



**SUPPLEMENT TO DECEMBER 2005**

# **LOCAL IMPACT REPORT**

**SUBMITTED BY TROPICANA PENNSYLVANIA, LLC**

**MARCH 6, 2006**

## Table of Contents

	<u>Page</u>
I. APPLICATION BACKGROUND.....	1
A. Statutory Background.....	1
B. Tropicana Pennsylvania, LLC – The Applicant.....	1
C. Allentown, Pennsylvania – The Host Municipality .....	3
1. <u>City of Allentown</u> .....	3
2. <u>Proposed Facility Location</u> .....	4
3. <u>A City in Need</u> .....	4
4. <u>Allentown School District</u> .....	5
D. Lehigh Valley Tropicana – Overview.....	6
1. <u>Supplement to Local Impact Report of December, 2005</u> .....	6
2. <u>Development Objectives</u> .....	6
3. <u>Anticipated Benefits</u> .....	7
II. LOCAL IMPACTS .....	8
A. Impact on Traffic .....	8
B. Impact on Water & Sewer Systems.....	8
C. Impact on Emergency Services and Law Enforcement.....	8
1. <u>Local Police</u> .....	8
2. <u>Emergency Services</u> .....	9
3. <u>Local Fire Department</u> .....	9
4. <u>Tropicana Pennsylvania, LLC – Dedication to Local Law Enforcement and Emergency Services</u> .....	10
5. <u>Services Summary</u> .....	10

D.	Economic Impact.....	11
1.	<u>Economic Output/Spending Impacts</u> .....	11
2.	<u>Employment and Earnings Impacts</u> .....	11
3.	<u>Fiscal (tax) Impacts</u> .....	12
4.	<u>Phase II Impacts</u> .....	12
5.	<u>Qualitative Impacts</u> .....	12
E.	Impact on Tourism and Historical and Cultural Resources.....	13
F.	Social Impact.....	13
1.	<u>Gambling Addictions</u> .....	14
2.	<u>Excessive Spending/Bankruptcy</u> .....	14
3.	<u>Crime</u> .....	15
4.	<u>Proactive Approach by Tropicana Pennsylvania, LLC</u> .....	15
III.	CONCLUSION .....	17

LIST OF EXHIBITS:

Exhibit “A” – Biographical Information – Aztar Corporation

Exhibit “B” – Biographical Information – Local Team

Exhibit “C” – Section of City of Allentown Zoning Map

Exhibit “D” – September 2005 Press Release, Dr. Karen S. Angello, superintendent of Allentown School District

Exhibit “E” – Proposed Site Plan for Phase I

Exhibit “F” – Proposed Perspective for Phase I

Exhibit “G” – Proposed Master Plan (Phases I & II)

Exhibit “H” – Proposed Perspective for Phases I & II

Exhibit “I” – Amenities List

Exhibit “J” – Letter from Tropicana Pennsylvania, LLC to William H. Newhard, President, Lehigh, Northampton, Pike and Monroe Counties Building and Construction Trades Council

Exhibit “K” – Preliminary Traffic Impact Study

Exhibit “L” – Letter from Chief Utility Engineer Donald S. Lichty, P.E.

Exhibit “M” – Letter from Chief of Police Roger J. MacLean

Exhibit “N” – Letter from Deputy Fire Chief David L. Oncay

Exhibit “O” – Letter from Tropicana Pennsylvania, LLC to The Honorable Edward Pawlowski, Mayor of Allentown

Exhibit “P” – Economic Impact Report



## I. APPLICATION BACKGROUND

### A. Statutory Background.

The Pennsylvania Race Horse Development and Gaming Act, 4 Pa.C.S.A §1101 et seq. (the “Gaming Act”), is intended to expand employment and entertainment opportunities, promote economic development and expand tourism in Pennsylvania through authorization of limited gaming by the installation and operation of slot machines. The Gaming Act legalized slot machine gaming at 14 facilities – seven horse or harness racing tracks with up to 5,000 slot machines each (Category 1 licenses), five standalone sites with up to 5,000 machines each (Category 2 licenses), and 2 smaller resort licenses which may have up to 500 machines (Category 3 licenses). The Gaming Act requires all applicants for a gaming license to submit a Local Impact Report, considering impacts on traffic, emergency services, school systems, utility services and tourism, along with the economic impacts on the host municipality and surrounding areas.

This Supplemental Local Impact Report addresses a full range of information on the Applicant, Tropicana Pennsylvania, LLC, the proposed host city of Allentown, and the impacts on resources and economic development, while contemporaneously demonstrating the major revitalization the proposed facility will create within the City of Allentown, Lehigh County and the surrounding areas.

### B. Tropicana Pennsylvania, LLC – The Applicant.

On December 23, 2005, Tropicana Pennsylvania, LLC (the “Applicant”) filed an application with the Pennsylvania Gaming Control Board (“PGCB”) for a proposed Category 2 slots parlor facility located in the City of Allentown. Tropicana Pennsylvania, LLC, a Pennsylvania limited liability company, is an affiliate of Aztar Corporation, a Delaware corporation (“Aztar”).

In 2005, Aztar had revenues of more than \$915 million and earnings before interest, taxes, depreciation and amortization (EBITDA) of \$212 million,

with assets of nearly \$1.6 billion. Aztar is a publicly traded company with more than twenty-six (26) years of experience in the United States Gaming industry, including the operation of the Tropicana Casino and Resort in Atlantic City, New Jersey, Tropicana Resort and Casino in Las Vegas, Nevada, Ramada Express Hotel and Casino in Laughlin, Nevada, Casino Aztar in Caruthersville, Missouri, and Casino Aztar in Evansville, Indiana.

In total, Aztar employs approximately 10,000 individuals and operates over 300,000 square feet of casino space featuring more than 9,100 slot machines and 300 table games units. Its gaming facilities host a combined 5,750 casino-hotel guestrooms, 195,000 square feet of meeting space, extensive entertainment facilities and more than 50 restaurants and lounges.

Of Aztar's 10,000 employees, more than one-third are union members. Unions represented in Aztar's properties include Unite HERE, (food and beverage, housekeeping, and public areas employees), the largest union represented; Teamsters (slot attendants), Operating Engineers, Painters, Carpenters and Stagehands, among others. For example, at the Tropicana in Atlantic City, 2,200 of the 5,000 employees belong to unions.

The Aztar family of companies is committed to ensure a diverse workforce. Aztar has made a commitment to purchase goods and services from local businesses and local minority- and women-owned businesses, and we continue to responsibly address this commitment.

Aztar, its subsidiaries and senior executives are licensed with gaming facilities in the four (4) gaming jurisdictions, and have a strong record of compliance with gaming regulators and authorities in all jurisdictions. Aztar is a member of the American Gaming Association, and adheres to the Association's Code of Conduct for Responsible Gaming, governing employee and customer education, underage gambling, alcohol service, advertising and research.

Thirty-five (35) executives with an average twenty-two (22) years of experience in the gaming industry comprise the management committees of the five (5) gaming locations. Each Aztar gaming location continues to stand in their respective communities as a model of good corporate citizenship in its host location. Aztar's gaming operations participate in civic and professional organizations, providing employee participation and resources to groups such as Chambers of Commerce, tourism boards and economic development organizations. Aztar further aids its host communities by making financial and in-kind donations to worthy recipients and supplying time, food and resources to numerous non-profit organizations.

Robert M. Haddock, Chairman of the Board, President and Chief Executive Officer of Aztar Corporation, and Northeast Pennsylvania native, leads the Lehigh Valley Tropicana team, along with Aztar executives Neil Ciarfalia,

Nelson W. Armstrong, Meridith P. Sipek, Joe Cole, James L. Brown and Richard Ruden. A brief description of their exceptional qualifications and history with Aztar is attached as **Exhibit “A”**.

Echoing its dedication to this project, Aztar and Tropicana Pennsylvania, LLC have engaged numerous local companies and firms to provide assistance and local perspective. Since late 2004, Aztar has worked with local legal counsel, Fitzpatrick Lentz & Bubba, P.C., and has engaged Econsult, an economic consultant, Keystone Consulting Engineers, Inc., a full-service engineering firm, Traffic Planning & Design, Inc., a specialized traffic engineering and consulting firm, Alvin H. Butz, Inc., a full-service construction company (as it relates to pre-construction services), The Echo Group, a strategic communications firm, and Friedmutter Group, a specialized casino architecture firm. An informational summary on the local team is attached as **Exhibit “B”**.

C. Allentown, Pennsylvania – The Host Municipality.

1. City of Allentown.

The City of Allentown is Pennsylvania’s third largest city, with a current population of approximately 106,632 people.<sup>1</sup> Allentown encompasses approximately 18.30 square miles and contains approximately 2,020 acres of park land, nineteen (19) playgrounds, five (5) swimming pools and one (1) municipal golf course. The Allentown Art Museum, Civic Theater of Allentown and Allentown Symphony Orchestra offer cultural and entertainment events year round. Mayfair Festival of the Arts, held annually each Spring, and the annual SportsFest provide summer entertainment at local Cedar Beach Park.

Allentown is within 85 miles of the two largest cities on the eastern seaboard, Philadelphia and New York City. Interstate 78, U.S. Routes 22, 222 and 309, as well as several state highways, provide access to Allentown and other major cities in Pennsylvania and the eastern United States. The Lehigh Valley entrance to the Northeast Extension of the Pennsylvania Turnpike is located approximately 3 miles west of Allentown, providing direct highway access from major cities. Route 33 is located several miles to the east, providing excellent access to New York, New Jersey and northeastern Pennsylvania markets.

According to statistics from the U. S. Census Bureau, the median household income in 1999 was \$32,016, with eighteen and one-half percent (18.5%) of residents living below poverty.

---

<sup>1</sup> Information contained in the City of Allentown, Pennsylvania Financial Statements for the Year Ended December 31, 2004, a copy of which can be found at [http://www.allentownpa.org/finance\\_department.htm](http://www.allentownpa.org/finance_department.htm). Population figure based on 2000-04, U.S. Department of Commerce, Bureau of the Census.

## 2. Proposed Facility Location.

The Applicant acquired five (5) parcels of land totaling approximately 23 acres along American Parkway and Agere Way. This East Allentown site is approximately 1.3 miles from the intersection of U.S. Route 22 and Airport Road and the Lehigh Valley International Airport. The largest parcel of 18 acres is located at 1115 American Parkway N.E., and was acquired by the Applicant in January 2006 from Agere Systems Inc. This site previously housed industrial facilities for Western Electric and AT&T, the predecessors of Agere Systems Inc. The other four parcels of vacant land were acquired in 2005 from neighboring property owners.

As of March 1, 2006, the entire 23 acre assemblage is zoned Business Light Industrial (BLI), which provides for gaming as a use permitted by right. The 23 acres was previously zoned Limited Industrial (I2), and over the past few months, rezoning requests submitted to the Allentown City Council, were approved unanimously, with full knowledge of Council that gaming is a use permitted by right in the BLI District.

Among the most attractive aspects of the proposed location is its remoteness from houses and other residential units. The proposed location is at least one-half mile from any residential districts and is surrounded by industrial and business use districts, as illustrated from the section of the City of Allentown Zoning Map attached hereto as **Exhibit "C"**. This location features geographical boundaries, separating the site from schools and universities. The closest school, Louis E. Dieruff High School, located at 815 N. Irving Street, is approximately 7/10ths of a mile from the proposed location, with the second closest school located over one mile away. The closest universities and college campuses are several miles away.

## 3. A City in Need.

The downtown area of Allentown has suffered for several years through the steady decline of major businesses and retail stores moving out of the area. Remaining business owners face continual economic challenges. Ongoing efforts by business and economic development initiatives attempt to attract new business and retail to the east side and downtown areas, but without a major catalyst to take the lead, Allentown's attempts have largely continued to be unsuccessful on downtown-wide basis.

Allentown has also struggled with its attempts to achieve a balanced budget. According to the City of Allentown, Pennsylvania Financial Statements for the Year Ended December 31, 2004, showed that during 2004, net assets decreased \$8.1 million and a deficit of over \$2 million. Allentown has a current deficit estimated at \$5.2 million, with some proposed resolutions for lowering the deficit coming at the expense of the residents.



#### 4. Allentown School District.

Allentown School District (“ASD”) is the fourth (4<sup>th</sup>) largest school district of Pennsylvania’s five hundred and one (501) districts. ASD is comprised of two (2) high schools (grades 9-12), four (4) middle schools (two with grades 5-8 and two with grades 6-8), and sixteen (16) elementary schools (ranging from grades K-5, grades 1-5 and grades 1-4). In 2005, approximately 17,600 students were enrolled, and approximately 1,218 teacher and 2,000 other employees were employed by ASD, providing a student-to-teacher ratio of anywhere from 15.1 (Jefferson Elementary School) to 20.3 (Louis E. Dieruff High School) and 23.1 (William Allen Senior High School). Overall, the district-wide average is 19.2 students-per-teacher. This is the worst faculty-student ratio of all of the Lehigh County school districts.

Based on the 2004 and 2005 school years, approximately seventy percent (70%) of students are economically disadvantaged, qualifying for free or reduced price lunch. This percentage far exceeds other Lehigh County school districts, almost three times the percentage of economically disadvantaged students as are enrolled in Northern Lehigh School District, the next closest to ASD, numbering approximately twenty-six percent (26%). Approximately seventy-three percent (73%) of students are members of a minority group, with Hispanics making up almost seventy percent (70%) of minority students. Roughly one out of every five students is limited in English language proficiency.

The need for additional resources is alarmingly apparent from the results of the 2005 Pennsylvania System of School Assessment (PSSA). The PSSA is a standards-based, criterion-referenced assessment used to measure a student’s attainment of the academic standards while also determining the degree to which school programs enable students to attain proficiency of the standards. Students in grades 3, 5, 8 and 11 are assessed in reading and math, while students in grades 5, 8 and 11 are assessed in writing. The four (4) performance levels are Advanced, Proficient, Basic and Below Basic. The students who fall under the Below Basic level have little understanding of the skills tested under the Assessment and desperately need additional instructional opportunities and/or increased student academic commitment to achieve the Proficient level. The results from the 11<sup>th</sup> grade students at both high schools showed that approximately fifty-seven percent (57%) of students are at the Below Basic level for Math, and approximately forty-two percent (42%) are at the Below Basic level for Reading. On average, less than one-half of these 11<sup>th</sup> grade students meet the Proficient level in writing.

ASD has a lower graduation rate than other local schools, with approximately forty percent (40%) of students enrolled in 12<sup>th</sup> grade failing to graduate in 2005. In 2005, ASD had a 13% attendance failure rate for secondary students, the only district in Lehigh and Northampton counties above an 8% attendance failure rate.

ASD receives funds from the Pennsylvania Department of Education Successful Students' Partnership, which assists school districts in developing and implementing long-range, comprehensive strategies for dropout prevention and dropout rate reduction. ASD is the only school district from Lehigh and Northampton counties to receive assistance through this grant program.

The pressing need for new buildings and classrooms, educational resources and basic technology are also major concerns of ASD, with no reasonably foreseeable potential for resolution. In a September press release after receiving the 2005 PSSA results, Dr. Karen S. Angello, superintendent of ASD, expressed the need for improvements, especially at the high school level, and the immediate need to address facility issues due to increasing enrollments, class size, and academic program requirements. A copy of this September press release is attached hereto as **Exhibit "D"**.

D. Lehigh Valley Tropicana – Overview.

1. Supplement to Local Impact Report of December, 2005.

The Applicant submitted to the PGCB a Local Impact Report dated December, 2005. This Supplement is intended to be considered in conjunction with the earlier report.

2. Development Objectives.

The initial \$325 million development phase of the master plan of the Lehigh Valley Tropicana calls for 100,000 square feet of casino space, with 3,000 slot machines, more than 30,000 square feet of dining space, with up to 10 restaurants, bars and lounges, a 5,000-square-foot showroom/entertainment venue, a 250-room hotel, up to 15,000 square feet of executive conference center space, and 3,400 parking spaces. Artist renderings of the proposed Site Plan for Phase I and a Perspective for Phase I are attached hereto as **Exhibits "E"** and **"F"** respectively. The full master plan calls for additional casino and dining space, another 250 hotel rooms, a spa, 10,000 square feet of retail space, and another 1,500-space parking garage. Artist renderings of the proposed Master Plan (Phases I & II) and a Perspective for Phases I & II are attached hereto as **Exhibits "G"** and **"H"** respectively. A detailed list of amenities for Phase I and Phase II of development is attached as **Exhibit "I"**. The Lehigh Valley Tropicana will draw on the colorful and dynamic Old Havana theme of the hugely successful Quarter at the Tropicana Casino and Resort in Atlantic City, as well as on the strength of the Tropicana name.

The proposed development site is vacant and the general infrastructure is largely in place, allowing for construction shortly after a license is granted and other regulatory requirements are met. The Applicant's goal is to have the initial

phase open within fifteen (15) to eighteen (18) months after the gaming license is awarded.

### 3. Anticipated Benefits.

The Lehigh Valley Tropicana is designed to be an exciting destination entertainment facility that, when fully developed, would offer a 500-room hotel, 5,000 slot machines, a showroom, an executive conference center and a fabulous array of restaurants, bars, lounges, retail stores, and other forms of entertainment. The proposed facility will offer many amenities to Allentown which it is currently lacking, including a joint business and entertainment venue, as well as a retail and entertainment component that Allentown, including the downtown area, is lacking. Considering this project along with other proposed development in Allentown, including the potential minor league baseball stadium on a neighboring parcel of land, the city would realize immediate positive effects.

The spirit and energy which this project will bring to Allentown is tied directly to the Applicant, a company projected to initially spend an estimated \$325 million. A majority of the estimated \$325 will be spent in Allentown and the surrounding municipalities to covering engineering services, construction costs and building supplies. The project will generate approximately seven hundred fifty (750) construction jobs, and more than thirteen hundred (1,300) permanent jobs with average compensation of \$35,000 per year per full-time employee.

Employees will receive extensive training on the operation of a gaming facility and will be initially mentored by experienced employees from other Aztar gaming facilities. This training and mentoring will not only teach skills to be a model employee, but will also stress the need to participate in the community. The Applicant is committed to purchasing goods and services from Allentown-based companies and firms who have Allentown's best interests in mind. The Applicant is currently working to finalize a project labor agreement negotiated with the Lehigh, Northampton, Pike and Monroe Counties Building and Construction Trades Council regarding construction of the proposed facility using only construction firms that employ union labor. A letter from Tropicana Pennsylvania, LLC to William H. Newhard, President, Lehigh, Northampton, Pike and Monroe Counties Building and Construction Trades Council regarding the project labor agreement is attached as **Exhibit "J"**.

Along with the jobs and benefits that will come from the construction and daily operations of the proposed facility, the Applicant's track record has been built on creating opportunities with local businesses to purchase goods and services necessary in the operation of a gaming facility. The Applicant estimates approximately \$35 million per year will be spent with local business on these types of purchases.

The Lehigh Valley Tropicana anticipates upwards of 3.5 million customer visits per year upon opening the first phase of development. The Lehigh Valley Tropicana will have a market of approximately 10 million adults within a seventy-five (75) mile radius, many of whom will venture out into all areas of Allentown, supporting the other businesses and amenities Allentown offers. The facility will attract visitors who would otherwise have been unlikely to visit Allentown, and will provide an opportunity for area businesses to show these visitors what they and the City has to offer.

## II. LOCAL IMPACTS

### A. Impact on Traffic.

The Applicant initially engaged the services of Pidcock Engineers (“Pidcock”) for a background traffic review, whose preliminary report exceeds the scope of analysis for this gaming application and for Applicant’s land development application. The preliminary Pidcock report is attached as **Exhibit “K”**, and will be supplemented by a project-specific traffic impact study conducted by Traffic Planning & Design, Inc. (“TPD”) in the course of Applicant’s land development submission to the City of Allentown. Pidcock’s preliminary review contemplates radio-controlled signalization improvements as necessary improvements to the existing road and signalization system.

TPD is presently working to compile up-to-date traffic counts as part of its work in the customary land development submission, focusing on the Applicant’s project specifically and its impact on local roadways, as is required by local land development ordinances and applicable law.

### B. Impact on Water & Sewer Systems.

The Applicant’s site is served by public water and sewer, with adequate capacity for anticipated use requirements. Chief Utility Engineer Donald S. Lichty, P.E., provided a letter dated December 5, 2005, establishing this service capacity, which is attached as **Exhibit “L”**.

### C. Impact on Emergency Services and Law Enforcement.

#### 1. Local Police.

The proposed site will be serviced by the City of Allentown Police Department from the station located at 435 Hamilton Street, Allentown, approximately two (2) miles from the proposed site. The Police Department is staffed with both full-time and part-time officers, and currently services the entire Allentown population and numerous events held yearly in the City. It is the opinion of Chief of Police Roger J. MacLean that the City of Allentown Police Department will be able to effectively respond to any incidents that may arise in

connection with the proposed facility. A letter from Chief MacLean is attached as **Exhibit "M"**.

In addition to the assistance from the City of Allentown Police Department, the Applicant will provide its own company-trained security force equipped with the necessary training and qualification to handle all situations which may arise on a day-to-day basis. The Applicant will provide security within the gaming facility and other locations throughout the property, including parking garages and other outside facilities. The Applicant recognizes that Allentown residents are concerned about safety and security issues, and will take all available measures to address these concerns and exceed the expectations of the community.

The Applicant will maintain a strong responsibility to the City of Allentown and the neighboring municipalities to minimize and eliminate any negative impact that may be attributable to the proposed facility. It is company policy to ensure adequate measures and programs to prevent underage drinking and gambling, excessive drinking and other unlawful activities. The Applicant will not tolerate such illegal activities on the property and is committed to educating its employees on how to handle these situations in the most effective manner possible.

## 2. Emergency Services.

The proposed site will be serviced by the City of Allentown Emergency Medical Services (EMS), a division of the Allentown Police Department. Allentown EMS employs twenty-seven (27) full-time paramedics and twenty (20) substitute paramedics. Two (2) life support ambulances are staffed around the clock with two (2) additional advanced life support ambulances operating during peak call volume times. Two (2) fire stations within the City of Allentown house the EMS fleet. The Hibernia Fire Station, located less than one mile away from the proposed site, will handle emergency calls to the proposed facility until 11:00 p.m., and the Center City Fire Station, located approximately 2 miles away, will handle emergency calls after 11:00 p.m. Allentown EMS vehicles will have multiple points of access to the site from Agere Way, American Parkway, Fairmont Street and Fenwick Street.

## 3. Local Fire Department.

The proposed site will be serviced by the City of Allentown Fire Department, which consists of 146 firefighters manning six (6) fire stations, with the closest fire station located approximately 6/10ths of a mile from the proposed facility. The Fire Department has seven (7) pumping trucks and two (2) ladder trucks, and has many special teams in the Department, including a Hazardous Materials Team, Bomb Squad, and a Technical Rescue Team. In the event of a

large scale emergency, fire departments from surrounding municipalities would also be available to assist the City of Allentown Fire Department.

Deputy Fire Chief David L. Oncay has not only assured the Applicant of the adequacy of the City of Allentown Fire Department to handle any emergencies at the proposed facility, but also lends his support for the development of the proposed project in Allentown. Deputy Fire Chief Oncay recognizes the additional revenue the proposed facility would bring to Allentown and welcomes the Applicant. Deputy Fire Chief Oncay's overview of the City of Allentown Fire Department resources and capacity is addressed in his March 3, 2006 letter attached as **Exhibit "N"**.

4. Tropicana Pennsylvania, LLC – Financial Commitment to Local Law Enforcement and Emergency Services.

If the Applicant is awarded the license from the PGCB, the Applicant has already committed the following monetary contributions:

- \$1.25 million in order to assist Allentown in the purchase of a new ambulance for Allentown EMS, a new ladder fire engine for Allentown Fire Department, and construction of a new police substation on the east side of Allentown;
- \$500,000 over five (5) years to local service agencies identified by Allentown to pay for programs to treat gambling addiction;
- \$250,000 to start a fund to help employees who live in Allentown become homeowners.

These commitments recognize the needs of the City and evidence the Applicant's dedication to the City's law enforcement and emergency services. A copy of a letter from Tropicana Pennsylvania, LLC to The Honorable Edward Pawlowski, Mayor of Allentown date March 3, 2006, confirming these commitments is attached as **Exhibit "O"**.

5. Services Summary.

Based on the opinions of City officials, this project will have no or little adverse impact on the City's law enforcement and emergency services. The City's EMS, Police Department and Fire Department are adequately staffed and have the necessary equipment to service the proposed project. With the funds that would be required to be transferred from the State Gaming Fund to the PGCB to provide grants to local law enforcement agencies in the Commonwealth, as well as the written financial commitment made by the Applicant to the City for additional equipment and improvements, there is clearly a potential for City services to improve even while attending to the needs of the

proposed project. In addition, the Applicant's project will be staffed by its own security and provide for on-sight police presence.

D. Economic Impact.

The Applicant has retained the services of Econsult Corporation ("Econsult"), a Philadelphia based national consulting firm with expertise in economic impact analysis and economic development, to evaluate the potential impacts of the proposed project in the City of Allentown. Econsult prepared a report entitled "*Potential Economic Impacts of the Lehigh Valley Tropicana, a Proposed Casino Entertainment Facility in the City of Allentown*" dated February 2006 (the "Economic Impact Report"). A copy of the Economic Impact Report is attached hereto as **Exhibit "P"**.

Using standard econometric models, Econsult determined that the proposed facility would be a tremendous benefit to the City of Allentown, one of Pennsylvania's most fiscally strapped cities. The economic impacts are anticipated to be in the form of increased employment and earnings, direct, ancillary and induced spending, and significant tax revenues generated by new construction, ongoing operations and ancillary spending. Such positive impacts would come at a time when statistics show that the City of Allentown has a lower household median income and significantly higher rates of poverty and unemployment than the State of Pennsylvania, with several areas in economic distress.

1. Economic Output/Spending Impacts.

During construction of Phase I of the proposed facility, an estimated \$144 million will be spent within the City of Allentown and the surrounding areas in the construction and wholesale trade industries, as well as obtaining professional, scientific and technical services. In total, an estimated \$196 million will be spent on construction state wide. This will increase a potential total state wide economic spending impact of nearly \$475 million.

The Applicant further estimates \$82 million in Year 1 on up to \$95 million in Year 5 of annual regional direct spending from the ongoing operations of the facility. This projection does not include the estimated ancillary visitor spending between \$17 million in Year 1 to over \$28 million by Year 5 on non-Tropicana related expenditures.

2. Employment and Earnings Impacts.

Nearly 750 direct and 1,212 indirect regional constructions jobs will be created as part of construction of Phase I of the project, producing an estimated \$79 million in earnings. The statewide employment impact for construction alone would reach nearly 4,500 jobs and over \$150 million in earnings. Approximately

1,300 direct and 1,179 indirect regional permanent full-time jobs will be available upon completion of Phase I of the project, producing an estimated \$85.7 million in earnings. An additional estimated 500 regional jobs will be available by Year 5. The large pool of construction and permanent full-time jobs will result in an improved quality of life in Allentown and surrounding areas.

### 3. Fiscal (tax) Impacts.

Local tax impacts resulting from Phase I of the project include property taxes (municipal, county and school district), Allentown's 1% earned income tax, the 4% LVCVB Hotel tax, and the 4% casino revenue host fee, split 2% (or \$10 million, whichever is greater) to Allentown and 2% Lehigh County.

While City officials have preliminarily opined that no significant additional municipal operating expenditures will result from the proposed project, to the extent there are some marginal, incidental increases, the host fee should more than cover them. An estimated \$400,000 (combined) in earned income tax revenues associated with the construction project will go to Allentown and ASD. During Year 1, operating expenditures and ancillary spending will generate an estimated \$19.3 million in local tax revenues, increasing to an estimated \$20.3 million in Year 5.

### 4. Phase II Impacts.

The anticipated \$200 million expansion of the facility as proposed in Phase II of the project will generate increases in all of the above noted impacts. There will be additional local construction spending of approximately \$114 million, direct spending associated with the operation of the expanded facility of approximately \$121 million, and ancillary visitor spending of approximately \$45 million per year.

Approximately 500 construction jobs will be created, with the addition of an estimated 450 permanent full time jobs. Increased tax revenues to Allentown, ASD and Lehigh County will also follow, and, with a de minimus impact on municipal operating expenditures, the additional revenue can be used to further improve the financial conditions of Allentown and ASD.

### 5. Qualitative Impacts.

Along with the economic impacts described above, derivative benefits are expected to affect residents in Allentown, surrounding municipalities, and even throughout Pennsylvania. The proposed project, reusing a large, formerly industrial site, will assist in revitalizing not only the east side of Allentown, but also the downtown area by creating a need for new businesses and expanding employment opportunities. Residents who currently seek entertainment outside Allentown will see increased entertainment opportunities, which will generate an



opportunity for increased tourism and airport passenger traffic. Businesses will also be able to take advantage of the 12,000 to 15,000 sq. ft. total executive conference center style meeting and conference space with multiple rooms and expanded technology.

E. Impact on Tourism and Historical and Cultural Resources.

The Applicant's goal is to create an entertainment destination, complete with various restaurants, shops, a hotel and conference center facility, and entertainment opportunities. The number of visitors to existing entertainment, restaurants and hotels will actually escalate, a benefit that will come from the increased tourism to the area due to the Lehigh Valley Tropicana. In a two-year study of legalized gambling conducted by the National Gambling Impact Study Commission (NGISC) and submitted in 1999, NGISC concluded that the gaming industry is an "economic mainstay", playing an increasingly prominent role in local and state economies.

In their report, Econsult analyzed potential visitor spending outside of the facility. While the facility will be frequented by one-day trip visitors from Lehigh and Northampton Counties and other surrounding areas, an estimated 4.5% of visitors in the first year will spend the night. A number of these overnight guests will choose hotel accommodations outside of the facility, while taking time to stop at local shops, diners and restaurants. Based on estimates from Econsult and Pennsylvania tourism data for daily spending, local businesses will see an estimated \$17 million ancillary spending in Year 1, increasing to an estimated \$28 million in future years.

This project also provides an opportunity for Lehigh Valley Convention and Visitors Bureau (LVCVB) to expand their marketing efforts, using the project to highlight the other regional attractions that would complement visits to the gaming facility. This project will provide an additional focus on Allentown, generating new avenues for LVCVB and the City of Allentown to attract new visitors.

F. Social Impact.

Years of research and studies have looked at economic impacts and social problems, such as gambling addictions, bankruptcy and crime, in communities with established casinos, communities with newly established casinos and casino towns. The reoccurring conclusion in all of these studies is that the social problems in communities with casinos are no different than those in communities without casinos.

