FRENCH & PARRELLO
ASSOCIATES, P.A., CONSULTING ENGINEERS



November 24, 2006

Ms. Mickey Kane, Clerk
Pennsylvania Gaming Control Board
Verizon Tower, 5th Floor
Strawberry Square
303 Walnut Street
Harrisburg, PA 17101

RE: Sands Bethworks Gaming LLC Application
Docket # 1353
Response to Review Comments - Traffic Impact Study

Dear Ms. Kane:

In conjunction with Lublanecki Engineering, Inc., French and Parrello Associates (FPA) has reviewed the comments contained in the November 15, 2006 letter from McCormick Taylor to Glenn Rowe. As noted in their letter, McCormick Taylor reviewed the Sands Bethworks Traffic Impact Study & Access Improvements Evaluation and the Sands Bethworks Traffic Impact Study & Access Improvements Evaluation Response, both prepared by Lublanecki Engineering and both dated October 19, 2006.

We offer the following responses to the review comments:

Comments Listed Under Site Visit

- *Comment: Most of the traffic signal installation in the study area appeared to be in good condition.*

  Response: Since a good deal of the traffic signal equipment is in good condition, every effort will be made to utilize existing equipment in the proposed improvement schemes; and, therefore, minimize the impact to traffic flow during construction.

- *Comment: Some of the study area intersections appear to have recently been reconstructed.*

  Response: Recent construction will be taken into consideration when developing improvement schemes to minimize disturbance to existing facilities.

1800 Route 34, Suite 101 · Wall, NJ · 07719 · T 732.312.9800 · F 732.312.9801 · www.fpaengineers.com

Laurence E. French, P.E. · Argo T. Parrello, P.E. · James B. Heller, P.E. · Joseph M. Edwards, P.E. · Scott D. Watkins, P.E.
David I. Calnan, P.E. · William F. Nero, P.E., P.P., C.M.E. · Keith B. Smith, P.E., P.P., C.M.E. · Steven A. Tardy, P.E.

Offices: Wall Township, NJ · Hackettstown, NJ · Bethlehem, PA

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- *Comment: Potential widening improvements to Daly Avenue may be constrained by abandoned railroad tracks and the proposed City greenway.*

  Response: Aerial photogrammetry and supplemental surveying to develop base mapping for the Preliminary Design of roadway improvements to Daly Avenue has commenced. In addition, work has started on researching existing records and tax maps to determine the legal right-of-way width of Daly Avenue. As part of this work, FPA will perform field survey to locate property markers and monuments and to establish a baseline, existing right-of-way widths and horizontal and vertical control for the project. Once the base mapping is completed, the design can be advanced to evaluate the extent that additional right-of-way may be needed. It is anticipated that any right-of-way acquisitions required to the south will be coordinated with officials from the City of Bethlehem and will consider impacts to the abandoned railroad tracks and to the proposed Greenway. Should sufficient right-of-way not be available to the south, widening to the north into the casino site will be utilized in conjunction with improvements planned for the site.

- *Comment: Sidewalks and pedestrian accommodations are generally present and in fair condition through the majority of the study area, however some areas are partially obstructed by numerous poles.*

  Response: Pedestrians will be accommodated within the area of roadway improvements by providing sidewalks in accordance with applicable PENNDOT and City standards. These improvements would include widening the sidewalk if necessary to provide the required unobstructed widths.

- *Comment: Insufficient information was available to adequately assess the potential impacts of proposed improvements to existing utilities; however transportation improvements within urban locations such as the proposed site typically require extensive utility coordination and relocation.*

  Response: As noted above, preliminary design work has commenced. This work includes identifying utility companies with existing facilities within the project limits and performing investigations to determine the presence, location, and type of utility facilities which exist in the project area. As the design advances, identifying and resolving conflicts between existing utility facilities and the proposed roadway improvements will be performed. Although at this time the extent of the utility coordination and relocation efforts is not definitively known, FPA agrees that this effort may be extensive, but achievable given the current construction schedule.

