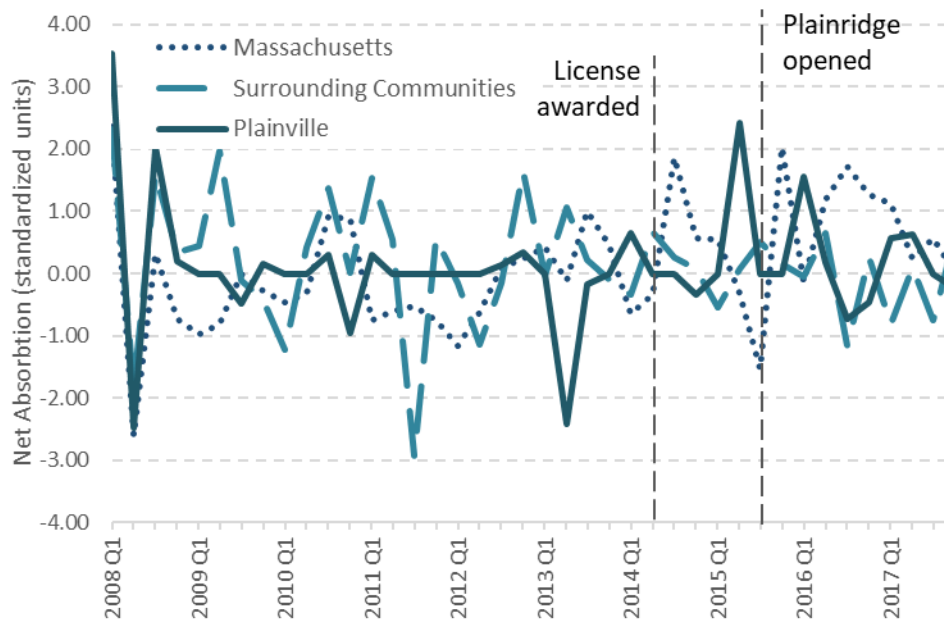
Many quarters saw no change in net absorption for industrial properties in Plainville (Figure 24). Plainville's net absorption changed in only 25 of 40 quarters, with 14 of those being positive shifts and 11 being negative. This is to be expected given the small number of industrial buildings in Plainville and stands in contrast to the industrial net absorption of Massachusetts, which saw 20 positive quarters and 20 negative quarters. By the end of 2017, Plainville had almost a million more square feet of occupied industrial RBA, while Massachusetts gained just over 416 million square feet.

Figure 23: Commercial Net Absorption (measured in standardized units), 2008-2017



Source: The CoStar Group Inc.

Figure 24: Industrial Net Absorption (measured in standardized units), 2008-2017



Source: The CoStar Group Inc.

Surrounding Community Vacancy and Absorption Rates

Table 7 compares the commercial and industrial vacancy rate and net absorption in Plainville to surrounding communities—designated as “official surrounding communities” by the Massachusetts

Gaming Commission. For commercial properties, Plainville's vacancy rate of 3.1% is the lowest when compared to the surrounding communities and is much lower than Massachusetts' vacancy rate in 2017. Every town except Mansfield and Wrentham had a 2017 vacancy rate below or equal to the State level. Attleboro and Foxborough all had larger decreases in commercial vacancy rates than the State, while Plainville experienced a smaller decrease and Mansfield, North Attleborough, and Wrentham experienced increases in the vacancy rate. While almost half of the commercial net absorption for the State occurred since the beginning of PPC's construction, just over 10% of Plainville's commercial net absorption occurred in that timeframe.