A PricewaterhouseCoopers survey conducted in 1997 involving 178,000 casino employees (approximately one-half of the casino work force at the time) found that employment with a casino had a very positive affect not only on their

own lives, but within their communities. Sixteen percent (16%) of the casino employees surveyed used their casino jobs to replace unemployment benefits, 63% gained improved access to health care benefits, 43% had better access to day care for their children, 65% had been able to develop new job skills as a result of their employment and 78% indicated that their employer provided them with training to perform their job.<sup>2</sup> Along with these positive impacts, increased employment helps attribute to a decrease in crime and other social ills present in the community prior to the introduction of gaming.

### 1. Gambling Addictions.

Research has established that the opening of new or additional gaming facilities in a community does not create pathological gamblers. The American Psychiatric Association describes “pathological gambling” as a clinical disorder characterized by a persistent and recurring failure to resist gambling behavior that is harmful to the individuals and/or others. Close to 1% of the U.S. adult population are pathological gamblers.

The rate of pathological gambling is not a direct consequence of the location of the gaming facility in a community. In fact, studies have shown that the prevalence of pathological gambling has either remained stable or decreased, despite the introduction of new gaming facilities into a community. In communities with a higher concentration of gaming opportunities, no correlation has been found to higher levels of gaming disorders. Even a study conducted on casino employees by Harvard Medical School’s Division on Addictions found that, while levels of pathological gaming were initially high with employees of casinos, prevalence rates decreased over time.<sup>3</sup>

Elderly gamblers generally cite the ability to meet with friends and interact with others in a fun and entertaining environment. While claims are often made that casinos target the elderly, causing destructive gambling practices, frequent elderly casino visitors are found to generally exercise good money management and budget their fixed income to allow for this activity. In fact, many see it as an inexpensive day out for someone on a fixed income.

### 2. Excessive Spending/Bankruptcy.

While bankruptcy filings have increased over the years, the American Gaming Association has found that this increase is generally attributed to

---

<sup>2</sup> Statistics provided by the American Gaming Association (citing PricewaterhouseCoopers, *Gaming Industry Employee Impact Survey* (Washington, D.C.: American Gaming Association, October 1997), 2).

<sup>3</sup> Research information provided by the American Gaming Association (citing Howard J. Shaffer, Joni Vander Bilt and Matthew N. Hall, “Gambling, Drinking, Smoking and Other Health Risk Activities Among Casino Employees,” *American Journal of Industrial Medicine* 36 (1999); 365-378).

changes to the bankruptcy laws, the diminished social stigma in filing bankruptcy and, most notably, increasing availability of credit cards. According to an Atlantic City study conducted by the General Accounting Office, and the topic for *Impact of Gambling: Economic Effects more Measurable than Social Effects*, a report published in April 2000, no data was found showing a cause-effect relationship between gambling and bankruptcies. In fact, Utah and Tennessee ranked highest in bankruptcy in 2002 while neither state had any form of legalized gambling.<sup>4</sup>

### 3. Crime.

A common misconception is that with casinos comes increased crime. What is frequently overlooked in assessing this argument is that casinos often come into communities with the intention of being an economic stimulus. Casinos are located in areas with higher rates of crime, poverty and other social issues. When a casino begins operating in one of these areas, although not actually changing, appear higher in comparison to other areas and give the false impression that the casino is the cause. The inverse, however, is generally true, and the increased employment, security and resources provided to the community actually alleviate some of these social problems.

Communities with gaming facilities are just as safe as statistically similar communities without casinos. Generally, as a result of the extra security, multiple layers of regulatory control, and the other economic benefits, gaming facilities act as a crime deterrent. A look at the levels of crime in Atlantic City due to increased gaming facilities actually found a yearly decline in the crime rate.

Another factor that is often overlooked is that increased tourism in any community, with or without gaming, is likely to bring an increase in crime due to an influx of people and activity. For example, Orlando, Florida, which attracts approximately 43 million visitors annually, experienced a 3.8% increase in vehicle theft between 1994 and 2002, while the national rate dropped 19%.<sup>5</sup> Conversely, the Las Vegas metropolitan area has nearly 35 million visitors annually and has a crime rate lower than other major U.S. tourist destinations.

### 4. Proactive Approach by Tropicana Pennsylvania, LLC.

The Applicant is committed to promoting responsible gaming through employee training, advertising efforts and programs to educate customers.

All employees hired by Tropicana Pennsylvania, LLC will attend two days of orientation, which includes training on the company's commitment to, and programs regarding Responsible Gaming. Specific training will include a review

---

<sup>4</sup> Since 2002, Tennessee has added a state lottery as a form of legalized gambling.

<sup>5</sup> See American Gaming Association, Fact Sheet: Crime, available at [http://www.americangaming.org/Industry/factsheets/issues\\_detail.cfv?id=23](http://www.americangaming.org/Industry/factsheets/issues_detail.cfv?id=23).

of the educational materials available to customers and fellow employees, the specific locations of the materials and the process for assisting someone inquiring about our responsible gaming programs. Employees will be educated on the Applicant's Self-Exclusion Program, which will allow customers to ban themselves from the proposed gaming facility. In addition, the Applicant will implement extensive internal policies and programs dealing with problem and underage gambling, and raise employee awareness regularly with events such as seminars for supervisors, conducted by nationally recognized experts in this field. Responsible gaming awareness information is included in our employee handbook and it is a key component in the orientation program required of each new employee.

The Applicant will also create a Responsible Gaming Committee comprised of senior management from each operating department. The Committee will be responsible for the development and implementation of all responsible gaming related programs and practices, and will also manage the Self-Exclusion Program discussed below, along with any Pennsylvania implemented exclusion program.

Tropicana Pennsylvania, LLC will develop a Self-Exclusion Program, providing customers the opportunity to ban themselves from the gaming facility for one year, five years or lifetime. This program will have the customer agreeing in writing not to attempt to enter the casino for the selected time period or be subject to arrest for trespassing. A photograph of the customer will be taken and maintained by Security personnel stationed at the casino entrance. Participants of this program will be required to submit a written request to seek reinstatement at the conclusion of the selected time period. The Responsible Gaming Committee will review and act upon all exclusions and reinstatement requests. All program participants that request, and are extended reinstatement, will be automatically denied check cashing and credit line privileges.

Another program Tropicana Pennsylvania, LLC plans to implement is Project 21, a multi-faceted educational awareness program designed to heighten casino employees', minors', and the public's awareness concerning underage gambling. Casino Aztar in Evansville, Indiana started the initial program, which incorporates college scholarship funding to area high school students on an annual basis.

In accordance with expected regulations, the Applicant will print the appropriate Pennsylvania Mental Health services contact information on advertising and marketing materials, and will display posters promoting responsible gaming throughout the casino and other public areas of the proposed facility. The Applicant will go beyond these projected requirements to develop printed materials that provide information for those seeking assistance with gambling addiction, alcohol abuse or depression. Brochures and other literature

will be available at many locations within the proposed facility and from casino employees.

In addition to ongoing efforts and programs, Tropicana Pennsylvania, LLC will be a member of the American Gaming Association and will operate within the AGA's Code of Conduct, utilizing resources available through the AGA. The Applicant will also participate annually in the Responsible Gaming Education Awareness Week by hosting employee activities and running local print and broadcast advertisements.

### III. CONCLUSION

As evidenced in the figures and statistics provided in this report, the City of Allentown is the ideal location for a Category 2 gaming license. The City's deficit and the desperate financial needs of Allentown School District paired with the estimated tax revenues is but one of numerous examples of exceptional potential that will come with the proposed facility. Allentown will have the ability to better utilize and expand on not only tourism, from increased and consistent year-round visits to restaurants, hotels and local businesses, but also business expansion and economic growth that the City has tried to initiate for several years.

Based on comparisons to Aztar's other casino locations, and the data provided by Econsult, this project will spur economic growth throughout Allentown. Even with the potential for some negative effects that may come with this project, local officials continue to lend their support for Tropicana Pennsylvania, LLC, continually expressing their belief that the positive impacts will far outweigh the negative. The local officials are partially at ease due to the reputation and resume of Aztar, their continued commitment to the community, and their work and responsibility in preventing and controlling issue of gambling addictions, underage gambling and crime.

## EXHIBIT "A"

### **Biographical Information**

#### **Aztar Corporation**

##### **Robert M. Haddock**

*Chairman of the Board, President and Chief Executive Officer  
Aztar Corporation*

Robert Haddock became Chairman of the Board and Chief Executive Officer of Aztar Corporation in March 2005. He served as Aztar Chief Financial Officer, first as Executive Vice President, then as President, from the company's founding in 1989 until he assumed his present position.

He served as Executive Vice President and Chief Financial Officer of Aztar predecessor Ramada Inc. beginning in 1987 and steered Ramada through its restructuring in 1989. He was appointed President of Aztar in May 2002. He practiced law in the San Francisco area and served as Vice President and Treasurer of Itel Air in San Francisco before joining Ramada.

Mr. Haddock was born and raised in Scranton, Pennsylvania and attended Scranton Preparatory. His additional studies include Fordham University (BA, 1967, Phi Beta Kappa); University of Wisconsin (MA, 1968); Stanford Law School (JD, 1972), and Stanford Graduate School of Business (MBA, 1978).

##### **Neil A. Ciarfalia**

*Chief Financial Officer, Vice President and Treasurer  
Aztar Corporation*

Neil Ciarfalia joined Aztar Corporation in 1995 as Treasurer of the company and was named a Vice President in 2004. He was appointed Chief Financial Officer in February 2005. He has an extensive background in financial services, in his most recent previous affiliation serving as President of Saab Aircraft Finance Corp. and Fairbrook Leasing, Inc., Saab Aircraft's financing subsidiary. He holds Bachelor of Arts and Master of Business Administration degrees from Stanford University.

##### **Nelson W. (Ned) Armstrong Jr.**

*Vice President, Administration, and Secretary  
Aztar Corporation*

Ned Armstrong joined Aztar predecessor Ramada Inc. in 1973 as a supervisor in the financial records department and served in positions of increasing responsibility, rising to Vice President of Administration and Controller in 1987.

He was appointed Vice President, Administration, and Secretary in the Ramada restructuring in which Aztar was formed in 1989. He holds the Bachelor of Arts degree in Accounting from the University of Michigan.

**Meridith P. Sipek**

*Vice President and Controller  
Aztar Corporation*

Meridith Sipek joined Aztar predecessor Ramada Inc. in 1977 as Manager, Accounting Research and Compliance, and rose to Assistant Corporate Controller in 1985, assuming that position in Aztar in the restructuring of Ramada in 1989. He was appointed Controller of Aztar in 1990, and promoted to Vice President and Controller in 2004. He holds the Bachelor of Science degree in Accounting from DePaul University, and is a Certified Public Accountant.

**Joe Cole**

*Vice President, Corporate Communications  
Aztar Corporation*

Joe Cole joined Aztar predecessor Ramada Inc. as Vice President, Corporate Communications, in March 1988 after 26 years with Phoenix Newspapers Inc. He assumed the same responsibilities at Aztar when that company was formed in December 1989. At PNI, he served as a reporter, columnist and editor with *The Arizona Republic* and as general manager of a new business unit of PNI. He holds a bachelor of arts degree in journalism from the University of Arizona. He is a past president and presently a director of the National Investor Relations Institution's Arizona chapter.

**James L. Brown**

*President and General Manager  
Casino Aztar Evansville*

Prior to his appointment to the position of President and General Manager of Casino Aztar Evansville in 2002, Mr. Brown joined the property under development as Vice President and General Manager in February 1995 and opened Casino Aztar Evansville, Indiana's first riverboat casino, in December 1995.

Mr. Brown joined Aztar in 1986 as Assistant Director of Hotel Operations of the company's Tropicana Casino and Resort in Atlantic City, New Jersey. He joined the pre-opening team at Aztar's Ramada Express Hotel & Casino in early 1988 as Director of Hotel Operations. He was named Vice President of Operations for the 1,500-room Nevada resort in 1990 and served in that capacity until his Evansville appointment.

In addition to his responsibilities at Casino Aztar Evansville, Mr. Brown serves as Chairman of the Casino Association of Indiana, a position he has held for the past four years. He also serves as Vice Chairman of the Evansville Convention & Visitors Bureau Board of Commissioners and is a board member of the Evansville Regional Business Committee, and the Metropolitan Evansville Chamber of Commerce, as well as various other community boards. In addition, he was the recipient of the 1998 Hope Award, presented by the Indiana State Chapter of the National Multiple Sclerosis Society, for his efforts and support of community programs.

Mr. Brown received his Bachelor of Science Degree in Business Management and Administration from Indiana University in 1980. In 1994, the Educational Institute of the American Hotel and Motel Association designated him as a Certified Hotel Administrator.

**Richard Ruden**

*Executive Director Development  
Aztar Corporation*

Richard Ruden has been with Aztar Corporation and its predecessor Ramada Inc. since 1988. He began his career with the company as Tax Manager and later moved into development with significant roles in all of Aztar's major expansion projects, including the development of Aztar's casinos in Missouri and Indiana. He has experience in all phases of development, including finance, real estate, legal, construction, tenant leasing and government relations. His professional career began in the tax and audit departments of an international CPA firm.

Mr. Ruden was born and raised in Tenafly, New Jersey. He received his Bachelor of Science Degree in Accounting and Finance from the University of Arizona in 1982. In 1994, he received his Master of Business Administration from the University of Phoenix. He also is a Certified Public Accountant.



## **EXHIBIT “B”**

### **Biographical Information**

#### **Local Team**

##### **Fitzpatrick Lentz & Bubba, P.C.**

*Local Counsel to Aztar Corporation and Tropicana Pennsylvania, LLC*

Fitzpatrick Lentz & Bubba, P.C., has offices immediately south of Allentown in Center Valley, and is one of the largest firms in the Lehigh Valley, providing quality services in the areas of business, real estate, civil litigation, estate planning and taxation, banking, land use, technology and healthcare matters. The firm’s business practice includes the representation of numerous corporations and partnerships, including regional representation of large national companies, with an extremely broad-based real estate practice, encompassing not only transactional matters but a heavy emphasize on land use, subdivision and zoning matters, dealing with related agency and environmental matters.

##### **Keystone Consulting Engineers, Inc.**

*Local Civil Engineer for Tropicana Pennsylvania, LLC*

Keystone Consulting Engineers, Inc. (“KCE”) provides a full range of engineering services in the fields of precision boundary and topographic surveying, municipal engineering, subdivision and land development, highway and traffic engineering, environmental engineering including sanitary sewer, storm sewer, and water distribution system design, as well as construction inspection services. KCE is one of the largest civil consulting engineering firms in the Lehigh Valley, with 84 employees serving nearly 200 clients, including 30 municipalities and authorities, from the Poconos to Coopersburg and from Easton to Kutztown. KCE has two offices, one in Northampton County at 433 East Broad Street in Bethlehem, PA, and one in Lehigh County at 6235 Hamilton Boulevard in Wescosville, PA.

##### **Traffic Planning and Design, Inc.**

*Local Traffic Consultant for Tropicana Pennsylvania, LLC*

Traffic Planning and Design, Inc. (“TPD”) is a 100-member consulting engineering firm specializing in transportation engineering and related environmental services. Throughout our history, TPD has remained dedicated to developing responsible and innovative transportation and environmental solutions, and has several professional affiliations, including the Lehigh Valley Economic Development Corporation (LVEDC) and Greater Lehigh Valley Chamber of Commerce. TPD has four (4) offices in Pennsylvania and New Jersey, with an Allentown-area office in Center Valley.

**Econsult Corporation**

*Economic Consultants for Tropicana Pennsylvania, LLC*

Econsult Corporation was founded in Philadelphia in 1979 for the purpose of providing high quality economic research and statistical & econometric analysis in support of litigation. Econsult's practice has expanded beyond litigation to include economic consulting services to assist business and public policy decision-makers. The company currently employs over 30 consultants and affiliates with academically distinguished quantitative expertise and experience with customized approaches designed to meet client's needs.

**Alvin H. Butz, Inc.**

*Full-Service Construction Company providing Pre-Construction Services to Tropicana Pennsylvania, LLC*

Alvin H. Butz, Inc., the oldest and largest construction company of its kind in the Lehigh Valley, has operated continuously since its founding in 1920. Butz pioneered the Construction Management concept in the Lehigh Valley in 1973 and has been consistently ranked among the 100 largest construction managers in the country since 1981. The Butz staff includes engineers, architects, CPAs, and MBAs, as well as a highly-trained staff of project managers and field superintendents. The company employs a full-time safety director and highly-skilled carpenters and cement finishers. Butz is a full service, highly diversified CM firm with a wide range of construction experience including colleges and universities, hospitals and health care facilities, industrial plants, offices, retail buildings, churches, dams, public schools, municipal facilities, clean rooms, theaters, stadiums, prisons, libraries, and retirement communities.

**The Echo Group**

*Communications Consultants for Tropicana Pennsylvania, LLC*

The Echo Group is a Center City Philadelphia-based strategic communications firm with extensive experience garnering positive media coverage for firms, associations and individuals. Dan Fee, who runs The Echo Group, is a seasoned political and media strategist who has worked on and directed successful political and issue advocacy campaigns. With its strategic partners, the Echo Group's services include media strategy, media relations, writing, design, creation and placement of television, radio, print ads and online marketing services including web design.

**Friedmutter Group**

*Specialized Architect for Tropicana Pennsylvania, LLC*

Friedmutter Group Architecture & Design studios, founded in 1992 by Brad Friedmutter, is a highly regarded design, architectural, and master planning firm specializing in Hospitality, Casino and Entertainment projects. Friedmutter

Group offers only the best quality and most innovative design solutions for clients all over the world. With offices in Las Vegas, Atlantic City, Newport Beach and Chicago, Friedmutter Group is well positioned to meet the needs of its growing client base. Friedmutter Group is comprised of a diverse and creative team of architects, designers, and art directors, all utilizing the most cutting-edge technology to provide their clients with impeccable service. With expertise in hospitality design, the Friedmutter Group portfolio includes casinos, hotels, retail centers, and specialty shops.

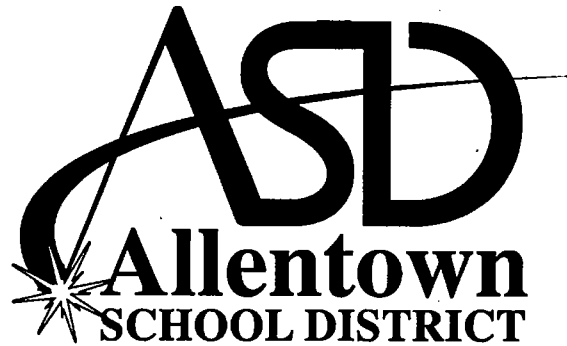
EXHIBIT "C"



- Legend**
- High Density Residential
  - Medium High Density Residential
  - Medium Density Residential
  - Medium Density Residential - Planned
  - Medium Low Density Residential
  - Low Density Residential
  - Low Density Conservation Residential
  - Limited Business/Residential
  - Central Business District
  - Highway Business District
  - Shopping Center Business District
  - Urban Commercial
  - Business/Light Industrial
  - Limited Industrial
  - General Industrial
  - Institutional and Government
  - Park
- R-H
  - R-MH
  - R-M
  - R-MP
  - R-ML
  - R-L
  - R-LC
  - B-1/R
  - B-2
  - B-3
  - B-4
  - B-5
  - B/LI
  - I-2
  - I-3
  - I-G
  - P



EXHIBIT "D"



For immediate release

For more information, please contact:  
Dr. Karen S. Angello  
Superintendent, Allentown School District  
484-765-4235  
[angellok@allentownsd.org](mailto:angellok@allentownsd.org)  
Susan L. Williams, APR, MA  
610-366-2155  
[suewill@ptd.net](mailto:suewill@ptd.net)

**2005 PSSA Results Demonstrate Challenge Ahead:  
As NCLB Raises the Bar, ASD Seeks Ways to Meet  
Adequate Yearly Progress (AYP) Targets of *No Child Left Behind***

- **15 of 20 District Schools Meet AYP Target of 45% at Proficient or Advanced in Mathematics Performance**
- **All Elementary Schools Meet AYP in Mathematics**
- **District Exceeds Overall 2005 Reading Target of 54% at Proficient or Advanced in Six of 20 Schools**
- **Seven ASD Schools Meet AYP Requirements**
- **LEP (Limited English Proficient) Students Increase Reading Scores by 6 Points**
- **School Officials Acknowledge Increased Benchmarks Challenge District**

(Allentown, PA, September 20, 2005) –Dr. Karen S. Angello, Superintendent of the Allentown School District, reports the results of the Pennsylvania System of School Assessment (PSSA) scores for 2005. The data have been released from the Pennsylvania Department of Education and were posted today on the PDE Web site [www.pdenewsroom.state.pa.us](http://www.pdenewsroom.state.pa.us). In addition, the District reports results towards meeting the benchmarks set forth by the implementation of the *No Child Left Behind* (NCLB) federal legislation enacted January 8, 2001.

“With the *No Child Left Behind* achievement targets for meeting Adequate Yearly Progress raised this year in mathematics by ten percentage points and in reading by nine percentage points, the Allentown School District must increase its momentum in advancing student achievement even more,” stated Dr. Angello. “I want to thank the ASD Board of Directors, ASD professional and support staff, students, parents/guardians, and the community for providing the energy and team spirit required for ASD to meet the new achievement targets of *No Child Left Behind*. Specifically, 41.3 percent of the students overall are at proficient or advanced levels of performance in reading and 44.0 percent of the students overall are proficient or advanced in mathematics. All indicators point to a continued need for improvements, especially at the high school level. ASD must resolve its facility issues to address increasing enrollments, class size, and academic program requirements. We need to continue standardizing curriculum and strengthening instructional practices in order to achieve the increasingly stringent requirements of *No Child Left Behind*.” See [www.pde.state.pa.us/pas/site](http://www.pde.state.pa.us/pas/site)

**Summary of 2001-2005 AYP (Adequate Yearly Progress) Results - Mathematics**

<b>Allentown School District</b>					
<b>LEVEL</b>	<b>MATHEMATICS</b>				
	<b>PROFICIENT + ADVANCED</b>				
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>TARGET SCORE</b>	---	35	35	35	45
District Grades 3-5	30.0	37.3	48.6	52.9	60.6
District Grades 6-8	23.0	29.7	30	35.4	42.8
District Grades 9-12	25.5	29.1	29.1	22.2	23.7
<b>District Average</b>	27.1	32.6	35.3	38.7	44.0

Dr. Angello summarized the gains made in mathematics achievement, “All elementary schools met AYP in mathematics; Central made AYP achievement through Safe Harbor. Grade 5 PSSA results reflect significant achievement in mathematics, especially with our Black students increasing from 46.5 percent at proficient or advanced to 57.9 percent and the Hispanic students reaching 55.1 percent or proficient or advanced from 44.1 percent in 2004. The elementary mathematics program was implemented in 2001, and the long-term impact is clearly benefiting the students. All four middle schools achieved substantial Grade 8 PSSA results. South Mountain Middle School’s gains resulted in making Safe Harbor. Raub and Trexler Middle Schools met the mathematics target overall but did not meet it with one subgroup. During the 2004-2005 school year, all four Title I middle schools received additional mathematics teachers as a

direct recommendation from the middle school reform plan. This practice will continue to ensure more students move toward proficient levels of performance.”

“It is at the high school level that we face our greatest challenges,” Dr. Angello continued. “We are concerned with the level of performance in mathematics at the high school level. Improved mathematics curriculum and instruction are necessary. This is a priority in the new strategic plan introduced for 2005-2011. We will also fully utilize the professional development support to our teachers that is funded through a National Science Foundation grant.”

Some highlights in mathematics achievement are as follows:

- District percentage of students scoring Proficient or Advanced has risen 16.9 percentage points since 2001, with the elementary level doubling its achievement in five years from 30 to 60.6 percent at proficient or advanced.
- All elementary schools met or exceeded their overall mathematics target in 2005.
- 15 of 20 schools exceeded the increased 2005 overall mathematics AYP target of 45% Proficient or Advanced.
- The elementary subgroups of White, Black, Latino/Hispanics, Limited English Proficient (LEP) and Economically Disadvantaged have over 50 percent of the students at proficient or advanced.
- At the elementary level, the special education subgroup made Safe Harbor in mathematics.

**Summary of 2001-2005 AYP (Adequate Yearly Progress) Results - Reading**

<b>Allentown School District</b>					
<b>LEVEL</b>	<b>READING</b>				
	<b>PROFICIENT + ADVANCED</b>				
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>TARGET SCORE</b>	---	45	45	45	54
District Grades 3-5	33.9	37.9	41.8	45.9	43.5
District Grades 6-8	39.2	39.9	39.9	45.5	40.2
District Grades 9-12	41.5	38.1	43.1	39.6	39.8
<b>District Average</b>	36.5	38.7	40.7	44.2	41.3

“Knowing that proficiency in reading is the foundation for success for all students, ASD continues to move forward with literacy initiatives that began with the Empowerment Plan in 2001. These initiatives

build on the premise that standards-based, focused instruction over extended periods of time will contribute to improved student achievement,” commented Dr. Angello.

During the 2003-2004 school year, the ASD board approved the purchase and implementation of a new district-wide elementary literacy program. During the first year of implementation, elementary literacy coaches and classroom teachers began working to provide consistent, sequential instruction with the new materials that supported standards-based instruction. As the implementation enters its second year, ASD professionals will focus on the continuous improvement of student achievement through instructional practices that address literacy skills and strategies. Additional professional development will be provided district-wide to strengthen the implementation of this program.

Focused instruction in literacy is also moving forward in the middle schools, where students performing below the proficient level receive supplemental reading instruction, as recommended in the middle school reform initiative. Middle school teachers investigated best practices in adolescent literacy. These research-based strategies strengthen literacy skills in the content areas and help to improve comprehension. The ASD Board of Directors adopted a district-wide sixth grade reading program that will be implemented this 2005-2006 school year, assuring more consistency in providing standards-based instruction.

In addition, ASD is strengthening and expanding its programs for English language learners, emphasizing consistent instruction in speaking, listening, reading and writing English as a second language for ASD students who speak a total of 30 different languages. The CALLA (Cognitive Academic Language Learning Approach) and SIOP (Sheltered Instruction Observational Protocol) will be continued. These instructional strategies, coupled with the special instructional materials for Limited English Proficient students, appeared to influence the ten percentage point gains in reading achievement.

Some highlights in reading achievement are as follows:

- 41.3 percent of all tested students were proficient or advanced in reading, 12.7 percent short of meeting the state AYP target of 54%.
- Elementary LEP (limited English proficient) students met AYP standards through Safe Harbor using a focused second-language program, with 25 percent of the LEP students proficient or advanced.
- Six ASD schools have already exceeded the 2005 reading target of 54% proficient or advanced.



## **PARTICIPATION, GRADUATION, AND ATTENDANCE RATES**

- Attendance: 100% of elementary and middle schools met the 2005 attendance target of 90 percent.
- Participation: All schools but one met the 2005 participation target (participation in taking the PSSA tests) of 95 percent. William Allen High School did not meet the target with one subgroup missing the target by less than a percentage point.
- Graduation Rate: The District graduation rate of the two high schools made growth toward 80 percent. William Allen High School met the 2005 target with 60.32 percent in 2005 over 56.10 percent in 2004. Dieruff did not meet the graduation target with 64.43 percent in 2005 vs. 66.73 percent in 2004.

### **Adequate Yearly Progress (AYP) Glossary**

It should be noted that 15 ASD schools met or exceeded the AYP mathematics target of 45 percent in proficient or advanced levels of performance, and six ASD schools reached or exceeded the AYP reading target of 54 percent in proficient or advanced levels of performance.

There are several categories by which Pennsylvania schools are monitored and labeled as a requirement in of the federal legislation *No Child Left Behind*. The designated categories indicating level of performance of schools and districts are as follow:

**Met Adequate Yearly Progress (AYP):** The school/district has met the achievement, participation and attendance and/or graduation benchmarks.

**Warning:** The school/district has not met AYP for one year. Schools in this category will move into School Improvement I if they do not meet AYP the next year.

**Making Progress:** The school/district was identified in a prior year in either Warning, School Improvement or Corrective action but has met AYP for one year. It will need to meet the targets two years in a row to be counted as making AYP.

**Safe Harbor Designation:** Safe Harbor recognizes progress. Schools or sub-groups that do not achieve the 45% and 54% performance thresholds can still achieve AYP by meeting the Safe Harbor requirements by reducing percentage of non-proficient students by ten percent or more over the previous year.

*All of the categories listed below must offer greater levels of assistance to the school and ensure there is an improvement team that implements a comprehensive improvement plan.*

**School Improvement I:** has not met AYP for two years. Schools in this category must offer school choice and the district must provide technical assistance in helping it meet its benchmarks.

**School Improvement Year II:** has not met AYP for three years. Schools in this category must offer school choice and supplemental educational services (tutoring).

**Corrective Action Year I:** has not met AYP for four years. At this point significant changes in leadership, curriculum, professional development or other strategies may be warranted. Schools in this category must offer school choice and supplemental educational services (tutoring).

**Corrective Action Year II:** has not met AYP for five years. At this point the school might be reconstituted, privatized or chartered. Schools in this category must offer school choice and supplemental educational services (tutoring).

### Allentown School District Progress, Per School

- **Central Elementary** (School Improvement II) — made Safe Harbor in mathematics this year with a five-fold increase over 2001. 13.6% are proficient or advanced in reading and 24.1 are proficient or advanced in mathematics, substantial progress since 2000.

<i>PSSA PROFICIENCY + ADVANCED SCORES: CENTRAL ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	5.5	12.9	17.8	18.1	24.1
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	9.7	17.7	17.0	18.9	13.6

- **Cleveland Elementary** (Warning)—as a feeder school with no fifth grade, the fifth grade scores are equal to the District average for Grade 5 in mathematics and reading.

<i>PSSA PROFICIENCY + ADVANCED SCORES: CLEVELAND ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	8.6			53.0	60.6
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	6.9			45.9	43.5

- **Hiram Dodd Elementary** (Made AYP)—met AYP targets three years in a row, doubling mathematics achievement in four years.

<i>PSSA PROFICIENCY + ADVANCED SCORES: DODD ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	41.0	48.2	71.1	76.2	81
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	52.4	56.4	66.3	69.7	67

- **Jackson Elementary (Warning)**—met AYP targets two years in a row, but decreased in reading from 46.2 percent to 35.1 percent in 2005.