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Comments Listed Under Technical Review of the Traffic Study

1. *Comment: The study did not adequately address portions of PA Route 412 anticipated to serve significant volumes of project traffic accessing I-78. The study indicates that these locations were addressed by previous PENNDOT studies associated with the pending improvements; however the gaming facility is projected to increase the volume of traffic using this route. Expanding the study area would be appropriate.*

   Response: The SR 412 Section 001 study report dated June 15, 2005, prepared by Orth-Rodgers & Associates, Inc. and submitted to the Pennsylvania Department of Transportation was prepared in support of the SR 412 improvement project. The study assesses the proposed improvements to the section of SR 412 between East Fourth Street and the I-78 interchange, which is currently under design by PENNDOT's consultant, KCI Technologies.

   In conducting the study, Orth-Rodgers contacted us, and we sent them information regarding projected types and sizes of uses for both Phase 1 and projected Phase 2 development. Many of the uses have projected ranges as to size of development, and, in an effort to be conservative, we assumed the largest sizes. Since June of 2005 we have refined our projections as to types and sizes of development and find them to be lower than what was sent to Orth-Rodgers for their June 15' 2005 report. Although out latest trip distribution pattern shows an additional five percent of casino traffic using this section of SR 412, due to decrease in the size of the rest of the site our study projects less traffic on SR 412 between East Fourth Street and the I-78 interchange.

2. *Comment: Trip generation for the gaming and hotel facility was developed using a "patronage model" as well as assumptions regarding modal split (automobile versus bus) and vehicle occupancy.*

   Response: The patronage model determines total annual person visits to the casino complex, and segregates the data by peaks (seasonal, monthly, daily and hourly), modal splits and vehicles occupancy. The patronage model is primarily used to determine the economic feasibility of the site; however, it can be used as an accurate and precise measure of patron trip generation.

3. *Comment: When comparing trip generation estimates for the gaming component of the five At-large facilities, the trip generation for the Sands Bethworks facility is generally consistent with the average of all At-large projections*

   Response: As stated in the previous response, the patronage model is an accurate and precise measure of patron trip generation which can be converted to vehicle trips.

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4. Comment: *The mitigation measures identified in the study provide an acceptable overall level of service at the intersection of Daly Avenue and Stefko Boulevard; however operations are degraded from pre-development conditions and deficient operations are projected for the southbound left turn movement during the 2018 evening peak.*

Response: It should be noted that operations are only degraded from existing pre-development conditions. When compared to 2008 and 2018 no-build conditions, operations are significantly improved in the build condition with improvements.

Specifically the intersection of Daly Avenue and Stefko Boulevard will function in the Phase 1 build condition at level-of-service "B" overall during both the weekday AM and PM peak hours and Saturday peak hour as opposed to level-of-service "C" overall during the weekday AM and PM peak hours and level-of-service "B" during the Saturday peak hour in the no-build condition. The intersection will function in the ultimate build condition in 2018 at level-of-service "C" overall during the weekday AM peak hour and level-of-service "D" during the weekday PM peak hour as opposed to level of service "F" overall during the weekday peak hours in the no-build condition. The overall Saturday peak hour remains the same at level-of-service "B."

Even though the southbound left turn movement during the weekday PM peak hour is degraded from level of service "D" to "E" when comparing the no-build to build condition, the overall level of service for the intersection during the weekday PM peak hour improves from level of service "F" to "D".

Comments Listed Under Evaluation of the Recommended Improvements

5. Comment: *The study indicates that the pending PENNDOT improvements to PA Route 412 and the I-78 interchange are adequate to serve project traffic; however no information supporting this conclusion has been provided.*

Response: As stated previously in the response to comment number one, the SR 412 Section 001 study report prepared by Orth-Rodgers addresses the improvements needed to mitigate the projected traffic impacts to the interchange of SR 412 and I-78. These improvements are currently under design by PENNDOT's consultant, KCI Technologies.

6. Comment: *The study recommends installation of traffic signals at all site accesses to PA Route 412 and the integration of these signals into a coordinated system.*

Response: We propose a coordinated traffic signal system on SR 412 in the vicinity of the site. Signal coordination summaries for the 2008 Phase 1 Build Condition and the 2018 Full Build Out Condition are attached at the end of this letter report as Exhibits 1 and 2, respectively.

