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**David E. Wooster and Associates, Inc.**

Straightforward & Unwavering

February 25, 2021

Mr. Ira Lubert  
c/o Eric Pearson  
SC Gaming OpCo, LLC

*VIA EMAIL*

***Reference: Traffic Evaluation – Category 4 Casino – College Township, Centre County, Pennsylvania***

Dear Mr. Lubert:

As requested, David E. Wooster and Associates, Inc. (Wooster) has performed a traffic evaluation of the proposed Category 4 casino in the Nittany Mall in College Township, Centre County. The purpose of this correspondence is to provide you with a summary of our findings.

**1.0 Introduction**

The Nittany Mall site is located along Benner Pike (S.R. 0150) and College Avenue (S.R. 0026) in College Township, Centre County, PA. The Nittany Mall is a 543,000 ft<sup>2</sup> (gross leasable area) facility that has the following access points:

- Two (2) signalized points of access to Benner Pike (S.R. 0150)
- Two (2) unsignalized points of access to Shiloh Road
- One (1) signalized and one (1) unsignalized access point to College Avenue (S.R. 0026)

Redevelopment is proposed for the vacant space in the Nittany Mall formerly occupied by Macy's. The redevelopment includes using the former Macy's space as a Category 4 casino facility (also known as a "mini-casino"). The access points noted above will not change as a result of the redevelopment. An aerial image showing the overall Nittany Mall site, the site access points, and the location of the proposed Category 4 casino is included with this correspondence.

## 2.0 Trip Generation Calculations

### 2.1 Nittany Mall

The Nittany Mall is currently not fully occupied. Increased store vacancies at retail shopping malls have been a trend seen nationwide for many years as online retailing has become more efficient in their product delivery systems and therefore more widely used. (According to the US Census Bureau, e-commerce as a percent of total retail sales has grown from 0.6% in the 4<sup>th</sup> quarter of 1999 to over 16% in the second quarter of 2020.<sup>1</sup>) However, the Nittany Mall at one time was fully occupied and could reoccupy simply by retailers entering into leasing arrangements with the Mall management company. In other words, no traffic analysis would be required for re-occupancy with a similar retail use. Therefore, the trip generation of the Nittany Mall property must assume full occupancy to obtain an accurate picture of trip generation of the site when fully occupied.

In order to calculate the trip generation of the Nittany Mall, the information published by the Institute of Transportation Engineers' (ITE) in their *Trip Generation*, 10<sup>th</sup> Edition, was used. Land Use Code (820) is applicable to the Nittany Mall. Based on the trip generation calculations, the 543,000 ft<sup>2</sup> Nittany Mall generates the following trips:

- Weekday PM Peak Hour of Adjacent Street Traffic (Weekday PM Street Peak) = 1,900 trips (912 In/988 Out)
- Saturday Peak Hour = 2,356 trips (1,225 In/1,131 Out)

Detailed trip generation tables are included with this correspondence.

### 2.2 Nittany Mall without Macy's Space

As noted previously, the casino is proposed to occupy the space formerly occupied by Macy's. The square footage of this space is 94,766 ft<sup>2</sup>, making the residual mall space 448,234 ft<sup>2</sup>. The trip generation of the residual 448,234 ft<sup>2</sup> mall space is as follows:

- Weekday PM Street Peak Hour = 1,649 trips (792 In/857 Out)
- Saturday Peak Hour = 2,025 trips (1,053 In/972 Out)

The difference between the Mall under full occupancy and the Mall without the Macy's space is 251 Weekday PM Street Peak Hour trips and 331 Saturday Peak Hour trips.

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<sup>1</sup> <https://www.census.gov/library/stories/2020/11/share-of-online-retail-sales-soaring.html>

## ***2.3 Mini-Casino Space***

### ***2.3.1 ITE Trip Generation***

The Mini-Casino is proposed to include 1,000 gaming positions. The preliminary estimate is for there to be approximately 750 slot machines. The remaining gaming positions are related to 40 table games.

The trip generation for the mini-casino space was calculated using a variety of methods. The first was to use Land Use Code (473) – Casino/Video Lottery Establishment from ITE's Trip Generation. The calculated trip generation using this publication is as follows:

- Weekday PM Street Peak Hour = No Data Available
- Weekday PM Peak Hour of Generator = 436 trips (318 In/118 Out)
- Saturday Peak Hour = No Data Available

The data in Trip Generation is very limited (3 studies in the PM Generator Peak Hour and 0 studies in the PM Street/SAT Peak Hour). Therefore, other avenues were explored to determine the trip generation of the mini-casino.

