

## MEMORANDUM

**TO:** Mr. Domenic Longobardi  
Director of Non-Gaming Operations  
Plainridge Park Casino  
301 Washington Street  
Plainville, Massachusetts 02762

**FROM:** Mr. Jeffrey S. Dirk, P.E., PTOE, FITE  
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**DATE:** September 26, 2019

**RE:** 6964

**SUBJECT:** 2019 Traffic Monitoring Program  
Plainridge Park Casino  
Plainville, Massachusetts

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Vanasse & Associates, Inc. (VAI) has completed the 2019 Traffic Monitoring Program for the Plainridge Park Casino located at 301 Washington Street (Route 1) in Plainville, Massachusetts (hereafter referred to as the “Project”). The 2019 Traffic Monitoring Program is the latest update to the monitoring studies that have been completed subsequent to the opening of the Project in 2016 pursuant to the Massachusetts Department of Transportation (MassDOT) Section 61 Finding. Consistent with the prior traffic monitoring reports, this report includes a review of: i) traffic volumes; ii) trip patterns; iii) traffic operations; and iv) safety; along Route 1 and at defined intersections. In addition, an updated summary of the elements of the Transportation Demand Management (TDM) program that have been implemented for employees and patrons is provided, along with the results from a recent survey of employee and patron travel modes. As required by the MassDOT Section 61 Finding, the results of the 2019 Traffic Monitoring Program are being submitted to MassDOT, the Town of Plainville, the Southeastern Regional Planning and Economic Development District (SRPEDD), the Greater Attleboro Taunton Regional Transit Authority (GATRA) and the Secretary of Energy and Environmental Affairs.

Based on a review of the results of the 2019 Traffic Monitoring Program, we have noted the following with respect to the Project:

1. The *measured* traffic volumes associated with the Project were found to be approximately four (4) percent lower on an average weekday, 52 percent higher during the weekday morning peak-hour, 28 percent higher during the Friday evening peak-hour and four (4) percent higher during the Saturday afternoon peak-hour when compared to the traffic volume *projections* for the Project. As documented herein, sufficient capacity is afforded at the Project site driveway intersection with Route 1 and at the monitored intersections to accommodate the variation in traffic volumes associated with the Project;
2. The 2019 observed peak-hour traffic volumes within the study area were found to be similar to the conditions that were documented in the 2015 Baseline Study;

3. A review of motor vehicle crash data indicates that the study intersections exhibited similar crash patterns before and after the opening of the Project and, with the exception of the Route 1/Route 152 intersection, were found to have motor vehicle crash rates that were below both the MassDOT statewide and District averages for a signalized or unsignalized intersection, as appropriate, for the MassDOT Highway Division District in which the intersections are located (District 5);
4. The Route 1/Route 152 intersection was found to have experienced a decrease in the number of reported crashes after the opening of the Project (17 crashes in 2015 vs. 10 crashes in 2017); however, the calculated motor vehicle crash rate continues to be above the MassDOT average crash rate (statewide and District 5) for a signalized intersection. The majority of the crashes occurring at the intersection were reported as rear-end type collisions that resulted in property damage only. A Road Safety Audit (RSA) was conducted for this intersection in 2014 as a part of the Project and a number of the recommendations from the RSA have been implemented. It is likely that these improvements have contributed to the reduction in the number of motor vehicle crashes occurring at the intersection;
5. Eighteen motor vehicle crashes were reported to have occurred at the Route 1/Plainridge Park Casino driveway intersection over the 5-year review period, the majority of which occurred on a weekday, involved rear-end type collisions that were attributed to driver error, and resulted in property damage only. The calculated motor vehicle crash rate at the intersection was found to be below the MassDOT average crash rates for a signalized intersection;
6. Operating conditions at the majority of the monitored intersections were found to be similar to the conditions that were documented as a part of the 2015 Baseline Study, indicating that the opening of the Project and the associated increase in traffic volumes did not result in a significant increase in motorist delays or vehicle queuing over the conditions that existed prior to the opening of the Project with consideration of the noted traffic volume differentials during the peak hours;
7. The intersection of Route 1 at the Plainridge Park Casino driveway was shown to operate at an overall level-of-service (LOS) B or better during both the weekday evening and Saturday afternoon peak hours, with all movements reported to be operating at LOS C or better where a LOS of “D” or better is considered “acceptable” operating conditions;
8. Approximately 92 percent of patrons and employees arrive to the Project site alone in a private automobile, with approximately 70 percent indicating that they were not aware of public transportation or car/vanpool opportunities. The majority of patrons and employees indicated that they would not use or participate in a shuttle program from an off-site parking facility and would not walk or bicycle to the Project site if sidewalks and bicycle lanes were available; and
9. Twenty-four (24) percent of employees indicated that they were not aware of the corporate Transportation Demand Management (TDM) program but would participate. This indicates a distinct opportunity to increase employee participation in the TDM program.

In consideration of these findings, we have concluded that the measured impact of the Project on traffic volumes, trip patterns, motor vehicle crash trends, and traffic operations (levels of service, motorist delays and vehicle queuing) has been relatively minor, with operating conditions at the monitored intersections found to be similar to the conditions that were documented as a part of the 2015 Baseline Study. Further, opportunities exist to increase employee participation in the TDM program and the use of public transportation services and car/vanpool participation by both patrons and employees.

The following summarizes the results of the 2019 Traffic Monitoring Program.



## **EXISTING CONDITIONS**

An updated field inventory of existing conditions within the study area was conducted in June 2019. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area for the 2019 Traffic Monitoring Program was developed in consultation with MassDOT and includes the major roadway that provide access to the Project site, Washington Street (Route 1), as well as six (6) major intersections (including the Project site driveway) through which Project related traffic will travel which are listed below and depicted on Figure 1.

1. Route 1 at Madison Street (Wrentham)
2. Route 1 at the I-495 Northbound Ramps (Plainville)
3. Route 1 at the I-495 Southbound Ramps (Plainville)
4. Route 1 at the Plainridge park casino Drive (Plainville)
5. Route 152 at Route 1 Southbound Jughandle (Plainville)
6. Route 1 at Route 152 (Plainville)

The following describes existing conditions within the study area.

### **Roadway**

#### **Washington Street (Route 1)**

- Four-lane roadway under the jurisdiction of MassDOT that is functionally classified as an urban principal arterial roadway north of I-495 and as an urban minor arterial to the south
- Provides full access interchanges with I-495 (Exit 14) and I-95 (Exit 9) to the north of the Project site and with I-295 to the south (Exit 1)
- Provides two 11 to 23-foot wide travel lanes per direction that are separated by a raised median or double-yellow centerline with variable width marked shoulders and additional travel lanes provided at major intersections
- Sidewalks are not provided within the study area
- Provides sufficient width (combined travel lane and shoulder) to support bicycle travel in a shared traveled-way configuration<sup>1</sup> with marked bicycle lanes provided between Taunton Street (Route 152) and the I-495 southbound ramps
- The posted speed limit within the study area is 45 miles per hour (mph)

### **Intersections**

Table 1 and Figure 2 summarize lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections.

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<sup>1</sup>A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.