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7. Comment: *The proposed casino access utilizes a slightly unconventional "English T" configuration that permits the concurrent movement of entering and exiting left turns.*

   Response: The "English T" configuration that permits the concurrent movement of entering and exiting left turns at the proposed casino access utilizes only two signal phases. The two-phase signal results in a very efficient operation and good levels of service ("A" and "B") during all 2008 and 2018 peak hours.

8. Comment: *Except as noted above, it appears that the proposed improvements adequately mitigate the project impacts based on the results presented in the analysis.*

   Response: We believe that our responses have adequately addressed the concerns expressed, and that the proposed improvements more than adequately mitigate the projected traffic impacts. It is our conclusion that in general the Sands Bethworks Phase 1 – Casino/Retail Development will have a significant positive impact on traffic flow in front of the site and at the intersection of Daly Avenue (SR 412) and Stefko Boulevard (Minsi-Trail Bridge).

Comments Listed Under Highway Occupancy Permit Issues

- Comment: *Potential widening improvements to Daly Avenue may be constrained by abandoned railroad tracks directly to the south. Widening may also require the replacement of existing sidewalks and streetscape improvements.*

  Response: As noted above in the responses to several comments, right-of-way acquisition needs and improvements to sidewalks and roadway border areas required have not been determined at this time. It is anticipated that any right-of-way acquisitions required to the south will be coordinated with officials from the City of Bethlehem and will consider impacts to the abandoned railroad tracks and to the proposed Greenway. In addition, pedestrian accommodations will be provided within the area of roadway improvements in accordance with applicable PENNDOT and City standards.

- Comment: *The approach to the Minsi Trail Bridge to Daly Avenue may present challenges to the proposed improvements at Stefko Boulevard.*

- Response: Although traffic operational improvements may require alterations, the design will strive to avoid or minimize any alterations to the bridge.

- *Comment: While specific geometric information has not been provided it appears that the proposed access to the Retail Center includes a relatively tight horizontal radius with a potentially steep downgrade. .*

  Response: At this time the geometry of the proposed access to the Retail Center is sufficient for the traffic anticipated. As the site design advances, this access may be modified. These modifications will be limited to the "site side". No changes are anticipated with regard to the location of the intersection of this access point with Daly Avenue or the number of lanes provided on this access.

- *Comment: Insufficient information was available to adequately assess the potential impacts of proposed improvements to existing utilities; however transportation improvements within urban locations such as the proposed site typically require extensive utility coordination and relocation.*

  Response: As noted above, preliminary design work, including identifying utility companies and performing investigations to determine the presence, location, and type of utility facilities which exist in the project area has commenced. As the design advances, identifying and resolving conflicts between existing utility facilities and the proposed roadway improvements will be performed.

Comments Listed Under Conclusions

- *Comment: Evaluating the project specific impacts to the interchange of I-78 and PA Route 412.*

  Response: As mentioned in the response to comments numbers one and five, project specific impacts have been evaluated by Orth-Rodgers in their SR 412 Section 001 study report dated June 15, 2005, and proposed improvements are currently under design by PENNDOT's consultant, KCI Technologies.

- *Comment: Developing a coordinated traffic signal timing plan for Daly Street that includes provisions to minimize queuing at site accesses.*

  Response: The proposed coordinated traffic signal system mentioned in the response to comment number six will minimize queuing at the site access intersections. A queue length summary showing 95$^{th}$ percentile queue lengths is attached at the end of this letter report as Exhibit 3.

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- *Comment:* *Advancing the design of the improvements to the intersection of Daly Street and Stefko Boulevard, including verification that sufficient right-of-way is available and that the geometry of the bridge approach can be accommodated.*

  Response: As noted above, as the design of the roadway improvements advances, issues including right-of-way needs, pedestrian accommodations, and alterations to the Minsi Trail Bridge will be addressed in coordination with PENNDOT.