### ***2.3.2 Penn National Springettsbury Township TIS***

Copper Star Gaming provided us with a copy of the Transportation Impact Study for the Penn National Category 4 Satellite Casino, Springettsbury Township, York County, prepared by Transportation Resource Group, Inc. (TRG), dated September 2018. The trip generation calculations in this TIS were based on count data collected at the Hollywood Casino in East Hanover Township, Dauphin County, PA. At the time the counts were performed, the Hollywood Casino contained 2,377 gaming positions. The following trips were counted:

- Weekday 24-Hour = 8,662 trips
- Saturday 24-Hour = 12,733 trips
- Weekday PM Street Peak Hour = 578 trips (254 In/324 Out)
- Saturday Midday Peak Hour = 564 trips (345 In/219 Out)
- Saturday PM Peak Hour = 1,008 trips (581 In/427 Out)

The resultant trip generation rates of the Hollywood Casino are as follows:

- Weekday 24-Hour – 3.644 trips/gaming position
- Saturday 24-Hour – 5.357 trips/gaming position

- Weekday PM Peak Hour – 0.243 trips/gaming position (44% In/56% Out)
- Saturday Midday Peak Hour – 0.237 trips/gaming position (61% In/39% Out)
- Saturday PM Peak Hour – 0.424 trips/gaming position (58% In/42% Out)

In addition to the Hollywood Casino Data, there was other casino data contained in the Springettsbury Township TIS information. In their February 26, 2019 Response Letter to First Capital Engineering comments dated December 4, 2018, TRG included data from the Market 8 Traffic Impact Study, Philadelphia, PA for the Sugarhouse Casino (also located in Philadelphia, PA) to corroborate the Hollywood Casino rates above. The trip generation rates of the Sugarhouse Casino are as follows:

- Friday PM Street Peak Hour – 0.2675 trips/gaming position
- Saturday PM Peak Hour – 0.3947 trips/gaming position

A summary of the information contained in the Springettsbury Township TIS is included with this correspondence.

### **2.3.3 The Meadows**

Wooster collected traffic volume data at the access for The Meadows in Washington, PA as part of a TIS for a nearby site. The Meadows includes not only a casino use but also a racetrack and hotel. The casino includes 3,053 gaming positions, comprised of 2,500 slot machines and 553 gaming table positions. (7 positions/table was assumed.) The following trips were counted at The Meadows:

- Weekday PM Street Peak Hour = 846 trips (317 In/529 Out)
- Saturday Midday Peak Hour = 673 trips (369 In/304 Out)

These trips correspond to the following trip generation rates:

- Weekday PM Street Peak Hour – 0.277 trips/gaming position (37% In/63% Out)
- Saturday Midday Peak Hour – 0.220 trips/gaming position (55% In/45% Out)

These rates are slightly conservative since The Meadows contains uses other than the casino.

### 2.3.4 Summary of all Trip Generation Rates

The table below summarizes all of the trip generation rates described above. The most conservative rates are noted in **bold**.

Source	Trip Generation Rates				
	Weekday 24-Hour	SAT 24-Hour	Weekday PM Peak Hour of Adj. Street	Saturday Midday Peak Hour	Saturday PM Peak Hour
ITE	N/A	N/A	N/A	N/A	N/A
Hollywood Casino	<b>T=3.644(X)</b>	<b>T=5.357(X)</b>	T=0.243(X)	<b>T=0.237(X)</b>	<b>T=0.424(X)</b>
Sugarhouse Casino	N/A	N/A	T=0.2675(X) <sup>2</sup>	N/A	T=0.3947(X)
The Meadows	N/A	N/A	<b>T=0.277(X)</b>	T=0.220(X)	N/A

Using the most conservative trip generation rates (**bold**), the resultant trip generation of the subject mini-casino is as follows:

- Weekday 24-Hour = 3,644 trips (1,822 In/1,822 Out)
- Saturday 24-Hour = 5,357 trips (2,679 In/2,678 Out)
- Weekday PM Street Peak Hour = 277 trips (102 In/175 Out)
- Saturday Midday Peak Hour = 237 trips (145 In/92 Out)
- Saturday PM Peak Hour = 424 trips (246 trips/178 Out)

### 3.0 Trip Generation Comparison

The projected trip generation of the mini-casino summarized in Section 2.3.4 was compared with the trip generation change in the Nittany Mall without the Macy's space occupied (Section 2.2). The trip generation comparison was made for the Weekday PM Street Peak Hour and the Saturday Midday Peak Hour. These hours represent the highest concentration of traffic volume on the adjacent roadway system, and therefore are typically the relevant peak hours analyzed in a Traffic Impact Study (TIS).

The mini-casino trip generation during the Weekday PM Street peak is 277 trips. The change in trip generation of the Nittany Mall without the Macy's space during the Weekday

<sup>2</sup> This data is from a Friday PM Peak Hour

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PM Street Peak is 251 trips. Therefore, the Weekday PM Street peak trips are very similar to the Macy's space being occupied.

The mini-casino trip generation during the Saturday Midday Peak Hour is 237 trips. The change in trip generation of the Nittany Mall without the Macy's space during the Saturday Midday Peak Hour is 331 trips. Therefore, the Saturday Midday Peak Hour trips are less than the condition with the Macy's space being occupied.

#### **4.0 Post-Development Traffic Conditions/Conclusions**

As noted previously in this analysis, the Nittany Mall is not fully occupied and not operating at its full trip generation potential. And based on national trends and the increasing presence of online retail, it is highly unlikely that it will ever return to its full trip generation potential. However, the access configuration and infrastructure surrounding the mall was designed to support the full trip generation potential of the mall. The trip generation of the mini-casino (which is very similar to the change in trips relating to the vacant space that it will occupy), combined with the vacancies within the remainder of the mall, will result in a trip generation on the site that is less than what it was at its full operating potential. Since the access configuration and infrastructure is in place to support the site as fully operational, it can safely be concluded that the site and surrounding roadway infrastructure as currently designed, is more than adequate to support the mini-casino.

We trust this information is submitted in proper form. If you have any questions or require additional information, please contact this office.