Table 7: Commercial Vacancy and Absorption, Plainville and Surrounding Communities

| Commercial Vacancy and Absorption, Plainville and Surrounding Communities, 2008-2017 | Vacancy Rate (Q4 2017) | Change, Q1 2008-Q4 2017 | Change, Q2 2014-Q4 2017 | Net Absorption (Q1 2008-Q4 2017) | Net Absorption, (Q2 2014-Q4 2017) |
|---|-------------------------------|--------------------------------|--------------------------------|---|--|
| Massachusetts | 5.6% | -2.6% | -1.7% | 53,453,852 | 25,615,534 |
| Plainville | 3.1% | -0.7% | 0.4% | 241,555 | 29,049 |
| Surrounding Communities | | | | | |
| Attleboro | 3.5% | -7.4% | -2.3% | 248,039 | 88,570 |
| Foxborough | 3.2% | -6.2% | -2.0% | 504,844 | 102,385 |
| Mansfield | 10.0% | 3.3% | 5.3% | -110,712 | -211,470 |
| North Attleborough | 5.6% | 1.5% | -0.8% | -37,169 | -21,841 |
| Wrentham | 10.7% | 9.5% | 0.0% | -4,587 | -163 |

Source: The CoStar Group Inc.

Notes: Vacancy rate from CoStar data are defined as the share of unused rentable building area. Net absorption is the net change in occupied space in a geography's rentable building area.

At 1.8%, Plainville's industrial vacancy rate is the lowest in the area and substantially lower than the State rate (Table 8). Among the surrounding communities, only Attleboro and Foxborough have an industrial vacancy rate higher than that of the State. Between the 1st quarter in 2008 and the 4th quarter in 2017, every community in the area followed the State trend of falling industrial vacancy rates and positive industrial net absorption, although those trends do not hold for every community since the start of PPC's construction.

Table 9 presents an alternative concept of vacancy rates, based upon the share of vacant mailing addresses, instead of vacant properties on the market. Information on vacant mailing addresses is taken from Valassis Lists, a direct mail marketing firm, which supplies United States Postal Service vacancy data to the web-based mapping company PolicyMap. Valassis Lists includes commercial and industrial buildings that have been abandoned as well as other properties that are not on the market as a share of all buildings. Unfortunately, Valassis Lists does not consider vacancy rates in relation to square footage, nor does it distinguish commercial from industrial properties. While they may not be directly comparable, when viewed together, both CoStar and Valassis help to provide a more complete view of vacancy in the host and surrounding communities.

Table 8: Industrial Vacancy and Absorption, Plainville and Surrounding Communities

| Industrial Vacancy and Absorption, Plainville and Surrounding Communities, 2008-2017 | Vacancy Rate (Q4 2017) | Change, Q1 2008-Q4 2017 | Change, Q2 2014-Q4 2017 | Net Absorption (Q1 2008- Q4 2017) | Net Absorption, (Q2 2014-Q4 2017) |
|--|------------------------|-------------------------|-------------------------|-----------------------------------|-----------------------------------|
| Massachusetts | 4.8% | -4.9% | -4.1% | 416,118,399 | 795,569 |
| Plainville | 0.6% | -2.1% | -5.9% | 845,271 | 25,054 |
| Surrounding Communities | | | | | |
| Attleboro | 10.7% | -1.2% | -3.9% | 4,746,792 | -599,000 |
| Foxborough | 4.9% | -15.7% | 4.4% | 1,273,870 | 57,300 |
| Mansfield | 4.0% | -6.4% | -0.8% | 5,455,011 | 84,729 |
| North Attleborough | 0.9% | -4.2% | -4.2% | 1,595,776 | 92,201 |
| Wrentham | 2.1% | -9.5% | -2.2% | 418,312 | 43,705 |

Source: The CoStar Group Inc.

Notes: Vacancy rates from CoStar data are defined as the share of unused rentable building area. Net absorption is the net change in occupied space in a geography's rentable building area.

For every community in the surrounding area except for Attleboro, data was collected at the zip-code level. At 12.2%, Plainville's Valassis vacancy rate is higher than that of the Commonwealth as a whole, but lower than its southern neighbors of North Attleboro and Attleboro. The remaining communities in the surrounding area all have Valassis vacancy rates lower than that of the Commonwealth.