- *Comment:* *Coordinating with utility providers to assess potential relocation impacts associated with roadway improvements. .*

  Response: As noted above, coordinating with utility facilities and identifying and resolving conflicts between existing utility facilities and the proposed roadway improvements will be performed as the design work advances.

We trust that these responses will address your concerns.

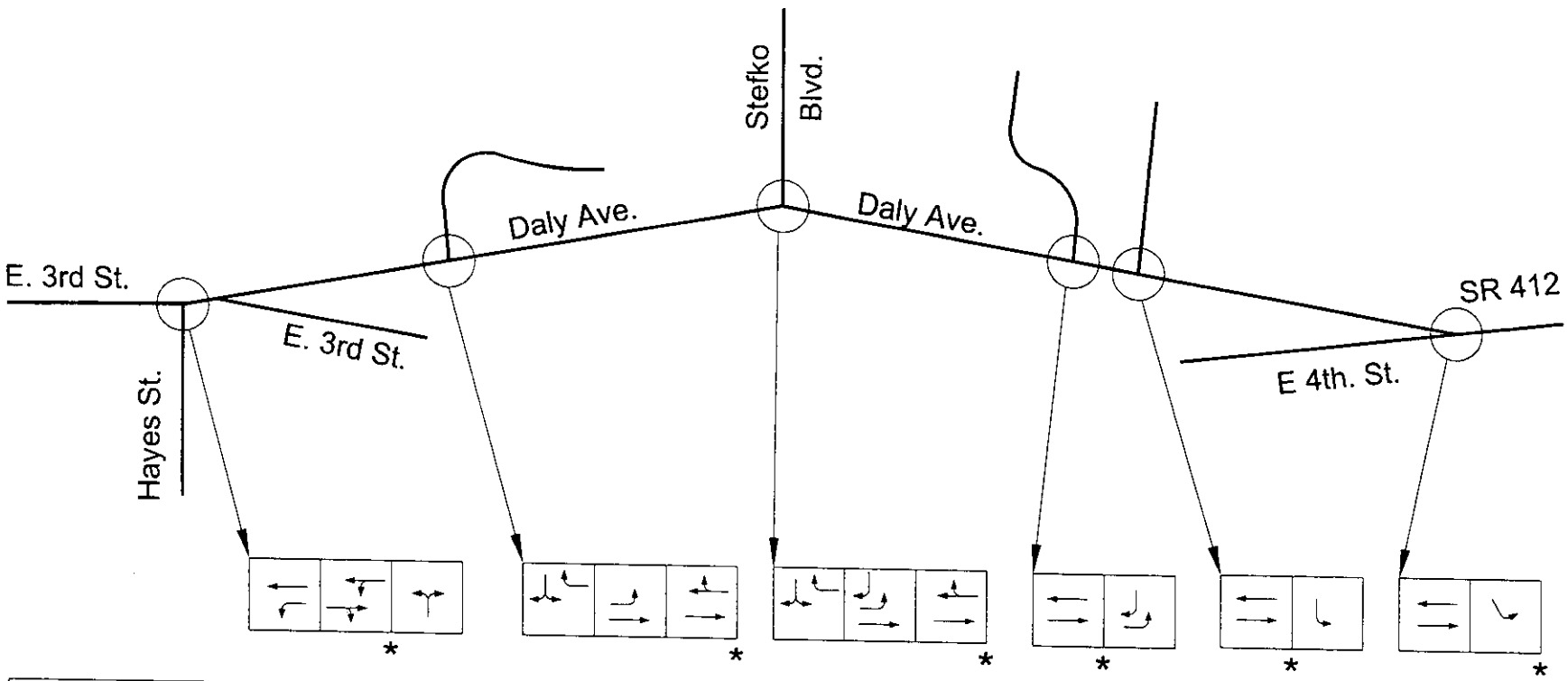
Very truly yours,

***FRENCH & PARRELLO ASSOCIATES, PA***

Charles Meidhof, P.E.
Senior Project Manager

encl.