**Table 1**  
**STUDY AREA INTERSECTION DESCRIPTION**

| No. | Intersection                                     | Traffic Control Type <sup>a</sup> | No. of Travel Lanes Provided  | Shoulder Provided? (Yes/No/Width)    | Pedestrian Accommodations? (Yes/No/Description)   | Bicycle Accommodations? (Yes/No/Description)   |
|-----|--|-----------------------------------|---|--------------------------------------|---|--|
| 1.  | Route 1/<br>Madison Street                       | TS                                | 2 per direction on Route 1 with turn lanes; 1 left/thru lane and 1 right-turn lane on Madison Street eastbound and 1 general-purpose lane on Madison Street westbound | Yes – 1 to 15 feet on Route 1        | No  | Yes - Shared traveled-way <sup>b</sup>   |
| 2.  | Route 1/I-495 Northbound Ramps                   | F                                 | 2 per direction on Route 1 with turn lanes; 1 per direction on I-495 ramps  | Yes – 2 to 3 feet on all approaches  | No  | Yes - Shared traveled-way  |
| 2A. | Route 1 Northbound/<br>I-495 Northbound Off-Ramp | TS                                | 2 per direction on Route 1 and I-495 Northbound Off-Ramp  | Yes – 1 to 12 feet on all approaches | No  | Yes – Shared traveled-way  |
| 3.  | Route 1/I-495 Southbound Ramps                   | F                                 | 2 per direction on Route 1 with turn lanes; 1 per direction on I-495 ramps  | Yes – 2 to 3 feet on all approaches  | No  | Yes - Shared traveled-way  |
| 3A. | Route 1 Southbound/<br>I-495 Southbound Off-Ramp | TS                                | 2 per direction on Route 1 and I-495 Southbound Off-ramp  | Yes – 1 to 12 feet on all approaches | No  | Yes – Bicycle lane on Route 1 Southbound   |
| 4.  | Route 1/<br>Plainridge Park Casino Drive         | TS                                | 2 per direction on Route 1 with turn lanes; 1 left-turn lane and 2 right-turn lanes on Plainridge Park Casino Drive   | Yes – 1 to 5 feet on all approaches  | No  | Yes – Bicycle lane on Route 1 and shared traveled-way on Plainridge Park Casino Driveway with “sharrow” pavement markings; bicycle detection on all approaches |
| 5.  | Route 152/ Route 1 Southbound Jughandle          | TS                                | 2 per direction on Route 1; 2 left-turn lanes and 1 right-turn lane on Route 1 Southbound Jughandle   | Yes – 1 to 2 feet on all approaches  | No  | Yes – Bicycle detection on all approaches  |
| 6.  | Route 152/<br>Route 106                          | TS                                | 1 per direction on Route 152 with turn lanes; 1 per direction on Route 106 with turn lanes  | Yes – 1 to 4 feet on all approaches  | Yes – Sidewalks along both sides of Route 152 and Route 106; crosswalks on all approaches; exclusive pedestrian phase with pushbutton actuation | Yes - Shared traveled-way  |

<sup>a</sup>TS = traffic signal control; S = STOP-sign control; Y = Yield-sign control; F = free-flow (added lane).

<sup>b</sup>Combined shoulder and travel lane width equal to or exceeds 14 feet.



## **EXISTING TRAFFIC VOLUMES**

Traffic volume data for the 2019 Traffic Monitoring Program was obtained from automatic traffic recorder (ATR) counts and manual turning movement counts (TMCs) conducted in June 2019. The ATR counts were completed over a continuous seven-day, week-long period on the driveway that serves the Project site, with weekday evening (4:00 to 7:00 PM) and Saturday afternoon (2:00 to 5:00 PM) peak-period manual TMCs performed at the study area intersections. These time periods were selected as they are representative of the peak traffic volume periods for both the Project and the proximate roadway network.

### **Traffic Volume Adjustments**

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, monthly traffic volumes obtained from the closest MassDOT permanent count station to the Project site were reviewed (Permanent Count Station No. 6248 located on Interstate-95 (I-95), north of Interstate-495 (I-495), in Foxborough).<sup>2</sup> Based on a review of the count station data, it was determined that traffic volumes for the month of June are approximately 8.5 percent above average-month conditions. In order to allow for a comparison between the 2019 traffic volume data and the traffic volume data that was collected in conjunction with the 2015 Baseline Study (which was adjusted to average-month conditions), the June traffic volume data was adjusted downward by 8.5 percent in order to be representative of average-month traffic volume conditions. The 2019 weekday evening and Saturday afternoon peak-hour traffic volumes are graphically depicted on Figures 3 and 4, respectively. A review of the 2019 traffic volume data indicates that the peak-hour traffic volumes are similar to or slightly lower than those that were reported in the 2015 Baseline Study. Copies of the peak-hour traffic volume networks from the 2015 Baseline Study are included in the Appendix for reference.

### **Motor Vehicle Crash Data**

Motor vehicle crash information for the study intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2013 through 2017, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, and day of occurrence, and presented in Table 2.

As can be seen in Table 2, with the exception of the Route 1/Route 152 intersection, the study intersections were found to have a calculated crash rate below the MassDOT statewide and District 5 averages for a signalized or unsignalized intersection, as appropriate. The majority of the crashes reported at the intersections involved property damage only; occurred on a weekday; and were reported as either angle or rear-end-type collisions.

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<sup>2</sup>MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2019.

