



July 29, 2013

Mr. Francis J. Hanney
Traffic Services Manager
PennDOT District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406

RE: **Transportation Impact Study Response**
The Provence Casino Development
City of Philadelphia, Philadelphia County, PA
TPD# TOIN.A.00008

Dear Mr. Hanney:

On behalf of Tower Entertainment, LLC, Traffic Planning and Design, Inc. (TPD) has prepared the following responses to the April 5, 2013 Orth-Rodgers & Associates, Inc. (ORA) review letter (attached). Please note the comments and responses below.

GENERAL

1. Transportation Impact Study Guidelines

A Transportation Impact Study (TIS), prepared in accordance with Strike-Off Letter 470-09-04 (Policies and Procedures for Transportation Impact Studies) must be submitted by the Applicant. The information submitted by the Applicant does not fully comply with PennDOT's TIS guidelines. A compliant TIS will require vehicular/pedestrian counts at potentially impact locations, additional trip generation/distribution methodology, existing/future capacity analysis and recommendations and conclusions. Below are components related to a TIS report (not limited to) that should be included when applicable.

- a) A transportation impact study must be signed and sealed by a professional engineer registered in Pennsylvania.

Response: The revised transportation impact study (TIS) has been signed and sealed by a professional engineer registered in Pennsylvania.

- b) Include an Executive Summary.

Response: An executive summary is included in the revised TIS.

- c) All proposed driveways should be evaluated for capacity, sight distance and queuing.

Response: TPD has provided a statement regarding the available sight distance at the proposed driveways for the Provence development access driveways. Additionally, TPD has determined all driveways will operate at LOS D or better, all are unsignalized access points along one-way streets, and that exiting queues will be managed on site.

- d) Include detailed traffic circulation within the proposed site.

Response: A detailed traffic circulation description is included in the revised TIS.



- e) Provide a traffic signal warrant analysis for any proposed traffic signal location.

Response: A traffic signal warrant analysis is included for the Callowhill Street/16th Street intersection is included in the revised TIS.

- f) Provide crash data/history for critical intersections/roadway network. A summary of the crash analysis can be included in the report; however, actual crash records within the appendix with a confidentiality statement on the cover. It is recommended to separate the crash record appendix from the main TIS report.

Response: A crash data summary is included in the revised TIS and the records are included under separate cover.

- g) Traffic Signal and System Permit plans must be included in the traffic impact study.

Response: Traffic Signal Permit plans received by TPD are included in the revised TIS.

- h) Street view photographs and/or aerial photos of the study intersections are preferred.

Response: Aerial photographs of the study area intersections are included in the revised TIS.

- i) The trips generated from other proposed developments that may impact the project site study area must also be included in the projected trip analysis.

Response: The revised TIS includes traffic from three nearby developments.

- j) Include pedestrian distribution to/from venues and provide an access evaluation.

Response: A pedestrian distribution figure is included in the revised TIS.

- k) Include an analysis of pedestrian activity at the intersections within the project limits, including the Applicant's proposed accesses, to determine if pedestrians are present. The determination if pedestrians are present must be based on pedestrian counts, a visual inspection of the site to determine if clearly defined walking paths are provided. The results of this analysis must be utilized to determine if and where pedestrian facilities must be provided.

Response: TPD has included observed and future pedestrian volumes on our schematic figures contained in the report. Additionally, TPD has included a section that discusses where pedestrian access points are located and the future pedestrian circulation on site.

- l) Provide pedestrian capacity analysis following the 2010 HCM guidelines for intersections that are found to be impacted by the increase of pedestrian traffic generated by the casino. Include mitigation improvements for those areas with high pedestrian traffic

Response: TPD has included the existing and future pedestrian volumes in our capacity analysis calculations and has also identified pedestrian improvements associated with the proposed development.

- m) Opening year analysis must be performed for the development. Future analyses must be performed for the horizon year, i.e. 5 years beyond opening year of the development



when the first structure is in use and access is constructed to the State roadway. The report must be modified to reflect the opening year and Horizon year analysis for the development.