cc: Mr. Frank Donaghue, Chief Counsel, PGCB
Mr. Alberto Federico, McCormick Taylor, w/encl.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PEAK AM HOUR | 14 | 36 | 20 | | 22 | 10 | 38 | | 29 | 22 | 19 | | 46 | 24 | | 46 | 24 | | 17 | 53 |
| CYCLE LENGTH - 70 SEC | OFFSET = 11 SEC | | | | OFFSET = 59 SEC | | | | MASTER | | | | OFFSET = 17 SEC | | | OFFSET = 17 SEC | | | OFFSET = 27 SEC | |
| PEAK PM HOUR | 14 | 36 | 20 | | 22 | 15 | 33 | | 31 | 19 | 20 | | 42 | 28 | | 42 | 28 | | 17 | 53 |
| CYCLE LENGTH - 70 SEC | OFFSET = 5 SEC | | | | OFFSET = 46 SEC | | | | MASTER | | | | OFFSET = 6 SEC | | | OFFSET = 6 SEC | | | OFFSET = 13 SEC | |
| PEAK SAT HOUR | 14 | 46 | 20 | | 22 | 26 | 32 | | 34 | 24 | 22 | | 34 | 46 | | 34 | 46 | | 21 | 59 |
| CYCLE LENGTH - 80 SEC | OFFSET = 1 SEC | | | | OFFSET = 54 SEC | | | | MASTER | | | | OFFSET = 6 SEC | | | OFFSET = 6 SEC | | | OFFSET = 12 SEC | |

* OFFSET START OF YELLOW

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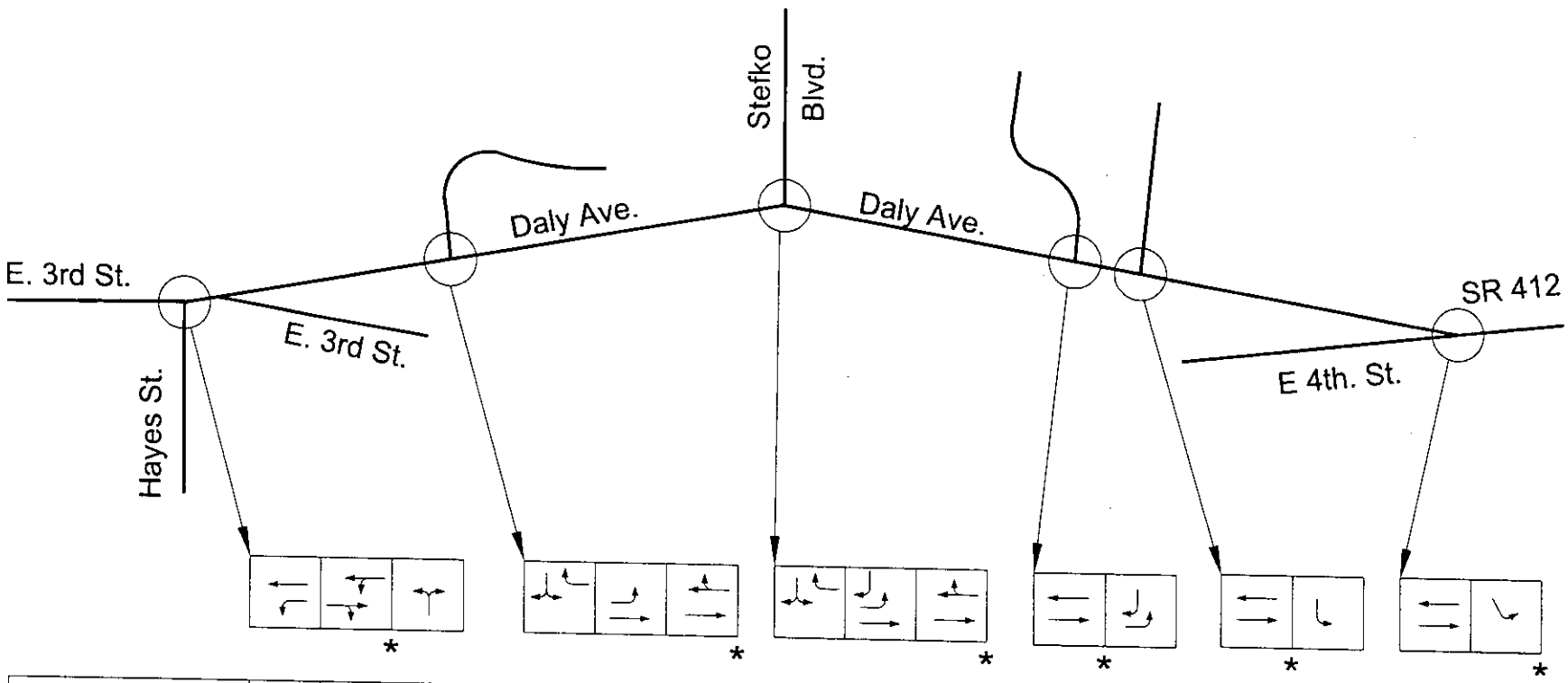
EXHIBIT NO. 1