**Table 2**  
**MOTOR VEHICLE CRASH DATA SUMMARY<sup>a</sup>**

|  | Route 1/<br>Madison Street | Route 1/<br>I-495 Northbound<br>Ramps | Route 1/<br>I-495 Southbound<br>Ramps | Route 1/<br>Plainridge Park<br>Casino Drive | Route 1/<br>Route 152 | Route 152/<br>Route 1<br>Southbound<br>Jughandle |
|--|----------------------------|---------------------------------------|---------------------------------------|---|-----------------------|--|
| <i>Traffic Control Type<sup>b</sup>:</i> | U                          | I                                     | I/TS                                  | TS  | TS                    | TS   |
| <i>Year:</i>                             |                            |                                       |                                       |   |                       |  |
| 2013                                     | 6                          | 2                                     | 6                                     | 0   | 15                    | 1  |
| 2014                                     | 6                          | 8                                     | 2                                     | 0   | 15                    | 0  |
| 2015                                     | 6                          | 1                                     | 7                                     | 5   | 17                    | 2  |
| 2016                                     | 5                          | 1                                     | 4                                     | 5   | 10                    | 1  |
| <u>2017</u>                              | <u>8</u>                   | <u>0</u>                              | <u>8</u>                              | <u>8</u>                                    | <u>10</u>             | <u>0</u>   |
| Total                                    | 31                         | 12                                    | 27                                    | 18  | 67                    | 4  |
| Average                                  | 6.20                       | 2.40                                  | 5.40                                  | 3.60  | 13.40                 | 0.80   |
| Rate <sup>c</sup>                        | 0.43                       | 0.14                                  | 0.34                                  | 0.30  | 0.99                  | 0.16   |
| MassDOT Crash Rate <sup>d</sup>          | 0.57/0.57                  | 0.57/0.57                             | 0.57/0.57                             | 0.78/0.75                                   | 0.78/0.75             | 0.78/0.75  |
| Significant? <sup>e</sup>                | No                         | No                                    | No                                    | No  | Yes                   | No   |
| <i>Type:</i>                             |                            |                                       |                                       |   |                       |  |
| Angle                                    | 9                          | 0                                     | 0                                     | 1   | 22                    | 0  |
| Rear-End                                 | 12                         | 2                                     | 12                                    | 14  | 39                    | 2  |
| Head-On                                  | 2                          | 0                                     | 0                                     | 1   | 1                     | 0  |
| Fixed Object                             | 1                          | 0                                     | 3                                     | 0   | 2                     | 1  |
| Sideswipe                                | 7                          | 2                                     | 6                                     | 0   | 2                     | 1  |
| Pedestrian                               | 0                          | 0                                     | 0                                     | 0   | 0                     | 0  |
| <u>Other/Unknown</u>                     | <u>0</u>                   | <u>8</u>                              | <u>6</u>                              | <u>2</u>                                    | <u>1</u>              | <u>0</u>   |
| Total                                    | 31                         | 12                                    | 27                                    | 18  | 67                    | 4  |
| <i>Severity:</i>                         |                            |                                       |                                       |   |                       |  |
| Property Damage Only                     | 22                         | 8                                     | 25                                    | 13  | 52                    | 4  |
| Personal Injury                          | 9                          | 4                                     | 2                                     | 5   | 15                    | 0  |
| <u>Fatal</u>                             | <u>0</u>                   | <u>0</u>                              | <u>0</u>                              | <u>0</u>                                    | <u>0</u>              | <u>0</u>   |
| Total                                    | 31                         | 12                                    | 27                                    | 18  | 67                    | 4  |
| <i>Day of Week:</i>                      |                            |                                       |                                       |   |                       |  |
| Monday through Friday                    | 23                         | 10                                    | 22                                    | 14  | 51                    | 3  |
| Saturday                                 | 4                          | 1                                     | 1                                     | 3   | 8                     | 1  |
| <u>Sunday</u>                            | <u>4</u>                   | <u>1</u>                              | <u>4</u>                              | <u>1</u>                                    | <u>8</u>              | <u>0</u>   |
| Total                                    | 31                         | 12                                    | 27                                    | 18  | 67                    | 4  |

<sup>a</sup>Source: MassDOT Safety Management/Traffic Operations Unit records, 2013 through 2017.

<sup>b</sup>Traffic Control Type: TS = traffic signal; U = unsignalized; I = Interchange.

<sup>c</sup>Crash rate per million vehicles entering the intersection.

<sup>d</sup>2018 Statewide/District crash rate.

<sup>e</sup>The intersection crash rate is significant if it is found to exceed MassDOT statewide or District crash rate for the MassDOT Highway Division District in which the intersection is located (District 5).

The Route 1/Route 152 intersection was reported to have experienced a total of 67 motor vehicle crashes over the five-year review period, the majority of which resulted in property damage only, occurred on a weekday and were classified as rear-end type crashes. A review of the crash data before and after the opening of the Project (2016) indicates that the intersection has experienced a reduction in the number of reported crashes (17 crashes in 2015 vs. 10 crashes in 2017); however, the calculated motor vehicle crash rate continues to be above the MassDOT average crash rate (statewide and District 5) for a signalized intersection. A Road Safety Audit (RSA) was conducted for this intersection in 2014 as a part of the Project and a number of the recommendations from the RSA have been implemented at the intersection. It is likely that these improvements have contributed to the reduction in the number of motor vehicle crashes occurring at the intersection.

The Project site driveway intersection with Route 1 was reported to have experienced a total of 18 motor vehicle crashes over the five-year review period, the majority of which occurred on a weekday, involved rear-end type collisions that were attributed to driver error, and resulted in property damage only. The calculated motor vehicle crash rate at the intersection was found to be below the MassDOT average crash rates for a signalized intersection.

A review of the MassDOT statewide High Crash Location List indicated that there were no locations within the study area that were included on MassDOT's Highway Safety Improvement Program (HSIP) listing as high crash locations. In addition, no fatal motor vehicle crashes were reported to have occurred at the study area intersections over the five-year review period.

The detailed MassDOT Crash Rate Worksheets and High Crash Location mapping are provided in the Appendix.

### **PLAINRIDGE PARK CASINO TRAFFIC CHARACTERISTICS**

Table 3 summarizes the traffic volume data as measured on the Plainridge Park Casino driveway, the sole access to the Project site, in June 2019, and compares the measured traffic volumes to the traffic volume projections for the Project as presented in the March 2013 *Traffic Impact Study* (the "March 2013 TIS") that was prepared in support of the Project.<sup>3</sup> The traffic volumes presented in Table 3 represent average-month conditions and include traffic volumes associated with the horse racetrack operation as well as the casino.

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<sup>3</sup>*Traffic Impact Study for the Plainridge Racecourse Expansion*, 301 Washington Street (Route 1), Plainville, Massachusetts; McMahon Associates; March 2013.

**Table 3**  
**PLAINRIDGE PARK CASINO**  
**TRAFFIC VOLUME SUMMARY AND COMPARISON**

|                                     | (A)<br>June 2019<br>Measured Traffic<br>Volumes <sup>a</sup> | (B)<br>Projected Traffic<br>Volumes <sup>b</sup> | (C = A-B)<br>Difference |
|-------------------------------------|--|--|-------------------------|
| Average Weekday Daily               | 6,232  | 6,512  | -280                    |
| <i>Weekday Morning Peak-Hour</i>    | 161  | 106  | +55                     |
| <i>Friday Evening Peak-Hour</i>     | 627  | 489  | +138                    |
| Saturday                            | 8,152  | -- <sup>c</sup>                                  | -- <sup>c</sup>         |
| <i>Saturday Afternoon Peak-Hour</i> | 630  | 603  | +27                     |

<sup>a</sup>Traffic volumes as measured on the Plainridge Park Casino driveway in June 2019.

<sup>b</sup>As presented in the March 2013 TIS.

<sup>c</sup>Saturday trip estimates for the Project were not presented as a part of the March 2013 TIS.

As can be seen in Table 3, the Project was shown to generate approximately 6,232 vehicle trips on an average weekday (two-way, 24-hour volume) as *measured* in June 2019, with 161 vehicle trips *measured* during the weekday morning peak-hour and 627 vehicle trips *measured* during the Friday evening peak-hour. On a Saturday, the Project was shown to generate approximately 8,152 vehicle trips as *measured* in June 2019, with 630 vehicle trips *measured* during the Saturday afternoon peak-hour.

In comparison to the traffic volume *projections* for the Project that were presented in the March 2013 TIS, the actual *measured* traffic volumes were found to be 280 vehicle trips lower (approximately 4 percent) on an average weekday when compared to the trip estimates for the Project. During the weekday morning and Friday evening peak hours, the *measured* traffic volumes were found to be 55 vehicle trips higher (approximately 52 percent) and 138 vehicle trips higher (approximately 28 percent), respectively, than the traffic volume *projections* for the Project. During the Saturday afternoon peak-hour, the actual *measured* traffic volumes were found to be 27 vehicle trips higher (approximately four (4) percent) when compared to the trip estimates for the Project.