<i>PSSA PROFICIENCY + ADVANCED SCORES: JACKSON ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	45.9	41.2	54.1	53.8	53.4
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	38.8	32.2	47.5	46.2	35.1

- **Jefferson Elementary (School Improvement II)**—joins many of ASD’s other elementary schools in vast improvement in some areas. Mathematics increased by 24 percentage points in two years.

<i>PSSA PROFICIENCY + ADVANCED SCORES: JEFFERSON ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	28.7	30.3	31.9	48.1	55.9
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	32.8	30.3	27.9	46.2	37.2

- **Lehigh Parkway Elementary (Made AYP)**—met AYP targets three years in a row, continuously surpassing all targets. 93.1% of the students at Lehigh Parkway Elementary School were at proficient or advanced levels of performance in mathematics.

<i>PSSA PROFICIENCY + ADVANCED SCORES: LEHIGH PARKWAY ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	44.0	55.4	85.7	100.0	93.1
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	44.0	52.1	80.0	89.3	75.9

- **McKinley Elementary (Making Progress)**—exceeded its AYP target in mathematics three years in a row. 55.3% of students surpassed the 2005 reading target, an increase of 27.6 percentage points in one year.

<i>PSSA PROFICIENCY + ADVANCED SCORES: MCKINLEY ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	16.0	26.7	47.8	44.6	52.6
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	16.0	31.1	32.6	27.7	55.3

- **Mosser Elementary (Corrective Action I)** — exceeded the mathematics target of 45 percent by 15.6 percentage points; 31.4 percent of the students are proficient or advanced in reading.

<i>PSSA PROFICIENCY + ADVANCED SCORES: MOSSER ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	23.0	22.0	51.8	48.5	60.6
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	21.3	23.7	33.7	33.9	31.4

- **Muhlenberg Elementary (Made AYP)**—met AYP targets three years in a row, continuously surpassing all targets.

<i>PSSA PROFICIENCY + ADVANCED SCORES: MUHLENBERG ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	58.5	81.3	79.1	86.9	86.1
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	68.4	79.2	75.0	84.8	78.6

- **Ritter Elementary (Warning)**—met AYP targets in reading and mathematics three years in a row; however not all subgroups reached AYP targets in 2005.

<i>PSSA PROFICIENCY + ADVANCED SCORES: RITTER ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	30.7	59.0	67.5	77.0	74.6
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	52.3	56.1	62.8	61.8	57.2

- **Roosevelt Elementary (Making Progress)**—met its AYP target in mathematics three years in a row. 60 percent of the students were at proficient or advanced in mathematics in 2005, exceeding the state target. The school doubled its reading score in four years and gained 45 points in mathematics during the same period.

<i>PSSA PROFICIENCY + ADVANCED SCORES: ROOSEVELT ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	15.0	34.2	44.4	55.1	60.0
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	20.5	34.7	36.1	32.9	41.2

- **Sheridan Elementary (School Improvement II)**—exceeded the AYP goal by 18.4 percentage points in mathematics, and 32.5 percent of students are proficient or advanced in reading.

<i>PSSA PROFICIENCY + ADVANCED SCORES: SHERIDAN ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	40.4	44.3	43.0	41.9	60.3
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	34.7	43.6	37.5	34.6	32.5

- **Union Terrace Elementary** (Made AYP)—upgraded from “Making Progress” last year, meeting its AYP target for two years in a row, and increasing almost 31 percentage points from 2002 through 2005 in mathematics and 21.4 percentage points in reading.

<i>PSSA PROFICIENCY + ADVANCED SCORES: UNION TERRACE ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	41.9	38.5	45.4	64.3	69.7
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	54.3	38.5	45.4	61.2	59.9

- **Washington Elementary** (Making Progress)—exceeded the mathematics target by an impressive 27.1 percentage points and has increased reading by 14 percentage points, making AYP through Safe Harbor.

<i>PSSA PROFICIENCY + ADVANCED SCORES: WASHINGTON ELEMENTARY</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	14.9	26.3	49.5	45.4	72.5
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	17.9	27.5	39.1	33.9	48

- **Harrison-Morton Middle** (School Improvement II)—has made significant progress on PSSA scores in mathematics over two years, but missed AYP targets this year.

<i>PSSA PROFICIENCY + ADVANCED SCORES: HARRISON MORTON MIDDLE</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	23.6	20.5	24.2	36.2	40.2
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	39.2	31.9	37.8	44.6	37.5

- **Raub Middle** (School Improvement II)—43.3 percent of the students at proficient or advanced levels of performance in reading and 49.4 percent in mathematics.

<i>PSSA PROFICIENCY + ADVANCED SCORES: RAUB MIDDLE</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	24.0	28.0	35.0	51.8	49.4
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	35.9	38.9	42.0	50.6	43.3

- **South Mountain Middle** (School Improvement II)—39.3 percent are proficient or advanced in reading, and 41.6 percent are proficient or advanced in mathematics, with Safe Harbor status achieved in math.

<i>PSSA PROFICIENCY + ADVANCED SCORES: SOUTH MOUNTAIN MIDDLE</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	28.7	32.7	30.8	29.9	41.6
	2001	2002	2003	2004	2005
TARGET SCORE	----	45	45	45	54
Reading	38.7	41.1	40.7	43.9	39.3

- **Trexler Middle** (School Improvement II)—41.7 percent of the students at proficient or advanced levels of performance. 44.5 percent of the students are proficient or advanced in mathematics, just .5 percentage points below the state target.

<i>PSSA PROFICIENCY + ADVANCED SCORES: TREXLER MIDDLE</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	16.8	34.9	28.6	30.5	44.5
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	32.8	43.5	39.6	45.5	41.7

- **Louis E. Dieruff High** (School Improvement II)—lack of progress in mathematics and reading will continue to be addressed at Dieruff. 100 percent of Dieruff students participated in testing. Because there is no Title I funding provided to Dieruff, school choice and SES tutoring services are not offered. There are District tutoring programs provided.

<i>PSSA PROFICIENCY + ADVANCED SCORES: DIERUFF HIGH</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	27.7	31.5	29.5	25.0	21.2
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	40.8	41.4	43.4	42.9	40.6

- **William Allen High** (School Improvement II)—lack of progress in mathematics and reading will continue to be addressed at Allen. William Allen achieved progress toward increasing its graduation rate this year. Because there is no Title I funding provided to Allen, school choice and SES tutoring services are not required to be offered. There are District tutoring programs provided.

<i>PSSA PROFICIENCY + ADVANCED SCORES: WILLIAM ALLEN HIGH</i>					
TARGET SCORE	----	35	35	35	45
Mathematics	24.3	27.5	28.1	26.2	26.4
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
TARGET SCORE	----	45	45	45	54
Reading	42.0	35.7	41.0	40.9	41.7

### **Making Progress in Proficiency**

Dr. Angello summarized, “Our focus on improvement of instructional practices is a key priority for us,” stated Superintendent Angello. “The elementary mathematics program is a good example of new practices that are making a difference. This program has been implemented for four years and is now impacting sustained improvement in achievement. The implementation of a district-wide elementary reading program last school year was a critical step in ensuring a consistent literacy program. We are most fortunate to have received a state grant, Project 720, that brings with it very structured, accountable steps in advancing student achievement at the two high schools. We must commit even more to our high schools to ensure that all students are successful and remain in school. The new strategic plan addresses

our current concerns. I cannot stress enough the importance of consistent instructional practices and a concern for every student to have the support needed to reach real gains in learning.”

“Community partnerships will continue to be important to the success of students in the Allentown School District,” Dr. Angello continued. “We have many situations that challenge us and our students. We must continue to work with our partners for it is clear there is a strong commitment of our parents, business partners, and elected officials. The ASD Board of Directors is very goal focused, and will also not only work with us to achieve our goals but expect accountability for taking sufficient steps to reach those goals. If we continue to build on the strong partnerships we have, we can take significant steps to move the district forward at a faster pace.”

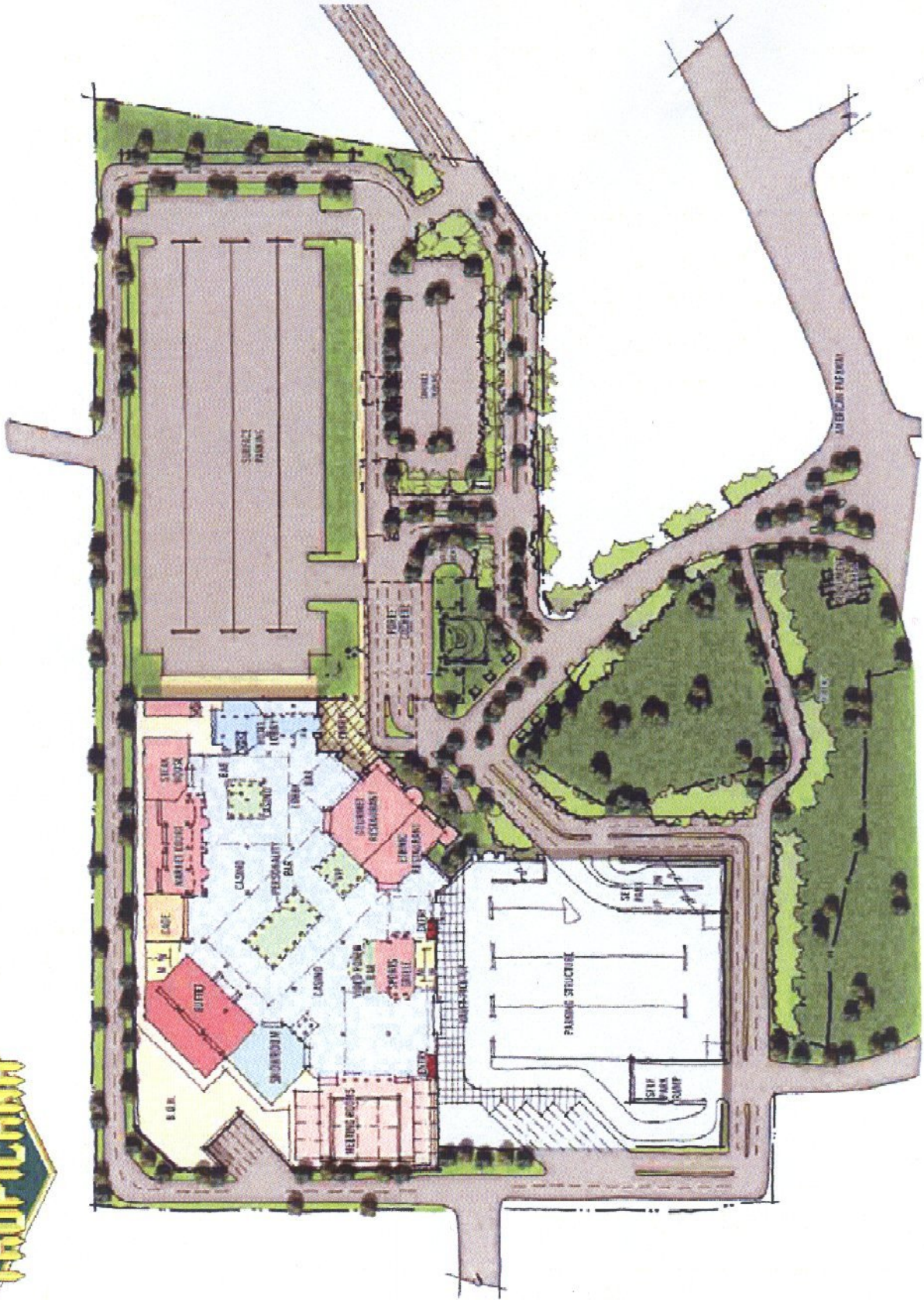
“The Board will continue to maintain clear focus on its goals and ensure that those goals are driving continuous improvement in student achievement,” stated Jeff Glazier, ASD School Board President.

Serving approximately 17,600 students in 22 early childhood, elementary, middle and high schools located throughout the City of Allentown, PA, Allentown School District is the fourth largest school district out of 501 Commonwealth districts. About 73 percent of the students are members of minority groups and 69 percent qualified for free or reduced lunch in 2004-2005. 16.9 percent of students today have limited English proficiency (LEP) and are enrolled in ESOL programs; 22.6 percent of the LEP students are in elementary schools. One in four students changes school locations throughout the year. The District continues to implement a standardized, district-wide instructional calendar with consistent teaching practices from school to school to assist students who move within and without the District on a frequent basis.

Allentown School District employs approximately 1,218 teachers and 2,000 employees overall.  
[www.allentownsd.org](http://www.allentownsd.org) 484-765-4000.

#

EXHIBIT "E"



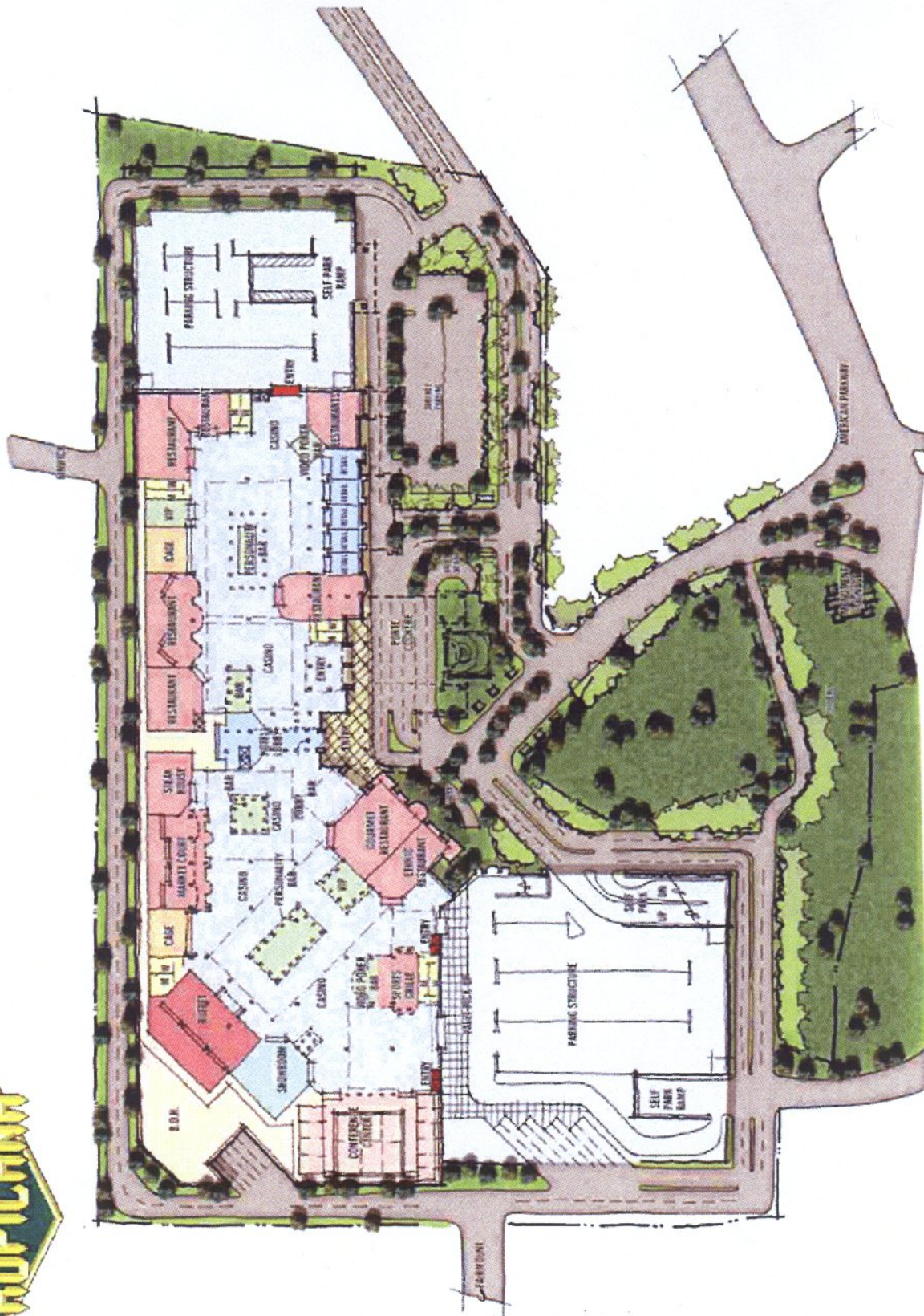
Site Plan (Phase I)



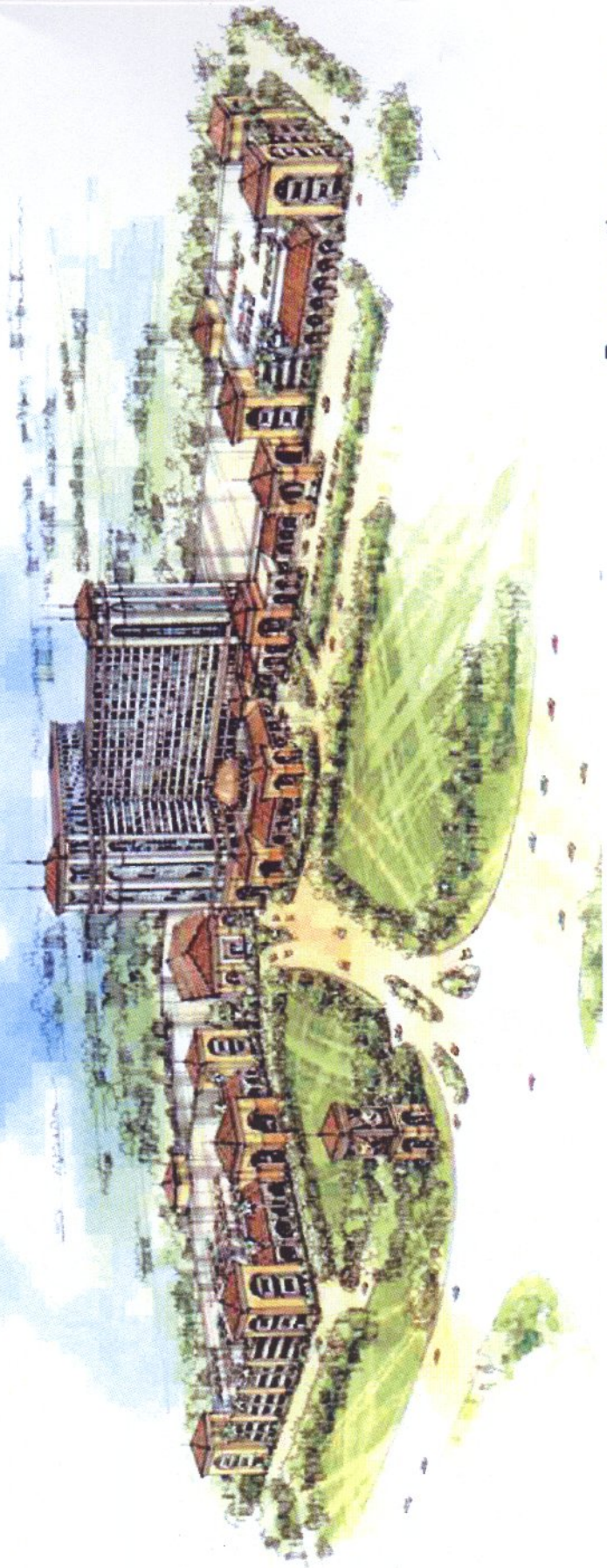
EXHIBIT "F"



Perspective (Phase I)



Master Plan



Perspective (Master Plan)

## EXHIBIT "I"

### Project Scope: Phase I

#### Casino

- ▲ 100,000 sq. ft. of casino space, including bars and restrooms.
  - Casino space highly integrated with dining and entertainment areas utilizing podium on one level.
  - Design elements representative of The Quarter.
  - 3,000 slots (games types, denominations, number of participation games *to be determined*).
  - Premium slot area (level of privacy and number of units *to be determined*).
  - Premium player lounge located proximate to premium slot area (specific location and size *to be determined*).
  - 3 casino bars integrated into casino space including:
    - o Personality bar (live entertainment capable).
    - o Video poker bar.
    - o Feature bar (bar proximate to hotel lobby).
  - 2 to 3 sets of public restrooms (5,000 sq. ft. allocation).
  - Casino cage (number of stations *to be determined*).
  - Player's Club Desk and Support (size and location *to be determined*).
  - An outlet for the sale of Pennsylvania lottery tickets.

#### Dining

- ▲ 37,425 sq. ft. of dining space.
  - Dining space located directly off casino floor and integrated with casino space.
- ▲ Aztar owned and operated restaurants:
  - Steak and Seafood (125 seats, 3,125 sq. ft, similar to Cavanaugh's).
  - Buffet (400 seats, 8,800 sq. ft).
  - 4 to 5 casual, quick dining outlets (20 seats, 750 sq. ft. per store) Branded, franchised outlets preferred. (Potential brands/concepts include Starbucks, Patisserie, Philly Cheesesteak, Pizza, Noodles, Ice Cream.)
  - Aztar also to operate room service, banquet kitchen, employee cafeteria.

- ▲ Leased restaurants:
  - Sports Bar/Pub (200 seats, 6,000 sq. ft.). Ri Ra or similar concept.
  - Restaurant/Club (225 seats, 9,000 sq. ft.). Cuba Libre or similar concept.
  - Ethnic Restaurant (200 seats, 7,500 sq. ft.). Mexican or Italian.

Note: All restaurant square footage allowances currently under review.

### **Entertainment**

- ▲ 5,000 sq. ft. Multi-Purpose Entertainment Venue/Showroom.
  - Uses to include headline entertainment, special events and ancillary meeting space.

### **Hotel**

- ▲ Tower consisting of 250 Tropicana-branded guestrooms and suites.
  - 230 standard guestrooms (standard guestrooms 14'-0" clear dim., +/- 400 sq. ft., level slightly above Allentown/Lehigh Valley's Hilton Garden Inn and Marriott Courtyard).
  - 16 standard 2-bay suites.
  - 4 premium suites (two 3-bay, two 4-bay).
  - Fitness center occupying two hotel tower bays.
  - Logo/gift/amenity shop located off hotel lobby.
  - Hotel valet parking via porte cochere shared with casino valet parking.
  - Front desk, located off hotel/casino porte cochere and main lobby area (efficient, non-expansive front desk area).

### **Meeting Space**

- ▲ 12,000 to 15,000 sq. ft. total executive conference center style meeting and conference space, similar to Evansville, Indiana executive conference center.
  - Room sizes, types and technology capabilities similar to the Evansville, Indiana property.

### **Parking**

- ▲ 3,000-space parking garage (350 sq. ft. per vehicle).  
+/- 400 valet parking spaces included in parking structure.
- ▲ +/- 400 surface parking spaces to accommodate customers and, potentially, employees (final number of spaces to effectively utilize undeveloped portion of site).
- ▲ All valet parking to be provided via shared porte cochere located proximate to hotel lobby and main casino entrance.

## **Back of House**

- ▲ 80,000 sq. ft to accommodate support for operations including: surveillance; Pennsylvania Gaming Control Board; Pennsylvania State Police; security, employee support.

## **Motorcoach**

- ▲ 8 to 10 motorcoach bays, affording convenient ingress/egress to/from casino. Motorcoach lobby and processing area located proximate to motorcoach landing area (size and location *to be determined*).

## **Project Scope: Phase II**

### **Casino**

- ▲ 75,000 sq. ft. of additional casino space, including bars and restrooms.
  - Design elements representative of Phase I.
  - 2,000 additional slots.
  - Additional casino cage, restroom and bar space allocated.

### **Dining**

- ▲ 4 to 6 restaurants, combination of Aztar owned and leased outlets:
  - Increased restaurant capacity of 75%.
  - Dining space located directly off casino floor and integrated with casino space.
  - Square footage allowances *to be determined*.

### **Retail**

- ▲ 10,000 sq. ft. of retail space.
  - Location proximate to casino floor.
  - Regional and national brand stores.
  - Size and number of outlets *to be determined*.

### **Hotel**

- ▲ Second tower consisting of 250 Tropicana-branded guestrooms and suites.
  - Design level consistent with Phase I guestrooms and suites.
  - Number and level of suites *to be determined*.
  - 5,000 sq. ft. Aztar owned or leased fill service day spa.



February 28, 2006

William H. Newhard  
President  
Lehigh, Northampton, Pike & Monroe Counties  
Building & Construction Trades Council  
1201 West Liberty St.  
Allentown, PA 18102-2651

Re: Project Labor Agreement  
Lehigh Valley Tropicana

Dear Mr. Newhard:

Tropicana Pennsylvania, LLC ("Trop PA") has applied for a category 2 gaming license in the state of Pennsylvania. This project will be known as the Lehigh Valley Tropicana and initially calls for the construction of a 100,000 square foot casino accommodating up to 3,000 slot machines and all necessary back of house support, a 250-room full service hotel, a 15,000 square foot executive conference center, a showroom, approximately 10 to 13 restaurants and lounges, a 3,000-car parking garage together with 10 motor coach bays, surface parking of 400 spaces and all the necessary site work for our already assembled 23 acre site. More importantly, this initial phase will include the employment of approximately 750 construction workers.

Trop PA's affiliate in Atlantic City has an excellent track record with the local Building Trades as it utilized all union labor to complete its largest and most recent expansion project known as "The Quarter" in November of 2004, a \$250 million project which consisted of

- A 200,000-square-foot indoor dining, entertainment and retail complex.
- A new hotel tower with 502 rooms.
- A 20,000-square-foot meeting and convention facility.
- 2,400 parking spaces.

In addition, other Trop PA affiliates throughout the country enjoy the same relationship with their respective local Building Trades.

It is Trop PA's intention to enter into a project labor agreement with the Lehigh, Northampton, Pike & Monroe Counties Building and Construction Trades Council (the "Union") for construction of its proposed project in Allentown, Pennsylvania, if a gaming license is awarded.

LEHIGH VALLEY TROPICANA

THE SOVEREIGN BUILDING · 609 HAMILTON MALL · ALLENTOWN, PA 18101  
TEL (610) 740-1005, EXT: 405 · FAX (610) 433-3090

This letter shall serve as Trop PA's commitment to the Union to negotiate in good faith with the Union to enter into a project labor agreement that is mutually acceptable to Trop PA and the Union for the construction of its project in Allentown, Pennsylvania.

If the terms of this letter of intent are acceptable, please sign one of the two enclosed copies and return one fully executed copy to us in the enclosed self-addressed envelope. We look forward to continuing our excellent relationship with the construction trades in the Commonwealth of Pennsylvania.

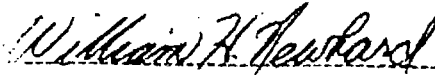
Very truly yours,



Tropicana Pennsylvania, LLC

By: Richard Ruden

Accepted and Agreed:



William H. Newhard

President

Lehigh, Northampton, Pike & Monroe

Counties Building & Construction Trades

Council



EXHIBIT "K"

**TRAFFIC IMPACT STUDY  
SUPPLEMENT NO. 1**

FOR THE

**PROPOSED REDEVELOPMENT OF THE AGERE  
SYSTEMS INC. - UNION BOULEVARD CAMPUS**

LOCATED IN

**CITY OF ALLENTOWN  
PENNSYLVANIA**

**February 10, 2006**

**THE PIDCOCK COMPANY**

CIVIL ENGINEERING AND LAND PLANNING  
ARCHITECTURE  
LAND SURVEYING

Oxford Drive at Fish Hatchery Road  
Allentown, Pennsylvania

# **TRAFFIC IMPACT STUDY SUPPLEMENT NO. 1**

FOR THE

**PROPOSED REDEVELOPMENT OF THE AGERE  
SYSTEMS INC. - UNION BOULEVARD CAMPUS**

LOCATED IN

**CITY OF ALLENTOWN  
PENNSYLVANIA**

**February 10, 2006**

**THE PIDCOCK COMPANY**

CIVIL ENGINEERING AND LAND PLANNING  
ARCHITECTURE  
LAND SURVEYING

Oxford Drive at Fish Hatchery Road  
Allentown, Pennsylvania

## Executive Summary

Aztar Corporation proposes to construct a gaming casino and entertainment facility on a parcel south of American Parkway, on the existing Agere campus, as shown in Exhibit 1. A preliminary investigation has been completed to determine the impact on the surrounding road network of the proposed Casino, based upon the April 1999 Traffic Impact Study (TIS) for the Lucent Microelectronics Campus Expansion (now operating as Agere Systems Inc.). The 2011 Build traffic volumes from the original study were assumed conservatively for the Base traffic volumes for this Supplement. Access for the proposed facility is primarily from the driveway to American Parkway opposite Agere Drive, and connections to other existing City streets will be available for local traffic management. For the purposes of this Supplement, the future bridge over the Lehigh River is considered not in place. Since the Aztar market research indicates that the Casino development traffic will utilize Route 22, Airport Road, and American Parkway as the primary access route to the facility, the following intersections have been preliminarily analyzed:

1. Airport Road (SR 1003) and Catasauqua Road;
2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance;
3. Airport Road (SR 1003) and Lloyd Street;
4. Airport Road (SR 1003) and American Parkway;
5. American Parkway and Irving Street; and
6. American Parkway and Agere Drive/Casino Access Driveway.

This Traffic Impact Study Supplement (TISS) investigates the 2011 Base Conditions Level of Service, which is an intersection's operational analysis without the proposed development, and the 2011 Build Conditions Level of Service, which is an intersection's operational analyses with the proposed development traffic generation included.

As the Agere Systems development on the north side of American Parkway is not built-out, existing traffic from this facility does not reflect the level of traffic previously approved for that tract of land. The TIS accounted for a full build out of 5,000 employees on the northern campus, while the current development accommodates 2,500 employees. Prior to addition of the Casino traffic, the Base Volumes were reduced to account for the partial build-out of the Agere Systems facility.

The trip generation for the Casino is based upon a similar, smaller, facility owned by the Developer in Evansville, Indiana. The Evansville site recorded 1,552,137 visitors in a year. The proposed Casino, based upon a marketing analysis performed by the Developer, is anticipated to draw 3,235,941 patrons with full build-out. Therefore, traffic for the proposed development was assumed to be 2.08 times the traffic experienced at the Evansville site.

Traffic entering the Evansville Casino was documented by the Developer for a weeklong period in 60-minute intervals. Traffic entering the facility was averaged for Tuesday, Wednesday, and Thursday to develop an average entering traffic volume during the peak hours of the adjacent street traffic (7:00 AM-8:00 AM and 4:00 PM-5:00 PM). As exiting traffic information was not available, a patron stay length of 5 hours was assumed. Exiting traffic was assumed equal to the entering traffic five hours earlier in the day. This resulted in 76 entering and 8 exiting AM Peak hour trips and 131 entering and 118 exiting PM Peak hour trips from the Evansville facility. Utilizing the 2.08 factor, this results in 159 entering and 17 exiting AM Peak hour trips and 273 entering and 245 exiting PM Peak hour trips for the proposed Lehigh Valley site.