Yours truly,

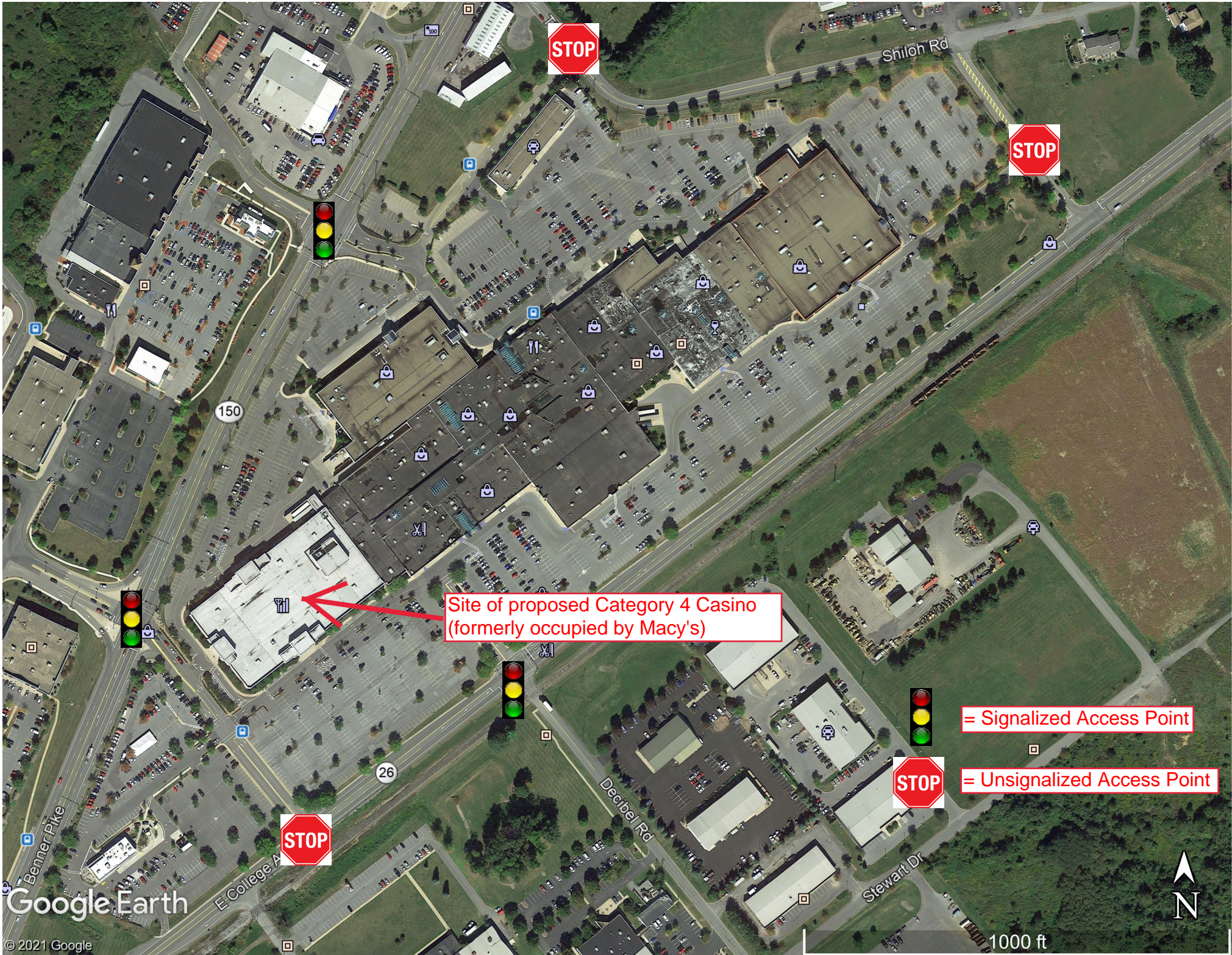


Charles A. Wooster, P.E., PTOE  
President

CAW/dh

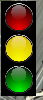
Enclosures

3925022521\_Traffic Narrative



STOP

STOP



STOP

STOP

Site of proposed Category 4 Casino  
(formerly occupied by Macy's)

= Signalized Access Point

= Unsignalized Access Point



***TRIP GENERATION INFORMATION FROM TIS FOR  
CATEGORY 4 CASINO IN SPRINGETTSBURY TOWNSHIP,  
YORK COUNTY, PA***



**Transportation Impact Study**  
**for the**  
**Penn National Category 4 Satellite Casino**

**Springettsbury Township, York County**

**Prepared for:**  
**Penn National Gaming, Inc.**

**September 2018**



## TRIP GENERATION WORKSHEETS

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**TRIP GENERATION ANALYSIS**  
**for the**  
**PROPOSED PENN NATIONAL CATEGORY 4 SATELLITE CASINO**

A trip generation analysis was conducted for the proposed Penn National Category 4 Satellite Casino at the York Galleria Mall site in Springettsbury Township, York County, Pennsylvania. The analysis was based on a previous trip generation study completed for the Hollywood Casino at Penn National located in East Hanover Township, Dauphin County, PA. The study was prepared by TPD, Inc. in December 2009. The study utilized ATR and TMC counts to calculate the trip generation rates. These same counts and methodology were used to calculate the trip generation rates for the proposed satellite casino in Springettsbury Township. As previously agreed, the time periods to be analyzed for the satellite casino include:

- 1) Thursday 3:00 to 6:00 PM
- 2) Saturday 11:00 AM to 2:00 PM
- 3) Saturday 5:00 to 9:00 PM

The attached Table 1 shows the estimated trip generation for the proposed satellite casino at the York Galleria Mall. The calculations used to determine the estimates follows:

**DAILY TRIP GENERATION RATES (per December 2009 TPD study)**

	<u>Volume</u>	<u>Equation</u> (Based on 2,377 Gaming Positions)
Thursday	8,662	$T = 3.644 * (X)$
Saturday	12,733	$T = 5.357 * (X)$

**PEAK HOUR TRIP GENERATION RATES (Per December 2009 TPD Study)**

	<u>Period</u>	<u>ATR Volume</u>	<u>Peak Hour</u>	<u>TMC Volume</u>	<u>Peak Hour</u>
Thursday	3:00 - 6:00 PM	578	(3:45 - 4:45 PM)	-NA-	
Saturday	11:00 AM - 2:00 PM	564	(1:00 - 2:00PM)	-NA-	
Saturday	5:00 - 9:00 PM	904	(6:15 - 7:15 PM)	1,008	(6:00 - 7:00 PM)

	<u>Max Volume</u>	<u>Equation</u> (Based on 2,377 Gaming Positions)
Thursday	578	$T = 0.243 * (X)$
Saturday	564	$T = 0.237 * (X)$
Saturday	1,008	$T = 0.424 * (X)$

**GAMING POSITIONS CALCULATIONS (Per December 2009 TPD Study)**

1 Slot Machine = 1 Gaming Position  
1 Table Game = Maximum of 7 Gaming Positions  
1 Poker Table = Maximum of 10 Gaming Positions

**GAMING POSITIONS FOR THE PROPOSED CATEGORY 4 SATELLITE CASINO IN SPRINGGETTSBURY TWP**

750 Slot Machines = 750 Gaming Positions  
40 Table Games = 280 Gaming Positions  
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Total	1,030 Gaming Positions
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**DIRECTIONAL DISTRIBUTION (Per traffic volumes used in December 2009 TPD Study)**

	<u>Enter</u>	<u>Exit</u>	<u>Enter %</u>	<u>Exit %</u>
Thursday - ATR	254	324	44%	56%
Sat Noon - ATR	345	219	61%	39%
Sat Evening - TMC	581	427	58%	42%



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February 26, 2019

Ms. Jessica Fieldhouse  
Director of Community Development  
Springettsbury Township  
1501 Mt. Zion Road  
York, PA 17402

**Re: Penn National Mini-Casino  
Transportation Impact Study  
Response Letter to First Capital Engineering comments dated December 4, 2018  
Springettsbury Township, York County, PA  
TRG Project # 167.051.18**

Dear Ms. Fieldhouse:

This letter addresses the comments outlined in First Capital Engineering's letter dated December 4, 2018, regarding the Transportation Impact Study for the proposed Penn National Mini-Casino to be located in Springettsbury Township, York County. The following numbered paragraphs correspond to the numbered comments in First Capital Engineering's letter.

**Site Trip Generation Comments**

- 1. (§289-21.D.6) The estimated site trip generation for the proposed Galleria Casino used trip generation rates from a study by TPD Inc. on the Hollywood Casino at Penn National in December 2009 prior to installation of table games. Was there an analysis conducted at Penn National after the opening of table games to verify the accuracy of the trip generation used?*

When conducting a traffic impact study (TIS), it is preferable to use the ITE Trip Generation Manual to determine the magnitude of the trip generation for the specific user. The 10<sup>th</sup> edition of the ITE Trip Generation Manual includes Land Use #473, Casino/Video Lottery Establishment. However, this data is very limited and only includes a handful of actual count sites. Therefore, alternate trip generation estimated procedures were necessary.

Penn National provided TRG with site trip generation data prepared by TPD, Inc., which was based on actual counts at the Hollywood Casino at Penn National. This same data has been utilized in other traffic studies, reviewed and approved by PennDOT. Officials at Penn National believe this data will be representative of conditions in South-Central Pennsylvania, and closely reflect what is anticipated at the Springettsbury Township site. Penn National has not performed post-construction counts to verify the impact of the table games; however, gaming industry practice does not differentiate a slot machine

position from a table game position when determining visitation. Therefore, extrapolating trip frequency based upon total number of slot machine positions will yield the same ratio as total gaming positions inclusive of table games and is a valid basis for which to determine total trip frequency.

We are attaching corroborating studies from Pennoni's Market 8 Traffic Impact Study. This study references trip generation rates for the existing Sugarhouse Casino Complex (45,000 sf, with 3,000 slot machines and tables) in a commercial (non-residential) area of the greater Philadelphia area. The trip generation rate for the Sugarhouse Casino is 0.2675 trips per gaming position during the Friday PM peak hour period (street) and 0.3947 trips per gaming position during the Saturday peak hour for the Casino. This compares favorably to the rate used for the Springettsbury Township mall site of 0.243 trips per gaming position during the Thursday PM peak hour period (street). (Note – It is expected that Friday evening traffic is higher than Thursday peak hour traffic.) The Springettsbury rate for the Saturday peak hour of the casino is 0.424 trips per gaming position.