With the exception of the weekday morning and Friday evening peak hours, the measured traffic volumes were found to be within a 10 percent variation of the projected traffic volumes, which is within the range of normal daily and seasonal traffic volume fluctuations and not unexpected. The traffic volume differentials during the weekday morning and Friday evening peak hours exceeded normal variations; however, as identified in the Traffic Operations Analysis section of this assessment (discussion follows), operating conditions at the Project site access were found to be acceptable (defined as a level-of-service of “D” or better), with the balance of the intersections within the traffic monitoring program study area found to be operating under similar or improved conditions from those that were documented as a part of the 2015 Baseline Study.



## TRAFFIC OPERATIONS ANALYSIS

In order to evaluate traffic operations at the study intersections, a detailed traffic operations and vehicle queue analysis (“LOS analysis”) was performed for the weekday evening and Saturday afternoon peak hours using the 2019 traffic volume data presented on Figures 3 and 4. Capacity analyses provide an indication of how well transportation facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

In brief, six levels of service are defined for each type of facility. They are given letter designations ranging from “A” to “F”, with a level-of-service (LOS) “A” representing the best operating conditions and a LOS “F” representing congested or constrained operations. A LOS “E” is representative of a transportation facility that is operating at its design capacity with a LOS “D” generally defined as the limit of “acceptable” traffic operations. Since the level-of-service of a traffic facility is a function of the flows placed upon it, such a facility may operate at a wide range of levels of service depending on the time of day, day of week, or period of the year.

The Synchro® intersection capacity analysis software, which is based on the analysis methodologies and procedures presented in the 2010 *Highway Capacity Manual* (HCM),<sup>4</sup> was used to complete the level-of-service and vehicle queue analyses at the signalized and unsignalized intersections. The levels of service for signalized intersections were calculated using the operational analysis methodology of the 2000 Highway Capacity Manual and implemented as a part of the Synchro® software as suggested by MassDOT. The Highway Capacity Manual (HCM) analysis software was used to complete the level-of-service analysis at the ramp junction intersections (interchange areas).

The results of the 2019 traffic operations analysis are summarized in Tables 4, 5 and 6 along with the corresponding operating conditions that were reported as a part of the 2015 Baseline Study. The detailed analysis worksheets are provided in the Appendix.

### 2019 Traffic Operations Analysis Summary

#### **Signalized Intersections**

As can be seen in Table 4, all four (4) signalized intersections within the study area were shown to operate at an overall LOS C or better under all analysis periods with the following of note:

- **Route 1/Route 152** – During the weekday evening peak-hour, left-turn movements on the Route 152 eastbound approach were shown to be operating at their design capacity (LOS E) with vehicle queues of up to 5 vehicles.
- **Route 1/Plainridge Park Driveway** – Overall intersection operations were reported at LOS B or better with individual movements operating at LOS C or better.

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<sup>4</sup>*Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2010.

**Table 4**  
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE**  
**AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/<br>Peak Hour/Movement  | 2015 Baseline    |                    |                  |   | 2019 Existing |             |          |   |
|---|------------------|--------------------|------------------|---|---------------|-------------|----------|---|
|   | V/C <sup>a</sup> | Delay <sup>b</sup> | LOS <sup>c</sup> | Queue <sup>d</sup><br>Avg./95 <sup>th</sup> | V/C           | Delay       | LOS      | Queue <sup>d</sup><br>Avg./95 <sup>th</sup> |
| <b>Route 1 at the I-495 Northbound Off-Ramp</b> |                  |                    |                  |   |               |             |          |   |
| <i>Weekday Evening:</i>                         |                  |                    |                  |   |               |             |          |   |
| I-495 Northbound Off-Ramp WB RT                 |                  |                    |                  |   | 0.31          | 25.2        | C        | 2/4   |
| Route 1 NB TH                                   |                  |                    |                  |   | 0.49          | 10.1        | B        | 7/9   |
| <b>Overall</b>                                  |                  |                    |                  |   | --            | <b>6.7</b>  | <b>A</b> | --  |
| <i>Saturday Midday:</i>                         |                  |                    |                  |   |               |             |          |   |
|   |                  | (See Table 6)      |                  |   |               |             |          |   |
| I-495 Northbound Off-Ramp WB RT                 |                  |                    |                  |   | 0.19          | 36.8        | D        | 1/2   |
| Route 1 NB TH                                   |                  |                    |                  |   | 0.33          | 4.4         | A        | 3/6   |
| <b>Overall</b>                                  |                  |                    |                  |   | --            | <b>7.0</b>  | <b>A</b> | --  |
| <b>Route 1 at Madison Street</b>                |                  |                    |                  |   |               |             |          |   |
| <i>Weekday Evening:</i>                         |                  |                    |                  |   |               |             |          |   |
| Madison Street EB LT/TH                         |                  |                    |                  |   | 0.05          | 37.5        | D        | 0/1   |
| Madison Street EB RT                            |                  |                    |                  |   | 0.22          | 28.0        | C        | 1/3   |
| Madison Street WB LT/TH/RT                      |                  |                    |                  |   | 0.26          | 39.0        | D        | 1/1   |
| Route 1 NB UT/LT                                |                  |                    |                  |   | 0.29          | 46.3        | D        | 2/3   |
| Route 1 NB TH/RT                                |                  |                    |                  |   | 0.51          | 5.5         | A        | 3/15  |
| Route 1 SB UT/LT                                |                  |                    |                  |   | 0.07          | 41.2        | D        | 0/1   |
| Route 1 SB TH                                   |                  |                    |                  |   | 0.96          | 22.4        | C        | 24/36                                       |
| Route 1 SB RT                                   |                  | (See Table 5)      |                  |   | 0.00          | 6.0         | A        | 0/0   |
| <b>Overall</b>                                  |                  |                    |                  |   | --            | <b>19.6</b> | <b>B</b> | --  |
| <i>Saturday Midday:</i>                         |                  |                    |                  |   |               |             |          |   |
| Madison Street EB LT/TH                         |                  |                    |                  |   | 0.07          | 44.0        | D        | 0/1   |
| Madison Street EB RT                            |                  |                    |                  |   | 0.03          | 33.0        | C        | 0/1   |
| Madison Street WB LT/TH/RT                      |                  |                    |                  |   | 0.01          | 44.5        | D        | 0/0   |
| Route 1 NB UT/LT                                |                  |                    |                  |   | 0.42          | 47.8        | D        | 3/5   |
| Route 1 NB TH/RT                                |                  |                    |                  |   | 0.38          | 2.7         | A        | 0/4   |
| Route 1 SB UT/LT                                |                  |                    |                  |   | 0.04          | 46.1        | D        | 0/1   |
| Route 1 SB TH                                   |                  |                    |                  |   | 0.51          | 7.9         | A        | 5/12  |
| Route 1 SB RT                                   |                  |                    |                  |   | 0.01          | 4.7         | A        | 0/0   |
| <b>Overall</b>                                  |                  |                    |                  |   | --            | <b>8.0</b>  | <b>A</b> | --  |

See notes at end of table.