Based on the number of patrons anticipated by the Developer to travel to the Casino development from each of several neighboring counties, a traffic distribution model was developed which identified the following trip distribution pattern:

- To/From the East using Route 22: 48 percent
- To/From the West using Route 22: 46 percent
- To/From south/east using other routes: 6 percent

Based upon this distribution, traffic was assigned to the roadway network and through the study intersections. Based on the Level of Service Summary Table as depicted in Exhibit 2, which identifies the Level of Service for each lane group at the six study intersections for the Base and Build conditions, the following conclusions are offered for each intersection:

**1. Airport Road (SR 1003) and Catasauqua Road**

Development traffic through this intersection is limited to the northbound and southbound through movements. All of the Route 22 exiting traffic travels northbound through this intersection while the Route 22 traffic entering from the East travels southbound through this intersection.

**2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance**

Development traffic through this intersection is limited to the northbound and southbound through movements. All of the Route 22 exiting traffic travels northbound through this intersection and all of the Route 22 entering traffic travels southbound through this intersection.

**3. Airport Road (SR 1003) and Lloyd Street**

Development traffic through this intersection is limited to the northbound and southbound through movements. All of the Route 22 exiting traffic travels

northbound through this intersection and all of the Route 22 entering traffic travels southbound through this intersection.

**4. Airport Road (SR 1003) and American Parkway**

This intersection was studied in the original TIS as a ‘T’ intersection with the northbound, southbound, and eastbound approaches. During construction, the westbound approach was added to the intersection. The TISS roadway analysis model includes the current roadway geometry and signal phasing, and includes assumed traffic volumes for the movements into and out of this approach.

Development traffic through this intersection is limited to the eastbound left and right turn movements, the northbound left turn movement and the southbound right turn movement. All of the Route 22 exiting traffic turns left from the eastbound approach at this intersection while all of the Route 22 entering traffic turns right southbound at this intersection. Northbound left turning traffic and eastbound right turning traffic represents one of the other routes for local traffic.

**5. American Parkway and Irving Street**

Development traffic in this intersection is limited to the eastbound and westbound through movements. All of the Route 22 exiting traffic travels eastbound through this intersection while all of the Route 22 entering traffic travels westbound through this intersection.

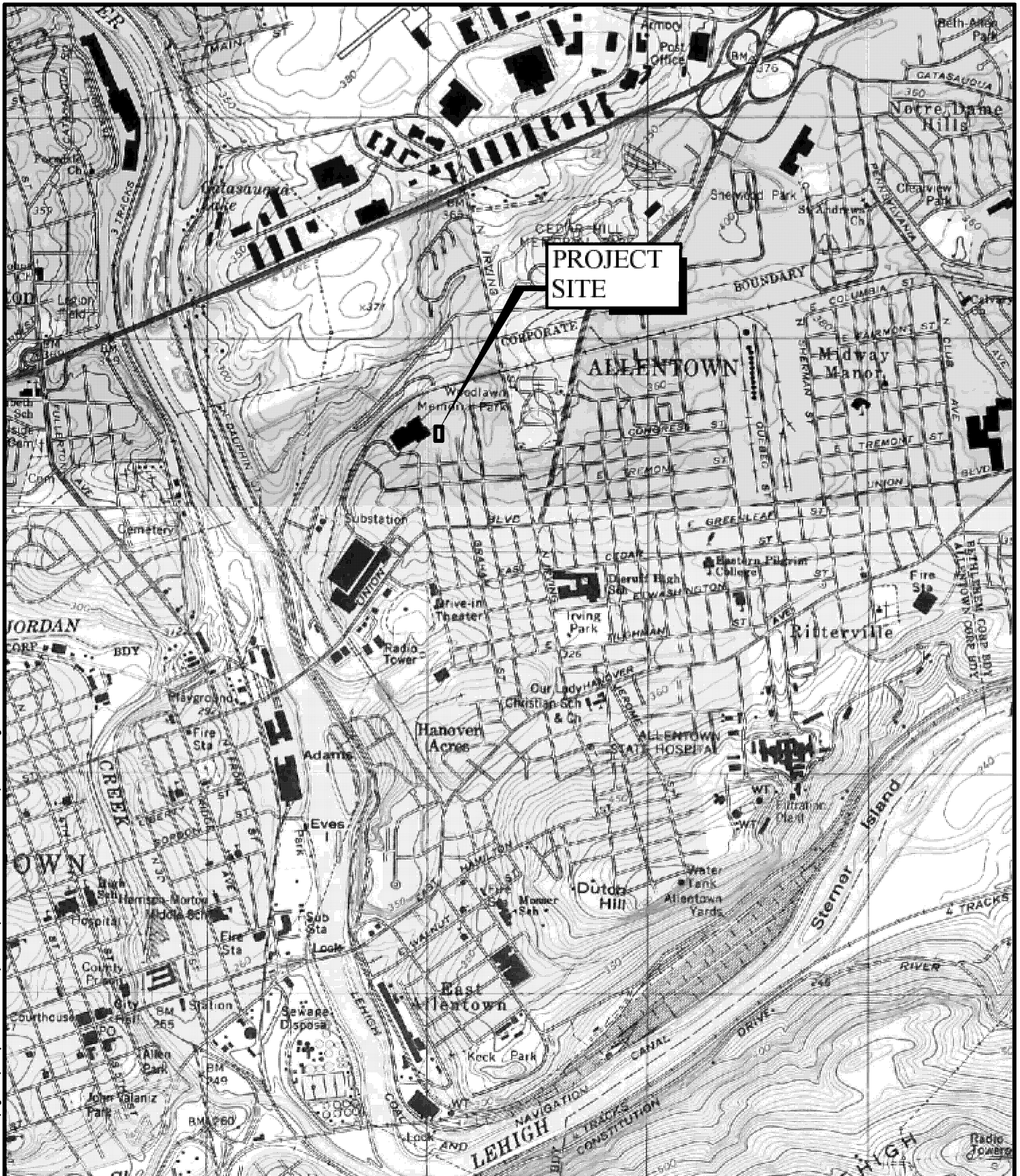
**6. American Parkway and Agere Drive/Casino Access Driveway**

Development traffic in this intersection is primarily northbound right turns and westbound left turns. Some local traffic will utilize the northbound left turn movement and the eastbound right turn movement.

To improve operations and to optimize the operations of the traffic corridors, a spread-spectrum radio communication system is proposed for the traffic signals along the Airport Road and American Parkway corridors.

Based upon the above-identified improvement, the majority of movements through the six study intersections will operate at a level of operation at or near the no-build condition with the addition of the full build-out casino traffic volumes or at a level of service D or better.

Drawing name: S:\Agere\Ballpark\_casino\Traffic\Exhibits for 12.19.05\EX\_1.dwg Last Modified: Jan 03, 2006 - 9:52am



HORIZONTAL DATUM: NAD 83  
 EXISTING GROUND ELEVATION AT HOTEL SITE: 362' ABOVE MEAN SEA LEVEL  
 VERTICAL DATUM: NGVD 29

DRWN. BY:	JLS
CHKD. BY:	BEH
FIELD BOOK:	-

SCALE:	1"=2000'
DATE:	DEC. 22, 2005
PROJ. NO.:	05-048

**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
 CITY OF ALLENTOWN, LEHIGH COUNTY, PENNSYLVANIA

**THE PIDCOCK COMPANY**  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**PROJECT LOCATION MAP**

**EXHIBIT**

1

"NOT PUBLISHED; ALL RIGHTS RESERVED BY THE PIDCOCK COMPANY."

## Exhibit 2: Level of Service Summary Table

1	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & Route 22 EB Off Ramps/Catasauqua Road	<b>EASTBOUND</b>		
	THROUGH	F(101.2)	E
	APPROACH LOS	F(101.2)	E
	<b>WESTBOUND</b>		
	LEFT	F(99.2)	E
	RIGHT	D	D
	APPROACH LOS	E	D
	<b>NORTHBOUND</b>		
	THROUGH	E	D
	RIGHT	B	B
	APPROACH LOS	D	D
	<b>SOUTHBOUND</b>		
	LEFT	F(94.0)	F(92.4)
	THROUGH	B	B
	APPROACH LOS	D	D
	INTERSECTION LOS	E	D

2	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & B.J's Warehouse/Off Track Betting	<b>EASTBOUND</b>		
	LEFT	F(161.5)	F(124.3)
	THROUGH/RIGHT	E	D
	APPROACH LOS	F(142.9)	F(110.9)
	<b>WESTBOUND</b>		
	LEFT	D	D
	THROUGH/RIGHT	E	D
	APPROACH LOS	D	D
	<b>NORTHBOUND</b>		
	LEFT	A	A
	THROUGH/RIGHT	D	D
	APPROACH LOS	D	D
	<b>SOUTHBOUND</b>		
	LEFT	F(150.7)	E
	THROUGH/RIGHT	A	A
	APPROACH LOS	B	B
INTERSECTION LOS	D	D	

3	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & Lloyd Street	<b>EASTBOUND</b>		
	LEFT		
	LEFT/THROUGH/RIGHT	F(156.6)	F(137.0)
	THROUGH/RIGHT		
	APPROACH LOS	F(156.6)	F(137.0)
	<b>WESTBOUND</b>		
	LEFT/THROUGH	D	D
	RIGHT	D	D
	APPROACH LOS	D	D
	<b>NORTHBOUND</b>		
	LEFT	A	A
	THROUGH/RIGHT	E	D
	APPROACH LOS	E	D
	<b>SOUTHBOUND</b>		
	LEFT	D	D
	THROUGH/RIGHT	A	B
APPROACH LOS	B	B	
INTERSECTION LOS	D	C	

- = LOS Improvement
- = LOS Degradation, LOS D or better
- = LOS Degradation, LOS E or F

## Exhibit 2: Level of Service Summary Table

4	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & American Parkway	<b>EASTBOUND</b>		
	LEFT	D	D
	THROUGH	B	B
	RIGHT	B	C
	APPROACH LOS	D	D
	<b>WESTBOUND</b>		
	LEFT	D	E
	THROUGH	D	E
	RIGHT	D	D
	APPROACH LOS	D	E
	<b>NORTHBOUND</b>		
	LEFT	B	C
	THROUGH/RIGHT	C	D
	APPROACH LOS	C	D
	<b>SOUTHBOUND</b>		
	LEFT	B	C
	THROUGH	C	C
	RIGHT	A	A
	APPROACH LOS	C	C
	INTERSECTION LOS	C	C

5	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
American Parkway & N. Irving Street	<b>EASTBOUND</b>		
	LEFT	B	A
	THROUGH/RIGHT	C	B
	APPROACH LOS	B	B
	<b>WESTBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	B	A
	APPROACH LOS	B	A
	<b>NORTHBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	C	B
	APPROACH LOS	C	B
	<b>SOUTHBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	B	C
	APPROACH LOS	B	C
	INTERSECTION LOS	B	B

6	TURN MOVEMENT	2011			
		BASE	BUILD	BASE	BUILD
		AM PEAK	AM PEAK	PM PEAK	PM PEAK
American Parkway & Agere Driveway/Casinos & Ballpark	<b>EASTBOUND</b>				
	LEFT	B	B	D	D
	THROUGH/RIGHT	B	B	D	D
	APPROACH LOS	B	B	D	D
	<b>WESTBOUND</b>				
	LEFT	B	A	D	D
	THROUGH	B	B	D	C
	RIGHT	A	A	A	A
	APPROACH LOS	B	A	D	C
	<b>NORTHBOUND</b>				
	LEFT/THROUGH	A	B	A	B
	RIGHT	A	B	A	B
	APPROACH LOS	A	B	A	B
	<b>SOUTHBOUND</b>				
	LEFT	A	B	E	C
	THROUGH	A	B	A	B
	RIGHT	A	B	A	B
	APPROACH LOS	A	B	E	C
	INTERSECTION LOS	B	A	D	C

= LOS Improvement  
 = LOS Degradation, LOS D or better  
 = LOS Degradation, LOS E or F



## Table of Contents

	<u>Page No.</u>
Executive Summary .....	i
List of Executive Summary Exhibits .....	vii
List of Figures .....	vii
List of Tables .....	viii
Introduction.....	1
Base Conditions .....	1
Description of Capacity Analyses.....	4
Signalized Intersections .....	4
Base Capacity Analysis .....	5
Existing Agere Systems Facility .....	6
Proposed Development .....	7
Proposed Site Trip Generation.....	7
Proposed Site Trip Distribution .....	8
Projected 2011 Build Traffic Volumes .....	8
Projected 2011 Build Capacity Analysis .....	8
Conclusions and Recommendations .....	10

## List of Executive Summary Exhibits

- Exhibit 1: Project Location Map
- Exhibit 2: Level of Service Summary Table

## List of Figures

- Figure S1: Project Location Map
- Figure S2: Existing Lane Configurations
- Figure S3: 2011 Base Traffic Volumes
- Figure S4: 2011 Base Level of Service
- Figure S5: Agere New Trip Assignment – 5,000 Employees
- Figure S6: 2011 Traffic Volumes without Agere
- Figure S7: Agere New Trip Assignment – 2,500 Employees
- Figure S8: 2011 No-Build Traffic Volumes
- Figure S9: Casino Trip Assignment
- FigureS10: 2011 Build Traffic Volumes
- FigureS11: 2011 Build Level of Service

## List of Tables

Table 1: Level of Service Summary Table

Table 2: Queue Length Summary Table

## Appendices

Appendix A 2011 Base Capacity Analysis Worksheets

Appendix B Agere Trip Generation Calculations

Appendix C Evansville Site Data

Appendix D 2011 Build Capacity Analysis Worksheets

## Introduction

Aztar Corporation proposes to construct a gaming casino and entertainment facility on a parcel south of American Parkway, on the existing Agere campus, as shown in Figure S1. An investigation has been completed to determine the impact on the surrounding road network of the proposed Casino, based upon the April 1999 Traffic Impact Study (TIS) for the Lucent Microelectronics Campus Expansion (now operating as Agere Systems Inc.). Access for the proposed facility is primarily from the driveway to American Parkway opposite Agere Drive, and connections to other existing City streets will be available for local traffic management. For the purposes of this Supplement, the future bridge over the Lehigh River is considered not in place. Since the Aztar market research indicates that the Casino development traffic will utilize Route 22, Airport Road, and American Parkway as the primary access route to the facility, the following intersections have been preliminarily analyzed:

1. Airport Road (SR 1003) and Catasauqua Road;
2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance;
3. Airport Road (SR 1003) and Lloyd Street;
4. Airport Road (SR 1003) and American Parkway;
5. American Parkway and Irving Street; and
6. American Parkway and Agere Drive/Casino Access Driveway.

This Traffic Impact Study Supplement (TISS) investigates the 2011 Base Conditions Level of Service, which is an intersection's operational analysis without the proposed development, and the 2011 Build Conditions Level of Service, which is an intersection's operational analyses with the proposed development traffic generation included.

## Base Conditions

As described above, the development is to be constructed on the existing Agere Systems campus located on the South side of American Parkway in the City of Allentown, Lehigh County. The following existing roads are included within the study area.

Route 22 (S.R. 0022) is a limited access, east-west freeway that provides four through lanes and serves as the primary artery through the Lehigh Valley. US Route 22 provides connections with PA Route 378, PA Route 33, and Interstate 78 to the east and PA Route 309, Interstate 476, and Interstate 78 to the west. Route 22 is a state highway under the jurisdiction of PENNDOT with a posted speed limit of 55 MPH. The interchange with Airport Road is a full cloverleaf design with the eastbound Route 22 exit to southbound Airport Road also providing access across from Catasauqua Road at a signalized intersection.

Airport Road (S.R. 1003) is a north-south road that generally provides four travel lanes within the study area. Dedicated left turn lanes are provided at each of the four study intersections along the corridor. Dedicated right turn lanes are provided at some of the intersections. Airport Road is a state highway under the jurisdiction of PENNDOT. The four study intersections along Airport Road are signalized.

American Parkway is an east-west road that provides four travel lanes within the study area. American Parkway is under the jurisdiction of the City of Allentown. Dedicated left turn lanes are provided at each of the three study intersections along the corridor. Dedicated right turn lanes are provided at two of the intersections. The three study intersections are signalized.

The following intersections were studied as a part of this study:

1. Airport Road (SR 1003) and Catasauqua Road

Northbound Airport Road consists of three through lanes and a right turn lane. The right most through lane is signed as a lane for Route 22 eastbound traffic, as this lane becomes the on-ramp lane onto Route 22 east. Southbound Airport Road consists of dual left turn lanes and two through lanes. The eastbound Route 22 off-ramp to Airport Road South splits prior to the intersection with traffic headed for Catasauqua Road directed to two through lanes at the signal while traffic to Airport Road South merges at a yield sign south of the intersection. Westbound Catasauqua Road provides dual left turn lanes and a right turn lane. The signal provides a southbound protected/prohibited left turn phase and split phasing for the eastbound and westbound approaches.

2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance

The northbound and southbound Airport Road approaches consist of a left turn lane, a through lane, and a shared through/right turn lane. The eastbound and westbound BJ's Warehouse/Lehigh Downs Facility approaches consist of a left turn lane and a shared through/right turn lane. The signal provides southbound and westbound protected/permitted advance left turn phasing.

3. Airport Road (SR 1003) and Lloyd Street

The northbound and southbound Airport Road approaches consist of a left turn lane, a through lane, and a shared through/right turn lane. The eastbound Lloyd Street approach consists of single lane and the westbound Lloyd Street approach consists of a shared left turn/through

lane and a separate right turn lane. The signal provides a southbound protected/permitted advance left turn phasing.

4. Airport Road (SR 1003) and American Parkway

The northbound Airport Road approach consists of a left turn lane, a through lane, and a shared through/right turn lane. The southbound Airport Road approach consists of a left turn lane, two through lanes, and a channelized right turn lane. The eastbound American Parkway approach consists of dual left turn lanes, a through lane, and a channelized right turn lane. The westbound American Parkway approach consists of a left turn lane, a through lane, and a right turn lane. The signal provides northbound and southbound protected/permitted advance left turn phasing and eastbound protected/prohibited advance left turn phasing.

5. American Parkway and Irving Street

The eastbound and westbound American Parkway approaches consist of a left turn lane, a through lane, and a shared through/right turn lane. The northbound and southbound Irving Street approaches consist of a left turn lane and a shared through/right turn lane. The signal provides a northbound protected/permitted advance left turn phasing.

6. American Parkway and Agere Drive/Casino Access Driveway.

The eastbound American Parkway approach consists of a left turn lane, a through lane, and a shared through/right turn lane. The westbound American Parkway approach consists of a left turn lane, two through lanes, and a channelized right turn lane. The southbound Agere Drive approach consists of a left turn lane, a through lane, and a right turn lane. The northbound Casino Access Driveway consists of a shared left turn/through lane and a channelized right turn lane. The signal provides eastbound and westbound protected/permitted advance left turn phasing.

The existing lane configurations at the study intersections are shown on Figure S2.

As the Agere Systems development on the north side of American Parkway is not built-out, existing traffic from this facility does not reflect the level of traffic previously approved for that tract of land. Traffic counts at the study intersections would not accurately reflect the volume of traffic permitted on the roadways for the current lane configurations and traffic control. Therefore, the 2011 Build traffic volumes from the original study were assumed conservatively for the Base traffic volumes for this Supplement. Figure 16 from the TIS, which depicts the 2011 Build Traffic Volumes, is included for reference as Figure S3. As part of the TIS, the westbound American Parkway approach to Airport Road was not considered. Estimated traffic volumes for the

entering and exiting movements from this approach were assumed to be 20 vehicles per hour for each movement.

## Description of Capacity Analyses

Capacity analyses were performed to evaluate the traffic conditions at each of the studied intersections. Signalized and unsignalized intersections are analyzed for their ability to serve traffic volumes and to determine the level of operational service for each movement at an intersection. The original TIS utilized the Highway Capacity Software, version 2.4g. Since the original TIS was completed in April 1999, the nationally accepted methodologies for analyzing traffic signals have changed. The analyses in this Supplement were performed using the latest software developed by Trafficware Inc., Synchro v6.0, a computerized software widely accepted as an analysis tool for signalized and unsignalized intersections. Synchro provides analysis of the intersections implementing procedures of the 2000 Highway Capacity Manual. Synchro considers, along with many other factors, the effect of a coordinated signalized system, which is proposed for the Airport Road and American Parkway corridors.

### Signalized Intersections

Level of Service (LOS) is defined in terms of average control delay per vehicle, which is a measure of loss of travel time. Delay is dependent on a number of factors, including width of the roadways, number of lanes, turning volumes, heavy vehicle (truck) volumes, the green time, and the volume to capacity (v/c) ratio for the approach in question. The criteria for the various level of service designations are as follows:

<u>Level of Service</u>	<u>Average Delay Per Vehicle (seconds)</u>
A	10.0 or less
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	80.1 or greater

Levels of Service range from values A though F as indicated above. Level of Service A is considered free flow, where the motorist can make any movement with little or no delay. Level of Service F is considered failure, where traffic is proceeding so slowly that it causes frustration for the motorist. Levels of Service (LOS) B through E indicate increasing delays for each level. The LOS is calculated for each movement of the approach; i.e., a left turn lane could be operating at LOS F while the through lane could be operating at LOS B. Generally, if a facility is found to be operating at a LOS C or higher in rural areas or LOS D or higher in urban areas, the facility is considered adequate. These levels of service allow the motorist to proceed through an intersection without serious delays.

## Base Capacity Analysis

The 2011 Base traffic volumes were used to perform the capacity analysis for the traffic conditions before the addition of the proposed Casino traffic. Prior to evaluating the capacity at the study intersections, each intersection was optimized for cycle length and split times. The Capacity Analysis / Level of Service worksheets for the 2011 Base conditions are contained in Appendix A. A summary of the results for the AM peak hour and the PM peak hour are provided in Table 1. Figure S4 depicts the 2011 Base Levels of Service for the study intersections. Each study intersection is described below.

1. Airport Road (SR 1003) and Catasauqua Road

This intersection is anticipated to operate with several movements operating below acceptable levels during the PM Peak. The eastbound through movement, Westbound left turn movement and southbound left turn movement are anticipated to operate at LOS F while the northbound through movement is anticipated to operate at LOS E during the PM Peak. All other movements are anticipated to operate at LOS D or better. The overall intersection is anticipated to operate at LOS C during the AM Peak and LOS E during the PM Peak.

2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance

This intersection is anticipated to operate with several movements operating below acceptable levels during both the AM and PM Peak periods. The eastbound left turn movement is anticipated to operate at LOS F during both the AM and PM Peak periods, the southbound left turn movement is anticipated to operate at LOS F during the PM Peak, the eastbound and westbound through/right movements are anticipated to operate at LOS E during both the AM and PM Peak periods, and the westbound left turn movement is anticipated to operate at LOS E during the AM Peak period. All other movements are anticipated to operate at LOS D or better. The overall intersection is anticipated to operate at LOS C during the AM Peak and LOS D during the PM Peak.

3. Airport Road (SR 1003) and Lloyd Street

This intersection is anticipated to operate with several movements operating below acceptable levels during both the AM and PM Peak periods. The eastbound movement is anticipated to operate at LOS F during both the AM and PM Peak periods, the westbound left/through and right turn movements are anticipated to operate at LOS E during the AM Peak period, and the northbound through/right movement is anticipated to operate at LOS E during the PM Peak period. All other movements are anticipated to operate at LOS D or better. The overall intersection is

anticipated to operate at LOS C during the AM Peak and LOS D during the PM Peak.

4. Airport Road (SR 1003) and American Parkway

This intersection is anticipated to operate with all movements operating at LOS D or better during both the AM and PM Peak periods. The overall intersection is anticipated to operate at LOS B during the AM Peak and LOS C during the PM Peak.

5. American Parkway and Irving Street

This intersection is anticipated to operate with the majority of movements operate at acceptable levels during the AM Peak and all movements operating at acceptable levels during the PM Peak period. The eastbound left turn movement is anticipated to operate at LOS F and the southbound through/right movement is anticipated to operate at LOS E during the AM Peak. All other movements are anticipated to operate at LOS D or better. The overall intersection is anticipated to operate at LOS D during the AM Peak and LOS B during the PM Peak.

6. American Parkway and Agere Drive/Casino Access Driveway

This intersection is anticipated to operate with all movements operating at acceptable levels during the AM Peak, with all movements operating at LOS A or B. During the PM Peak period, the southbound left turn movement is anticipated to operate at LOS E. All other movements are anticipated to operate at LOS D or better. The overall intersection is anticipated to operate at LOS B during the AM Peak and LOS D during the PM Peak.

## Existing Agere Systems Facility

As the Agere Systems development on the north side of American Parkway is not built-out, existing traffic from this facility does not reflect the level of traffic previously approved for that tract of land. The approved TIS for this development accounted for a full build out of 5,000 employees on the northern campus. The current development accommodates 2,500 employees. A trip generation calculation was completed to determine the amount of traffic anticipated from this development based on the 2,500 employees. These calculations are provided in Appendix B. The following table identifies the trip generation for the approved 5,000 employees, the trip generation for the current 2,500 employees, and the resulting difference.



Time	Movement	5,000 Employees	2,500 Employees	Difference
AM Peak	Entering	1703	963	740
	Exiting	128	73	55
PM Peak	Entering	144	88	56
	Exiting	1298	716	582

Figure S5 depicts the trip distribution from the approved study for the 5,000 employees. The volumes without any Agere Systems traffic are depicted in Figure S6. Figure S7 depicts the trip distribution for the current 2,500 employees. The resulting 2011 traffic volumes with the current 2,500 employees are depicted in Figure S8.

## Proposed Development

Aztar Corporation proposes to construct a gaming casino and entertainment facility on a parcel south of American Parkway, on the existing Agere campus. The facility is anticipated to ultimately consist of a casino with 5,000 slot machines, restaurants, a showroom, and meeting space, as well as a 500-room hotel.

## Proposed Site Trip Generation

The trip generation for the Casino facility is based upon a similar, smaller, facility owned by the Developer in Evansville, Indiana. The Evansville site recorded 1,552,137 visitors in a year, as shown in Appendix C. The proposed Casino, based upon a marketing analysis performed by the Developer, is anticipated to draw 3,235,941 patrons with full build-out. Therefore, traffic for the proposed development was assumed to be 2.08 times the traffic experienced at the Evansville site.

Traffic entering the Evansville Casino was documented by the Developer for a weeklong period in 60-minute intervals. This information is included in Appendix C. Traffic entering the facility was averaged for Tuesday, Wednesday, and Thursday to develop an average entering traffic volume during the peak hours of the adjacent street traffic (7:00 AM-8:00 AM and 4:00 PM-5:00 PM) as identified in the original TIS. As exiting traffic information was not available, a patron stay length of 5 hours was assumed. Exiting traffic was assumed equal to the entering traffic five hours earlier in the day. This resulted in 76 entering and 8 exiting AM Peak hour trips and 131 entering and 118 exiting PM Peak hour trips from the Evansville facility. Utilizing the 2.08 factor, this results in 159 entering and 17 exiting AM Peak hour trips and 273 entering and 245 exiting PM Peak hour trips for the proposed Lehigh Valley site.

When compared to the traffic currently approved but not existing for the Agere Systems north site, we note that the anticipated traffic volumes on the roadway network during the AM Peak hour with the Casino facility will be less than the volumes approved with full build-out of the Agere Systems north site, as seen in the following table.

Time Period	Movement	Agere Systems Difference	Casino Facility	Difference
AM Peak	Entering	740	159	581
	Exiting	55	17	38
PM Peak	Entering	56	273	-217
	Exiting	582	245	337

Therefore, for the AM Peak only the American Parkway and Agere Drive/Casino Access Driveway was analyzed. The remaining intersections, with the build-out of the Casino facility, will experience less traffic than currently approved based on full build-out of the Agere Systems north site during the AM Peak.

During the PM Peak, the entering Casino facility traffic is anticipated to exceed the Agere Systems difference traffic. Therefore, the PM Peak hour volumes for the Casino Facility were distributed to the roadway network and analyses were completed to determine any required improvements.

### Proposed Site Trip Distribution

Based on the number of patrons anticipated by the Developer to travel to the Casino development from each of several neighboring counties, a traffic distribution model was developed. The County breakdown, included in Appendix C, identified the following trip distribution pattern:

- To/From the East using Route 22: 48 percent
- To/From the West using Route 22: 46 percent
- To/From south/east using other routes: 6 percent

The trip generation volumes were assigned to the roadway network based upon the above distribution. Figure S9 depicts the proposed trip assignment to the study intersections.

### Projected 2011 Build Traffic Volumes

The Projected 2011 No Build Traffic volumes contained on Figure S8 were combined with the development trip assignments contained on Figure S9 to estimate the 2011 Build Traffic Volumes. Figure S10 contains the projected 2011 Build Traffic volumes.

### Projected 2011 Build Capacity Analysis

The 2011 Build volumes were analyzed assuming the installation of a coordinated system along Airport Road and American Parkway. The system cycle length, splits, and offsets were optimized. The capacity analysis/level of service worksheets for the 2011 Build condition are contained in Appendix D. A summary of the results for the AM peak hour (American Parkway and Agere Drive/Casino Access Driveway only) and the PM peak

hour can be seen in Table 1. Figure S11 depicts the 2011 Build Levels of Service for the study intersections. Each intersection is described below.

1. Airport Road (SR 1003) and Catasauqua Road

This intersection is anticipated to operate with several movements operating below acceptable levels during the PM Peak period. All movements, however, are anticipated to operate at or better than the Base analysis.

2. Airport Road (SR 1003) and BJ's Warehouse entrance/Lehigh Downs Facility entrance

This intersection is anticipated to operate with several movements operating below acceptable levels during the PM Peak period. All movements, however are anticipated to operate at or better than the Base analysis.

3. Airport Road (SR 1003) and Lloyd Street

This intersection is anticipated to operate with all movements at or better than the Base analysis, with the exception of the southbound through/right movement which is anticipated to degrade from LOS A to LOS B during the PM Peak.

4. Airport Road (SR 1003) and American Parkway

This intersection is anticipated to operate with all movements operating at LOS D or better during the PM Peak period, except the westbound movements which are anticipated to operate at LOS E, degradations from LOS D.

5. American Parkway and Irving Street

This intersection is anticipated to operate with all movements operating at acceptable levels during the PM Peak period.

6. American Parkway and Agere Drive/Casino Access Driveway

This intersection is anticipated to operate with all movements operating at acceptable levels during the AM and PM Peak periods.

