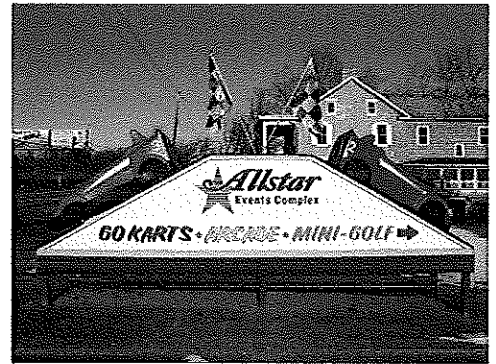


**Mason-Dixon Resorts and Casino
Emmitsburg Road (S.R.3001)**

Transportation Impact Study

Cumberland Township, Adams County

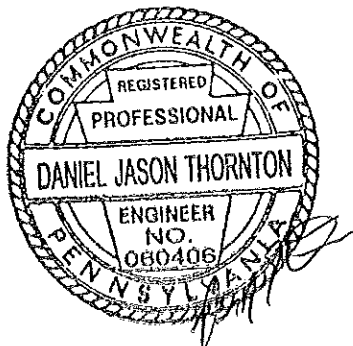


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March 2010



Transportation Impact Study

for the

Mason-Dixon Resorts and Casino Emmitsburg Road (S.R.3001)

Cumberland Township
Adams County, Pennsylvania



prepared for

Mason-Dixon Resorts, LLC

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Project No. 388.01

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Executive Summary

A summary of key findings is presented below followed by the recommendations.

1. Currently on site is the Eisenhower Inn and Conference Center as well as the All-Star Family Fun & Sports Complex. Access to the existing facility is provided by an existing full movement driveway on Emmitsburg Road (S.R.3001) to the south of Barlow Greenmount Road (S.R.3006). As part of the proposed development, the All-Star Family Fun building is proposed to be converted to a casino. The size of the building will not change but will be renovated to accommodate the casino's needs. The casino is proposed to have 600 slots and 50 table games at this time. Access to the proposed casino will continue to be provided by the full movement driveway on Emmitsburg Road (S.R.3001).
2. The following intersections were selected for detailed analysis based on discussions with Cumberland Township:
 - Emmitsburg Road (S.R.3001) / Barlow Greenmount Road (S.R.3006)
 - Emmitsburg Road (S.R.3001) / Existing Resort Driveway
 - Emmitsburg Road (S.R.3001) / U.S. Route 15 Southbound Ramps (2)
 - Emmitsburg Road (S.R.3001) / U.S. Route 15 Northbound Ramps
3. Currently, the study intersections operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
4. An accident analysis was performed at the study intersections. The analysis shows that there is not a safety problem at the study intersections.
5. In the year 2012 without the proposed development, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
6. In the year 2017 without the proposed development, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
7. The proposed Mason-Dixon Resorts and Casino is anticipated to generate an estimated 354 new trips during the typical weekday PM peak hour, 414 new trips during the Friday PM peak hour and 468 new trips during the Saturday peak hour. On a weekday basis, an estimated 5,958 trips will be generated.
8. In the year 2012 with the proposed Mason-Dixon Resorts and Casino, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours with the exception of the Emmitsburg Road (S.R.3001)/Existing Resort Driveway intersection, which will operate at an overall LOS F during the Saturday peak hour.

9. In the year 2017 with the proposed Mason-Dixon Resorts and Casino, the study intersections will operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours with the exception of the Emmitsburg Road (S.R.3001)/Existing Resort Driveway intersection, which will operate at an overall LOS F during the Saturday peak hour.
10. An improvement analysis was conducted to determine what improvements are required to mitigate the proposed development's site traffic. The results of the improvement analysis are as follows:

Emmitsburg Road (S.R.3001)/Existing Resort Driveway

Even though turn lanes are not warranted, an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. The analysis found that the Peak Hour Volume Warrant was met in the year 2012 during the Saturday peak hour. With a traffic signal, the intersection will operate at acceptable levels of service. The developer is willing to install a northbound right turn lane on Emmitsburg Road (S.R.3001) at the existing Resort Driveway. The improvement analysis and a queue analysis is summarized in Table A and Table B in the appendices. The northbound right turn lane is proposed to be 150 feet of storage and a 100 foot taper.