Table 9: Valassis Vacancy Rates

| Vacancy Rates, Plainville and Surrounding Communities, 2008-2017 | Valassis Vacancy Rate, All Businesses, Q4 2017 |
|--|--|
| Massachusetts | 8.3% |
| Plainville | 10.7% |
| Surrounding Communities | |
| Attleboro | 20.0% |
| Foxborough | N/A |
| Mansfield | 21.9% |
| North Attleborough | 8.3% |
| Wrentham | 10.6% |

Source: Valassis Lists

Notes: Vacancy rates from Valassis Lists are defined as the share of vacant addresses according to the US Postal Service

Lease Rates

Price is another important factor in an area's real estate market. While there are a number of factors that determine what price properties charge in rent, it stands to reason that those areas with higher lease rates are areas that are seen as more desirable by organizations seeking space to rent. There are, however, a few exceptions and caveats. First, some organizations own the space they occupy and those properties are not included in the CoStar lease data. Second, individual buildings may possess

characteristics which make them particularly valuable to certain types of businesses and organizations. This can make a direct comparison difficult. In this respect, the difference in lease rates between municipalities may say as much about the mix of business activities of those municipalities as it does about their relative economic health.

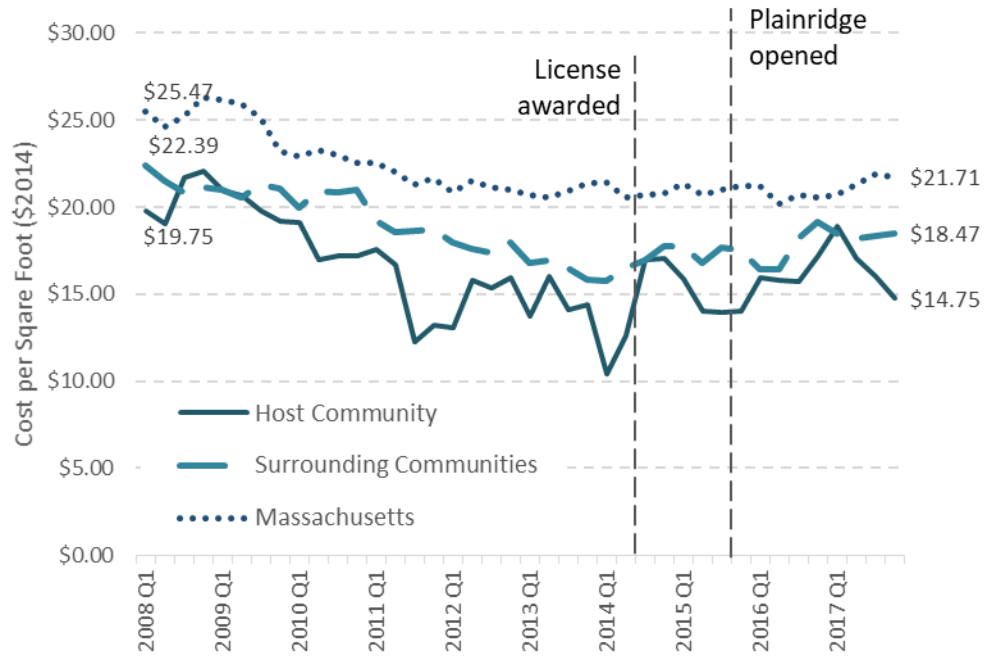
We analyze lease rates separately for industrial and commercial space, dividing commercial leases into two groups: office and non-office real estate. This is because there are often significant differences in the lease rates between office and non-office real estate.¹¹ Office commercial real estate often includes the offices of professional service firms, lawyers, doctors, and government buildings, etc., while non-office commercial real estate includes restaurants, retail stores, sports and entertainment facilities, transportation facilities, and many other types of real estate. Lease rates for industrial real estate are also presented.