## Conclusions and Recommendations

Based on the preceding Traffic Impact Study Supplement and a review of Table 1, which provides a summary of the Level of Service for each traffic condition, the following conclusions and recommendations are offered:

The trip generation for the Casino, based upon a similar facility, results in 159 entering and 17 exiting AM Peak hour trips and 273 entering and 245 exiting PM Peak hour trips for the proposed Lehigh Valley site.

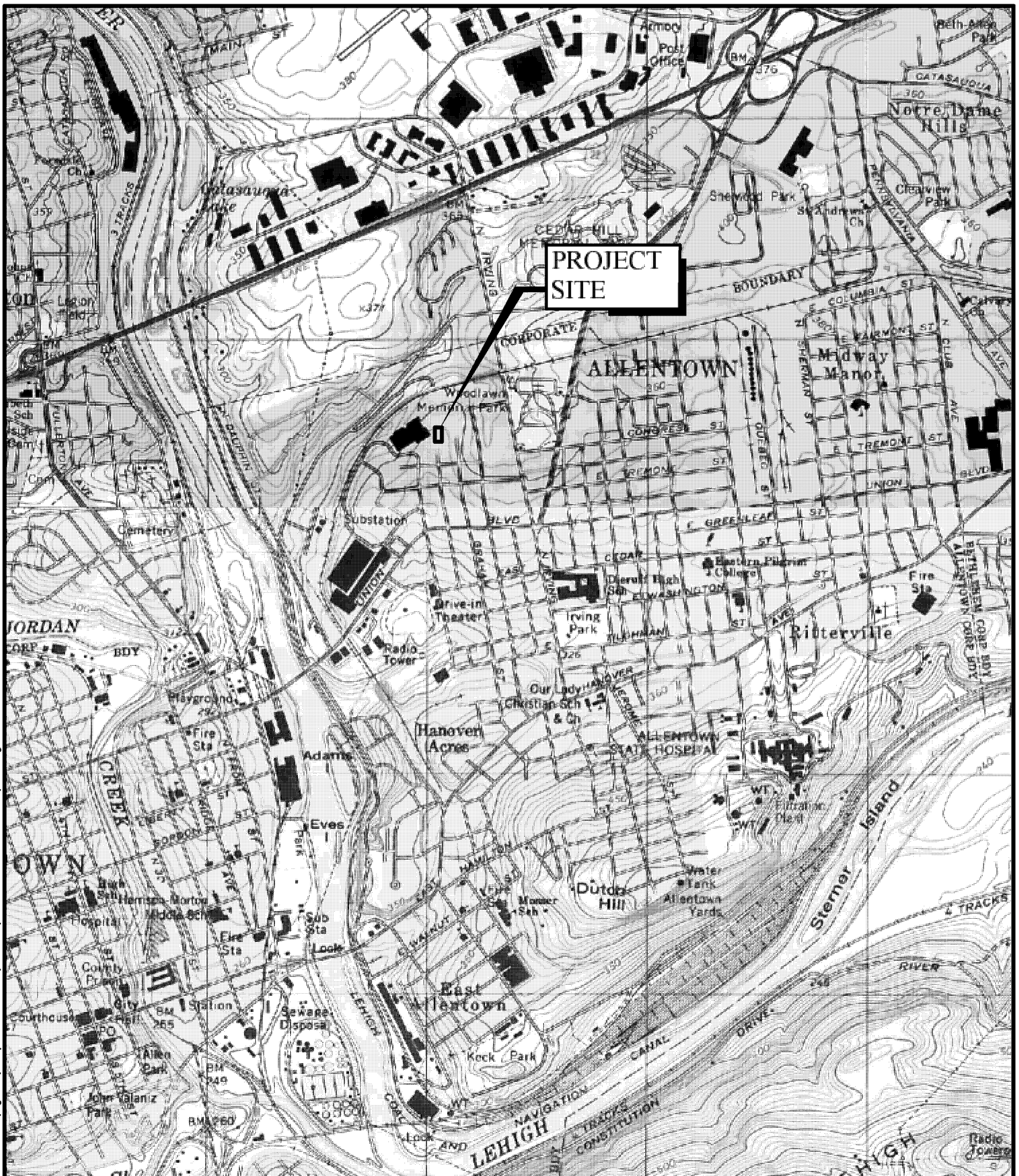
The current Agere Systems facility employs approximately 2,500, half of the 5,000 employees included in the approved TIS. During the AM Peak, the anticipated Casino traffic is less than the volume of traffic not utilized by the Agere Systems facility. During the PM Peak, the entering Casino volume exceeds the unused Agere Systems facility traffic, but does not have a significant on the operations of the Airport Road and American Parkway corridors.

To improve operations and to optimize the operations of the traffic corridors, a spread-spectrum radio communication system is proposed for the traffic signals along the Airport Road and American Parkway corridors.

Based upon the installation of the communication system, the majority of movements through the six study intersections will operate at a level of operation at or near the no-build condition with the addition of the full build-out casino traffic volumes or at a level of service D or better.

## FIGURES

Drawing name: S:\Agere\Ballpark\_casino\Traffic\Exhibits for 12.19.05\SI.dwg Last Modified: Jan 03, 2006 - 9:56am



HORIZONTAL DATUM: NAD 83  
 EXISTING GROUND ELEVATION AT HOTEL SITE: 362' ABOVE MEAN SEA LEVEL  
 VERTICAL DATUM: NGVD 29

DRWN. BY:	JLS
CHKD. BY:	BEH
FIELD BOOK:	-

SCALE:	1"=2000'
DATE:	DEC. 22, 2005
PROJ. NO.:	05-048

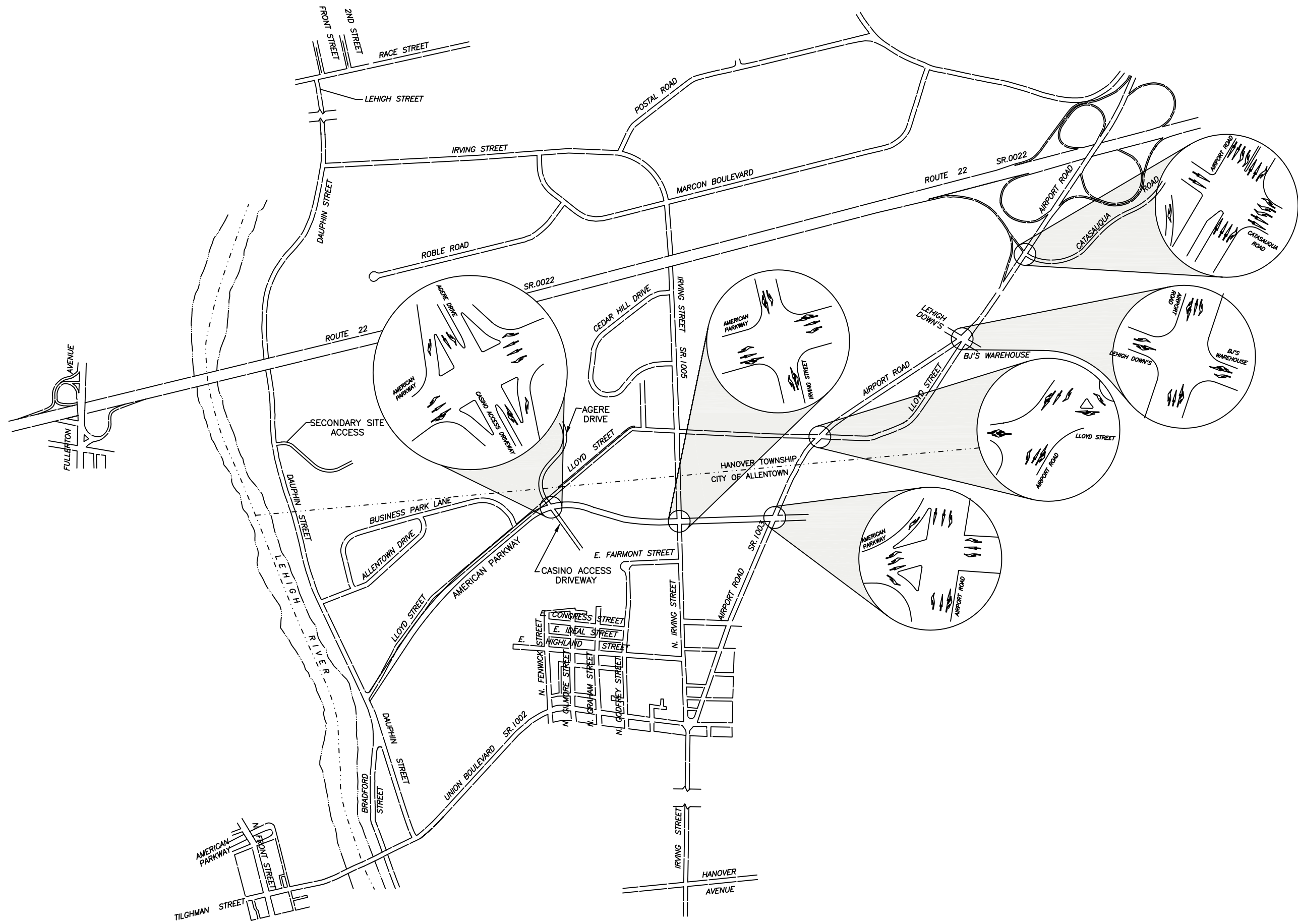
**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
 CITY OF ALLENTOWN, LEHIGH COUNTY, PENNSYLVANIA

**THE PIDCOCK COMPANY**  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**PROJECT LOCATION MAP**

<b>FIG.</b>
<b>SI</b>

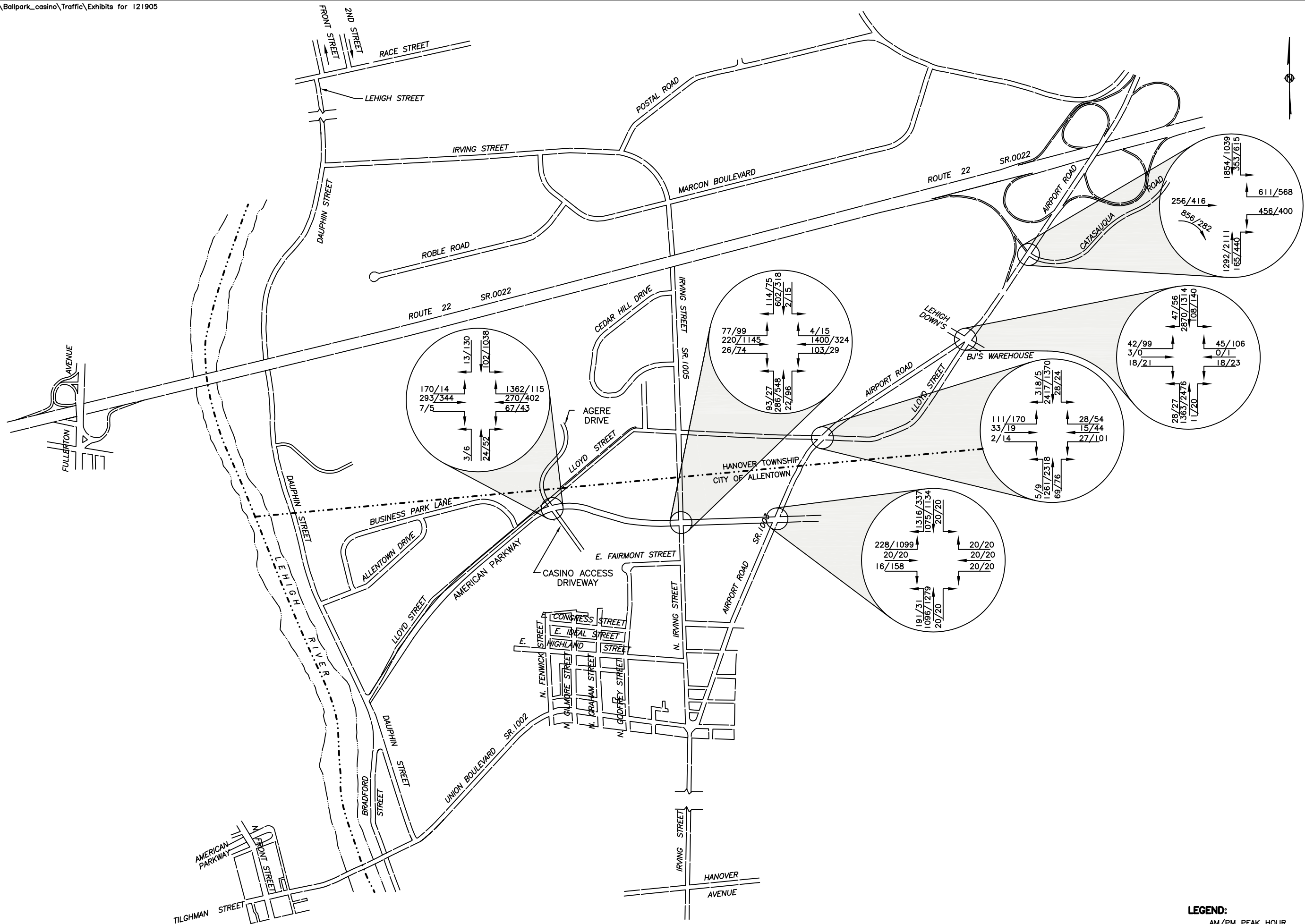
"NOT PUBLISHED; ALL RIGHTS RESERVED BY THE PIDCOCK COMPANY."



**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
**THE PIDCOCK COMPANY**  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103  
**EXISTING LANE CONFIGURATIONS**

**FIGURE**  
**S2**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



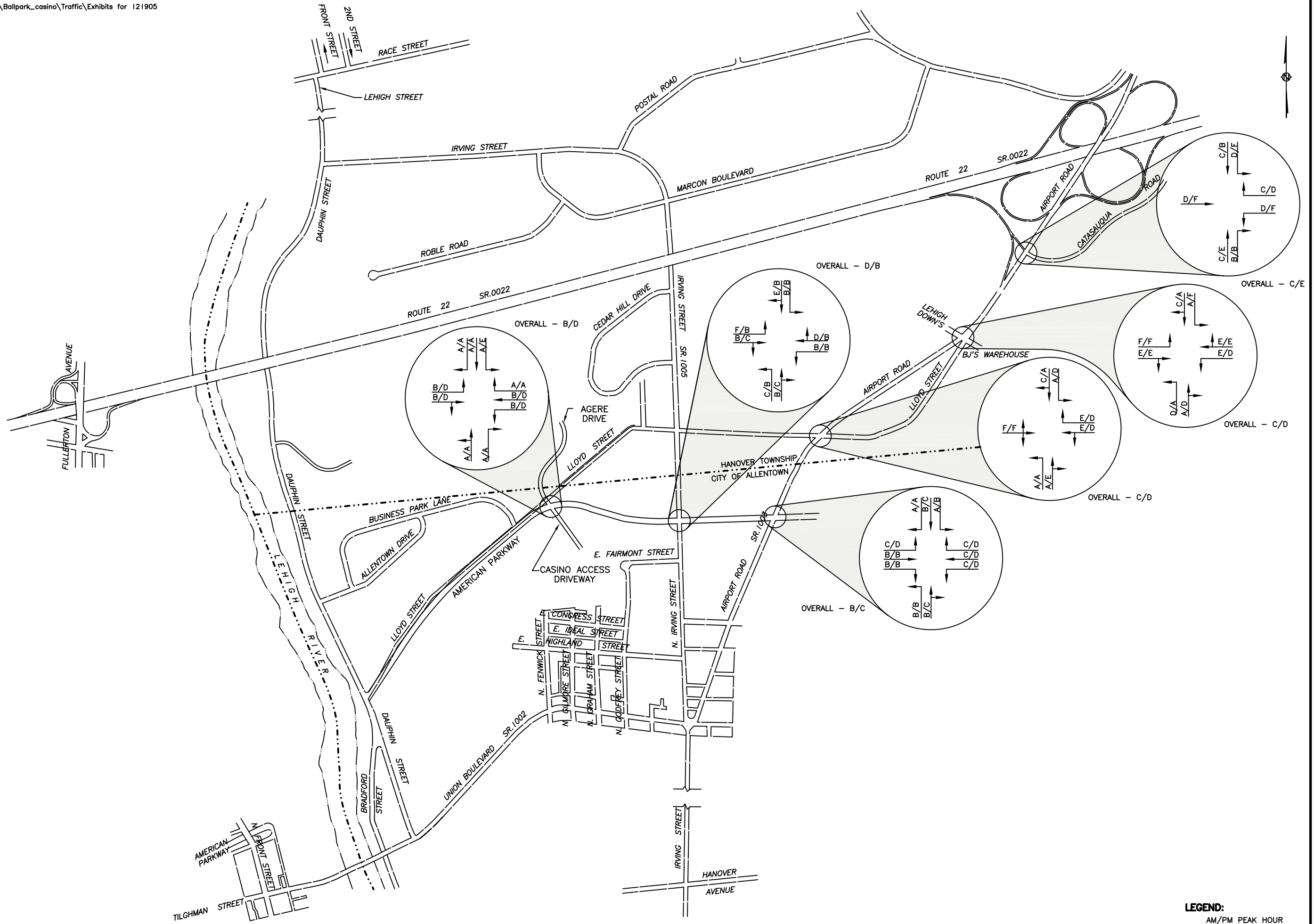
**LEGEND:**  
AM/PM PEAK HOUR

AGERE SYSTEMS, INC.  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
 THE PIDCOCK COMPANY  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**FIGURE**  
**S3**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



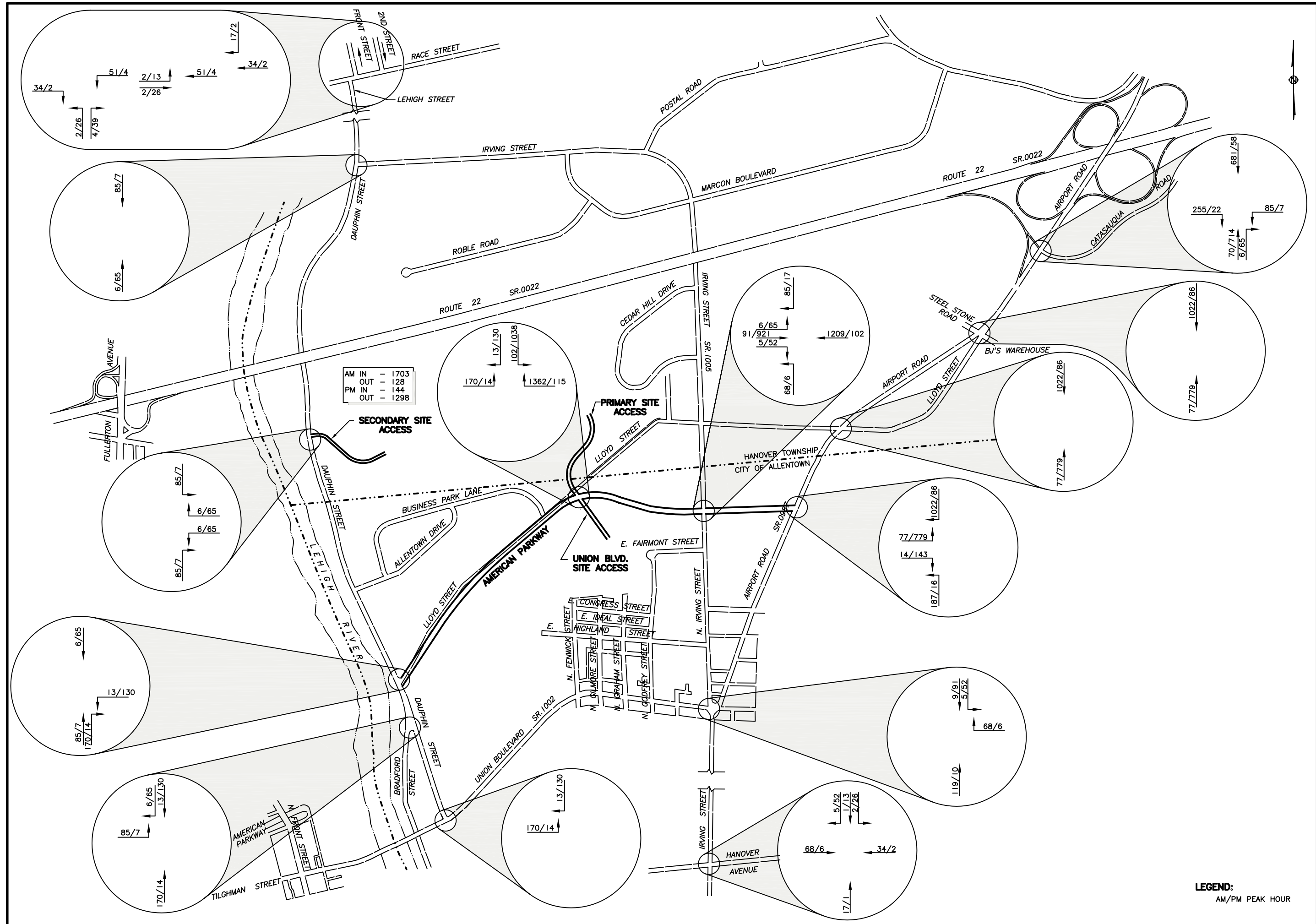


**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
**THE PIDCOCK COMPANY**  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

2011 BASE LEVEL OF SERVICE

**FIGURE**  
**S4**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



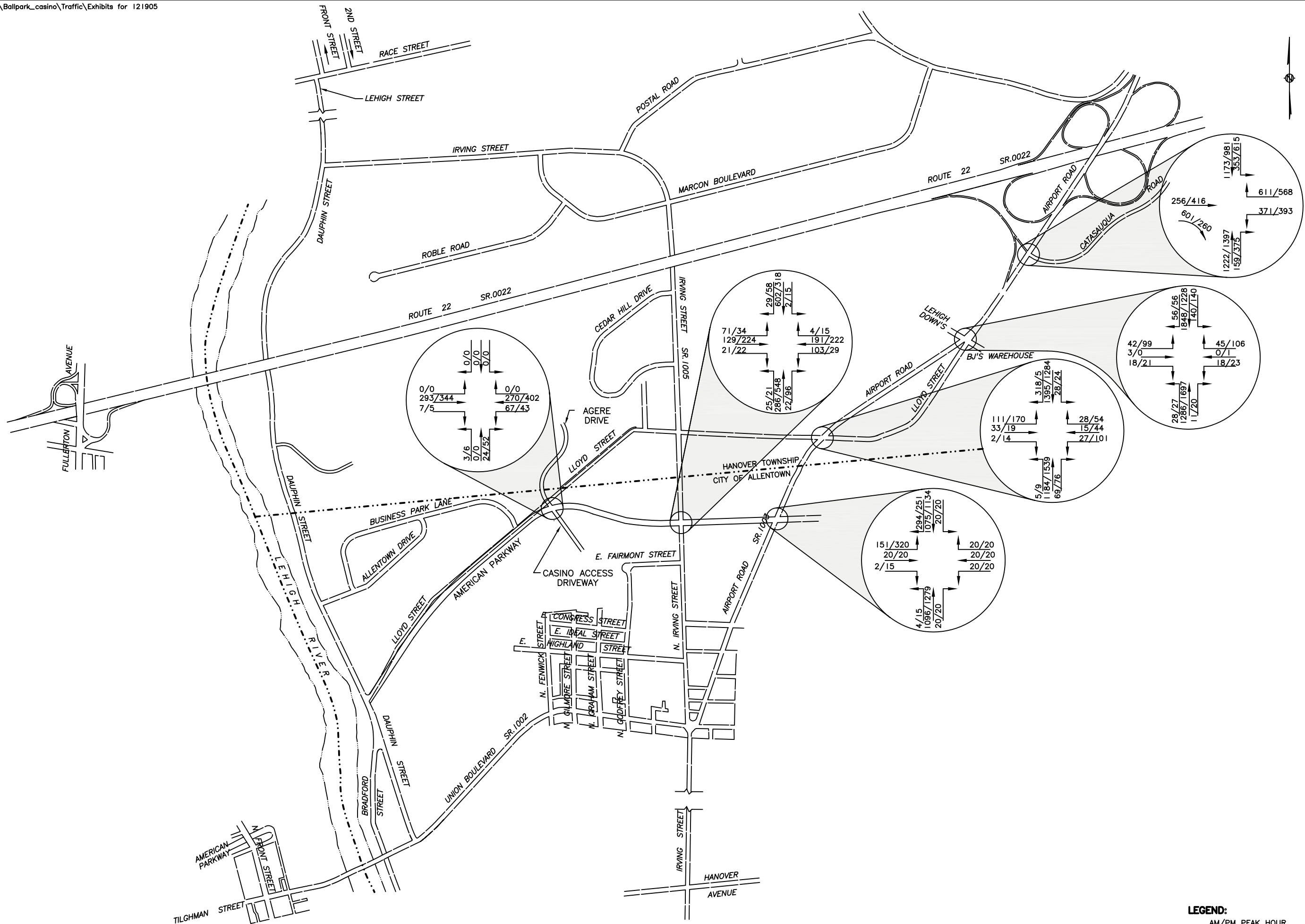
**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION

**G. EDWIN PIDCOCK CO.**  
 CIVIL ENGINEERS-ARCHITECTS-LAND PLANNERS-SURVEYORS  
 2451 PARKWOOD DRIVE ALLENTOWN, PENNSYLVANIA 18103

**FIGURE**  
**S5**

**AGERE NEW TRIP ASSIGNMENT - 5,000 EMPLOYEES**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*

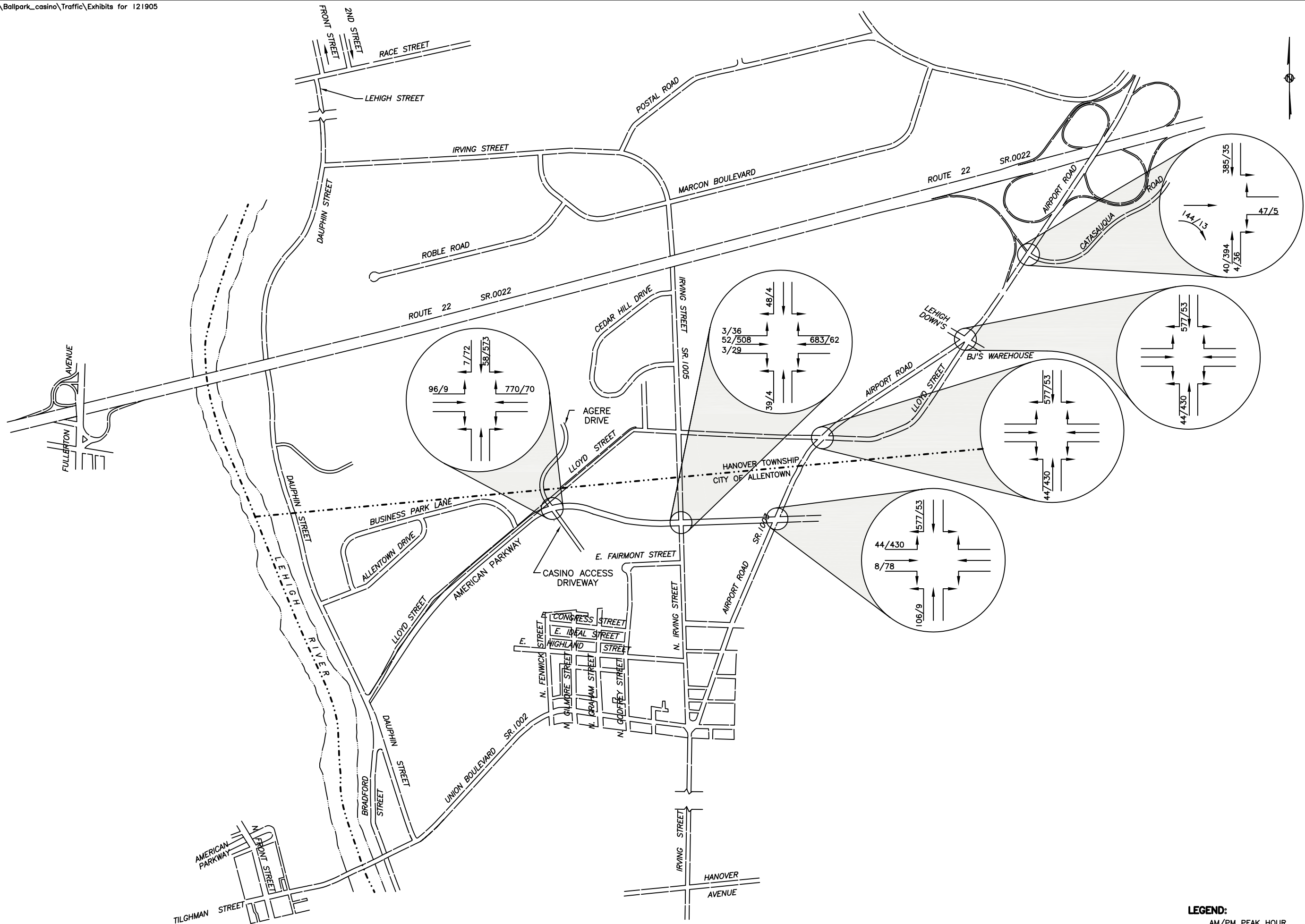


**LEGEND:**  
AM/PM PEAK HOUR

AGERE SYSTEMS, INC.  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
 THE PIDCOCK COMPANY  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**FIGURE**  
**S6**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