Emmitsburg Road (S.R.3001)/Route 15 Northbound Ramps

In the year 2017 during the Saturday peak hour, this intersection will operate at an overall LOS A (6.3 sec/veh delay) without the proposed development but will degrade to an overall LOS C (17.3 sec/veh delay) with the proposed development. Per PennDOT guidelines, the developer is required to mitigate the LOS if the LOS grade changes and the increase in overall intersection is greater than 10 seconds. In the year 2017, the delay increase from the "without development" scenario to "with development" scenario is 11.0 seconds. Therefore the developer is required to mitigate the site traffic. Even though turn lanes are not warranted on Emmitsburg Road (S.R.3001), an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. Based on the traffic counts, a traffic signal is not warranted at this intersection. The intersection only has a marginal degradation in levels of service and the intersection will still operate at acceptable overall levels of service in the year 2017 with the proposed development. Therefore, no improvements are recommended at this intersection.

11. With the proposed recommendations, safe and efficient site access can be obtained.

Recommendations

Based on the results of the traffic analysis, mitigating measures are required as part of this development. Only minor modifications are necessary since traffic volumes for a resort complex were anticipated in previous traffic planning for the tract of land. Traffic volumes have been lower than expected due to declining occupancy. Therefore, increased occupancy at the Mason-Dixon Resort will only help traffic reach slightly above previously expected levels. A summary of the recommendations to ensure safe and efficient traffic movements is presented below:

Site Access

1. The developer will install a traffic signal at the Emmitsburg Road (S.R.3001)/Existing Resort Driveway. The signal will be a two phase operation with the future possibility of coordination with future signals along Emmitsburg Road (S.R.3001). The developer will also construct a 150 foot northbound right turn lane on Emmitsburg Road (S.R.3001) at the existing resort driveway.

INTRODUCTION/PROJECT SUMMARY

This report describes the transportation impact analysis for the proposed Mason-Dixon Resorts and Casino development located to the east of Emmitsburg Road (S.R.3001) in Cumberland Township, Adams County, Pennsylvania. See Figure 1 in the Appendices for the site location. Currently on site is the Eisenhower Inn and Conference Center as well as the All-Star Family Fun & Sports Complex. Access to the existing facility is provided by an existing full movement driveway on Emmitsburg Road (S.R.3001) to the south of Barlow Greenmount Road (S.R.3006). As part of the proposed development, the All-Star Family Fun building is proposed to be converted to a casino. The size of the building will not change but will be renovated to accommodate the casino's need. The casino is proposed to have 600 slots and 50 table games at this time. Access to the proposed casino will continue to be provided by the full movement driveway on Emmitsburg Road (S.R.3001). Figure 2 in the Appendices shows the site plan for the proposed development.

The purpose of this study is to identify significant traffic problems associated with the ability of the existing roadways to accommodate the volume of traffic anticipated from the development and to assure safe and efficient site access. If necessary, improvements will be recommended to mitigate the impact of development traffic on the surrounding roadway network. This study is prepared in accordance with PennDOT SOL 470-09-4 guidelines on traffic impact studies.

DATA COLLECTION

This section summarizes the data collected for the study as well as the methodology used to obtain the data in accordance with the scoping meeting application. Based on the characteristics of the proposed development, the following peak hours will be analyzed:

- Typical weekday PM peak hour (Thursday)
- Friday PM peak hour
- Saturday peak hour

Manual turning movement counts were conducted at the study intersections by Transportation Resource Group, Inc. (TRG), during typical weekday evening, Friday evening and Saturday in January and February 2010. The counts were conducted during the typical weekday evening hours from 3:00 PM to 6:00 PM, during the Friday evening hours from 4:00 PM to 7:00 PM and during the Saturday midday hours from 12:00 PM to 3:00 PM. Counts were recorded in 15-minute intervals, with the peak hour being selected from the four highest consecutive 15-minute periods. The existing January and February 2010 counts were seasonally factored utilizing PennDOT's Traffic Data Report. The TMC count summaries can be found in the Appendices. The following Thursday (PM), Friday (PM) and Saturday peak hours occurred at the study intersections:

<u>Intersection</u>	<u>Typical Weekday PM Peak Hour</u>	<u>Friday Peak Hour</u>	<u>SAT Peak Hour</u>
Emmitsburg Road (S.R.3001)/Barlow Greenmount Road (S.R.3006)	4:15 – 5:15 PM	4:30 – 5:30 PM	1:30 – 2:30 PM
Emmitsburg Road (S.R.3001)/Existing Resort Driveway	4:45 – 5:45 PM	4:00 – 5:00 PM	1:00 – 2:00 PM
Emmitsburg Road (S.R.300)/Route 15 SB Ramps	4:45 – 5:45 PM	4:00 – 5:00 PM	2:00 – 3:00 PM
Emmitsburg Road (S.R.3001)/Route 15 NB Ramps	4:45 – 5:45 PM	4:00 – 5:00 PM	1:30 – 2:30 PM

Due to the nature of the proposed development and the surrounding study area, gap analysis and travel time studies are not required and were not conducted for the study area roadways.

EXISTING STUDY AREA CONDITIONS

This section discusses the existing traffic conditions, land use context, roadway type and traffic controls in the study area. A description of the study area including the roadway network is also included in the section.

Study Area

The study area was selected based on those intersections that will be impacted the greatest by the proposed development and was confirmed with Cumberland Township. The following intersections were selected for further detailed analysis:

- Emmitsburg Road (S.R.3001)/Barlow Greenmount Road (S.R.3006)
- Emmitsburg Road S.R.3001/Existing Resort Driveway
- Emmitsburg Road (S.R.3001)/Route 15 SB Ramps
- Emmitsburg Road (S.R.3001)/Route 15 NB Ramps

Surrounding Land Uses/Land Use Context

Currently on site is the Eisenhower Inn and Conference Center and All-Star Family Fun & Sports Complex. The proposed development is surrounded mostly by residential homes with a few commercial land uses along Emmitsburg Road (S.R.3001). The Boyd's Bear store is located to the west of Emmitsburg Road (S.R.3001).

Based on a "windshield screen" field view of the study area, the land use context of the study area is rural community collector.

Existing Transportation System

The major roadway system in the study area is comprised of state roadways. The following is a summary of the traffic control of the existing study area intersections:

Emmitsburg Road (S.R.3001)/Barlow Greenmount Road (S.R.3006)

This three legged intersection is controlled by a stop sign on the minor street approach of Barlow Greenmount Road (S.R.3006). Each approach is single lane.

Emmitsburg Road (S.R.3001)/Complex Driveway

This existing three-legged intersection is controlled by a stop sign on the minor street approach of the complex driveway. There are no turn lanes on any of the approaches.

Emmitsburg Road (S.R.3001)/Route 15 Southbound Ramps

This intersection is unsignalized and provides access to/from southbound Route 15. A stop sign and a channelized right turn island are on the Route 15 southbound off ramp at Emmitsburg Road (S.R.3001). There are separate access points for traffic on Emmitsburg Road (S.R.3001) to enter the Route 15 southbound on ramp. The on ramp for southbound traffic on Emmitsburg Road (S.R.3001) is aligned with the Route 15 southbound off ramp while the on ramp for the northbound traffic on Emmitsburg Road (S.R.3001) is located further south. This intersection will be analyzed as two (2) separate intersections.

Emmitsburg Road (S.R.3001)/Route 15 Northbound Ramps

This four-legged intersection is controlled by a stop sign on the Route 15 northbound off ramp. The Route 15 northbound off ramp has a channelized right turn island.

Table 1 lists the roadway system characteristics for the study area road network.