**Table 4 (Continued)**  
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE**  
**AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/<br>Peak Hour/Movement        | 2015 Baseline    |  |                  |   | 2019 Existing |             |          |   |
|---|------------------|--|------------------|---|---------------|-------------|----------|---|
|   | V/C <sup>a</sup> | Delay <sup>b</sup>   | LOS <sup>c</sup> | Queue <sup>d</sup><br>Avg./95 <sup>th</sup> | V/C           | Delay       | LOS      | Queue <sup>d</sup><br>Avg./95 <sup>th</sup> |
| <b>Route 1 at the I-495 Southbound Off-Ramp</b>       |                  |  |                  |   |               |             |          |   |
| <i>Weekday Evening:</i>                               |                  |  |                  |   |               |             |          |   |
| I-495 Southbound Off-Ramp EB RT                       |                  |  |                  |   | 0.67          | 30.5        | C        | 5/6   |
| Route 1 SB TH   |                  |  |                  |   | 0.56          | 8.2         | A        | 7/10  |
| Route 1 SB RT   |                  |  |                  |   | 0.40          | 0.7         | A        | 0/0   |
| <b>Overall</b>  |                  | (See Table 6)  |                  |   | --            | <b>11.0</b> | <b>B</b> | --  |
| <i>Saturday Midday:</i>                               |                  |  |                  |   |               |             |          |   |
| I-495 Southbound Off-Ramp EB RT                       |                  |  |                  |   | 0.46          | 26.4        | C        | 2/3   |
| Route 1 SB TH   |                  |  |                  |   | 0.37          | 4.5         | A        | 3/5   |
| Route 1 SB RT   |                  |  |                  |   | 0.20          | 0.3         | A        | 0/0   |
| <b>Overall</b>  |                  |  |                  |   | --            | <b>9.0</b>  | <b>A</b> | --  |
| <b>Route 1 at the Plainridge Park Casino Driveway</b> |                  |  |                  |   |               |             |          |   |
| <i>Weekday Evening:</i>                               |                  |  |                  |   |               |             |          |   |
| Plainridge Park Casino Driveway WB LT                 |                  |  |                  |   | 0.32          | 33.4        | C        | 1/3   |
| Plainridge park casino Driveway WB RT                 |                  |  |                  |   | 0.14          | 21.1        | C        | 1/2   |
| Route 1 NB TH   |                  |  |                  |   | 0.51          | 11.7        | B        | 7/11  |
| Route 1 NB RT   |                  |  |                  |   | 0.03          | 0.0         | A        | 0/0   |
| Route 1 SB LT   |                  |  |                  |   | 0.48          | 32.8        | C        | 3/5   |
| Route 1 SB TH   |                  |  |                  |   | 0.58          | 2.8         | A        | 4/5   |
| <b>Overall</b>  |                  | (Baseline conditions not assessed as Project was under construction) |                  |   | --            | <b>8.8</b>  | <b>A</b> | --  |
| <i>Saturday Midday:</i>                               |                  |  |                  |   |               |             |          |   |
| Plainridge Park Casino Driveway WB LT                 |                  |  |                  |   | 0.32          | 30.0        | C        | 1/2   |
| Plainridge Park Casino Driveway WB RT                 |                  |  |                  |   | 0.21          | 16.2        | B        | 2/2   |
| Route 1 NB TH   |                  |  |                  |   | 0.67          | 15.9        | B        | 8/13  |
| Route 1 NB RT   |                  |  |                  |   | 0.06          | 0.1         | A        | 0/0   |
| Route 1 SB LT   |                  |  |                  |   | 0.61          | 27.2        | C        | 4/7   |
| Route 1 SB TH   |                  |  |                  |   | 0.37          | 2.2         | A        | 2/3   |
| <b>Overall</b>  |                  |  |                  |   | --            | <b>11.7</b> | <b>B</b> | --  |

See notes at end of table.



**Table 4 (Continued)**  
**SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

| Signalized Intersection/<br>Peak Hour/Movement   | 2015 Baseline    |                    |                  |   | 2019 Existing |             |          |                                |
|--|------------------|--------------------|------------------|---|---------------|-------------|----------|--------------------------------|
|  | V/C <sup>a</sup> | Delay <sup>b</sup> | LOS <sup>c</sup> | Queue <sup>d</sup><br>Avg./95 <sup>th</sup> | V/C           | Delay       | LOS      | Queue<br>Avg./95 <sup>th</sup> |
| <b>Route 1 at Route 152</b>                      |                  |                    |                  |   |               |             |          |                                |
| <i>Weekday Evening:</i>                          |                  |                    |                  |   |               |             |          |                                |
| Route 152 EB LT                                  | 0.77             | 41.4               | D                | 4/6   | 0.65          | 62.4        | E        | 3/5                            |
| Route 152 EB TH                                  | 0.90             | 42.5               | D                | 6/12  | 0.47          | 43.9        | D        | 3/6                            |
| Route 152 EB RT                                  | 0.42             | 9.3                | A                | 1/3   | 0.15          | 35.9        | D        | 0/2                            |
| Route 152 WB LT                                  | 0.34             | 33.4               | C                | 1/3   | 0.49          | 46.7        | D        | 2/4                            |
| Route 152 WB TH                                  | 0.53             | 30.2               | C                | ¾   | 0.50          | 39.7        | D        | 4/5                            |
| Route 152 WB RT                                  | 0.42             | 5.7                | A                | 0/2   | 0.14          | 36.7        | D        | 0/2                            |
| Route 1 NB UT/LT                                 | 0.45             | 34.2               | C                | 2/4   | 0.59          | 46.2        | D        | 3/6                            |
| Route 1 NB TH                                    | 0.29             | 10.2               | B                | ¾   | 0.49          | 31.7        | C        | 6/8                            |
| Route 1 NB RT                                    | 0.00             | 0.0                | A                | 0/0   | 0.02          | 0.0         | A        | 0/0                            |
| Route 1 SB UT/LT                                 | --               | --                 | --               | --  | 0.80          | 39.2        | D        | 11/13                          |
| Route 1 SB TH                                    | 0.78             | 27.4               | C                | 9/12  | 0.69          | 22.7        | C        | 12/14                          |
| <b>Overall</b>                                   | --               | <b>27.3</b>        | <b>C</b>         | --  | --            | <b>34.1</b> | <b>C</b> | --                             |
| <i>Saturday MIDDAY:</i>                          |                  |                    |                  |   |               |             |          |                                |
| Route 152 EB LT                                  | 0.59             | 29.3               | C                | 3/5   | 0.53          | 30.7        | C        | 3/4                            |
| Route 152 EB TH                                  | 0.50             | 21.1               | C                | 5/6   | 0.40          | 24.7        | C        | 3/5                            |
| Route 152 EB RT                                  | 0.34             | 4.2                | A                | 0/1   | 0.11          | 47.1        | D        | 0/2                            |
| Route 152 WB LT                                  | 0.27             | 36.3               | D                | 1/3   | 0.33          | 34.1        | C        | 1/3                            |
| Route 152 WB TH                                  | 0.57             | 34.5               | C                | 4/5   | 0.48          | 29.4        | C        | 3/5                            |
| Route 152 WB RT                                  | 0.36             | 6.0                | A                | 0/2   | 0.13          | 27.0        | C        | 0/2                            |
| Route 1 NB UT/LT                                 | 0.56             | 36.5               | D                | 4/6   | 0.54          | 34.8        | C        | 3/5                            |
| Route 1 NB TH                                    | 0.34             | 13.7               | B                | 4/6   | 0.60          | 29.5        | C        | 5/8                            |
| Route 1 NB RT                                    | 0.00             | 0.0                | A                | 0/0   | 0.04          | 0.0         | A        | 0/0                            |
| Route 1 SB UT/LT                                 | --               | --                 | --               | --  | 0.77          | 37.5        | D        | 6/10                           |
| Route 1 SB TH                                    | 0.54             | 28.8               | C                | 5/6   | 0.44          | 21.7        | C        | 5/7                            |
| <b>Overall</b>                                   | --               | <b>22.8</b>        | <b>C</b>         | --  | --            | <b>29.0</b> | <b>C</b> | --                             |
| <b>Route 152 at Route 1 Southbound Jughandle</b> |                  |                    |                  |   |               |             |          |                                |
| <i>Weekday Evening:</i>                          |                  |                    |                  |   |               |             |          |                                |
| Route 152 EB TH                                  | 0.38             | 9.2                | A                | 4/6   | 0.26          | 2.3         | A        | 2/3                            |
| Route 152 WB TH                                  | 0.21             | 6.8                | A                | 2/2   | 0.14          | 0.5         | A        | 1/1                            |
| Route 1 Southbound Jughandle SB LT               | 0.60             | 22.8               | C                | 5/6   | 0.05          | 40.8        | D        | 0/1                            |
| Route 1 Southbound Jughandle SB RT               | 0.46             | 5.1                | A                | 11/2  | 0.15          | 41.5        | D        | 0/3                            |
| <b>Overall</b>                                   | --               | <b>12.0</b>        | <b>B</b>         | --  | --            | <b>8.7</b>  | <b>A</b> | --                             |
| <i>Saturday MIDDAY:</i>                          |                  |                    |                  |   |               |             |          |                                |
| Route 152 EB TH                                  | 0.37             | 6.1                | A                | 3/7   | 0.25          | 2.7         | A        | 2/3                            |
| Route 152 WB TH                                  | 0.21             | 7.2                | A                | 3/4   | 0.15          | 10.4        | B        | 4/5                            |
| Route 1 Southbound Jughandle SB LT               | 0.44             | 28.9               | C                | 3/4   | 0.06          | 31.0        | C        | 1/1                            |
| Route 1 Southbound Jughandle SB RT               | 0.67             | 16.1               | B                | 2/5   | 0.16          | 31.7        | C        | 0/3                            |
| <b>Overall</b>                                   | --               | <b>11.4</b>        | <b>B</b>         | --  | --            | <b>10.8</b> | <b>B</b> | --                             |