**LEGEND:**  
AM/PM PEAK HOUR

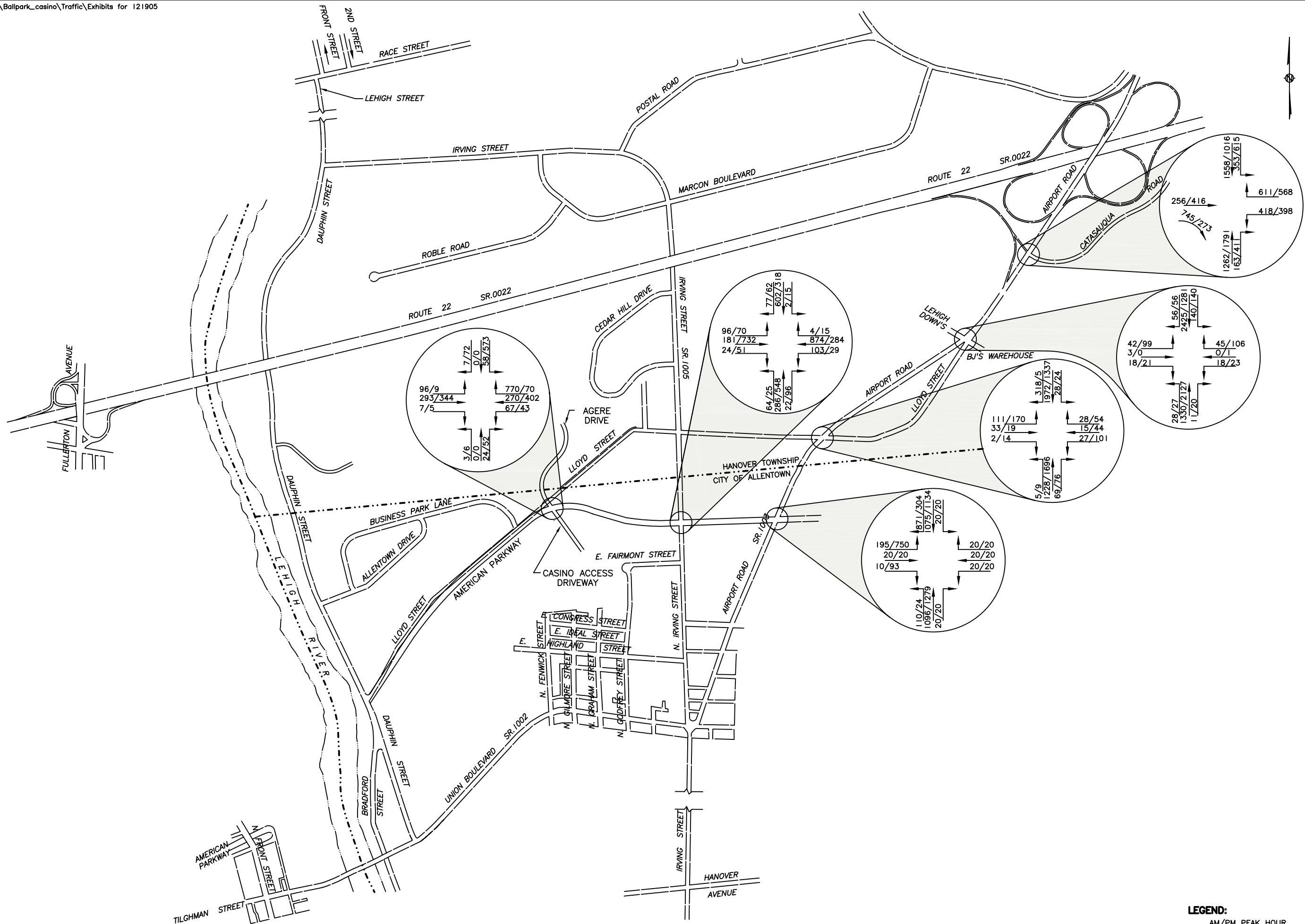
**AGERE SYSTEMS, INC.**  
AZTAR DEVELOPMENT CORPORATION SUBDIVISION

**THE PIDCOCK COMPANY**  
CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**AGERE NEW TRIP ASSIGNMENT - 2,500 EMPLOYEES**

**FIGURE**  
**S7**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*

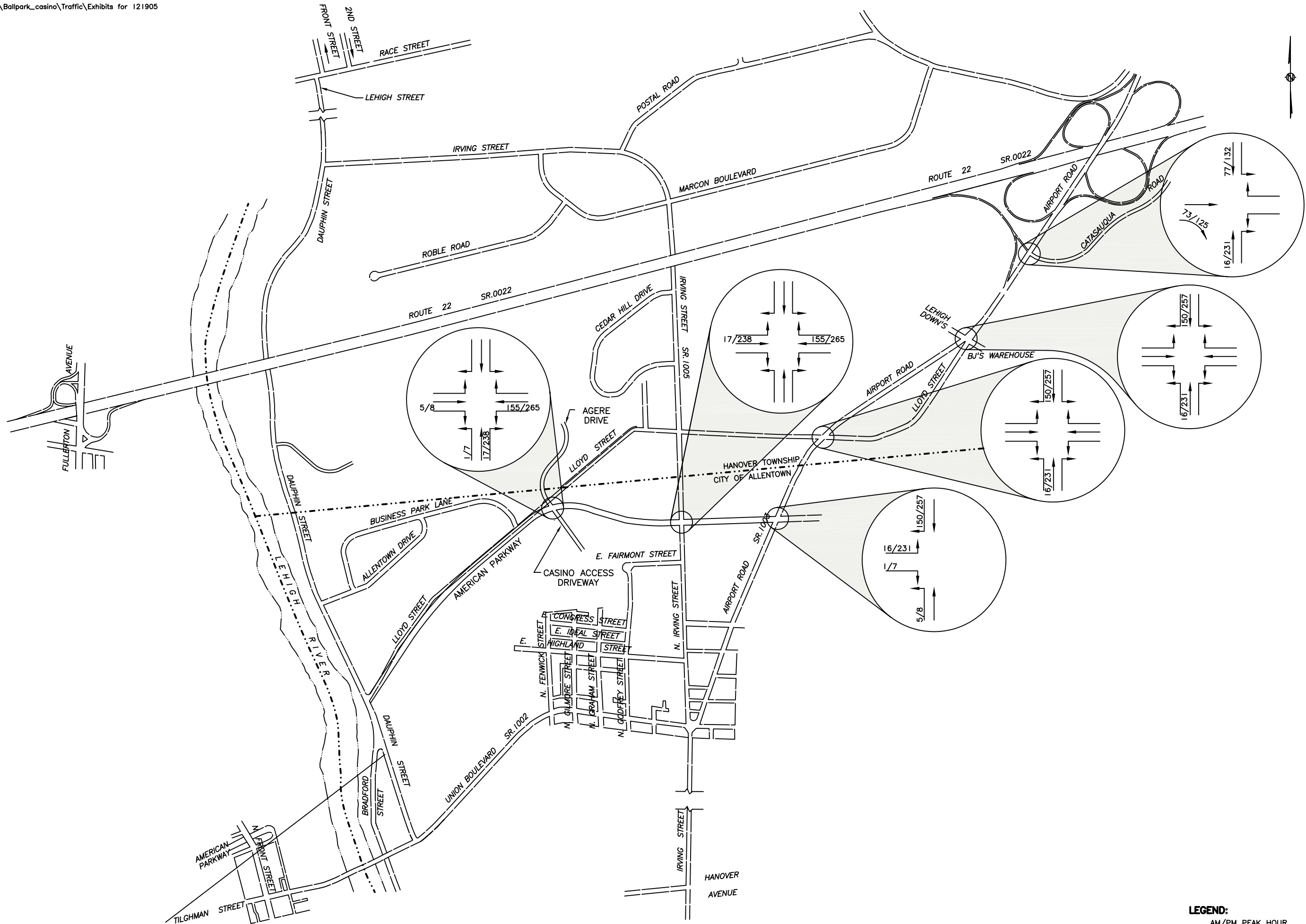


LEGEND:  
AM/PM PEAK HOUR

AGERE SYSTEMS, INC.  
AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
THE PIDCOCK COMPANY  
CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

FIGURE  
S8

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*

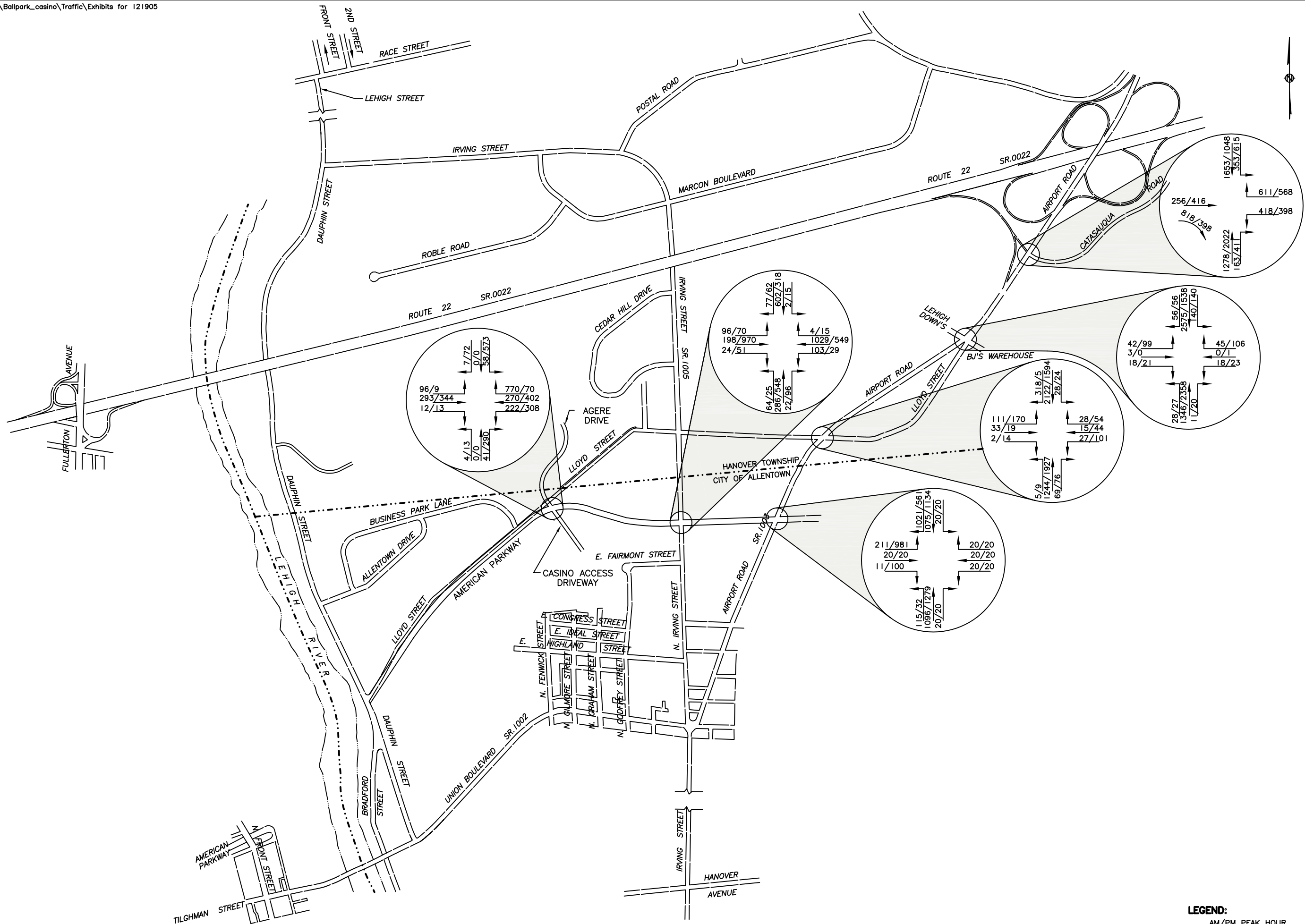


LEGEND:  
AM/PM PEAK HOUR

AGERE SYSTEMS, INC.  
AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
THE PIDCOCK COMPANY  
CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103  
CASINO TRIP ASSIGNMENT

FIGURE  
S9

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*

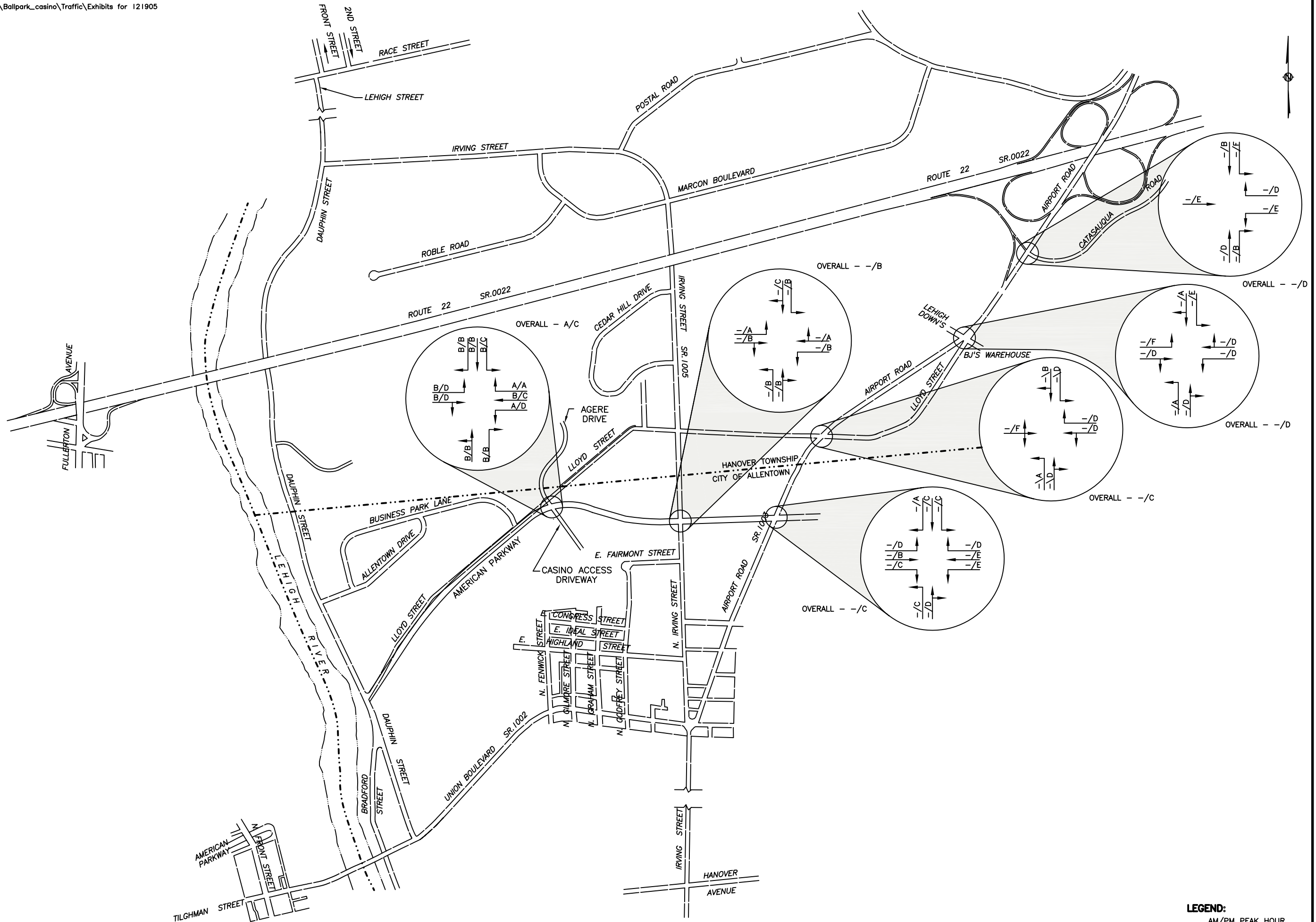


**LEGEND:**  
AM/PM PEAK HOUR

AGERE SYSTEMS, INC.  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
 THE PIDCOCK COMPANY  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103

**FIGURE**  
**S10**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



**AGERE SYSTEMS, INC.**  
 AZTAR DEVELOPMENT CORPORATION SUBDIVISION  
**THE PIDCOCK COMPANY**  
 CIVIL ENGINEERING AND LAND PLANNING ARCHITECTURE LAND SURVEYING  
 OXFORD DRIVE AT FISH HATCHERY ROAD, ALLENTOWN, PENNSYLVANIA 18103  
**2011 BUILD LEVEL OF SERVICE**

**FIGURE**  
**S11**

\*NOT PUBLISHED; ALL RIGHTS RESERVED BY G. EDWIN PIDCOCK CO.\*



## TABLES

**Table 1: Level of Service Summary Table**

1	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & Route 22 EB Off Ramps/Catasauqua Road	<b>EASTBOUND</b>		
	THROUGH	F(101.2)	E
	APPROACH LOS	F(101.2)	E
	<b>WESTBOUND</b>		
	LEFT	F(99.2)	E
	RIGHT	D	D
	APPROACH LOS	E	D
	<b>NORTHBOUND</b>		
	THROUGH	E	D
	RIGHT	B	B
	APPROACH LOS	D	D
	<b>SOUTHBOUND</b>		
	LEFT	F(94.0)	F(92.4)
	THROUGH	B	B
	APPROACH LOS	D	D
<b>INTERSECTION LOS</b>	E	D	

2	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & B.J.'s Warehouse/Off Track Betting	<b>EASTBOUND</b>		
	LEFT	F(161.5)	F(124.3)
	THROUGH/RIGHT	E	D
	APPROACH LOS	F(142.9)	F(110.9)
	<b>WESTBOUND</b>		
	LEFT	D	D
	THROUGH/RIGHT	E	D
	APPROACH LOS	D	D
	<b>NORTHBOUND</b>		
	LEFT	A	A
	THROUGH/RIGHT	D	D
	APPROACH LOS	D	D
	<b>SOUTHBOUND</b>		
	LEFT	F(150.7)	E
	THROUGH/RIGHT	A	A
APPROACH LOS	B	B	
<b>INTERSECTION LOS</b>	D	D	

3	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & Lloyd Street	<b>EASTBOUND</b>		
	LEFT		
	LEFT/THROUGH/RIGHT	F(156.6)	F(137.0)
	THROUGH/RIGHT		
	APPROACH LOS	F(156.6)	F(137.0)
	<b>WESTBOUND</b>		
	LEFT/THROUGH	D	D
	RIGHT	D	D
	APPROACH LOS	D	D
	<b>NORTHBOUND</b>		
	LEFT	A	A
	THROUGH/RIGHT	E	D
	APPROACH LOS	E	D
	<b>SOUTHBOUND</b>		
	LEFT	D	D
THROUGH/RIGHT	A	B	
APPROACH LOS	B	B	
<b>INTERSECTION LOS</b>	D	C	

= LOS Improvement  
 = LOS Degradation, LOS D or better  
 = LOS Degradation, LOS E or F

**Table 1: Level of Service Summary Table**

4	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
Airport Road & American Parkway	<b>EASTBOUND</b>		
	LEFT	D	D
	THROUGH	B	B
	RIGHT	B	C
	<b>APPROACH LOS</b>	D	D
	<b>WESTBOUND</b>		
	LEFT	D	E
	THROUGH	D	E
	RIGHT	D	D
	<b>APPROACH LOS</b>	D	E
	<b>NORTHBOUND</b>		
	LEFT	B	C
	THROUGH/RIGHT	C	D
	<b>APPROACH LOS</b>	C	D
	<b>SOUTHBOUND</b>		
	LEFT	B	C
	THROUGH	C	C
	RIGHT	A	A
	<b>APPROACH LOS</b>	C	C
	<b>INTERSECTION LOS</b>	C	C

5	TURN MOVEMENT	2011	
		BASE	BUILD
		PM PEAK	PM PEAK
American Parkway & N. Irving Street	<b>EASTBOUND</b>		
	LEFT	B	A
	THROUGH/RIGHT	C	B
	<b>APPROACH LOS</b>	B	B
	<b>WESTBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	B	A
	<b>APPROACH LOS</b>	B	A
	<b>NORTHBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	C	B
	<b>APPROACH LOS</b>	C	B
	<b>SOUTHBOUND</b>		
	LEFT	B	B
	THROUGH/RIGHT	B	C
	<b>APPROACH LOS</b>	B	C
	<b>INTERSECTION LOS</b>	B	B

6	TURN MOVEMENT	2011			
		BASE	BUILD	BASE	BUILD
		AM PEAK	AM PEAK	PM PEAK	PM PEAK
American Parkway & Agere Drive/Casinos & Ballpark	<b>EASTBOUND</b>				
	LEFT	B	B	D	D
	THROUGH/RIGHT	B	B	D	D
	<b>APPROACH LOS</b>	B	B	D	D
	<b>WESTBOUND</b>				
	LEFT	B	A	D	D
	THROUGH	B	B	D	C
	RIGHT	A	A	A	A
	<b>APPROACH LOS</b>	B	A	D	C
	<b>NORTHBOUND</b>				
	LEFT/THROUGH	A	B	A	B
	RIGHT	A	B	A	B
	<b>APPROACH LOS</b>	A	B	A	B
	<b>SOUTHBOUND</b>				
	LEFT	A	B	E	C
	THROUGH	A	B	A	B
	RIGHT	A	B	A	B
	<b>APPROACH LOS</b>	A	B	E	C
	<b>INTERSECTION LOS</b>	B	A	D	C

= LOS Improvement  
 = LOS Degradation, LOS D or better  
 = LOS Degradation, LOS E or F

**Table 2: Queue Length Summary Table**

1	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
Airport Road & Route 22 EB Off Ramps/Catasauqua Road	<b>EASTBOUND</b>				
	<b>WESTBOUND</b>				
	LEFT	241	295		260
	RIGHT	303	530		435
	<b>NORTHBOUND</b>				
	RIGHT	29	164		534
	<b>SOUTHBOUND</b>				
	LEFT	157	418		393

2	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
Airport Road & B.J.'s Warehouse/Off Track Betting	<b>EASTBOUND</b>				
	LEFT	126	227		195
	<b>WESTBOUND</b>				
	LEFT	46	49		41
	<b>NORTHBOUND</b>				
	LEFT	30	18		3
	<b>SOUTHBOUND</b>				
	LEFT	21	237		177

3	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
Airport Road & Lloyd Street	<b>EASTBOUND</b>				
	LEFT	N/A	N/A		N/A
	<b>WESTBOUND</b>				
	LEFT	N/A	N/A		N/A
	RIGHT	32	46		36
	<b>NORTHBOUND</b>				
	LEFT	6	10		3
	<b>SOUTHBOUND</b>				
LEFT	9	14		11	

4	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
Airport Road & American Parkway	<b>EASTBOUND</b>				
	LEFT	73	485		477
	RIGHT	13	51		37
	<b>WESTBOUND</b>				
	LEFT	26	36		43
	RIGHT	18	23		26
	<b>NORTHBOUND</b>				
	LEFT	88	24		32
	<b>SOUTHBOUND</b>				
	LEFT	9	18		10
RIGHT	70	0		0	

5	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
American Parkway & N. Irving Street	<b>EASTBOUND</b>				
	LEFT	139	52		33
	<b>WESTBOUND</b>				
	LEFT	75	26		27
	<b>NORTHBOUND</b>				
	LEFT	68	18		16
	<b>SOUTHBOUND</b>				
	LEFT	5	18		15
RIGHT	N/A	N/A		N/A	













6	TURN MOVEMENT	2011			
		BASE		WITH CASINO	
		AM PEAK	PM PEAK	AM PEAK	PM PEAK
American Parkway & Agere Driveway/Casinos & Ballpark	<b>EASTBOUND</b>				
	LEFT	52	29	34	15
	<b>WESTBOUND</b>				
	LEFT	25	63	61	224
	RIGHT	119	0	0	0
	<b>NORTHBOUND</b>				
	LEFT	N/A	N/A	N/A	N/A
	RIGHT	11	10	18	41
	<b>SOUTHBOUND</b>				
	LEFT	45	1189	39	541
RIGHT	8	15	7	23	

**APPENDIX A  
2011 BASE CAPACITY  
ANALYSIS WORKSHEETS**

# HCM Signalized Intersection Capacity Analysis

## 1: Catasauqua Road & Airport Road

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔↔		↗		↑↑↑	↗	↔↔	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		0.97		1.00		0.91	1.00	0.97	0.95	
Frt		1.00		1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539		3433		1583		4940	1583	3433	3438	
Flt Permitted		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539		3433		1583		4940	1583	3433	3438	
Volume (vph)	0	256	0	456	0	611	0	1292	165	353	1854	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	269	0	480	0	643	0	1360	174	372	1952	0
RTOR Reduction (vph)	0	0	0	0	0	226	0	0	49	0	0	0
Lane Group Flow (vph)	0	269	0	480	0	417	0	1360	125	372	1952	0
Heavy Vehicles (%)	0%	2%	0%	2%	0%	2%	0%	5%	2%	2%	5%	0%
Turn Type				Prot		custom			pm+ov		Prot	
Protected Phases		4		8		1 8		2	8		1	6
Permitted Phases									2			
Actuated Green, G (s)		12.5		15.9		36.9		35.1	51.0		17.0	56.1
Effective Green, g (s)		12.5		15.9		36.9		35.1	51.0		17.0	56.1
Actuated g/C Ratio		0.13		0.16		0.38		0.36	0.53		0.18	0.58
Clearance Time (s)		4.0		4.0				4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0		3.0				3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		458		566		605		1797	837		605	1999
v/s Ratio Prot		c0.08		c0.14		0.26		0.28	0.02		0.11	c0.57
v/s Ratio Perm									0.05			
v/c Ratio		0.59		0.85		0.69		0.76	0.15		0.61	0.98
Uniform Delay, d1		39.6		39.1		25.0		27.0	11.6		36.7	19.6
Progression Factor		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.9		11.3		3.3		3.0	0.1		1.9	15.3
Delay (s)		41.5		50.5		28.3		30.0	11.7		38.6	34.9
Level of Service		D		D		C		C	B		D	C
Approach Delay (s)		41.5				37.8		27.9				35.5
Approach LOS		D				D		C				D
<b>Intersection Summary</b>												
HCM Average Control Delay			34.1			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			96.5			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			81.3%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Queues

1: Catasauqua Road & Airport Road

12/22/2005



Lane Group	EBT	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑	↘↘	↗	↑↑↑	↗	↘↘	↑↑
Volume (vph)	256	456	611	1292	165	353	1854
Lane Group Flow (vph)	269	480	643	1360	174	372	1952
Turn Type		Prot custom			pm+ov	Prot	
Protected Phases	4	8	1 8	2	8	1	6
Permitted Phases					2		
Detector Phases	4	8	1 8	2	8	1	6
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	44.0	36.0	20.0	24.0	60.0
Total Split (%)	20.0%	20.0%	44.0%	36.0%	20.0%	24.0%	60.0%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5
Lead/Lag				Lag		Lead	
Lead-Lag Optimize?				Yes		Yes	
Recall Mode	None	None		Max	None	None	Max
v/c Ratio	0.59	0.85	0.77	0.76	0.20	0.62	0.98
Control Delay	42.4	54.4	17.0	31.3	3.5	39.7	36.3
Queue Delay	0.0	6.5	0.0	0.0	0.0	0.0	10.5
Total Delay	42.4	60.9	17.0	31.3	3.5	39.7	46.8
Queue Length 50th (ft)	83	148	147	267	10	109	571
Queue Length 95th (ft)	124	#241	303	357	29	157	#833
Internal Link Dist (ft)	132			368			575
Turn Bay Length (ft)							
Base Capacity (vph)	567	569	855	1797	887	691	1998
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	57	0	0	0	0	88
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.94	0.75	0.76	0.20	0.54	1.02

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 96.4

Natural Cycle: 100

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 1: Catasauqua Road & Airport Road

ø1	ø2	ø4	ø8
24 s	36 s	20 s	20 s
ø6			
60 s			

HCM Signalized Intersection Capacity Analysis  
 2: Off Track Betting & Airport Road

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1654		1770	1621		1805	3435		1770	3432	
Flt Permitted	0.77	1.00		0.43	1.00		0.03	1.00		0.15	1.00	
Satd. Flow (perm)	1433	1654		810	1621		63	3435		286	3432	
Volume (vph)	42	3	18	18	1	45	28	1363	11	108	2870	47
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	3	19	19	1	47	29	1435	12	114	3021	49
RTOR Reduction (vph)	0	18	0	0	43	0	0	0	0	0	1	0
Lane Group Flow (vph)	44	4	0	19	5	0	29	1447	0	114	3069	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm		pm+pt			Perm			pm+pt			
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	5.2	5.2		11.6	11.6		121.1	121.1		129.1	129.1	
Effective Green, g (s)	5.2	5.2		11.6	11.6		121.1	121.1		129.1	129.1	
Actuated g/C Ratio	0.03	0.03		0.08	0.08		0.81	0.81		0.87	0.87	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	50	58		79	126		51	2797		288	2980	
v/s Ratio Prot		0.00		c0.00	0.00			0.42		0.01	c0.89	
v/s Ratio Perm	c0.03			0.01			0.46			0.33		
v/c Ratio	0.88	0.06		0.24	0.04		0.57	0.52		0.40	1.03	
Uniform Delay, d1	71.4	69.4		63.9	63.4		4.8	4.4		3.5	9.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	83.7	0.5		1.6	0.1		38.8	0.7		0.9	24.8	
Delay (s)	155.1	69.9		65.5	63.5		43.5	5.1		4.3	34.6	
Level of Service	F	E		E	E		D	A		A	C	
Approach Delay (s)		126.7			64.1			5.9			33.5	
Approach LOS		F			E			A			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			26.7			HCM Level of Service			C			
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			148.7			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			103.2%			ICU Level of Service			G			
Analysis Period (min)			15									

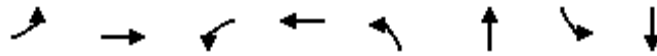
c Critical Lane Group



Queues

2: Off Track Betting & Airport Road

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	42	3	18	1	28	1363	108	2870
Lane Group Flow (vph)	44	22	19	48	29	1447	114	3070
Turn Type	Perm		pm+pt		Perm		pm+pt	
Protected Phases		4	3	8		2	1	6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	3	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	9.0	9.0	8.0	17.0	125.0	125.0	8.0	133.0
Total Split (%)	6.0%	6.0%	5.3%	11.3%	83.3%	83.3%	5.3%	88.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	
Recall Mode	None	None	None	None	Max	Max	None	Max
v/c Ratio	0.83	0.29	0.24	0.31	0.56	0.51	0.39	1.02
Control Delay	148.9	39.6	71.2	20.9	50.8	4.9	5.4	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8
Total Delay	148.9	39.6	71.2	20.9	50.8	4.9	5.4	40.3
Queue Length 50th (ft)	44	3	17	1	9	210	13	~1702
Queue Length 95th (ft)	#126	35	46	44	#30	245	21	#1804
Internal Link Dist (ft)		643		761		1306		323
Turn Bay Length (ft)								
Base Capacity (vph)	53	77	80	183	52	2829	289	3016
Starvation Cap Reductn	0	0	0	0	0	0	0	70
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.29	0.24	0.26	0.56	0.51	0.39	1.04

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 147

Natural Cycle: 150

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Off Track Betting & Airport Road

 ø4 8 s	 ø2 125 s	 8 s	 9 s
 ø6 133 s			 ø8 17 s

# HCM Signalized Intersection Capacity Analysis

## 3: Lloyd Street & Airport Road

12/22/2005

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800			1818	1615	1805	3416		1770	3397	
Flt Permitted		0.75			0.84	1.00	0.04	1.00		0.16	1.00	
Satd. Flow (perm)		1399			1571	1615	68	3416		292	3397	
Volume (vph)	111	33	2	27	15	28	5	1261	69	28	2417	318
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	35	2	28	16	29	5	1327	73	29	2544	335
RTOR Reduction (vph)	0	0	0	0	0	26	0	3	0	0	7	0
Lane Group Flow (vph)	0	154	0	0	44	3	5	1397	0	29	2872	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm			Perm		Perm	Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		16.0			16.0	16.0	111.2	111.2		117.6	117.6	
Effective Green, g (s)		16.0			16.0	16.0	111.2	111.2		117.6	117.6	
Actuated g/C Ratio		0.11			0.11	0.11	0.79	0.79		0.83	0.83	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		158			178	182	53	2683		268	2821	
v/s Ratio Prot								0.41		0.00	c0.85	
v/s Ratio Perm		c0.11			0.03	0.00	0.07			0.09		
v/c Ratio		0.97			0.25	0.02	0.09	0.52		0.11	1.02	
Uniform Delay, d1		62.6			57.3	55.8	3.5	5.5		3.8	12.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		63.5			0.7	0.0	3.5	0.7		0.2	21.6	
Delay (s)		126.1			58.0	55.9	7.0	6.2		4.0	33.6	
Level of Service		F			E	E	A	A		A	C	
Approach Delay (s)		126.1			57.2			6.3			33.3	
Approach LOS		F			E			A			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			28.5									HCM Level of Service C
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			141.6									Sum of lost time (s) 8.0
Intersection Capacity Utilization			98.3%									ICU Level of Service F
Analysis Period (min)			15									

c Critical Lane Group

Queues

3: Lloyd Street & Airport Road

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕↕	↕	↕↕
Volume (vph)	111	33	27	15	28	5	1261	28	2417
Lane Group Flow (vph)	0	154	0	44	29	5	1400	29	2879
Turn Type	Perm		Perm		Perm	Perm		pm+pt	
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phases	4	4	8	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	112.0	112.0	8.0	120.0
Total Split (%)	14.3%	14.3%	14.3%	14.3%	14.3%	80.0%	80.0%	5.7%	85.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?						Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	Max	Max	None	Max
v/c Ratio		0.96		0.25	0.14	0.09	0.52	0.11	1.02
Control Delay		122.9		60.5	19.5	7.8	6.1	3.0	34.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		122.9		60.5	19.5	7.8	6.1	3.0	34.9
Queue Length 50th (ft)		142		37	0	1	223	4	~1456
Queue Length 95th (ft)		#287		77	32	6	264	9	#1572
Internal Link Dist (ft)		386		375			884		227
Turn Bay Length (ft)									
Base Capacity (vph)		160		179	210	56	2716	274	2823
Starvation Cap Reductn		0		0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.96		0.25	0.14	0.09	0.52	0.11	1.02

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Natural Cycle: 140

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.



