Road Name	Ownership (State or Twp)	Orientation	Number of Lanes	Roadway Material	Speed Limit	ADT	Functional Class
Emmitsburg Road	S.R.3001	N-S	2	Asphalt	40	2,980	Minor Arterial
Barlow Greenmount Road	S.R.3006	N-S	2	Asphalt	40	525	Rural Minor Collector
Route 15	S.R.0015	N-S	4	Concrete	65	21,450	Principal Arterial Highway

The ADT volumes for the study roadways were obtained from PennDOT's ITMS website.

Pedestrian /Transit Facilities

Based on the characteristics of the surrounding study area, pedestrian facilities will not be provided along Emmitsburg Road (S.R.3001) as part of this development. Currently there are no pedestrian facilities provided along Emmitsburg Road (S.R.3001) in the area of the proposed development. There will be pedestrian facilities from the existing Eisenhower Hotel and Conference Center to the proposed casino on site. The local transit service does not have a fixed bus stop in the vicinity of the proposed development.

Traffic Volumes

Based on traffic characteristics of the development, weekday PM, Friday PM and Saturday peak hours were selected as the peak hours of operation. Existing peak hour traffic volumes were obtained from TMC counts conducted by TRG in January and February 2010. Figure 3 in the Appendices shows the existing typical weekday PM, Friday PM and Saturday peak hour traffic volumes at the study area intersections.

Level of Service/Capacity Analysis

This section discusses the existing levels of service and capacity analysis at the study intersections. The Highway Capacity Manual (2000) procedures were used to determine level of service (LOS) and capacity for intersections. Unsignalized intersections are rarely at capacity from an overall standpoint. Traffic movements from minor crossroads and major road left turns are largely affected by the distribution of gaps in the major street traffic stream, and motorist judgment in choosing gaps through which to execute their maneuvers. Gaps in the traffic stream depend on several factors, including the type of maneuvers being executed, type of minor street control, the average speed of the major street and geometric and environmental conditions. LOS criteria for unsignalized and signalized intersections are based on control delay (in seconds per vehicle) to motorists. Various factors affect delay, including traffic volumes, lane configurations and widths, traffic signal phasing and cycle lengths, trucks percentages, etc.

LOS ranges from "A" to "F" with "A" having the most favorable performance.

PENNDOT's "Policy and Procedures for Transportation Impact Studies" suggests new intersections must be designed to at least operate at an LOS C or better for rural conditions and an LOS D or better for urban conditions. Also, the overall intersection LOS for With Development scenarios should be no worse than Without Development scenarios per PennDOT's guidelines. Level of service ranges for unsignalized and signalized intersections can be found in Table 2.

Level of Service	Expected Traffic Delay	Average Control Delay ⁽¹⁾	Control Delay ⁽²⁾
A	Little or No Delay	<10	<10
B	Short Traffic Delays	>10 and ≤15	>10 and ≤ 20
C	Average Traffic Delays	>15 and ≤ 25	>20 and ≤ 35
D	Long Traffic Delays	>25 and ≤ 35	>35 and ≤ 55
E	Very Long Traffic Delays	>35 and ≤ 50	>55 and ≤ 80
F	Failure, Extreme Congestion	>50	>80

⁽¹⁾ UNSIGNALIZED – SEC/VEH
⁽²⁾ SIGNALIZED – SEC/VEH

Table A in the Appendices shows the results of the existing level of service analysis. The existing study intersections operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours. Figure 4 in the Appendices shows the existing level of service results at the study area intersections. Details of the level of service analysis can be found in the Appendices.

Crash Analysis

Crash data was obtained from PennDOT's Bureau of Highway Safety and Traffic Engineering for a five year period at the study intersections. This contains a summary of reportable accidents. A reportable accident is defined as an accident in which an injury or fatality occurs or one in which at least one of the vehicles is towed from the scene. The following summarizes the results of the crash data:

Emmitsburg Road (S.R.3001)/Barlow Greenmount Road (S.R.3006)

- No accidents were reported at this intersection during the five year period.

Emmitsburg Road (S.R.3001)/Route 15 SB Ramps

- No accidents were reported at this intersection during the five year period.

Emmitsburg Road (S.R.3001)/Route 15 NB Ramps

- No accidents were reported at this intersection during the five year period.

The analysis shows that the study intersection is not indicative of a safety problem. Details of the crash data analysis can be found in the Appendices.