LE LUBLANECKI ENGINEERING, INC.

2008 PHASE 1 BUILD CONDITION
SIGNAL COORDINATION SUMMARY
*Sands Bethworks Casino/Retail Development-PHASE 1*
*City of Bethlehem, Northampton County, Pennsylvania*
Project No. 05-205
November, 2006

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PEAK AM HOUR | 18 | 41 | 21 | | 22 | 11 | 47 | | 42 | 18 | 20 | | 58 | 22 | | 58 | 22 | | 14 | 66 |
| CYCLE LENGTH - 80 SEC | OFFSET = 15 SEC | | | | OFFSET = 64 SEC | | | | MASTER | | | | OFFSET = 8 SEC | | | OFFSET = 8 SEC | | | OFFSET = 21 SEC | |
| PEAK PM HOUR | 26 | 34 | 20 | | 22 | 14 | 44 | | 34 | 21 | 25 | | 48 | 32 | | 48 | 32 | | 15 | 65 |
| CYCLE LENGTH - 80 SEC | OFFSET = 2 SEC | | | | OFFSET = 46 SEC | | | | MASTER | | | | OFFSET = 73 SEC | | | OFFSET = 73 SEC | | | OFFSET = 79 SEC | |
| PEAK SAT HOUR | 24 | 50 | 26 | | 24 | 36 | 40 | | 48 | 31 | 21 | | 37 | 63 | | 37 | 63 | | 19 | 81 |
| CYCLE LENGTH - 100 SEC | OFFSET = 40 SEC | | | | OFFSET = 9 SEC | | | | MASTER | | | | OFFSET = 82 SEC | | | OFFSET = 82 SEC | | | OFFSET = 51 SEC | |

* OFFSET START OF YELLOW

EXHIBIT NO. 2

LUBLANSKI ENGINEERING, INC.

2018 FULL BUILD OUT BUILD CONDITION
SIGNAL COORDINATION SUMMARY
*Sands Bethworks Casino/Retail Development–PHASE 1*
*City of Bethlehem, Northampton County, Pennsylvania*
Project No. 05–205
November, 2006