Queue shown is maximum after two cycles.

Splits and Phases: 3: Lloyd Street & Airport Road

		ø2		ø4
8 s	112 s		20 s	
		ø6		ø8
120 s			20 s	

HCM Signalized Intersection Capacity Analysis  
 4: American Parkway & Airport Road

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 							 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3431		1770	3438	1583
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.14	1.00		0.20	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1863	1863	1583	257	3431		372	3438	1583
Volume (vph)	228	20	16	20	20	20	191	1096	20	20	1075	1316
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	240	21	17	21	21	21	201	1154	21	21	1132	1385
RTOR Reduction (vph)	0	0	13	0	0	20	0	2	0	0	0	0
Lane Group Flow (vph)	240	21	4	21	21	1	201	1173	0	21	1132	1385
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Turn Type	Prot		Perm	Perm		Perm	pm+pt			pm+pt		Free
Protected Phases	7	4				8		5	2		1	6
Permitted Phases			4	8		8	2			6		Free
Actuated Green, G (s)	7.7	14.0	14.0	2.3	2.3	2.3	40.2	35.4		31.4	30.6	62.2
Effective Green, g (s)	7.7	14.0	14.0	2.3	2.3	2.3	40.2	35.4		31.4	30.6	62.2
Actuated g/C Ratio	0.12	0.23	0.23	0.04	0.04	0.04	0.65	0.57		0.50	0.49	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	425	419	356	69	69	59	302	1953		206	1691	1583
v/s Ratio Prot	0.07	0.01				0.01		0.06	0.34		0.00	0.33
v/s Ratio Perm			0.00	0.01		0.00	0.37			0.05		c0.87
v/c Ratio	0.56	0.05	0.01	0.30	0.30	0.01	0.67	0.60		0.10	0.67	0.87
Uniform Delay, d1	25.7	18.9	18.7	29.2	29.2	28.9	7.8	8.8		7.9	12.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0	0.0	2.5	2.5	0.1	5.4	1.4		0.2	2.1	7.1
Delay (s)	27.4	18.9	18.7	31.7	31.7	28.9	13.3	10.1		8.2	14.1	7.1
Level of Service	C	B	B	C	C	C	B	B		A	B	A
Approach Delay (s)		26.2			30.8			10.6			10.2	
Approach LOS		C			C			B			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			11.7				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			62.2				Sum of lost time (s)				0.0	
Intersection Capacity Utilization			63.5%				ICU Level of Service				B	
Analysis Period (min)			15									

c Critical Lane Group

Queues

4: American Parkway & Airport Road

12/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↕↔	↖	↕↕	↖
Volume (vph)	228	20	16	20	20	20	191	1096	20	1075	1316
Lane Group Flow (vph)	240	21	17	21	21	21	201	1175	21	1132	1385
Turn Type	Prot		Perm	Perm		Perm	pm+pt		pm+pt		Free
Protected Phases	7	4			8		5	2	1	6	
Permitted Phases			4	8		8	2		6		Free
Detector Phases	7	4	4	8	8	8	5	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	8.0	8.0	8.0	20.0	8.0	20.0	
Total Split (s)	12.0	20.0	20.0	8.0	8.0	8.0	11.0	32.0	8.0	29.0	0.0
Total Split (%)	20.0%	33.3%	33.3%	13.3%	13.3%	13.3%	18.3%	53.3%	13.3%	48.3%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	
v/c Ratio	0.52	0.05	0.05	0.17	0.17	0.17	0.59	0.55	0.09	0.67	0.87
Control Delay	27.2	16.8	8.9	29.8	29.8	16.3	14.7	9.1	7.4	15.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	16.8	8.9	29.8	29.8	16.3	14.7	9.1	7.4	15.7	8.6
Queue Length 50th (ft)	42	6	0	7	7	0	28	117	3	178	0
Queue Length 95th (ft)	73	20	13	26	26	18	#88	237	9	252	#70
Internal Link Dist (ft)		896			1316			786		884	
Turn Bay Length (ft)											
Base Capacity (vph)	479	491	430	123	123	124	342	2124	240	1695	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.04	0.04	0.17	0.17	0.17	0.59	0.55	0.09	0.67	0.87

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 57.3

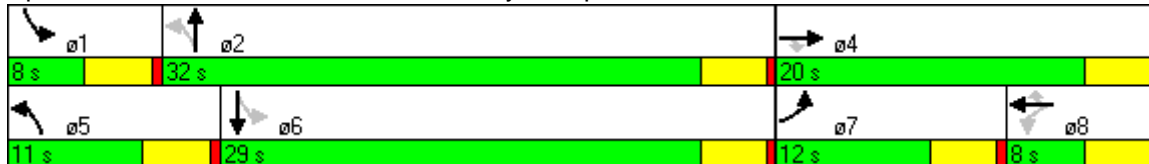
Natural Cycle: 60

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 4: American Parkway & Airport Road



HCM Signalized Intersection Capacity Analysis  
 5: American Parkway & N. Irving Street

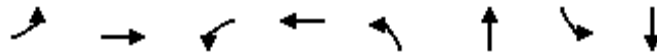
12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3484		1770	3538		1770	1843		1770	1818	
Flt Permitted	0.10	1.00		0.59	1.00		0.10	1.00		0.56	1.00	
Satd. Flow (perm)	196	3484		1097	3538		186	1843		1052	1818	
Volume (vph)	77	220	26	103	1400	4	93	286	22	2	602	114
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	232	27	108	1474	4	98	301	23	2	634	120
RTOR Reduction (vph)	0	10	0	0	0	0	0	3	0	0	8	0
Lane Group Flow (vph)	81	249	0	108	1478	0	98	321	0	2	746	0
Turn Type	Perm		Perm		pm+pt		Perm					
Protected Phases	2		6		3		8		4			
Permitted Phases	2		6		8		4					
Actuated Green, G (s)	38.1	38.1		38.1	38.1		43.1	43.1		36.0	36.0	
Effective Green, g (s)	38.1	38.1		38.1	38.1		43.1	43.1		36.0	36.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.48	0.48		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	1488		469	1511		145	891		425	734	
v/s Ratio Prot		0.07			c0.42		c0.02	0.17			c0.41	
v/s Ratio Perm	0.41			0.10			0.30			0.00		
v/c Ratio	0.96	0.17		0.23	0.98		0.68	0.36		0.00	1.02	
Uniform Delay, d1	24.9	15.8		16.2	25.1		21.0	14.4		15.9	26.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	88.7	0.2		1.1	18.5		11.8	0.2		0.0	37.5	
Delay (s)	113.6	16.0		17.4	43.6		32.8	14.7		15.9	64.1	
Level of Service	F	B		B	D		C	B		B	E	
Approach Delay (s)		39.3			41.9			18.9			63.9	
Approach LOS		D			D			B			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			43.8	HCM Level of Service				D				
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			89.2	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			100.2%	ICU Level of Service				G				
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: American Parkway & N. Irving Street

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕
Volume (vph)	77	220	103	1400	93	286	2	602
Lane Group Flow (vph)	81	259	108	1478	98	324	2	754
Turn Type	Perm		Perm		pm+pt		Perm	
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	6	6	3	8	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	42.0	42.0	42.0	42.0	8.0	48.0	40.0	40.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	8.9%	53.3%	44.4%	44.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
v/c Ratio	0.95	0.17	0.23	0.97	0.62	0.37	0.00	1.01
Control Delay	120.1	15.2	18.3	43.2	31.8	15.5	16.5	62.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.1	15.2	18.3	43.2	31.8	15.5	16.5	62.6
Queue Length 50th (ft)	44	43	38	426	29	107	1	~458
Queue Length 95th (ft)	#139	68	75	#593	#68	168	5	#680
Internal Link Dist (ft)		298		896		1200		711
Turn Bay Length (ft)								
Base Capacity (vph)	85	1509	471	1523	158	904	428	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.17	0.23	0.97	0.62	0.36	0.00	1.01

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 88.4

Natural Cycle: 90

Control Type: Semi Act-Uncoord

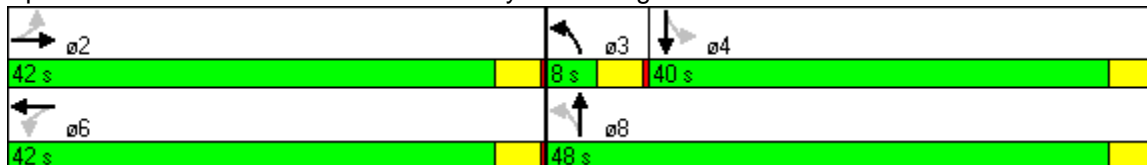
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 5: American Parkway & N. Irving Street



HCM Signalized Intersection Capacity Analysis  
6: American Parkway & Agere Driveway

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3527		1770	3539	1583		1795	1583	1770	1863	1583
Flt Permitted	0.45	1.00		0.56	1.00	1.00		0.93	1.00	0.76	1.00	1.00
Satd. Flow (perm)	834	3527		1044	3539	1583		1734	1583	1407	1863	1583
Volume (vph)	170	293	7	67	270	1362	3	1	24	102	1	13
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	308	7	71	284	1434	3	1	25	107	1	14
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	14	0	0	8
Lane Group Flow (vph)	179	311	0	71	284	1434	0	4	11	107	1	6
Turn Type	pm+pt			pm+pt		Free	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		Free	8		8	4		4
Actuated Green, G (s)	14.2	9.8		9.8	7.6	42.6		18.6	18.6	18.6	18.6	18.6
Effective Green, g (s)	14.2	9.8		9.8	7.6	42.6		18.6	18.6	18.6	18.6	18.6
Actuated g/C Ratio	0.33	0.23		0.23	0.18	1.00		0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	811		278	631	1583		757	691	614	813	691
v/s Ratio Prot	0.05	0.09		0.01	0.08						0.00	
v/s Ratio Perm	0.11			0.05		c0.91		0.00	0.01	0.08		0.00
v/c Ratio	0.48	0.38		0.26	0.45	0.91		0.01	0.02	0.17	0.00	0.01
Uniform Delay, d1	10.6	13.8		13.2	15.6	0.0		6.8	6.8	7.3	6.8	6.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3		0.5	0.5	9.0		0.0	0.0	0.6	0.0	0.0
Delay (s)	11.6	14.2		13.6	16.1	9.0		6.8	6.8	7.9	6.8	6.8
Level of Service	B	B		B	B	A		A	A	A	A	A
Approach Delay (s)		13.2			10.3			6.8			7.8	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			10.8			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			42.6			Sum of lost time (s)				0.0		
Intersection Capacity Utilization			39.2%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												



Queues

6: American Parkway & Agere Driveway

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷	↶	↶↷	↶		↷	↶	↶	↷	↷
Volume (vph)	170	293	67	270	1362	3	1	24	102	1	13
Lane Group Flow (vph)	179	315	71	284	1434	0	4	25	107	1	14
Turn Type	pm+pt		pm+pt		Free	Perm		Perm	Perm		Perm
Protected Phases	5	2	1	6			8			4	
Permitted Phases	2		6		Free	8		8	4		4
Detector Phases	5	2	1	6		8	8	8	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	10.0	22.0	8.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	20.0%	44.0%	16.0%	40.0%	0.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes							
Recall Mode	None	None	None	None		Max	Max	Max	Max	Max	Max
v/c Ratio	0.39	0.32	0.21	0.40	0.91		0.00	0.03	0.15	0.00	0.02
Control Delay	10.2	12.4	9.2	15.0	11.7		9.2	5.0	10.5	9.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	12.4	9.2	15.0	11.7		9.2	5.0	10.5	9.0	5.6
Queue Length 50th (ft)	25	32	9	31	0		1	0	17	0	0
Queue Length 95th (ft)	52	56	25	56	#119		5	11	45	2	8
Internal Link Dist (ft)		811		239			406			333	
Turn Bay Length (ft)											
Base Capacity (vph)	462	1328	338	1147	1583		852	798	698	925	793
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.39	0.24	0.21	0.25	0.91		0.00	0.03	0.15	0.00	0.02

Intersection Summary

Cycle Length: 50

Actuated Cycle Length: 40

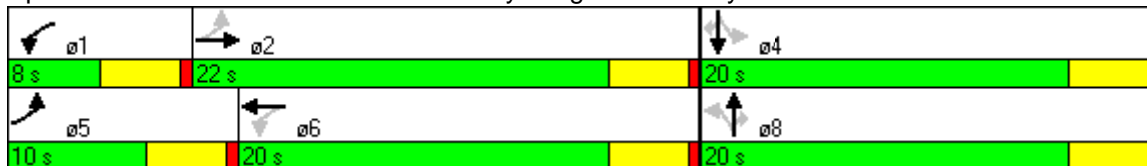
Natural Cycle: 50

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













Splits and Phases: 6: American Parkway & Agere Driveway



# HCM Signalized Intersection Capacity Analysis

## 1: Catasauqua Road & Airport Road

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔↔		↗		↑↑↑	↗	↔↔	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		0.97		1.00		0.91	1.00	0.97	0.95	
Frt		1.00		1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539		3433		1583		4940	1583	3433	3438	
Flt Permitted		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539		3433		1583		4940	1583	3433	3438	
Volume (vph)	0	416	0	400	0	568	0	2111	440	615	1039	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	438	0	421	0	598	0	2222	463	647	1094	0
RTOR Reduction (vph)	0	0	0	0	0	157	0	0	3	0	0	0
Lane Group Flow (vph)	0	438	0	421	0	441	0	2222	460	647	1094	0
Heavy Vehicles (%)	0%	2%	0%	2%	0%	2%	0%	5%	2%	2%	5%	0%
Turn Type				Prot		custom			pm+ov		Prot	
Protected Phases		4		8		1 8		2	8		1	6
Permitted Phases									2			
Actuated Green, G (s)		16.0		16.0		44.0		58.0	74.0		24.0	86.0
Effective Green, g (s)		16.0		16.0		44.0		58.0	74.0		24.0	86.0
Actuated g/C Ratio		0.12		0.12		0.34		0.45	0.57		0.18	0.66
Clearance Time (s)		4.0		4.0				4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0		3.0				3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		436		423		536		2204	901		634	2274
v/s Ratio Prot		c0.12		c0.12		0.28		c0.45	0.06		c0.19	0.32
v/s Ratio Perm									0.23			
v/c Ratio		1.00		1.00		0.82		1.01	0.51		1.02	0.48
Uniform Delay, d1		57.0		57.0		39.4		36.0	17.0		53.0	10.9
Progression Factor		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		44.2		42.3		9.9		21.2	0.5		41.0	0.7
Delay (s)		101.2		99.2		49.3		57.2	17.5		94.0	11.7
Level of Service		F		F		D		E	B		F	B
Approach Delay (s)		101.2			69.9			50.3				42.3
Approach LOS		F			E			D				D
<b>Intersection Summary</b>												
HCM Average Control Delay			55.1				HCM Level of Service			E		
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			94.6%				ICU Level of Service		F			
Analysis Period (min)			15									

c Critical Lane Group

Queues

1: Catasauqua Road & Airport Road

12/22/2005



Lane Group	EBT	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑	↘↘	↗	↑↑↑	↗	↘↘	↑↑
Volume (vph)	416	400	568	2111	440	615	1039
Lane Group Flow (vph)	438	421	598	2222	463	647	1094
Turn Type		Prot custom			pm+ov	Prot	
Protected Phases	4	8	1 8	2	8	1	6
Permitted Phases					2		
Detector Phases	4	8	1 8	2	8	1	6
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	48.0	62.0	20.0	28.0	90.0
Total Split (%)	15.4%	15.4%	36.9%	47.7%	15.4%	21.5%	69.2%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5
Lead/Lag				Lag		Lead	
Lead-Lag Optimize?				Yes		Yes	
Recall Mode	None	None		Max	None	None	Max
v/c Ratio	1.00	1.00	0.86	1.01	0.51	1.02	0.48
Control Delay	100.8	99.3	37.8	57.1	10.8	93.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.8	99.3	37.8	57.1	10.8	93.0	11.8
Queue Length 50th (ft)	~198	185	307	~688	116	~297	223
Queue Length 95th (ft)	#312	#295	#530	#811	164	#418	270
Internal Link Dist (ft)	132			368			575
Turn Bay Length (ft)							
Base Capacity (vph)	436	423	693	2204	905	634	2274
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.00	0.86	1.01	0.51	1.02	0.48

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Natural Cycle: 130

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 1: Catasauqua Road & Airport Road



HCM Signalized Intersection Capacity Analysis  
 2: Off Track Betting & Airport Road

12/22/2005

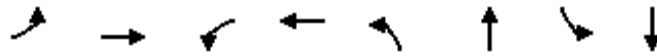
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.86		1.00	0.85		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1627		1770	1618		1805	3435		1770	3424	
Flt Permitted	0.68	1.00		0.54	1.00		0.18	1.00		0.04	1.00	
Satd. Flow (perm)	1275	1627		1014	1618		338	3435		70	3424	
Volume (vph)	99	1	21	23	1	106	27	2476	20	140	1314	56
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1	22	24	1	112	28	2606	21	147	1383	59
RTOR Reduction (vph)	0	20	0	0	67	0	0	0	0	0	2	0
Lane Group Flow (vph)	104	3	0	24	46	0	28	2627	0	147	1440	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm			pm+pt			Perm			pm+pt		
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.0	11.0		17.3	17.3		102.1	102.1		113.1	113.1	
Effective Green, g (s)	11.0	11.0		17.3	17.3		102.1	102.1		113.1	113.1	
Actuated g/C Ratio	0.08	0.08		0.12	0.12		0.74	0.74		0.82	0.82	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	101	129		139	202		249	2534		143	2798	
v/s Ratio Prot		0.00		0.00	c0.03			0.76		c0.05	0.42	
v/s Ratio Perm	c0.08			0.02			0.08			c0.78		
v/c Ratio	1.03	0.02		0.17	0.23		0.11	1.04		1.03	0.51	
Uniform Delay, d1	63.7	58.7		53.8	54.5		5.2	18.2		67.9	4.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	97.8	0.1		0.6	0.6		0.9	28.2		82.9	0.7	
Delay (s)	161.5	58.8		54.4	55.1		6.1	46.4		150.7	4.7	
Level of Service	F	E		D	E		A	D		F	A	
Approach Delay (s)		142.9			55.0			45.9			18.2	
Approach LOS		F			D			D			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			39.2			HCM Level of Service				D		
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			138.4			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			99.0%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Queues

2: Off Track Betting & Airport Road

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	99	1	23	1	27	2476	140	1314
Lane Group Flow (vph)	104	23	24	113	28	2627	147	1442
Turn Type	Perm		pm+pt		Perm		pm+pt	
Protected Phases		4	3	8		2	1	6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	3	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	15.0	15.0	8.0	23.0	106.0	106.0	11.0	117.0
Total Split (%)	10.7%	10.7%	5.7%	16.4%	75.7%	75.7%	7.9%	83.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	
Recall Mode	None	None	None	None	Max	Max	None	Max
v/c Ratio	1.02	0.15	0.18	0.44	0.11	1.02	1.01	0.51
Control Delay	154.5	25.2	57.0	24.9	6.7	42.7	111.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.5	25.2	57.0	24.9	6.7	42.7	111.3	4.5
Queue Length 50th (ft)	~102	1	19	29	7	~1369	~91	189
Queue Length 95th (ft)	#227	31	49	91	18	#1493	#237	224
Internal Link Dist (ft)		643		761		1306		323
Turn Bay Length (ft)								
Base Capacity (vph)	102	151	136	286	248	2564	146	2833
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.15	0.18	0.40	0.11	1.02	1.01	0.51

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 136.8

Natural Cycle: 140

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Off Track Betting & Airport Road

↖ ø1	↗ ø2	↖ ø3	↗ ø4
11 s	106 s	8 s	15 s
↘ ø5	↙ ø6	↘ ø7	↙ ø8
117 s		23 s	

# HCM Signalized Intersection Capacity Analysis

## 3: Lloyd Street & Airport Road

12/22/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.99			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1811	1615	1805	3425		1770	3437	
Flt Permitted		0.51			0.78	1.00	0.15	1.00		0.04	1.00	
Satd. Flow (perm)		941			1463	1615	288	3425		68	3437	
Volume (vph)	170	19	14	101	44	54	9	2318	76	24	1370	5
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	20	15	106	46	57	9	2440	80	25	1442	5
RTOR Reduction (vph)	0	2	0	0	0	39	0	1	0	0	0	0
Lane Group Flow (vph)	0	212	0	0	152	18	9	2519	0	25	1447	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm			Perm		Perm	Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		31.0			31.0	31.0	106.2	106.2		112.6	112.6	
Effective Green, g (s)		31.0			31.0	31.0	106.2	106.2		112.6	112.6	
Actuated g/C Ratio		0.20			0.20	0.20	0.70	0.70		0.74	0.74	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		192			299	330	202	2399		77	2553	
v/s Ratio Prot								c0.74		0.01	c0.42	
v/s Ratio Perm		c0.23			0.10	0.01	0.03			0.24		
v/c Ratio		1.11			0.51	0.05	0.04	1.05		0.32	0.57	
Uniform Delay, d1		60.3			53.5	48.5	7.0	22.7		45.1	8.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		96.3			1.4	0.1	0.4	33.1		2.5	0.9	
Delay (s)		156.6			54.9	48.6	7.4	55.8		47.6	9.6	
Level of Service		F			D	D	A	E		D	A	
Approach Delay (s)		156.6			53.2			55.6			10.2	
Approach LOS		F			D			E			B	

### Intersection Summary

HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	151.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queues

3: Lloyd Street & Airport Road

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕↔	↕	↕↔
Volume (vph)	170	19	101	44	54	9	2318	24	1370
Lane Group Flow (vph)	0	214	0	152	57	9	2520	25	1447
Turn Type	Perm		Perm		Perm	Perm		pm+pt	
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phases	4	4	8	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	107.0	107.0	8.0	115.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	71.3%	71.3%	5.3%	76.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?						Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	Max	Max	None	Max
v/c Ratio		1.08		0.50	0.15	0.04	1.04	0.27	0.57
Control Delay		140.9		59.4	16.2	8.3	51.7	12.1	9.8
Queue Delay		0.0		0.0	0.0	0.0	29.9	0.0	0.0
Total Delay		140.9		59.4	16.2	8.3	81.7	12.1	9.8
Queue Length 50th (ft)		~233		133	6	3	~1436	6	301
Queue Length 95th (ft)		#407		210	46	10	#1558	14	352
Internal Link Dist (ft)		386		375			884		227
Turn Bay Length (ft)									
Base Capacity (vph)		198		302	373	206	2426	94	2542
Starvation Cap Reductn		0		0	0	0	157	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		1.08		0.50	0.15	0.04	1.11	0.27	0.57

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.






























Queue shown is maximum after two cycles.

Splits and Phases: 3: Lloyd Street & Airport Road

		ø2		ø4
8 s	107 s		35 s	
		ø6		ø8
115 s			35 s	

HCM Signalized Intersection Capacity Analysis  
 4: American Parkway & Airport Road

12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 	 		 	 	 		 		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3432		1770	3438	1583
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.11	1.00		0.11	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1863	1863	1583	197	3432		201	3438	1583
Volume (vph)	1099	20	158	20	20	20	31	1279	20	20	1134	337
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1157	21	166	21	21	21	33	1346	21	21	1194	355
RTOR Reduction (vph)	0	0	74	0	0	20	0	1	0	0	0	0
Lane Group Flow (vph)	1157	21	92	21	21	1	33	1366	0	21	1194	355
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Turn Type	Prot		Perm	Perm		Perm	pm+pt			pm+pt		Free
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8	2			6		Free
Actuated Green, G (s)	30.3	36.5	36.5	2.2	2.2	2.2	40.0	37.8		38.6	37.1	87.8
Effective Green, g (s)	30.3	36.5	36.5	2.2	2.2	2.2	40.0	37.8		38.6	37.1	87.8
Actuated g/C Ratio	0.35	0.42	0.42	0.03	0.03	0.03	0.46	0.43		0.44	0.42	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1185	774	658	47	47	40	129	1478		115	1453	1583
v/s Ratio Prot	c0.34	0.01			0.01		0.01	c0.40		0.00	0.35	
v/s Ratio Perm			0.06	0.01		0.00	0.11			0.08		c0.22
v/c Ratio	0.98	0.03	0.14	0.45	0.45	0.01	0.26	0.92		0.18	0.82	0.22
Uniform Delay, d1	28.4	15.2	15.9	42.2	42.2	41.7	16.7	23.6		18.7	22.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	20.4	0.0	0.1	6.6	6.6	0.1	1.1	11.2		0.8	5.4	0.3
Delay (s)	48.8	15.2	16.0	48.8	48.8	41.9	17.8	34.8		19.5	27.8	0.3
Level of Service	D	B	B	D	D	D	B	C		B	C	A
Approach Delay (s)		44.3			46.5			34.4			21.5	
Approach LOS		D			D			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			33.0									HCM Level of Service C
HCM Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			87.8									Sum of lost time (s) 4.0
Intersection Capacity Utilization			80.7%									ICU Level of Service D
Analysis Period (min)			15									

c Critical Lane Group



Queues

4: American Parkway & Airport Road

12/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↕↔	↖	↕↕	↖
Volume (vph)	1099	20	158	20	20	20	31	1279	20	1134	337
Lane Group Flow (vph)	1157	21	166	21	21	21	33	1367	21	1194	355
Turn Type	Prot		Perm	Perm		Perm	pm+pt		pm+pt		Free
Protected Phases	7	4			8		5	2	1	6	
Permitted Phases			4	8		8	2		6		Free
Detector Phases	7	4	4	8	8	8	5	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	8.0	8.0	8.0	20.0	8.0	20.0	
Total Split (s)	34.0	42.0	42.0	8.0	8.0	8.0	8.0	40.0	8.0	40.0	0.0
Total Split (%)	37.8%	46.7%	46.7%	8.9%	8.9%	8.9%	8.9%	44.4%	8.9%	44.4%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	
v/c Ratio	0.93	0.03	0.23	0.24	0.24	0.23	0.20	0.88	0.13	0.80	0.22
Control Delay	41.9	15.4	6.0	48.4	48.4	23.8	15.0	30.8	14.4	27.1	0.3
Queue Delay	4.6	0.0	0.0	0.0	0.0	0.3	0.0	6.3	0.0	0.0	0.0
Total Delay	46.5	15.4	6.0	48.4	48.4	24.0	15.0	37.1	14.4	27.1	0.3
Queue Length 50th (ft)	~343	7	13	12	12	0	9	331	6	321	0
Queue Length 95th (ft)	#485	20	51	36	36	23	24	#562	18	#425	0
Internal Link Dist (ft)		896			1316			786		884	
Turn Bay Length (ft)											
Base Capacity (vph)	1243	817	765	86	86	93	165	1554	161	1494	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	57	0	0	0	0	6	0	154	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.03	0.22	0.24	0.24	0.24	0.20	0.98	0.13	0.80	0.22

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 83.6

Natural Cycle: 90

Control Type: Semi Act-Uncoord

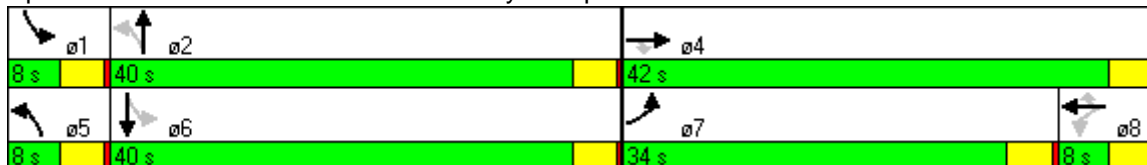
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 4: American Parkway & Airport Road



HCM Signalized Intersection Capacity Analysis  
 5: American Parkway & N. Irving Street

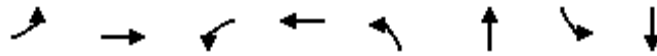
12/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3507		1770	3515		1770	1821		1770	1809	
Flt Permitted	0.54	1.00		0.15	1.00		0.27	1.00		0.20	1.00	
Satd. Flow (perm)	1003	3507		285	3515		499	1821		365	1809	
Volume (vph)	99	1145	74	29	324	15	27	548	96	15	318	75
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1205	78	31	341	16	28	577	101	16	335	79
RTOR Reduction (vph)	0	8	0	0	6	0	0	11	0	0	13	0
Lane Group Flow (vph)	104	1275	0	31	351	0	28	667	0	16	401	0
Turn Type	Perm		Perm		pm+pt		Perm					
Protected Phases	2		6		3		8		4			
Permitted Phases	2		6		8		4					
Actuated Green, G (s)	26.1	26.1		26.1	26.1		25.9	25.9		20.4	20.4	
Effective Green, g (s)	26.1	26.1		26.1	26.1		25.9	25.9		20.4	20.4	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.43	0.43		0.34	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	436	1526		124	1529		247	786		124	615	
v/s Ratio Prot	c0.36		0.10		0.00		c0.37		0.22			
v/s Ratio Perm	0.10		0.11		0.05		0.04					
v/c Ratio	0.24	0.84		0.25	0.23		0.11	0.85		0.13	0.65	
Uniform Delay, d1	10.7	15.0		10.7	10.6		11.0	15.3		13.7	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	5.6		4.8	0.4		0.2	8.5		0.5	2.5	
Delay (s)	12.0	20.6		15.5	11.0		11.3	23.8		14.1	19.3	
Level of Service	B		C		B		B		C			
Approach Delay (s)	20.0		11.4		23.3		19.1					
Approach LOS	B		B		C		B					
<b>Intersection Summary</b>												
HCM Average Control Delay	19.5		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.84											
Actuated Cycle Length (s)	60.0		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	82.0%		ICU Level of Service		E							
Analysis Period (min)	15											
c Critical Lane Group												

Queues

5: American Parkway & N. Irving Street

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↶↷	↶	↶↷	↶	↷	↶	↷
Volume (vph)	99	1145	29	324	27	548	15	318
Lane Group Flow (vph)	104	1283	31	357	28	678	16	414
Turn Type	Perm		Perm		pm+pt		Perm	
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	6	6	3	8	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	30.0	30.0	30.0	30.0	8.0	30.0	22.0	22.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	13.3%	50.0%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
v/c Ratio	0.23	0.80	0.24	0.22	0.11	0.90	0.11	0.63
Control Delay	12.4	19.4	16.8	10.4	11.6	27.9	17.1	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	19.4	16.8	10.4	11.6	27.9	17.1	21.6
Queue Length 50th (ft)	23	204	7	39	6	203	3	98
Queue Length 95th (ft)	52	#301	26	63	18	#395	18	#251
Internal Link Dist (ft)		298		896		1200		711
Turn Bay Length (ft)								
Base Capacity (vph)	454	1596	130	1596	244	800	148	659
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.80	0.24	0.22	0.11	0.85	0.11	0.63

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 57.7

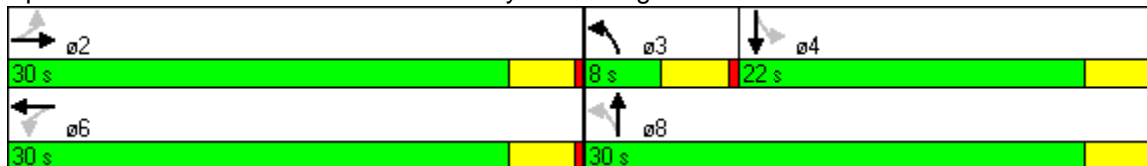
Natural Cycle: 60

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.


