Office real estate in Plainville leases at a lower rate than both the State and the surrounding communities, as it has over the 10 year study period (Figure 25). Office real estate in Plainville leases at approximately \$7 less per square foot than the average rate for the Commonwealth and roughly \$4 less than the average for the surrounding communities. Commercial office lease rates are also more volatile in Plainville, which is not surprising given the relatively small number of commercial office properties. Even so, we see little evidence of either a sustained spike or decline in commercial leasing rates in either Plainville or its surrounding communities following the construction or opening of PPC.

There has been more of a sustained rise in non-commercial lease rates in surrounding communities following the opening of PPC. However, we see no similar trend for Plainville, where real lease rates for non-commercial properties have actually declined in recent years. For most of the last 10 years, lease rates for non-office commercial properties in Plainville have been roughly similar to those of Massachusetts and the surrounding communities (Figure 26). By the 4th quarter of 2017, the lease rate in Plainville had fallen to roughly \$3 below that of the Commonwealth as a whole, with the rate for the surrounding communities being significantly higher than either.

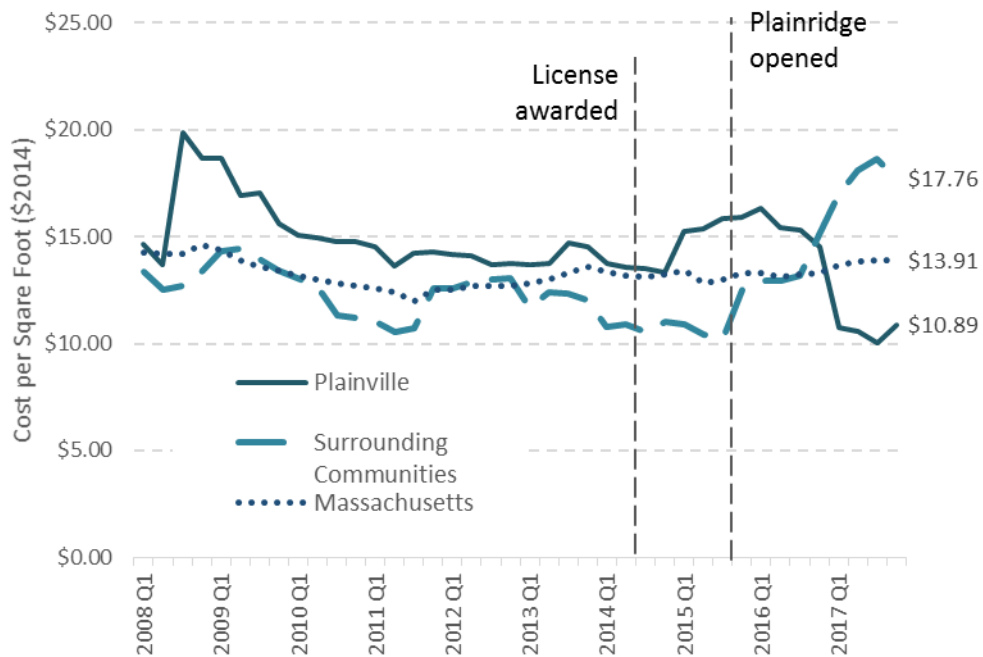
¹¹ CoStar's full definition of an office building reads as follows: "The primary intended use of an office building is to house employees of companies that produce a product or service primarily for support services such as administration, accounting, marketing, information processing and dissemination, consulting, human resources management, financial and insurance services, educational and medical services, and other professional services. Office buildings are characterized by work efficient floor plans, work areas, comfortable heating and cooling, cabling for phones and computers, and other conveniences that allow people conduct business. The interior finish and the structural design of the building supports the activities of the employees. Office buildings are typically configured for high density use, with a ratio of people to square footage in the 150 to 300 or more range and less than 25% of the demised floor space allocated to industrial or retail use. Some physical characteristics of a building may assist in classifying the property as "office" if the property's use is not apparent."

Figure 25: Office Commercial Lease Rates (2014 dollars), 2008-2017



Source: The CoStar Group Inc.