OPENING YEAR (2012) TRAFFIC CONDITIONS WITHOUT DEVELOPMENT

This section discusses the opening year 2012 traffic conditions without the proposed Mason-Dixon Resorts and Casino. This section includes traffic volumes and level of service analysis at the study intersections.

Traffic Volumes

Some level of external traffic growth on the roadway system can be expected even without the proposed development. This growth can be attributed to a nominal increase in through traffic and traffic generated by developments outside the study area. A 0.86 percent average annual growth rate was used to factor the 2010 traffic counts to the year 2012 as recommended by PennDOT Bureau of Planning and Research's Table "Growth Factors for July 2009 to July 2010." The background growth volume additions can be found in the Appendices. Figure 5 in the Appendices shows the typical weekday PM, Friday PM and Saturday opening year (2012) without development traffic volumes at the study intersections.

Planned and Permitted Developments

There are no planned or permitted developments in the area per correspondence with Cumberland Township traffic engineer.

Level of Service/Capacity Analysis

A level of service analysis was conducted at the study intersections for the opening year (2012) without development scenario to determine the future level of service without the proposed development. Table A in the Appendices shows the results of the level of service analysis.

As shown in the analysis, the study intersections continue to operate at acceptable overall levels of service in the year 2012 without the proposed development. Figure 6 in the Appendices shows the level of service results for the opening (2012) year without development during the typical weekday PM, Friday PM and Saturday peak hours at the study intersections. Details of the level of service analysis can be found in the Appendices.

DESIGN HORIZON (2017) TRAFFIC CONDITIONS WITHOUT DEVELOPMENT

This section discusses the design horizon year 2017 traffic conditions without the proposed Mason-Dixon Resorts and Casino development traffic volumes. This section includes the traffic volumes and level of service analysis at the study intersections.

Traffic Volumes

Some level of external traffic growth on the roadway system can be expected even without the proposed development. This growth can be attributed to a nominal increase in through traffic and traffic generated by developments outside the study area. A 0.86 percent average annual growth rate was used to factor the 2010 traffic counts to the year 2017 as recommended by PennDOT Bureau of Planning and Research's Table "Growth Factors for July 2009 to July 2010." The background growth volume additions can be found in the Appendices. Figure 7 in the Appendices shows the typical weekday PM, Friday PM and Saturday design horizon (2017) year without development traffic volumes at the study intersections.

Level of Service/Capacity Analysis

A level of service analysis was conducted at the study intersections for the design horizon year (2017) without development scenario to determine the future level of service without the proposed development. Table A in the Appendices shows the results of the level of service analysis.

As shown in the analysis, the study intersections continue to operate at acceptable overall levels of service in the year 2017 without the proposed development. Figure 8 in the Appendices shows the level of service results for the design horizon year (2017) without development during the typical weekday PM, Friday PM and Saturday peak hours at the study intersections. Details of the level of service analysis can be found in the Appendices.

DEVELOPMENT DESCRIPTION

Proposed Development

Currently on site is the Eisenhower Inn and Conference Center as well as the All-Star Family Fun & Sports Complex. Access to the existing facility is provided by an existing full movement driveway on Emmitsburg Road (S.R.3001) to the south of Barlow Greenmount Road (S.R.3006). As part of the proposed development, the All-Star Family Fun building is proposed to be converted to a casino. The size of the building will not change but will be renovated to accommodate the casino's needs. The casino is proposed to have 600 slots and 50 table games at this time. Access to the proposed casino will continue to be provided by the full movement driveway on Emmitsburg Road (S.R.3001).

Sight Distance Analysis

Intersection sight distance was field measured at the existing resort driveway intersecting Emmitsburg Road (S.R.3001) to determine if the available sight distance would exceed the PennDOT minimum and desirable site intersection sight distance. The required and measured intersection sight distances are shown below:

<u>Intersection</u>	<u>Measured</u>	<u>Left</u>		<u>Measured</u>	<u>Right</u>	
		<u>Required</u>	<u>Desirable</u>		<u>Required</u>	<u>Desirable</u>
Emmitsburg Road (S.R.3001)/ Existing Resort Driveway	+1,200'	319'	540'	507'	331'	450'

The available sight distance from the existing driveway exceeds the minimum and desirable sight distance. Details of the sight distance analysis can be found in the Appendices.