2. *(§289-21.D.6) The TPD Inc. trip generation analysis that was conducted for Hollywood Casino at Penn National in December 2009 used both automatic traffic recorder (ATR) counts and manual turning movement (TMC) counts. When comparing the weekday P.M. peak hour ATR to TMC counts, the study showed a 14% increase in trip volume for the TMC count, while the Saturday P.M. peak hour showed a 12% increase in trip volume. Due to the peak hour variation from the TPD Inc. study to the Galleria study, the increased trip volume was only used for the Saturday P.M. peak hour. Averaging the trip volume increase using TMC over ATR yields an estimated 13% increase in trips. Using the 13% increase in trip volume, the analysis shows there would be an increase of 33 trips during Thursday P.M. peak hour and an increase of 31 trips during Saturday midday. That equates to a volume increase of 14 (Saturday midday) and 15 (Thursday P.M. peak hour) utilizing the Whiteford Rd/Galleria SE driveway during the peak hour. Provide updated analysis of weekday P.M. and Saturday midday using a 13% increase in trip volume.*

The TPD study analyzed the Friday PM peak hour as well as the Saturday evening peak hour. The TRG study included a Thursday PM peak hour, the Saturday mid-day peak hour, in addition to the Saturday evening peak hour. Where automatic traffic recorder (ATR) and turning movement count (TMC) data was available (Saturday evening peak hour), TRG utilized the higher calculated rate based on the TMC data. TMC data was not available for the Thursday evening peak hour or for the Saturday mid-day peak hour. Therefore, TRG used the available data and did not extrapolate data points it did not have.

It should be noted that even if a 13% factor was applied to the available data for the Thursday PM rates, it would equate to a negligible level of traffic, 14 additional entering trips (or 1 vehicle every 4 minutes spread across the five mall access points) and 18 additional exiting trips (or 1 vehicle every 3 minutes spread across the five mall access points).

3. *(§289-21.D.6) The location of the Hollywood Casino at Penn National (East Hanover Township, Dauphin County) and the proposed Hollywood Casino at the Galleria are in different geographic locations. The Hollywood Casino at Penn National is located 17 miles from Harrisburg (≈49,192 population) in East Hanover Township (≈11,234 population). The proposed Hollywood Casino at the Galleria is located four miles from York (≈44,132 population), 24 miles from Lancaster (≈59,708 population), in Springettsbury Township (≈26,813 population). The Hollywood Casino at Penn National caters to destination trips; while the proposed Casino at the Galleria could be destination and pass-by trips.*
  - a. *Was there a geographical analysis conducted to adjust the projected trips, from the Hollywood Casino at Penn National to the proposed Hollywood Casino at the Galleria?*

- b. *The population density of Springettsbury Township is 699% more than East Hanover Township. Is there a different Casino in a similarly populated location as the proposed Galleria Casino that would yield a more accurate projected trip volume?*
- c. *Why was only one Casino used to determine the trip generation? If data from multiple Casino locations were used, would the average trip generation significantly differ from the trip generation derived from the Hollywood Casino at Penn National?*

In general, the vast majority of trips to casinos are planned trips or “destination” oriented. Studies have shown that very little visitation is impromptu or “pass-by” (typically 1-2% of overall visitation). The traffic impact study forecasted all trips to the Casino as “new trips”. No discount was made for “pass-by trips”. In reality, it is likely a good portion of the existing vehicles already in the nearby road network would utilize the facility. As a worst case scenario we did not include any of these trips as pass-by trips to the facility, thereby lessening the impact at the study intersections.

Penn National officials did conduct a marketing study which was used in developing the site trip distribution and assignment in the TIS. As noted previously, there is very limited data on trip generation for casinos.

Each site is unique in its own way, but it is anticipated the data provided from the Hollywood Casino at Grantville will be representative of the traffic generated at the Springettsbury Township site. As noted above in #1, other comparable casinos have trip generation estimates equivalent to those forecasted for the Springettsbury Township site.

4. *(§289-21.D.6) Hollywood Casino at Penn National opened a sports book (sports betting venue) in November 2018. Is this a projected addition to the Hollywood Casino at the Galleria? If so, what impact did sports betting have on traffic volume at Penn National?*

According to Penn National officials it is still too premature to determine the impact of sports betting. An argument can be made that the on-line versions of gambling and sports betting may do to physical casinos what on-line banking and on-line shopping have done to physical banks and retail stores (reduced trip generation).

### **Traffic Impact Study Comments**

1. *(§289-21.B) With the recent addition of Marshalls and Gold's Gym in vacant space at the Galleria, is there a proposed use for the remaining vacant space where Sears (remaining space not used by Hollywood Casino) and Bon-Ton were located?*

Not to our knowledge. The satellite casino is simply a tenant in a mall, where a traffic impact study was performed approximately 30 years ago, along with the necessary improvements and buildout of a fully occupied mall. It is likely that the tenants that may occupy these vacant spaces will not generate traffic volumes anticipated in the original TIS. As noted above, on-line merchandising has made a large impact on the trip generation experienced at the large retail centers such as the York Galleria Mall. (reduced traffic volumes)

2. *(§289-21.D) The proposed Hollywood Casino at the Galleria is expected to create 200 permanent jobs. Has analysis been conducted to predict the volume of employees and customers expected to use multimodal transportation? Is there a dedicated ADA compliant sidewalk from the Galleria Rabbitransit bus stop to the proposed Casino entrance?*

As a worst case scenario, we did not include a discount in traffic for multi-modal transportation. However, Rabbitransit will be apprised of the situation so that they can optimize the availability of transit to the facility.