<sup>a</sup>Volume-to-capacity ratio.

<sup>b</sup>Control (signal) delay per vehicle in seconds.

<sup>c</sup>Level-of-Service.

<sup>d</sup>Queue length in vehicles.

EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements; UT = u-turning movements.



**Table 5**  
**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE**  
**AND VEHICLE QUEUE SUMMARY**

| Unsignalized Intersection/<br>Peak Hour/Movement | 2015 Baseline       |                    |                  |  | 2019 Existing |       |     |                           |
|--|---------------------|--------------------|------------------|--|---------------|-------|-----|---------------------------|
|  | Demand <sup>a</sup> | Delay <sup>b</sup> | LOS <sup>c</sup> | Queue <sup>d</sup><br>95 <sup>th</sup> | Demand        | Delay | LOS | Queue<br>95 <sup>th</sup> |
| <b>Route 1 at Madison Street</b>                 |                     |                    |                  |  |               |       |     |                           |
| <i>Weekday Evening:</i>                          |                     |                    |                  |  |               |       |     |                           |
| Madison Street EB LT/TH/RT                       | 61                  | >50.0              | F                | 3                                      |               |       |     |                           |
| Madison Street WB LT/TH/RT                       | 31                  | >50.0              | F                | 6                                      |               |       |     |                           |
| Route 1 NB UT/LT                                 | 61                  | 24.4               | C                | 1                                      |               |       |     |                           |
| Route 1 NB TH/RT                                 | 1,076               | 0.0                | A                | 0                                      |               |       |     |                           |
| Route 1 SB LT                                    | 5                   | 12.3               | B                | 0                                      |               |       |     |                           |
| Route 1 SB TH/RT                                 | 2,111               | 0.0                | A                | 0                                      |               |       |     | (See Table 4)             |
| <i>Saturday MIDDAY:</i>                          |                     |                    |                  |  |               |       |     |                           |
| Madison Street EB LT/TH/RT                       | 44                  | >50.0              | F                | 3                                      |               |       |     |                           |
| Madison Street WB LT/TH/RT                       | 16                  | >50.0              | F                | 4                                      |               |       |     |                           |
| Route 1 NB UT/LT                                 | 90                  | 12.7               | B                | 1                                      |               |       |     |                           |
| Route 1 NB TH/RT                                 | 1,724               | 0.0                | A                | 0                                      |               |       |     |                           |
| Route 1 SB LT                                    | 4                   | 15.9               | C                | 0                                      |               |       |     |                           |
| Route 1 SB RT                                    | 1,174               | 0.0                | A                | 0                                      |               |       |     |                           |

<sup>a</sup>Demand in vehicles per hour.

<sup>b</sup>Average control delay per vehicle (in seconds).

<sup>c</sup>Level-of-Service.

<sup>d</sup>Queue length in vehicles.

EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements; UT = u-turning movements.