Site Trip Generation

The level of traffic likely to be generated by the proposed development has been estimated to determine the potential traffic impact on the study intersections. Estimated

site trips for the development were computed using the ITE article "Trip Generation Characteristics of Small to Medium Casino".

Table 2 summarizes the estimated site trip generation for the proposed development during the typical weekday PM, Friday PM and Saturday Peak hours.

Land Use (Code)	PM Peak Hour (Thursday)			PM Peak Hour (Friday)			Saturday Peak			ADWT
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
Casino (600 slots)	186	168	354	216	198	414	252	216	468	5,958

Cumberland Township has adopted a Capital Improvement Plan to ensure that the Township is equipped to provide access and infrastructure to accommodate anticipated development in the Township. This development is located in the Transportation Service Area – South. The traffic impact fee for this service area is \$2,210 per PM peak hour trip. The proposed development has 354 PM peak hour trips which equates to \$782,340. The developer and the Township will need to coordinate regarding the traffic impact fee to determine if site traffic from the existing All Star Family & Sports Complex can be subtracted from the traffic impact fee calculations. Details of the trip generation can be found in the Appendices.

Modal Split

Because there is not sufficient pedestrian, bicycle, and transit facilities provided within the study area, a trip reduction due to modal split is not applicable and was not assumed for this study.

Site Trip Distribution and Assignment

Figure 9 in the appendices shows the trip distribution percentages for the site traffic on the major roadway system. Figure 10 in the Appendices shows the total site trip distribution and assignment of the proposed development on the major roadway system at full buildout of the proposed development. Site trip distribution was based on existing

traffic patterns, a marketing study for the casino and engineering judgment. The following trip distribution was assumed for the site trips generated by the proposed development:

- 9% oriented to/from the north on Emmitsburg Road (S.R.3001)
- 1% oriented to/from the east on Barlow Greenmount Road (S.R.3006)
- 50% oriented to/from the south on Route 15
- 38% oriented to/from the north on Route 15
- 2% oriented to/from the south on Emmitsburg Road (S.R.3001)

On a daily basis, the existing driveway on Emmitsburg Road (S.R.3001) will have an estimated ADT of 6,464 trips or 3,232 vehicles, which is a high volume operation. Details of the site trip distribution and assignment are included in the Appendices.

OPENING YEAR (2012) TRAFFIC CONDITIONS WITH DEVELOPMENT

Traffic Volumes

The opening year with development peak hour volumes were derived by combining existing traffic, growth in background and through traffic, and the site trips generated by the proposed Mason-Dixon Resorts and Casino. Figure 11 in the Appendices shows the typical weekday PM, Friday PM and Saturday opening year with development traffic volumes at the study intersections.

Level of Service/Capacity Analysis

A level of service analysis was conducted at the study area intersections for the opening year (2012) with development scenario to determine the level of service with the development. Table A in the Appendices shows the results of the level of service analysis.

As shown in the analysis, all study intersections operate at acceptable overall levels of service in the year 2012 with development, with the exception of the Emmitsburg Road (S.R.3001)/Existing Resort Driveway intersection. Figure 12 in the Appendices shows the level of service results for the opening year (2012) with development during the typical weekday PM, Friday PM and Saturday peak hours at the study intersections. Details of the level of service analysis can be found in the Appendices.

Turn Lane Analysis

The need for a left turn and right turn lane at the site access intersection with Emmitsburg Road (S.R.3001) was analyzed with opening year (2012) with development traffic volumes utilizing PennDOT guidelines outlined in Publication 46 Chapter 11.17. The analysis found that a right turn lane nor left turn lane are not warranted at the site access intersection with 2012 traffic volumes. Details of the turn lane analysis can be found in the Appendices.