3. *(§289-21.D.4) Provide a signal warrant analysis and gap study for the Whiteford Rd/Galleria SE driveway using the anticipated volume increase with the proposed change of right in-right out and egress only at the Whiteford Rd/Galleria SW driveway. Does the anticipated traffic volume increase approach or exceed any signal warrant based on the ten-year projections at the Whiteford Rd/Galleria SE driveway?*

A traffic signal warrant analysis was performed at the Whiteford Road/Galleria SE driveway and is included with this response letter. The traffic signal warrant analysis was first completed using 24-hour existing traffic volumes which had been completed in September 2016 as part of the Township requested signal warrant analysis for the Susquehanna Bank (BB&T) Project. Based on these 2016 traffic counts, the volume warrants were not met. These counts were then factored to the year 2018 and site traffic generated by the proposed casino was also included in the traffic volumes. Based on this scenario, the Eight-Hour Vehicular Volume warrant was met for traffic signalization. Additionally, a traffic signal warrant analysis conducted for future 2029 conditions with development also showed that conditions were met for traffic signalization. It is our understanding that the Township currently holds approximately \$100,000 in funding that was contributed by another developer for installation of a traffic signal at the Whiteford Road/Galleria SE driveway. Penn National is willing to make a contribution to the Township for the remaining costs of installing this traffic signal.

4. *(§289-21.E.4) Provide analysis on the impact of traffic volume for the two proposed improvements at the Whiteford Rd/Galleria SW driveway.*

Improvement scenarios were conducted at the Whiteford Road/York Galleria SE entrance and at the Whiteford Road/York Galleria SW entrance. Improvement Option #1 analyzed an Exit Only scenario at the Whiteford Road/York Galleria SW entrance and Option #2 analyzed a Right-in/Right-out only at the Whiteford Road/York Galleria SW entrance. Traffic was reassigned to the roadway network based on these scenarios. Both options improved deficiencies at the York Galleria SW entrance although both options created failing conditions on the southbound driveway approach at the York Galleria SE entrance. The York Galleria SE entrance intersection will operate acceptably overall with the Exit only option, but will fail overall on Saturday with the Right-in/Right-out option. However, as previously documented, traffic signal control is warranted at the Whiteford Road/York Galleria SE entrance. With traffic signal control at the York Galleria SE entrance and either Option #1 or Option #2, the intersections will all operate with acceptable levels of service.



### **Proposed Improvement Comments**

1. (§289-21.E.4) *The study recommends optimizing timing of the traffic control signal at the Mt. Zion Road (S.R. 0024)/U.S. 30 WB Ramps-Whiteford Road intersection. During weekday PM hours, westbound traffic on the U.S. 30 ramp still operates at an overall level of service (LOS) E with the proposed timing optimized. Westbound traffic making a right turn off the U.S. 30 ramp will still operate at a LOS F. The existing storage capacity of the westbound right turn lane on the U.S. 30 ramp is 210 feet while the 2029 projected weekday PM peak hour requires 668 feet with proposed improvements. The Quattro development on Concord Road submitted a Penn Dot HOP to extend the right turn lane from 210 feet to 275 feet. The queue length shows there will still be congestion on the westbound ramp with the extended right turn lane and optimized timing of the traffic signal. The result of exceeding the storage capacity for the right turn limits traffic from utilizing the storage capacity of the straight through and left turn lanes, reducing the amount of traffic that can utilize each green light cycle. With 42% of projected Casino traffic oriented from U.S. 30 westbound, further improvements are recommended at this intersection. See Figure 1 below for existing conditions and Figure 2 for a proposed improvement. Recommendations for improvements are:*
  - a. *Add a raised curb island to the intersection to allow westbound right turn traffic to yield instead of stopping while also adding storage capacity to increase traffic flow. What impact would this recommendation have on queue length for right turn westbound on the U.S. 30 ramp?*
  - b. *Update the traffic control signal to an adaptive control signal to eliminate future timing optimizations. The real-time optimization with an adaptive control signal will improve traffic flow 24/7 while also mitigating traffic congestion associated with any promotional Casino event.*
  - c. *Add an ADA compliant sidewalk to the west of Mt. Zion Road in accordance with Springettsbury Township sidewalk GAP analysis. Pedestrian pushbuttons already exist with no sidewalk present. Eliminate the pushbutton that allows pedestrian crossing Mt. Zion Road on the north side of the intersection. The improvement will allow pedestrians to safely cross Whiteford Road to access the proposed Casino.*

Since right turns on red are currently made at the U.S. 30 WB off ramp and there is no dedicated receiving lane it is not anticipated that a widened radius will make a significant difference to this intersection. Moreover, it is clear that these improvements are off-site and are not proposed to be made as part of this project.

2. (§289-21.E.4) *The study recommends optimizing timing of the traffic control signal at the Mt. Zion Road (S.R. 0024)/Pleasant Valley Road intersection. The addition of a right turn lane southbound on Mt. Zion Road would greatly improve the traffic flow at the intersection. Additionally, updating the traffic control signal to an adaptive control signal will eliminate future timing optimizations. The real-time optimization with an adaptive control signal will improve traffic flow 24/7. However, with only 6% of new site generated traffic utilizing the intersection, optimizing the timing would be sufficient, but will likely need to be optimized again after completion of the Triplet Springs Residential Development, Pleasant Valley LLC apartments, and the Quattro development site on Concord Road.*

Acknowledged, and this study continues to recommend only that traffic signal timing be optimized.