**Table 6**  
**RAMP JUNCTION LEVEL-OF-SERVICE**

| Unsignalized Intersection/<br>Peak Hour/Movement                  | 2015 Baseline        |                    |                  | 2019 Existing |       |     |
|---|----------------------|--------------------|------------------|---------------|-------|-----|
|   | Density <sup>a</sup> | Speed <sup>b</sup> | LOS <sup>c</sup> | Density       | Speed | LOS |
| <b><i>Route 1 Northbound at the I-495 Northbound Off-Ramp</i></b> |                      |                    |                  | (See Table 4) |       |     |
| Weekday Evening   | 11.4                 | 51.1               | B                |               |       |     |
| Saturday MIDDAY   | 16.9                 | 50.9               | B                |               |       |     |
| <b><i>Route 1 Northbound at the I-495 Northbound On-Ramp</i></b>  |                      |                    |                  |               |       |     |
| Weekday Evening   | 9.3                  | 49.1               | A                | 12.3          | 49.0  | B   |
| Saturday MIDDAY   | 11.9                 | 49.2               | B                | 11.0          | 48.9  | B   |
| <b><i>Route 1 Northbound at the I-495 Southbound Off-Ramp</i></b> |                      |                    |                  |               |       |     |
| Weekday Evening   | 10.9                 | 51.1               | B                | 13.3          | 51.1  | B   |
| Saturday MIDDAY   | 14.1                 | 51.1               | B                | 12.5          | 51.1  | B   |
| <b><i>Route 1 Northbound at the I-495 Southbound On-Ramp</i></b>  |                      |                    |                  |               |       |     |
| Weekday Evening   | 10.7                 | 49.0               | B                | 10.1          | 49.1  | B   |
| Saturday MIDDAY   | 11.6                 | 49.0               | B                | 10.7          | 49.1  | B   |
| <b><i>Route 1 Southbound at the I-495 Northbound On-Ramp</i></b>  |                      |                    |                  |               |       |     |
| Weekday Evening   | 19.1                 | 48.9               | B                | 20.6          | 48.6  | C   |
| Saturday MIDDAY   | 10.8                 | 49.1               | B                | 11.3          | 48.9  | B   |
| <b><i>Route 1 Southbound at the I-495 Northbound Off-Ramp</i></b> |                      |                    |                  |               |       |     |
| Weekday Evening   | 21.5                 | 50.7               | C                | 18.5          | 50.9  | B   |
| Saturday MIDDAY   | 12.7                 | 51.1               | B                | 11.5          | 51.1  | B   |
| <b><i>Route 1 Southbound at the I-495 Southbound On-Ramp</i></b>  |                      |                    |                  |               |       |     |
| Weekday Evening   | 20.7                 | 48.7               | D                | 16.7          | 48.7  | B   |
| Saturday MIDDAY   | 12.3                 | 48.8               | B                | 10.6          | 49.1  | B   |
| <b><i>Route 1 Southbound at the I-495 Southbound Off-Ramp</i></b> |                      |                    |                  |               |       |     |
| Weekday Evening   | 21.2                 | 50.7               | C                | (See Table 4) |       |     |
| Saturday MIDDAY   | 11.6                 | 51.1               | B                |               |       |     |

<sup>a</sup>Passenger cars per mile per lane.

<sup>b</sup>Speed in ramp influence area in miles per hour.

<sup>c</sup>Level-of-Service.



## **Unsignalized Intersections**

As can be seen in Table 5, critical movements at the Route 1/Madison Street intersection (all movements from the Madison Street approaches) were shown to operate at or over capacity (LOS “E” or “F”, respectively) during both analysis periods under 2015 Baseline conditions. With the installation of traffic control signal and minor roadway widening as a part of the mitigation commitments for the mixed-use development that is to be located off Madison Street west of Route 1, this intersection currently operates at an overall LOS B or better during both analysis periods under 2019 Existing conditions.

## **Ramp Junctions**

As can be seen in Table 6, the ramp junctions within the study area were shown to operate at LOS C or better under during both peak periods.

## **Traffic Operations Comparison – Baseline vs. 2019**

In general, operating conditions at the monitored intersections were found to be similar to the conditions that were documented as a part of the 2015 Baseline Study, indicating that the opening of the Project and the associated increase in traffic volumes did not result in a significant change in motorist delays or vehicle queueing over the conditions that existed prior to the opening of the Project.

## **TRANSPORTATION DEMAND MANAGEMENT PROGRAM**

In conjunction with the initial planning of the Project, a comprehensive Transportation Demand Management (TDM) program was developed with the goal of reducing single-occupant vehicle (SOV) travel to the Project site by employees and patrons through encouraging the use of alternative modes of transportation to SOV's (i.e., carpools/vanpools, public transportation and pedestrian/bicycle trips). In addition, specific measures were targeted to reduce off-site employee trips during the workday such as direct deposit of pay checks and on-site amenities such as food services and an ATM machine. Table 7 summarizes the elements of the TDM program and the current status of implementation.

**Table 7**  
**2019 PLAINRIDGE PARK CASINO TDM PROGRAM**

| <b>TDM Measure</b>  | <b>Current Status</b> | <b>Follow-Up Required</b>   |
|---|-----------------------|---|
| Designate a full time on-site Transportation Coordinator  | Complete              | None  |
| Join or form a Transportation Management Association (TMA)  | Complete              | None  |
| Maintain a link to the MassRIDES website via the Plainridge Park Casino website   | Complete              | None  |
| Maintain a link on the Plainridge Park Casino website for information on Southeastern Massachusetts bike routes   | Complete              | None  |
| Provide promotional materials on-site for distribution regarding Bay State Commute (NuRide) and MassRIDES programs (e.g. website, employment package)   | Complete              | None  |
| Expand the role of the on-site transportation coordinator to oversee increased employees, patronage and the related monitoring program  | In-Progress           | On-going  |
| Maintain and/or expand the Guaranteed Ride Home Program   | In-Progress           | On-going  |
| Offer non-essential employees work schedules to reduce peak period traffic volumes  | Complete              | None  |
| Offer direct deposit to all employees   | Complete              | None  |
| Provide on-site amenities such as food, ATM machine, and check cashing services to reduce off-site vehicle trips throughout the day   | Complete              | None  |
| Designate a percentage of parking spaces for car/vanpool parking near the building entrance as a convenience to promote ridesharing   | In-Progress           | Reviewing areas of parking to designate as ridesharing spaces                     |
| Provide preferred parking for fuel-efficient vehicles to promote the use of clean fuel vehicles   | Complete              | None  |
| Provide electric vehicle (EV) charging stations to charge and promote the use of clean fuel vehicles  | Complete              | None  |
| Accommodate and promote the use of car-sharing services (e.g., Zip Car or Enterprise Carshare)  | Complete              | None  |
| Implement vehicle idle reduction policies   | Complete              | None  |
| Provide bicycle storage and changing rooms for employees who elect to bike to work  | Complete              | None  |
| Provide opportunity for employees to participate in transit subsidy or reimbursement programs, such as the Charlie Card Purchase program  | N/A                   | To be reviewed when GATRA expands route to include Plainridge Park Casino         |
| Provide on-site bus and passenger accommodations within the entry court of the Casino, with sidewalk connections to the customer and employee entrances. These accommodations will include, but not be limited to, dedicated waiting areas for transit riders with adequate seating; kiosks and/or terminals with up to date transit information; and bus berthing areas with covered and easy access to the waiting area and casino entrances            | Complete              | None - Added seating and monitors with MBTA schedule in the North Casino entrance |
| Provide a bus circulation lane within the entry court to allow for efficient bus operations to maintain service schedules   | Complete              | None  |
| Work with and provide necessary funding to the Greater Attleboro Taunton Regional Transit Authority (GATRA) to plan, develop, and implement a new route in North Attleboro and Plainville between Triboro Plaza and Plainridge Park Casino/Plainville Commons shopping center via Route 152. The new route will be designed to provide seamless transfers to the existing GATRA Bus Routes # 10 and #14 serving Attleboro, North Attleboro and Plainville | In-progress           | GATRA to expand routes in 2019 to include Plainridge Park Casino                  |





**EMPLOYEE AND PATRON TRAVEL MODE SURVEY**

An updated survey of employee and patron travel modes was completed in order to ascertain the effectiveness of the TDM program and to refine the initial program to achieve the desired goal of reducing overall volume of traffic generated by the Project. The results of the updated employee and patron travel mode survey are summarized in Table 8.