DESIGN HORIZON YEAR (2017) TRAFFIC CONDITIONS WITH DEVELOPMENT

Traffic Volumes

The design horizon year (2017) with development peak hour volumes were derived by combining existing traffic, growth in background and through traffic, and the site trips generated by the proposed Mason-Dixon Resorts and Casino. Figure 13 in the Appendices shows the typical weekday PM, Friday PM and Saturday design horizon year (2017) with development traffic volumes at the study intersections.

Level of Service/Capacity Analysis

A level of service analysis was conducted at the study area intersections for the design horizon year (2017) with development scenario to determine the level of service with the development. Table A in the Appendices shows the results of the level of service analysis.

As shown in the analysis, all study intersections operate at acceptable overall levels of service in the year 2017 with development, with the exception of the Emmitsburg Road (S.R.3001)/Existing Resort Driveway intersection. Figure 14 in the Appendices shows the level of service results for the design horizon year (2017) with development during the typical weekday PM, Friday PM and Saturday peak hours at the study intersections. Details of the level of service analysis can be found in the Appendices.

Turn Lane Analysis

The need for a left turn and right turn lane at the site access intersection with Emmitsburg Road (S.R.3001) was analyzed with design horizon year (2017) with development traffic volumes utilizing PennDOT guidelines outlined in Publication 46 Chapter 11.1. The analysis found that a right turn lane nor left turn are not warranted at the site access intersection with 2017 traffic volumes. Details of the turn lane analysis can be found in the Appendices.

MITIGATION IDENTIFICATION

An improvement analysis was conducted to determine what improvements are required to mitigate the proposed development's site traffic. The results of the improvement analysis are as follows:

Emmitsburg Road (S.R.3001)/Existing Resort Driveway

Even though turn lanes are not warranted, an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. The analysis found that the Peak Hour Volume Warrant was met in the year 2012 during the Saturday peak hour. With a traffic signal, the intersection will operate at acceptable levels of service. The developer is willing to install a northbound right turn lane on Emmitsburg Road (S.R.3001) at the existing Resort Driveway. The improvement analysis and a queue analysis is summarized in Table A and Table B in the appendices. The northbound right turn lane is proposed to be 150 feet of storage and a 100 foot taper.

Emmitsburg Road (S.R.3001)/Route 15 Northbound Ramps

In the year 2017 during the Saturday peak hour, this intersection will operate at an overall LOS A (6.3 sec/veh delay) without the proposed development but will degrade to an overall LOS C (17.3 sec/veh delay) with the proposed development. Per PennDOT guidelines, the developer is required to mitigate the LOS if the LOS grade changes and the increase in overall intersection is greater than 10 seconds. In the year 2017, the delay increase from the "without development" scenario to "with development" scenario is 11.0 seconds. Therefore the developer is required to mitigate the site traffic. Even though turn lanes are not warranted on Emmitsburg Road (S.R.3001), an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. Based on the traffic counts, a traffic signal is not warranted at this intersection. The intersection only has a marginal degradation in levels of service and the intersection will still operate at acceptable overall levels of service in the year 2017 with the proposed development. Therefore, no improvements are recommended at this intersection.

Details of the improvement/mitigation analysis can be found in the Appendices.

CONCLUSIONS and RECOMMENDATIONS

A summary of key findings is presented below followed by the recommendations.

1. Currently on site is the Eisenhower Inn and Conference Center as well as the All-Star Family Fun & Sports Complex. Access to the existing facility is provided by an existing full movement driveway on Emmitsburg Road (S.R.3001) to the south of Barlow Greenmount Road (S.R.3006). As part of the proposed development, the All-Star Family Fun building is proposed to be converted to a casino. The size of the building will not change but will be renovated to accommodate the casino's needs. The casino is proposed to have 600 slots and 50 table games at this time. Access to the proposed casino will continue to be provided by the full movement driveway on Emmitsburg Road (S.R.3001).
2. The following intersections were selected for detailed analysis based on discussions with Cumberland Township:
 - Emmitsburg Road (S.R.3001) / Barlow Greenmount Road (S.R.3006)
 - Emmitsburg Road (S.R.3001) / Existing Resort Driveway
 - Emmitsburg Road (S.R.3001) / U.S. Route 15 Southbound Ramps (2)
 - Emmitsburg Road (S.R.3001) / U.S. Route 15 Northbound Ramps
3. Currently, the study intersections operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
4. An accident analysis was performed at the study intersections. The analysis shows that there is not a safety problem at the study intersections.
5. In the year 2012 without the proposed development, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
6. In the year 2017 without the proposed development, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours.
7. The proposed Mason-Dixon Resorts and Casino is anticipated to generate an estimated 354 new trips during the typical weekday PM peak hour, 414 new trips during the Friday PM peak hour and 468 new trips during the Saturday peak hour. On a weekday basis, an estimated 5,958 trips will be generated.
8. In the year 2012 with the proposed Mason-Dixon Resorts and Casino, the study intersections will continue to operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours with the exception of the Emmitsburg Road (S.R.3001)/Existing Complex Driveway