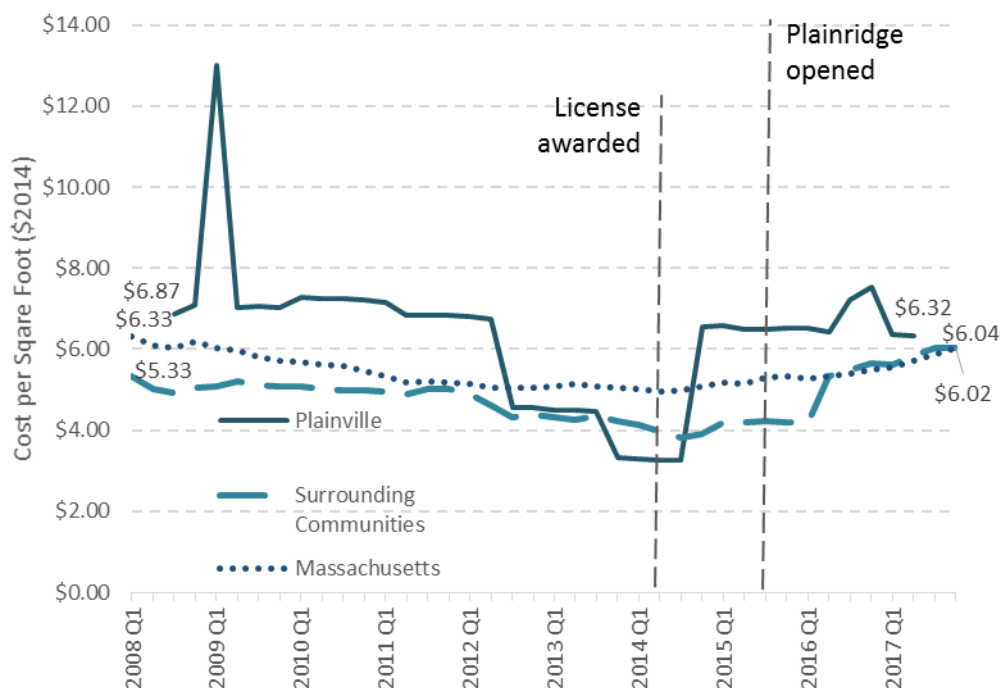
Figure 26: Non-Office Commercial Lease Rates (2014 dollars), 2008-2017



Source: The CoStar Group Inc.

Because of the small number of industrial buildings in the area, lease rate data is not available for every quarter in Plainville. For the quarters which data is available, industrial lease rates have been more similar between Plainville, the surrounding communities, and the Commonwealth than they have been for commercial lease rates (Figure 27). For much of the last 10 years, Plainville's average industrial lease rate has actually been higher than that of the other two geographies, if much more volatile. This volatility is to be expected, given the very small number of industrial buildings in Plainville.

Figure 27: Industrial Lease Rates (2014 dollars), 2008-2017



Source: The CoStar Group Inc.

Surrounding Community Lease Rates

At \$14.22 per square foot (2014 dollars), Plainville joins all of the surrounding communities in falling below the State commercial office lease rate of \$20.94 (Table 10). It also joins four of its surrounding communities in having experienced a decline in commercial office lease rates, with only Wrentham showing an increase in rates. While the trend over the last 10 years has been one of declining commercial office lease rates, Plainville has experienced rising commercial office lease rates since the middle of 2014, when construction began at PPC. The extent to which PPC has played a role in this recent reversal is difficult to discern, but Plainville is not alone, with Attleboro, Foxborough, North Attleborough, and Massachusetts as a whole experiencing the same reversal.