**Table 8  
2019 PLAINRIDGE PARK CASINO  
EMPLOYEE AND PATRON TRAVEL MODE SURVEY**

| Question  | Response   |           |
|---|------------|-----------|
|   | Patron     | Employee  |
| <b><i>How did you arrive at Plainridge Today?</i></b>   |            |           |
| Alone in car  | 92         | 88        |
| Car/vanpool   | 9          | 0         |
| Bus   | 0          | 0         |
| Taxi  | 0          | 0         |
| Uber/Lyft   | 1          | 0         |
| Motorcycle  | 0          | 2         |
| Bicycle   | 0          | 0         |
| Walked  | 0          | 1         |
| Other/Did not respond   | 0          | 3         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |
| <b><i>Are you aware of public transportation and car/vanpool options that are available?</i></b>                      |            |           |
| Yes   | 24         | 32        |
| No  | 75         | 61        |
| Did not respond   | 3          | 1         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |
| <b><i>Would you use public transportation or a shuttle from a secure designated pick-up area or bus terminal?</i></b> |            |           |
| Yes   | 17         | 22        |
| No  | 81         | 72        |
| Did not respond   | 4          | 0         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |
| <b><i>Would you walk or bicycle to Plainridge if sidewalks and bicycle lanes were available?</i></b>                  |            |           |
| Yes   | 4          | 13        |
| No  | 93         | 81        |
| Did not respond   | 5          | 0         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |
| <b><i>Are you aware of and do you participate in the corporate TDM program?</i></b>                                   |            |           |
| Aware and participate   | 2          | 12        |
| Aware but do not participate  | 7          | 14        |
| Not aware but would participate   | 28         | 23        |
| Not aware and would not participate   | 61         | 43        |
| Did not respond   | 4          | 2         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |
| <b><i>Which TDM program features do you use?</i></b>  |            |           |
| I do not participate  | 87         | 55        |
| Guaranteed ride home  | 1          | 0         |
| On-site Charlie Card sales  | 0          | 0         |
| Direct deposit  | 1          | 32        |
| MassRIDES carpool/vanpool matching  | 0          | 0         |
| Bay State Commute (NuRide) program  | 0          | 0         |
| Flexible Work Schedule  | 2          | 1         |
| Transit pass subsidy  | 1          | 0         |
| Other/Did not respond   | 10         | 6         |
| <b>TOTAL:</b>   | <b>102</b> | <b>94</b> |



As can be seen in Table 8, the current survey indicates that approximately 90 percent of patrons and 94 percent of employees arrive to the Project site alone in a private automobile, with approximately 74 percent of patrons and 65 percent of employees indicating that they were not aware of public transportation or car/vanpool opportunities. The majority of patrons and employees indicated that they would not use or participate in a shuttle program from an off-site parking facility. Similarly, the majority of patrons and employees indicated that they would not walk or bicycle to the Project site if sidewalks and bicycle lanes were available.

Focusing on employees, 24 percent indicated that they were not aware of the corporate TDM program but would participate. This indicates a distinct opportunity to increase employee participation in the TDM program.

## **SUMMARY**

VAI has completed the 2019 Traffic Monitoring Program for the Plainridge Park Casino located at 301 Washington Street (Route 1) in Plainville, Massachusetts, in accordance with the requirements of the MassDOT Section 61 Finding that was issued for the Project. As required therein, the 2019 Traffic Monitoring Program has documented and compared: i) traffic volumes; ii) trip patterns; iii) traffic operations; and iv) safety; along Route 1 and at defined intersections to the conditions that were documented as a part of the 2015 Baseline Study. In addition, a summary of the elements of the TDM program that has been implemented for employees and patrons has been provided, along with the results of an employee and patron survey of travel modes.

Based on a review of the results of the 2019 Traffic Monitoring Program, we have noted the following with respect to the Project:

1. The *measured* traffic volumes associated with the Project were found to be approximately four (4) percent lower on an average weekday, 52 percent higher during the weekday morning peak-hour, 28 percent higher during the Friday evening peak-hour and four (4) percent higher during the Saturday afternoon peak-hour when compared to the traffic volume *projections* for the Project. As documented herein, sufficient capacity is afforded at the Project site driveway intersection with Route 1 and at the monitored intersections to accommodate the variation in traffic volumes associated with the Project;
2. The 2019 observed peak-hour traffic volumes within the study area were found to be similar to the conditions that were documented in the 2015 Baseline Study;
3. A review of motor vehicle crash data indicates that the study intersections exhibited similar crash patterns before and after the opening of the Project and, with the exception of the Route 1/Route 152 intersection, were found to have motor vehicle crash rates that were below both the MassDOT statewide and District averages for a signalized or unsignalized intersection, as appropriate, for the MassDOT Highway Division District in which the intersections are located (District 5);
4. The Route 1/Route 152 intersection was found to have experienced a decrease in the number of reported crashes after the opening of the Project (17 crashes in 2015 vs. 10 crashes in 2017); however, the calculated motor vehicle crash rate continues to be above the MassDOT average crash rate (statewide and District 5) for a signalized intersection. The majority of the crashes occurring at the intersection were reported as rear-end type collisions that resulted in property damage only. A Road Safety Audit (RSA) was conducted for this intersection in 2014 as a part of the Project and



a number of the recommendations from the RSA have been implemented. It is likely that these improvements have contributed to the reduction in the number of motor vehicle crashes occurring at the intersection;

5. Eighteen motor vehicle crashes were reported to have occurred at the Route 1/Plainridge Park Casino driveway intersection over the 5-year review period, the majority of which occurred on a weekday, involved rear-end type collisions that were attributed to driver error, and resulted in property damage only. The calculated motor vehicle crash rate at the intersection was found to be below the MassDOT average crash rates for a signalized intersection;
6. Operating conditions at the majority of the monitored intersections were found to be similar to the conditions that were documented as a part of the 2015 Baseline Study, indicating that the opening of the Project and the associated increase in traffic volumes did not result in a significant increase in motorist delays or vehicle queuing over the conditions that existed prior to the opening of the Project with consideration of the noted traffic volume differentials during the peak hours;
7. The intersection of Route 1 at the Plainridge Park Casino driveway was shown to operate at an overall LOS B or better during both the weekday evening and Saturday afternoon peak hours, with all movements reported to be operating at LOS C or better where a LOS of “D” or better is considered “acceptable” operating conditions;
8. Approximately 92 percent of patrons and employees arrive to the Project site alone in a private automobile, with approximately 70 percent indicating that they were not aware of public transportation or car/vanpool opportunities. The majority of patrons and employees indicated that they would not use or participate in a shuttle program from an off-site parking facility and would not walk or bicycle to the Project site if sidewalks and bicycle lanes were available; and
9. Twenty-four (24) percent of employees indicated that they were not aware of the corporate Transportation Demand Management (TDM) program but would participate. This indicates a distinct opportunity to increase employee participation in the TDM program.

In consideration of these findings, we have concluded that the measured impact of the Project on traffic volumes, trip patterns, motor vehicle crash trends, and traffic operations (levels of service, motorist delays and vehicle queuing) has been relatively minor, with operating conditions at the monitored intersections found to be similar to the conditions that were documented as a part of the 2015 Baseline Study. Further, opportunities exist to increase employee participation in the TDM program and the use of public transportation services and car/vanpool participation by both patrons and employees.

cc: BG, File