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File Name: 06-934\QUEUE.XLS

| INTERSECTION NAME | APPROACH | LANE GROUP | # OF LANES | AVAILABLE STORAGE | 2008 PHASE 1 BUILD CONDITION Synchro Analyses 95th Percentile Queue langth PEAK AM HOUR | PEAK PM HOUR | PEAK SATURDAY HOUR | 2018 FULL BUILD-OUT BUILD CONDITION Synchro Analyses 95th Percentile Queue langth PEAK AM HOUR | PEAK PM HOUR | PEAK SATURDAY HOUR |
|---|---|---|---|---|---|---|---|---|---|---|
| **Intersection No. 1** | Eastbound | T | 1 | 450 | 86 | 106 | 96 | 113 | 144 | 133 |
| Daly Avenue | Westbound | T | 1 | 600 | 64 | 91 | 114 | 85 | 123 | 159 |
| and | | R | 2 | 600 | 0 | 0 | 0 | 0 | 0 | 0 |
| East 4th Street | SouthEast | L | 2 | 590 | 34 | 152 | 14 | 132 | 336 | 325 |
| **Intersection No. 2** | Eastbound | T | 2 | 75 | 1 | 3 | 0 | 43 | 4 | 9 |
| Daly Avenue | Westbound | T | 2 | 590 | 105 | 152 | 120 | 190 | 558 | 221 |
| and | | R | 1 | 200 | 0 | 0 | 0 | 0 | 0 | 77 |
| Casino East Driveway | Southbound | L | 2 | 450 | 63 | 132 | 219 | 125 | 329 | 468 |
| **Intersection No.3** | Eastbound | L | 1 | 300 | 18 | 29 | 47 | 14 | 38 | 54 |
| Daly Avenue | | T | 2 | 650 | 155 | 186 | 133 | 263 | 133 | 225 |
| and | Westbound | T | 2 | 75 | 8 | 8 | 5 | 11 | 38 | 6 |
| Casino West Driveway | Southbound | R | 2 | 400 | 0 | 13 | 30 | 0 | 16 | 2 |
| **Intersection No. 4** | Eastbound | L | 2 | 400 | 48 | 200 | 161 | 184 | 273 | 114 |
| Daly Avenue | | T | 2 | 1000 | 7 | 58 | 76 | 300 | 161 | 31 |
| and | Westbound | T | 2 | 650 | 76 | 68 | 67 | 152 | 330 | 63 |
| Stefko Boulevard | | R | 1 | 550 | 12 | 267 | 21 | 365 | 510 | 403 |
| | Southbound | L | 1 | 2000 | 340 | 391 | 255 | 566 | 549 | 341 |
| | | R | 1 | 2000 | 275 | 133 | 108 | 351 | 223 | 71 |
| **Intersection No. 5** | Eastbound | L | 1 | 300 | 7 | 10 | 110 | 1 | 91 | 183 |
| Daly Avenue | | T | 2 | 900 | 53 | 13 | 94 | 12 | 17 | 228 |
| and | Westbound | T | 2 | 1000 | 245 | 222 | 221 | 305 | 407 | 194 |
| Retail Access Driveway | | R | 1 | 300 | 1 | 0 | 10 | 2 | 0 | 15 |
| | Southbound | L | 2 | 300 | 4 | 11 | 14 | 14 | 29 | 46 |
| | | R | 1 | 300 | 19 | 41 | 49 | 20 | 45 | 56 |
| **Intersection No. 6** | Eastbound | T | 1 | | 434 | 507 | 594 | 479 | 278 | 304 |
| East 3rd Street | | R | 1 | | 10 | 22 | 17 | 11 | 28 | 22 |
| and | Westbound | L | 1 | 500 | 208 | 239 | 150 | 300 | 76 | 31 |
| Hayes Street | | T | 1 | 1000 | 124 | 76 | 138 | 625 | 910 | 335 |
| | Northbound | L | 1 | 500 | 116 | 115 | 142 | 140 | 140 | 168 |
| | | R | 1 | 500 | 34 | 48 | 61 | 56 | 53 | 64 |
| **Intersection No. 7** | Eastbound | LT | 1 | 400 | 76 | 124 | 137 | 79 | 130 | 143 |
| Stefko Boulevard | | R | 1 | 400 | 24 | 58 | 36 | 24 | 73 | 37 |
| and | Westbound | LTR | 1 | 150 | 9 | 7 | 10 | 9 | 7 | 10 |
| East Broad Street | Northbound | L | 1 | 100 | 65 | 52 | 38 | 77 | 59 | 40 |
| | | TR | 2 | 300 | 73 | 127 | 101 | 85 | 189 | 121 |
| | Southbound | L | 1 | 75 | 5 | 3 | 3 | 5 | 3 | 3 |
| | | TR | 2 | | 288 | 220 | 220 | 480 | 273 | 276 |

EXHIBIT NO. 3

LUBLANECKI ENGINEERING, INC.

2008 PHASE 1 AND 2018 FULL BUILD OUT
QUEUE LENGTH SUMMARY

*Sands Bethworks Casino/ Retail Development–PHASE 1*
*City of Bethlehem, Northampton County, Pennsylvania*

Project No. 05-205 November, 2006

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