Table 10: Commercial Lease Rates, Plainville and Surrounding Communities

| Area | Office Lease Rates | | | Non-Office Lease Rates | | |
|--------------------------------|--|---|---|--|---|---|
| | Q4 2007 Rate Per Sq Ft (\$2014) | Percent Change, Q1 2008- Q4 2017 | Percent Change, Q2 2014- Q4 2017 | Q4 2007 Rate Per Sq Ft (\$2014) | Percent Change, Q1 2008- Q4 2017 | Percent Change, Q2 2014- Q4 2017 |
| Massachusetts | \$20.94 | -14.7% | 5.8% | \$13.41 | -2.6% | 5.5% |
| Plainville | \$14.22 | -25.3% | 17.1% | \$10.50 | -25.7% | -19.9% |
| Surrounding Communities | | | | | | |
| Attleboro | \$15.32 | -8.1% | 27.2% | \$23.81 | 92.4% | 147.1% |
| Foxborough | \$20.14 | -16.0% | 8.8% | \$15.16 | 36.5% | 4.0% |
| Mansfield | \$18.32 | -21.4% | -6.7% | \$13.10 | -25.2% | -13.5% |
| North Attleborough | \$16.12 | -25.0% | 16.1% | \$11.90 | -5.4% | 30.3% |
| Wrentham | \$12.09 | 17.8% | -7.7% | \$11.82 | -52.4% | -52.3% |

Source: The CoStar Group Inc.

Notes: Lease rates are presented in real 2017 dollars. Data in this table is annual averages of quarterly data.

Commercial lease rate data for Wrentham is not available before Q4 2008. This is the calculation from the earliest available point.

Plainville joins all of the surrounding communities except for Attleboro and Foxborough in having commercial non-office lease rates that are lower than the Massachusetts average of \$13.41 (2014 dollars). While Plainville's rate has been steadily declining over most of the 10-year study period, the dramatic rates of change found in other communities suggests that this is a particularly volatile market in the area.

Plainville is one of five communities in the area to have industrial lease rates that currently exceed the Commonwealth average of \$5.82 (2014 dollars, Table 11). While the shift over the last 10 years is inconsistent, industrial lease rates in surrounding communities and the Commonwealth have all risen since the 2nd quarter of 2014, suggesting that Plainville's rise in this area since 2014 is part of a larger trend.

Table 11: Industrial Lease Rates, Plainville and Surrounding Communities

| Area | Q4 2007 Rate Per Sq Ft (\$2014) | Percent Change, Q1 2008- Q4 2017 | Percent Change, Q2 2014- Q4 2017 |
|--------------------------------|------------------------------------|-------------------------------------|-------------------------------------|
| Massachusetts | \$5.82 | -4.6% | 21.5% |
| Plainville | \$6.14 | -8.1% | -10.9% |
| Surrounding Communities | | | |
| Attleboro | \$3.82 | -16.4% | 50.7% |
| Foxborough | \$6.85 | 41.9% | 39.2% |
| Mansfield | \$5.79 | -1.7% | 22.1% |
| North Attleborough | \$7.37 | 12.9% | 54.0% |
| Wrentham | \$9.35 | -11.5% | -0.6% |

Source: The CoStar Group Inc.

Notes: Lease rates are presented in real 2017 dollars. Data in this table is annual averages of quarterly data.

Industrial lease rate data for Plainville is not available before Q3 2008 or after Q2 2017. This is the calculation from the earliest available point.

Conclusion

Since the award of its gaming license and subsequent opening in 2015, the Plainridge Park Casino (PPC) has not had a strong effect on several indicators that measure the local residential, commercial, and industrial real estate markets. For instance, there was an increase in single-family home and condominium sales following the awarding of the gaming license and opening of PPC in both Plainville and surrounding communities. However, this rise is consistent with broader trends in the region and thus unlikely to be purely attributable to PPC. There was also a slight rise in the real sales price of single-family homes in Plainville and surrounding communities in the first year following the opening of PPC, but this is also comparable to regional and statewide trends. Other than an increase in the amount of commercial space, the evidence suggests that the opening of PPC did not substantially change commercial or industrial real estate conditions in Plainville or its surrounding communities. The largely insignificant impact of PPC on real estate markets in host and surrounding communities is unsurprising as the slot parlor component of PPC was developed on the site of an existing harness racing facility in a relatively remote part of the town, with no new buildings being occupied or displaced in the process.