intersection, which will operate at an overall LOS F during the Saturday peak hour.

9. In the year 2017 with the proposed Mason-Dixon Resorts and Casino, the study intersections will operate at acceptable overall levels of service during the typical weekday PM, Friday PM and Saturday peak hours with the exception of the Emmitsburg Road (S.R.3001)/Existing Complex Driveway intersection, which will operate at an overall LOS F during the Saturday peak hour.
10. An improvement analysis was conducted to determine what improvements are required to mitigate the proposed development's site traffic. The results of the improvement analysis are as follows:

Emmitsburg Road (S.R.3001)/Existing Resort Driveway

Even though turn lanes are not warranted, an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. The analysis found that the Peak Hour Volume Warrant was met in the year 2012 during the Saturday peak hour. With a traffic signal, the intersection will operate at acceptable levels of service. The developer is willing to install a northbound right turn lane on Emmitsburg Road (S.R.3001) at the existing Resort Driveway. The improvement analysis and a queue analysis is summarized in Table A and Table B in the appendices. The northbound right turn lane is proposed to be 150 feet of storage and a 100 foot taper.

Emmitsburg Road (S.R.3001)/Route 15 Northbound Ramps

In the year 2017 during the Saturday peak hour, this intersection will operate at an overall LOS A (6.3 sec/veh delay) without the proposed development but will degrade to an overall LOS C (17.3 sec/veh delay) with the proposed development. Per PennDOT guidelines, the developer is required to mitigate the LOS if the LOS grade changes and the increase in overall intersection is greater than 10 seconds. In the year 2017, the delay increase from the "without development" scenario to "with development" scenario is 11.0 seconds. Therefore the developer is required to mitigate the site traffic. Even though turn lanes are not warranted on Emmitsburg Road (S.R.3001), an improvement analysis was conducted at this intersection to determine if turn lanes would mitigate the proposed development site traffic. The turn lanes do not mitigate the proposed development's site traffic. PennDOT does not permit the minor street approaches to have separate turn lanes at an unsignalized intersection. Therefore, a traffic signal warrant analysis was conducted. Based on the traffic counts, a traffic signal is not warranted at this intersection. The intersection only has a marginal degradation in levels of service and the intersection will still operate at acceptable overall levels of service in the

year 2017 with the proposed development. Therefore, no improvements are recommended at this intersection.

11. With the proposed recommendations, safe and efficient site access can be obtained.

RECOMMENDATIONS

Based on the results of the traffic analysis, mitigating measures are required as part of this development. Only minor modifications are necessary since traffic volumes for a resort complex were anticipated in previous traffic planning for the tract of land. Traffic volumes have been lower than expected due to declining occupancy. Therefore, increased occupancy at the Mason-Dixon Resort will only help traffic reach slightly above previously expected levels. A summary of the recommendations to ensure safe and efficient traffic movements is presented below:

Site Access

1. The developer will install a traffic signal at the Emmitsburg Road (S.R.3001)/Existing Resort Driveway. The signal will be a two phase operation with the future possibility of coordination with future signals along Emmitsburg Road (S.R.3001). The developer will also construct a 150 foot northbound right turn lane on Emmitsburg Road (S.R.3001) at the existing resort driveway.