Response: Opening year analysis would represent an interim analysis after completion and occupancy of a phased development. It is our understanding the Provence is planned to be constructed in one single phase. For this reason, and also, since the recommended traffic growth within the City is 0.0%, no opening year analysis was completed, since it would garner the same results as the design year evaluation.

- n) Queue analyses for all signalized intersections and for unsignalized left-turning lanes must be completed and stated in the report.

Response: Queue analyses for the study area are included in the revised TIS.

- o) Auxiliary lane warrant analysis, in accordance with Strike-Off Letter 470-08-07, must be included for the future conditions.

Response: An auxiliary turn lane analysis is included in the revised TIS.

- p) Include gravity model (a graphic is preferred).

Response: A gravity model for the vehicular traffic based on daily traffic volumes is contained in the revised TIS. Also, a gravity model for pedestrians based on population data is included in the revised TIS.

- q) Do not use default values on the traffic analysis inputs (saturation flow rates, utilization rates, etc.). Where existing traffic and pedestrian data is collected, actual values should be used.

Response: Actual data at each study area intersection was utilized for analysis purposes, aside from the saturation flow rate, for which the default value was utilized as directed in Comment 7 under Traffic Impact Study.

- r) A Level-of-Service Matrix per lane group must be provided. Including numerical delay value.

Response: A Level of Service matrix is included in the revised TIS.

- s) The site accesses must function at a minimum level-of service D for urban areas. Mitigation measures or restricted movements from deficient operating locations may be required to meet guidelines.

Response: An analysis of the site access configurations indicates that the site accesses will function at LOS D or better. The analysis is included in the revised TIS.

- t) All HCS and/or Synchro analysis worksheets and electronic files must be included for review.

Response: All HCS and Synchro worksheets are included in the revised TIS.



- u) All calculations and methodology must also be included in the report to justify the analysis and results.

Response: All calculations and methodology are described and noted in the revised TIS.

- v) The report should include conclusions and recommendations. Please note that the Developer/Applicant is responsible for mitigating all impacts resulting from the proposed development, unless there is another project under construction that will provide mitigation.

Response: The revised TIS includes conclusions and recommendations.

- w) If the recommendations include the elimination of existing on-street metered parking spaces, a revenue loss evaluation should also be provided.

Response: TPD has included an analysis of the amount of parking proposed to be removed as part of this development. It is TPD's understanding that a fiscal analysis of revenue loss will be performed as part of this application by a financial consultant.

- x) Include taxi and bus operation/circulation to/from the site.

Response: TPD has included a section that discusses taxi and bus operations for the proposed site.

2. Trip Generation/Distribution and Mode of Arrival Methodology

Trip Rate (trip per gaming position) should be based on the average of no less than three existing casinos of comparable design and location. The three casinos listed below are valid examples of existing casinos located in metropolitan areas. If trip rates are based on a different methodology please provide justification.

- a) SugarHouse Casino (Philadelphia, PA)
- b) Casino St. Charles (St. Louis, MO)
- c) Hollywood Casino (Columbus, OH)

Response: Traffic generation counts were conducted at three (3) local urban casinos, including SugarHouse Casino, Sands Bethlehem, and Harrah's Philadelphia. Specifics regarding the Trip Generation methodology are included in Appendix D of the revised TIS.

- 3. The "Executive Summary of the Interim Report of Findings" by the Philadelphia Gaming Advisory Task Force document should be utilized as a guide to develop trip methodologies. Data is provided for casino visitation patterns by time of Day (Page 15, Table 3) and mode of arrival splits (Page 16, Graph 2). All analysis, calculations and back up data must be included in the report.

Response: The "Executive Summary of the Interim Report of Findings" by the Philadelphia Gaming Advisory Task Force was utilized in developing the trip



generation for the proposed Provence. Specifics regarding the Trip Generation methodology are included in Appendix D of the revised TIS.

4. Time of Day Requirement

The Philadelphia Gaming Advisory Task force document states that a casino's Friday visitation peak time is different from the Friday evening rush hour time (commuter peak). The TIS Report should analyze both critical weekday and weekend peak time periods. Therefore, the following should be analyzed:

- a) Friday evening commuter peak hour (between 4-6 PM)
- b) Friday casino peak hour (between 7 – 10 PM)
- c) Saturday casino peak hour

Response: The revised TIS includes data at all study area intersections for the time periods noted above.