3. *(§289-21.E.4) The study proposes two improvement options to the Whiteford Road/Galleria Southwest driveway entrance. The options are to convert the driveway to a right-in/right-out or to convert the driveway to egress only. The existing driveway/Ring Road intersection is confusing, congested and incorporates a right turn that requires vehicles to significantly reduce speed in order to navigate the radius of the turn. The sharp radius of the turn creates congestion on Whiteford Road when two vehicles enter the driveway. The proposed right- in/right-out improvement may not solve that issue and will divert the southbound left turn traffic out of the driveway to the Whiteford Rd/Galleria Southeast driveway. The proposed improvement to convert the driveway to egress only is recommended. Converting the driveway to egress only, while shifting the entrance West on Whiteford Road will significantly improve traffic flow. This recommendation will reduce stop signs on Ring Road while extending the left and right turn lanes southbound. The existing southbound left turn congestion will be reduced due to less volume westbound on Whiteford Road. Recommend lighting improvement at the intersection to increase safety and an ADA compliant sidewalk linking existing Whiteford Road sidewalk to proposed Casino sidewalk. See Figure 3 below for existing conditions at the Whiteford Rd/Galleria Southwest driveway and Figure 4 for recommended improvements.*

Additional analysis of this study intersection is included with this response letter. Since Penn National is merely a tenant at the mall, the owner of the mall would have to agree to convert this intersection to right-in/right-out configuration. Penn National is willing to work with the Township and mall owner to make these changes. As reflected in the study, additional analysis was performed to account for traffic being re-routed through the Whiteford Road/Galleria SE driveway. As noted above, warrants are met for installing a traffic signal at this intersection, and Penn National is willing to contribute to the Township additional funds for the installation of the traffic signal (over and above the \$100,000 that the Township currently holds for the installation of the signal).

4. *(§289-21.E.4) The study does not propose any improvement at the Whiteford Rd/Galleria Southeast driveway entrance; however, tree relocation due to line of sight obstruction, modification of median for ADA compliant sidewalk or shortening of median, and improved lighting for safety are recommended. Installation of a traffic control signal is recommended if intersection justifies Penn Dot signal warrants. See Figure 5 for the existing conditions of the Whiteford Rd/Galleria Southeast driveway and Figure 6 for recommended improvements.*

The additional analysis included with this response letter for the Whiteford Road/Galleria SE driveway recommends installation of a traffic signal at this intersection.

5. *(§289-21.E.4) Within the study there are recommendations for optimizing traffic signal timings at two intersections within the traffic responsive system on Mt Zion Road. Modifying the timings at two intersections within the system will result in the need to retime all the signals within the system whether or not mitigation is necessary. Are there more traffic signals within the system other than the two recommended that will need modified?*

PennDOT recently upgraded the S.R.0024 corridor signals with a traffic responsive system. The intersections have flexibility based on demand on the traffic signal detectors as to time allotted for each phase.

If you have questions regarding this traffic summary letter or the attached trip generation estimate, please don't hesitate to contact me. Thanks!

Very truly yours,  
**Transportation Resource Group, Inc.**

A handwritten signature in black ink that reads "Jon A. Seitz". The signature is written in a cursive, flowing style.

Jon A. Seitz, P.E., PTOE  
Principal

JAS/vaw

***Backup Information for  
Site Trip Generation  
Comment #1***



# TRAFFIC IMPACT STUDY



**Market East /  
Center City**

**Philadelphia,  
Pennsylvania**

**February 2013  
Revised September 2013  
Revised November 2013  
MEAS 1201**

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PENNSYLVANIA REG. No. PE 051756E



**Trip Generation**

Development trips were generated for the site based on the following components: 80,000 GSF Casino (with 3192 gaming positions, buffet, 1200 seat (approx.) Showroom), 168 room hotel and approximately 30,000 GSF of fine dining. The number of planned gaming positions for the MARKET8 casino is broken down as follows:

2400 slot machines @ 1 seat/slot           => 2400 gaming positions  
 30 poker tables @ 10 seats/table       => 300 gaming positions  
 82 table games (6 seats/table)       => 492 gaming positions  
**Total Gaming Positions = 3192**

Projected peak hour trips (per gaming position) for the casino’s Friday and Saturday evening peak periods are based on research and information obtained from other casino traffic studies; as well as actual traffic counts at the Hollywood Casino in Columbus, OH and the SugarHouse Casino in Philadelphia. We have also compared these rates to ITE’s latest Trip Generation manual for Casino/Video Lottery Establishments (Land Use Code 473); however, ITE’s Land Use description does not exactly match that of this development. For this project, Pennoni recommends using the “SugarHouse” Trip Generation Rates for each proposed gaming position. (See APPENDIX K).

A summary of empirical trip generation data and research for various casinos is shown in TABLE 4.

**TABLE 4: CASINO TRIP GENERATION COMPARISONS**

Source	CASINO TRIP GENERATION / GAMING POSITION								
	FRIDAY PM - STREET			FRIDAY PM - CASINO			SATURDAY PM - CASINO		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
SugarHouse Casino* (Philadelphia, PA)*	46%	54%	0.2675	51%	49%	0.3224	48%	52%	0.3947
Hollywood Casino* (Columbus, OH)	50%	50%	0.2155	50%	50%	0.2793	42%	58%	0.3663
Casino St Charles (St. Louis, MO) <sup>7</sup>	44%	56%	0.4300	54%	46%	0.5400	53%	47%	0.6400
AVERAGE	47%	53%	0.2327	52%	48%	0.2906	48%	52%	0.3603
<b>USE:</b>	<b>46%</b>	<b>54%</b>	<b>0.268</b>	<b>51%</b>	<b>49%</b>	<b>0.322</b>	<b>48%</b>	<b>52%</b>	<b>0.395</b>

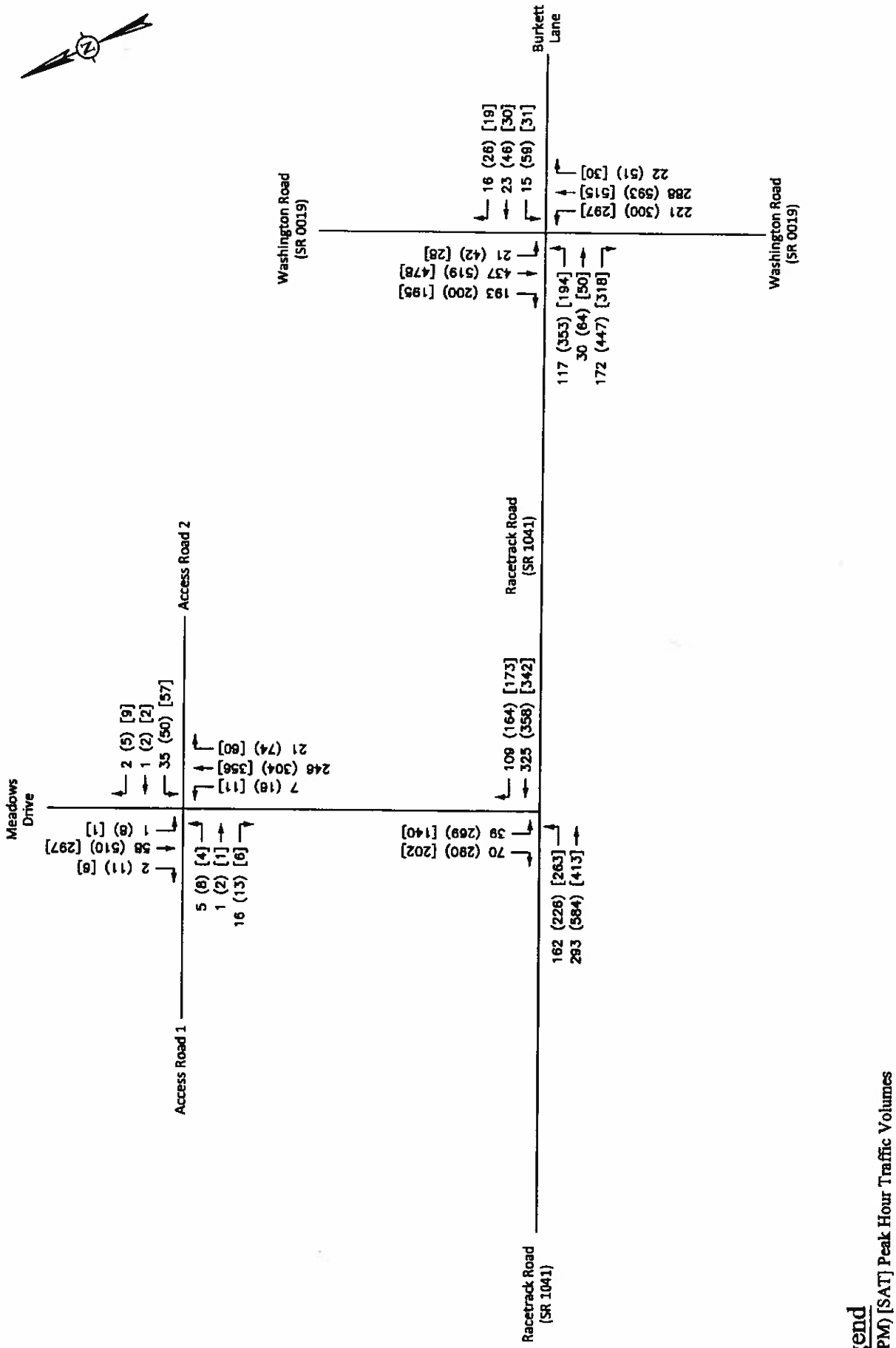
\* Based on actual count data obtained by Pennoni, June 2013

**Multi-Use Development Internal Trip Reductions**

The overall trip generation for the site considers trip reduction resulting from internal trips within the multi-use development. The internal trip reductions were applied using ITE internal trip reduction methodology as



***PEAK HOUR TRIP GENERATION COUNT SUMMARY FOR THE  
MEADOWS RACETRACK AND CASINO IN WASHINGTON, PA***



**Legend**

AM (PM) [SAT] Peak Hour Traffic Volumes

**PROPOSED SHEETZ DEVELOPMENT - North Strabane Township**

Existing Year 2017 Peak Hour Traffic Volumes

DAVID E. WOOSTER & ASSOC., INC.

FIGURE 3a  
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