TRAFFIC IMPACT STUDY

1. In addition to the fourteen (14) intersections included in the previously completed traffic impact study, the intersections that the applicant should also include in the study due to their proximity to the site and potential impacts are:

- a) Franklin Town Blvd and Vine Street,
- b) 17th Street and Vine Street (Local),
- c) 17th Street and Spring Garden Street,
- d) 16th Street and Vine Street (Local)
- e) 13th Street and Vine Street, and
- f) 13th Street and Callowhill Street.

Response: The six additional intersections listed above have been included in the revised TIS.

2. Evaluate and comment on the concept of connecting the I-676 Off Ramp, located just south of the Applicant's site, to Callowhill Street.

Response: TPD has included an evaluation of this alternative in the revised TIS.

3. Evaluate and comment on the feasibility of connecting the I-676 On/Off Ramps to Callowhill.

Response: TPD has included an evaluation of this alternative in the revised TIS.

4. Identify the removal of any public parking spaces and loading zones. If applicable provide the net revenue loss due to the reduction of existing metered parking spaces.

Response: TPD has included an analysis of the amount of parking proposed to be removed as part of this development. It is TPD's understanding that a fiscal analysis of revenue loss will be performed as part of this application by a financial consultant.



5. Provide an updated internal circulation diagram for the site. The one provided in the report (Figure 2 – Site Plan) shows conflicting and/or unclear movements and may require an update. Based on the data provided in this graphic it is unclear as to how the overall vehicular access will operate. All possible movements should be depicted and any ramps or access points to multi-level parking facilities should be clearly labeled. In addition the site's access and its potential impact on the I-676 Ramps should be reviewed and quantified in the study. This analysis of the I-676 Ramps should also address the impact on the currently one-way condition on Callowhill Street and clearly note any proposed changes to those existing conditions.

Response: TPD has provided a section on the site access and circulation in addition to more detailed site plans located in the attached Figures 2A-D.

6. Trip distribution percentages were provided in the report; however, a diagram of the distribution was not provided. Provide a gravity model diagram to and from the site. In addition, please show how access to I-95 is provided using local streets as an alternative to I-676.

Response: A figure depicting the traffic distribution is included in the revised TIS. A gravity model for the vehicular traffic based on daily traffic volumes is contained in the revised TIS. Also, a gravity model for pedestrians based on population data is included in the revised TIS.

7. It is recommended for this site to update the Synchro default saturation flow rate. Use saturation flow rate of 2100 to accurately model the rates in the City. Additionally, pedestrian crossing data must be accurately inputted into the analysis to properly account for vehicular delays associated with increased pedestrian crosswalk utilization.

Response: The analyses have been updated to include the default saturation flow rate of 2100, as noted above. Additionally, pedestrian data has been included in the capacity analyses in the revised TIS.

8. Future capacity analysis was based on the 2020 base condition (Design year without development) and 2020 Projected condition (Design year with development). However, additional future analysis must be performed for a Horizon Year (based on PennDOT's guidelines) i.e. 5 years beyond opening year of the development when the first structure is in use and access is constructed to the State roadway. The report will require the Open Year 2015 analysis.

Response: Opening year analysis would represent an interim analysis after completion and occupancy of a phased development. It is our understanding the Provence is planned to be constructed in one single phase. For this reason, and also, since the recommended traffic growth within the City is 0.0%, no opening year analysis was completed, since it would garner the same results as the design year evaluation.

9. In Appendix C it was indicated that the internal capture rate of 75% was utilized. Please provide additional information/calculations to validate the internal capture rate.



Response: Based on the traffic counts conducted at a nearby casino with mixed uses, TPD has verified the 75% interaction. Specifics regarding the Trip Generation methodology are included in Appendix D of the revised TIS.

Respectfully submitted,



A handwritten signature in blue ink, appearing to read 'Eric Ostimchuk', is positioned below the company logo.

Eric Ostimchuk, P.E., PTOE
Principal

Attachments: 4/5/13 ORA Letter

cc: Tina Roberts
TPD File