Splits and Phases: 5: American Parkway & N. Irving Street



# HCM Signalized Intersection Capacity Analysis

## 6: American Parkway & Agere Driveway

12/22/2005

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3532		1770	3539	1583		1786	1583	1770	1863	1583	
Flt Permitted	0.25	1.00		0.25	1.00	1.00		0.92	1.00	0.75	1.00	1.00	
Satd. Flow (perm)	467	3532		469	3539	1583		1720	1583	1403	1863	1583	
Volume (vph)	14	344	5	43	402	115	6	1	52	1038	1	130	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	15	362	5	45	423	121	6	1	55	1093	1	137	
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	15	0	0	37	
Lane Group Flow (vph)	15	366	0	45	423	121	0	7	40	1093	1	100	
Turn Type	pm+pt			pm+pt		Free	Perm		Perm	Perm		Perm	
Protected Phases	5	2		1	6			8				4	
Permitted Phases	2			6		Free	8		8	4		4	
Actuated Green, G (s)	19.0	17.4		22.2	19.0	120.7		88.1	88.1	88.1	88.1	88.1	
Effective Green, g (s)	19.0	17.4		22.2	19.0	120.7		88.1	88.1	88.1	88.1	88.1	
Actuated g/C Ratio	0.16	0.14		0.18	0.16	1.00		0.73	0.73	0.73	0.73	0.73	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	91	509		121	557	1583		1255	1155	1024	1360	1155	
v/s Ratio Prot	0.00	0.10		c0.01	c0.12							0.00	
v/s Ratio Perm	0.02			0.06		c0.08		0.00	0.03	c0.78		0.06	
v/c Ratio	0.16	0.72		0.37	0.76	0.08		0.01	0.03	1.07	0.00	0.09	
Uniform Delay, d1	43.5	49.3		41.7	48.7	0.0		4.4	4.5	16.3	4.4	4.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	4.8		1.9	5.9	0.1		0.0	0.1	47.9	0.0	0.1	
Delay (s)	44.4	54.2		43.6	54.6	0.1		4.4	4.6	64.2	4.4	4.8	
Level of Service	D	D		D	D	A		A	A	E	A	A	
Approach Delay (s)		53.8			42.5			4.6			57.6		
Approach LOS		D			D			A			E		
<b>Intersection Summary</b>													
HCM Average Control Delay			51.6			HCM Level of Service				D			
HCM Volume to Capacity ratio			0.97										
Actuated Cycle Length (s)			120.7			Sum of lost time (s)				8.0			
Intersection Capacity Utilization			88.6%			ICU Level of Service				E			
Analysis Period (min)			15										
c Critical Lane Group													

Queues

6: American Parkway & Agere Driveway

12/22/2005



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗		↖	↗	↖	↗	↗
Volume (vph)	14	344	43	402	115	6	1	52	1038	1	130
Lane Group Flow (vph)	15	367	45	423	121	0	7	55	1093	1	137
Turn Type	pm+pt		pm+pt		Free	Perm		Perm	Perm		Perm
Protected Phases	5	2	1	6			8			4	
Permitted Phases	2		6		Free	8		8	4		4
Detector Phases	5	2	1	6		8	8	8	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	8.0	20.0	8.0	20.0	0.0	92.0	92.0	92.0	92.0	92.0	92.0
Total Split (%)	6.7%	16.7%	6.7%	16.7%	0.0%	76.7%	76.7%	76.7%	76.7%	76.7%	76.7%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes							
Recall Mode	None	None	None	None		Max	Max	Max	Max	Max	Max
v/c Ratio	0.13	0.78	0.36	0.74	0.08		0.01	0.05	1.04	0.00	0.11
Control Delay	42.4	61.2	48.6	56.5	0.1		4.3	1.2	58.0	4.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	61.2	48.6	56.5	0.1		4.3	1.2	58.0	4.0	0.9
Queue Length 50th (ft)	10	146	29	157	0		1	0	~933	0	0
Queue Length 95th (ft)	29	#212	63	#263	0		5	10	#1189	2	15
Internal Link Dist (ft)		811		239			406			333	
Turn Bay Length (ft)											
Base Capacity (vph)	115	479	124	573	1583		1281	1194	1046	1388	1214
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.13	0.77	0.36	0.74	0.08		0.01	0.05	1.04	0.00	0.11

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 118.2

Natural Cycle: 120

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: American Parkway & Agere Driveway

↖	↗	↖	↗
8 s	20 s	92 s	
↖	↗	↖	↗
8 s	20 s	92 s	

**APPENDIX B**  
**AGERE TRIP GENERATION**  
**CALCULATIONS**

# THE PIDCOCK COMPANY

Civil Engineers • Architects • Land Planners • Surveyors

2451 Parkwood Drive Allentown, Pennsylvania 18103-9608 610/791-2252 Fax 610/791-1256

SUBJECT: Trip Generation Calculations PROJECT NO: 05048A  
Agere Systems, Inc. CALCULATIONS BY: BMC DATE: February 08, 2006  
CHECKED BY: BEH DATE: \_\_\_\_\_  
SCALE: \_\_\_\_\_ SHEET 1 OF 1

## **Trip Generation Calculations for the Corporate Headquarters Building (ITE Land Use 714):**

### **Employees Equation:**

Assume 2,500 Employees

### **Trip Generation:**

$$X = 2,500$$

### **AM Peak Hour (Fitted Curve Equation):**

$$\text{LN}(T) = 0.89 \text{ LN}(X) - 0.02$$

$$T = 1036$$

Entering Traffic:

$$1036 (x) 93\% = 963$$

Exiting Traffic:

$$1036 (x) 7\% = 73$$

### **PM Peak Hour (Fitted Curve Equation):**

$$\text{LN}(T) = 0.80 \text{ LN}(X) + 0.43$$

$$T = 804$$

Entering Traffic:

$$804 (x) 11\% = 88$$

Exiting Traffic:

$$804 (x) 89\% = 716$$

APPENDIX C  
EVANSVILLE SITE DATA



Please Note that all information is based on 4 week/5 week/4 week fiscal calendar.

### Casino Aztar Evansville Motorcoach Activity

<u>Month</u>	<u># Buses</u>	<u>%</u>
January	166	6.3%
February	228	8.7%
March	211	8.1%
April	225	8.6%
May	264	10.1%
June	220	8.4%
July	208	8.0%
August	268	10.2%
September	200	7.6%
October	210	8.0%
November	282	10.8%
December	133	5.1%
<b>Total</b>	<b>2,615</b>	

#### Average Daily Distribution

<u>Day of Week</u>	<u>Day</u>	<u>Evening</u>	<u>Total</u>	<u>%</u>	<u>Day %</u>	<u>Evening %</u>
Monday	5	1	6	12.0%	83.3%	16.7%
Tuesday	3	1	4	8.0%	75.0%	25.0%
Wednesday	5	1	6	12.0%	83.3%	16.7%
Thursday	3	3	6	12.0%	50.0%	50.0%
Friday	2	7	9	18.0%	22.2%	77.8%
Saturday	9	4	13	26.0%	69.2%	30.8%
Sunday	4	2	6	12.0%	66.7%	33.3%
	<b>31</b>	<b>19</b>	<b>50</b>		<b>62.0%</b>	<b>38.0%</b>

### Casino Admission Activity

<u>Month</u>	<u>Patrons</u>	<u>%</u>
January	119,234	7.7%
February	165,466	10.7%
March	122,187	7.9%
April	115,402	7.4%
May	147,703	9.5%
June	118,619	7.6%
July	129,118	8.3%
August	152,923	9.9%
September	115,640	7.5%
October	113,544	7.3%
November	139,870	9.0%
December	112,431	7.2%
<b>Total</b>	<b>1,552,137</b>	

#### Average Daily Distribution

**Nu-Metrics Traffic Analyzer Study  
Computer Generated Summary Report**

**Street: Entrance to Aztar parking garage  
Location: Entrance to Aztar parking garage**

A study of vehicle traffic was conducted with HI-STAR unit number 1827. The study was done in the Entrance lane on Entrance to Aztar parking garage in In county. The study began on 09/13/2004 at 04:00 PM and concluded on 09/20/2004 at 01:00 PM, lasting a total of 165 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 15,227 vehicles passed through the location with a peak volume of 282 on 09/18/2004 at 06:00 PM and a minimum volume of 1 on 09/14/2004 at 03:00 AM. The AADT Count for this study was 2,215.

**SPEED**

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

**Chart 1**

0	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to	to	to	to	to	to	to	>
9	14	19	24	29	34	39	44	49	54	59	64	69	74	
0	11599	481	136	71	14	20	10	3	1	2	2	2	2	1

At least half of the vehicles were traveling in the 10 - 14 mph range or a lower speed. The average speed for all classified vehicles was 13 mph with 100 percent exceeding the posted speed of mph. The HI-STAR found 0.07 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 10 mph and the 85th percentile was 14.52 mph.

**CLASSIFICATION**

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

**Chart 2**

0	21	28	40	50	60	70	80
to	to	to	to	to	to	to	>
20	27	39	49	59	69	79	
11975	261	77	13	3	3	2	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 12,226 which represents 99.20 percent of the total classified vehicles. The number of Small Trucks in the study was 77 which represents 0.60 percent of the total classified vehicles. The number of Trucks/Buses in the study was 13 which represents 0.10 percent of the total classified vehicles. The number of Tractor Trailers in the study was 8 which represents 0.10 percent of the total classified vehicles.

**HEADWAY**

During the peak time period, on 09/18/2004 at 06:00 PM the average headway between the vehicles was 12.72 seconds. The slowest traffic period was on 09/14/2004 at 03:00 AM. During this slowest period, the average headway was 1800.0 seconds.

**WEATHER**

The roadway surface temperature over the period of the study varied between 68 and 81 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Sep-28-04 12:14P E.U.T.S.

812-436-7834

P.08

**Date/Time/Volume/Average Speed/Temperature Report**  
 Entrance to Aztar parking garage

Hi-Star ID: 1827	Begin: 09/13/2004 04:00 PM	End: 09/20/2004 01:00 PM
Street: Entrance to Aztar parking	Lane: Entrance	Hours: 165:00
State:	Oper:	Period: 60
City:	Posted:	Raw Count: 15227
County:	AA DT Factor: 1	AA DT Count: 2215

Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
-------------------	-------	-----------	------	---------

**09/13/2004**

[04:00 PM-05:00 PM]	112	13 mph	80 F	Dry
[05:00 PM-06:00 PM]	130	14 mph	80 F	Dry
[06:00 PM-07:00 PM]	138	13 mph	80 F	Dry
[07:00 PM-08:00 PM]	100	13 mph	80 F	Dry
[08:00 PM-09:00 PM]	73	13 mph	79 F	Dry
[09:00 PM-10:00 PM]	46	13 mph	78 F	Dry
[10:00 PM-11:00 PM]	56	13 mph	78 F	Dry
[11:00 PM-12:00 AM]	35	13 mph	78 F	Dry

**09/14/2004**

[12:00 AM-01:00 AM]	31	13 mph	78 F	Dry
[01:00 AM-02:00 AM]	17	12 mph	78 F	Dry
[02:00 AM-03:00 AM]	10	13 mph	78 F	Dry
[03:00 AM-04:00 AM]	1	0 mph	78 F	Dry
[04:00 AM-05:00 AM]	6	16 mph	77 F	Dry
[05:00 AM-06:00 AM]	9	12 mph	76 F	Dry
[06:00 AM-07:00 AM]	14	13 mph	76 F	Dry
[07:00 AM-08:00 AM]	57	13 mph	76 F	Dry
[08:00 AM-09:00 AM]	50	13 mph	76 F	Dry
[09:00 AM-10:00 AM]	70	13 mph	78 F	Dry
[10:00 AM-11:00 AM]	78	12 mph	78 F	Dry
[11:00 AM-12:00 PM]	91	13 mph	78 F	Dry
[12:00 PM-01:00 PM]	106	13 mph	78 F	Dry
[01:00 PM-02:00 PM]	99	13 mph	79 F	Dry
[02:00 PM-03:00 PM]	101	13 mph	80 F	Dry
[03:00 PM-04:00 PM]	102	13 mph	80 F	Dry
[04:00 PM-05:00 PM]	129	13 mph	80 F	Dry
[05:00 PM-06:00 PM]	160	13 mph	81 F	Dry
[06:00 PM-07:00 PM]	184	13 mph	81 F	Dry
[07:00 PM-08:00 PM]	93	13 mph	80 F	Dry
[08:00 PM-09:00 PM]	79	13 mph	80 F	Dry
[09:00 PM-10:00 PM]	54	13 mph	80 F	Dry
[10:00 PM-11:00 PM]	47	13 mph	78 F	Dry
[11:00 PM-12:00 AM]	44	13 mph	78 F	Dry

**09/15/2004**

[12:00 AM-01:00 AM]	23	12 mph	78 F	Dry
[01:00 AM-02:00 AM]	19	13 mph	78 F	Dry
[02:00 AM-03:00 AM]	7	12 mph	78 F	Dry
[03:00 AM-04:00 AM]	2	12 mph	78 F	Dry
[04:00 AM-05:00 AM]	4	12 mph	77 F	Dry
[05:00 AM-06:00 AM]	5	13 mph	77 F	Dry

**Date/Time/Volume/Average Speed/Temperature Report**

NC97					
Date & Time Range	Count	Avg Speed	Temp	Wet/Dry	
<b>09/15/2004</b>					
[06:00 AM-07:00 AM]	18	13 mph	76 F	Dry	
[07:00 AM-08:00 AM]	88	13 mph	76 F	Dry	
[08:00 AM-09:00 AM]	73	13 mph	77 F	Dry	
[09:00 AM-10:00 AM]	92	13 mph	78 F	Dry	
[10:00 AM-11:00 AM]	99	13 mph	78 F	Dry	
[11:00 AM-12:00 PM]	114	13 mph	78 F	Dry	
[12:00 PM-01:00 PM]	164	14 mph	80 F	Dry	
[01:00 PM-02:00 PM]	84	13 mph	80 F	Dry	
[02:00 PM-03:00 PM]	107	14 mph	80 F	Dry	
[03:00 PM-04:00 PM]	162	13 mph	81 F	Dry	
[04:00 PM-05:00 PM]	159	13 mph	81 F	Dry	
[05:00 PM-06:00 PM]	213	13 mph	81 F	Dry	
[06:00 PM-07:00 PM]	213	13 mph	81 F	Dry	
[07:00 PM-08:00 PM]	122	13 mph	81 F	Dry	
[08:00 PM-09:00 PM]	84	14 mph	80 F	Dry	
[09:00 PM-10:00 PM]	85	14 mph	80 F	Dry	
[10:00 PM-11:00 PM]	54	15 mph	80 F	Dry	
[11:00 PM-12:00 AM]	40	13 mph	80 F	Dry	
<b>08/16/2004</b>					
[12:00 AM-01:00 AM]	27	16 mph	80 F	Dry	
[01:00 AM-02:00 AM]	12	13 mph	79 F	Dry	
[02:00 AM-03:00 AM]	7	14 mph	78 F	Dry	
[03:00 AM-04:00 AM]	5	12 mph	78 F	Dry	
[04:00 AM-05:00 AM]	10	13 mph	78 F	Dry	
[05:00 AM-06:00 AM]	7	13 mph	78 F	Dry	
[06:00 AM-07:00 AM]	44	12 mph	78 F	Dry	
[07:00 AM-08:00 AM]	104	13 mph	78 F	Dry	
[08:00 AM-09:00 AM]	61	13 mph	78 F	Dry	
[09:00 AM-10:00 AM]	85	13 mph	78 F	Dry	
[10:00 AM-11:00 AM]	128	13 mph	78 F	Dry	
[11:00 AM-12:00 PM]	148	13 mph	79 F	Dry	
[12:00 PM-01:00 PM]	157	13 mph	80 F	Dry	
[01:00 PM-02:00 PM]	120	13 mph	80 F	Dry	
[02:00 PM-03:00 PM]	107	14 mph	80 F	Dry	
[03:00 PM-04:00 PM]	142	13 mph	81 F	Dry	
[04:00 PM-05:00 PM]	105	13 mph	81 F	Dry	
[05:00 PM-06:00 PM]	139	13 mph	81 F	Dry	
[06:00 PM-07:00 PM]	189	13 mph	80 F	Dry	
[07:00 PM-08:00 PM]	121	13 mph	80 F	Dry	
[08:00 PM-09:00 PM]	114	13 mph	80 F	Dry	
[09:00 PM-10:00 PM]	93	13 mph	80 F	Dry	
[10:00 PM-11:00 PM]	83	13 mph	78 F	Dry	
[11:00 PM-12:00 AM]	57	12 mph	78 F	Dry	
<b>09/17/2004</b>					
[12:00 AM-01:00 AM]	28	13 mph	78 F	Dry	
[01:00 AM-02:00 AM]	26	12 mph	77 F	Dry	
[02:00 AM-03:00 AM]	7	12 mph	78 F	Dry	

### Date/Time/Volume/Average Speed/Temperature Report

NC97					
Date & Time Range	Count	Avg Speed	Temp	Wet/Dry	
09/17/2004					
[03:00 AM-04:00 AM]	8	12 mph	76 F	Dry	
[04:00 AM-05:00 AM]	6	12 mph	76 F	Dry	
[05:00 AM-06:00 AM]	9	14 mph	75 F	Dry	
[06:00 AM-07:00 AM]	18	13 mph	73 F	Dry	
[07:00 AM-08:00 AM]	90	13 mph	73 F	Dry	
[08:00 AM-09:00 AM]	71	13 mph	73 F	Dry	
[09:00 AM-10:00 AM]	97	13 mph	74 F	Dry	
[10:00 AM-11:00 AM]	111	13 mph	76 F	Dry	
[11:00 AM-12:00 PM]	231	13 mph	76 F	Dry	
[12:00 PM-01:00 PM]	115	13 mph	76 F	Dry	
[01:00 PM-02:00 PM]	140	13 mph	76 F	Dry	
[02:00 PM-03:00 PM]	123	14 mph	78 F	Dry	
[03:00 PM-04:00 PM]	141	15 mph	78 F	Dry	
[04:00 PM-05:00 PM]	147	13 mph	78 F	Dry	
[05:00 PM-06:00 PM]	214	14 mph	78 F	Dry	
[06:00 PM-07:00 PM]	276	13 mph	78 F	Dry	
[07:00 PM-08:00 PM]	276	13 mph	77 F	Dry	
[08:00 PM-09:00 PM]	233	13 mph	76 F	Dry	
[09:00 PM-10:00 PM]	168	13 mph	76 F	Dry	
[10:00 PM-11:00 PM]	152	13 mph	76 F	Dry	
[11:00 PM-12:00 AM]	119	13 mph	76 F	Dry	
09/18/2004					
[12:00 AM-01:00 AM]	62	12 mph	76 F	Dry	
[01:00 AM-02:00 AM]	56	13 mph	74 F	Dry	
[02:00 AM-03:00 AM]	35	15 mph	73 F	Dry	
[03:00 AM-04:00 AM]	30	13 mph	72 F	Dry	
[04:00 AM-05:00 AM]	17	12 mph	72 F	Dry	
[05:00 AM-06:00 AM]	25	13 mph	71 F	Dry	
[06:00 AM-07:00 AM]	36	14 mph	70 F	Dry	
[07:00 AM-08:00 AM]	55	13 mph	70 F	Dry	
[08:00 AM-09:00 AM]	63	14 mph	70 F	Dry	
[09:00 AM-10:00 AM]	90	13 mph	72 F	Dry	
[10:00 AM-11:00 AM]	83	13 mph	72 F	Dry	
[11:00 AM-12:00 PM]	118	13 mph	74 F	Dry	
[12:00 PM-01:00 PM]	141	13 mph	75 F	Dry	
[01:00 PM-02:00 PM]	163	15 mph	76 F	Dry	
[02:00 PM-03:00 PM]	146	14 mph	76 F	Dry	
[03:00 PM-04:00 PM]	139	14 mph	76 F	Dry	
[04:00 PM-05:00 PM]	190	13 mph	76 F	Dry	
[05:00 PM-06:00 PM]	253	14 mph	77 F	Dry	
[06:00 PM-07:00 PM]	262	13 mph	77 F	Dry	
[07:00 PM-08:00 PM]	230	13 mph	77 F	Dry	
[08:00 PM-09:00 PM]	209	14 mph	76 F	Dry	
[09:00 PM-10:00 PM]	184	13 mph	76 F	Dry	
[10:00 PM-11:00 PM]	181	15 mph	76 F	Dry	
[11:00 PM-12:00 AM]	114	13 mph	76 F	Dry	
09/19/2004					

**Date/Time/Volume/Average Speed/Temperature Report**

NC97					
Date & Time Range	Count	Avg Speed	Temp	Wet/Dry	
[12:00 AM-01:00 AM]	74	12 mph	78 F	Dry	
[01:00 AM-02:00 AM]	47	14 mph	74 F	Dry	
[02:00 AM-03:00 AM]	38	17 mph	74 F	Dry	
[03:00 AM-04:00 AM]	44	13 mph	72 F	Dry	
[04:00 AM-05:00 AM]	8	14 mph	72 F	Dry	
[05:00 AM-06:00 AM]	26	12 mph	71 F	Dry	
[06:00 AM-07:00 AM]	27	13 mph	70 F	Dry	
[07:00 AM-08:00 AM]	65	13 mph	70 F	Dry	
[08:00 AM-09:00 AM]	60	12 mph	70 F	Dry	
[09:00 AM-10:00 AM]	105	13 mph	70 F	Dry	
[10:00 AM-11:00 AM]	193	13 mph	72 F	Dry	
[11:00 AM-12:00 PM]	198	13 mph	73 F	Dry	
[12:00 PM-01:00 PM]	212	13 mph	75 F	Dry	
[01:00 PM-02:00 PM]	185	13 mph	76 F	Dry	
[02:00 PM-03:00 PM]	196	13 mph	76 F	Dry	
[03:00 PM-04:00 PM]	183	14 mph	76 F	Dry	
[04:00 PM-05:00 PM]	166	13 mph	76 F	Dry	
[05:00 PM-06:00 PM]	129	13 mph	76 F	Dry	
[06:00 PM-07:00 PM]	153	13 mph	76 F	Dry	
[07:00 PM-08:00 PM]	117	13 mph	76 F	Dry	
[08:00 PM-09:00 PM]	94	14 mph	76 F	Dry	
[09:00 PM-10:00 PM]	74	12 mph	76 F	Dry	
[10:00 PM-11:00 PM]	61	13 mph	74 F	Dry	
[11:00 PM-12:00 AM]	44	12 mph	74 F	Dry	
<b>09/20/2004</b>					
[12:00 AM-01:00 AM]	37	13 mph	72 F	Dry	
[01:00 AM-02:00 AM]	12	12 mph	72 F	Dry	
[02:00 AM-03:00 AM]	7	13 mph	72 F	Dry	
[03:00 AM-04:00 AM]	3	12 mph	70 F	Dry	
[04:00 AM-05:00 AM]	3	13 mph	69 F	Dry	
[05:00 AM-06:00 AM]	9	12 mph	68 F	Dry	
[06:00 AM-07:00 AM]	11	13 mph	68 F	Dry	
[07:00 AM-08:00 AM]	58	13 mph	68 F	Dry	
[08:00 AM-09:00 AM]	55	13 mph	70 F	Dry	
[09:00 AM-10:00 AM]	94	13 mph	70 F	Dry	
[10:00 AM-11:00 AM]	103	13 mph	70 F	Dry	
[11:00 AM-12:00 PM]	113	13 mph	72 F	Dry	
[12:00 PM-01:00 PM]	107	14 mph	73 F	Dry	

Evansville Site				
	AM Peak		PM Peak	
Weekday	Entering	Exiting	Entering	Exiting
Tuesday	57	10	129	91
Wednesday	68	7	159	114
Thursday	104	7	105	148
Average	76	8	131	118

Aztar Site Traffic Volumes				
	AM Peak		PM Peak	
Weekday	Entering	Exiting	Entering	Exiting
Average	76	8	131	118
New Totals	159	17	273	245

Evansville Site Visitors	1,552,137
Aztar Corporation Visitors	<u>3,235,941</u>
	208%













**APPENDIX D**  
**2011 BUILD CAPACITY**  
**ANALYSIS WORKSHEETS**



# HCM Signalized Intersection Capacity Analysis

## 1: Catasauqua Road & Airport Road

2/10/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔↔		↗		↑↑↑	↗	↔↔	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		0.97		1.00		0.91	1.00	0.97	0.95	
Frt		1.00		1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539		3433		1583		4940	1583	3433	3438	
Flt Permitted		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539		3433		1583		4940	1583	3433	3438	
Volume (vph)	0	416	0	398	0	568	0	2022	411	615	1148	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	438	0	419	0	598	0	2128	433	647	1208	0
RTOR Reduction (vph)	0	0	0	0	0	172	0	0	5	0	0	0
Lane Group Flow (vph)	0	438	0	419	0	426	0	2128	429	647	1208	0
Heavy Vehicles (%)	0%	2%	0%	2%	0%	2%	0%	5%	2%	2%	5%	0%
Turn Type				Prot		custom			pm+ov		Prot	
Protected Phases		4		8		1 8		2	8		1	6
Permitted Phases									2			
Actuated Green, G (s)		16.0		16.0		42.0		50.0	66.0	22.0	76.0	
Effective Green, g (s)		16.0		16.0		42.0		50.0	66.0	22.0	76.0	
Actuated g/C Ratio		0.13		0.13		0.35		0.42	0.55	0.18	0.63	
Clearance Time (s)		4.0		4.0				4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0		3.0				3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		472		458		554		2058	871	629	2177	
v/s Ratio Prot		c0.12		c0.12		0.27		c0.43	0.07	c0.19	0.35	
v/s Ratio Perm									0.21			
v/c Ratio		0.93		0.91		0.77		1.03	0.49	1.03	0.55	
Uniform Delay, d1		51.4		51.3		34.7		35.0	16.7	49.0	12.4	
Progression Factor		1.00		1.00		1.00		0.64	1.14	1.00	1.00	
Incremental Delay, d2		24.4		22.7		6.3		17.4	0.0	43.4	1.0	
Delay (s)		75.9		74.0		41.0		39.8	19.1	92.4	13.5	
Level of Service		E		E		D		D	B	F	B	
Approach Delay (s)		75.9				54.6		36.3			41.0	
Approach LOS		E				D		D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			43.9				HCM Level of Service			D		
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			92.8%				ICU Level of Service		F			
Analysis Period (min)			15									

c Critical Lane Group

Queues

1: Catasauqua Road & Airport Road

2/10/2006



Lane Group	EBT	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑	↘↘	↗	↑↑↑	↗	↘↘	↑↑
Volume (vph)	416	398	568	2022	411	615	1148
Lane Group Flow (vph)	438	419	598	2128	433	647	1208
Turn Type		Prot custom			pm+ov	Prot	
Protected Phases	4	8	1 8	2	8	1	6
Permitted Phases					2		
Detector Phases	4	8	1 8	2	8	1	6
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	46.0	54.0	20.0	26.0	80.0
Total Split (%)	16.7%	16.7%	38.3%	45.0%	16.7%	21.7%	66.7%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5
Lead/Lag				Lag		Lead	
Lead-Lag Optimize?							
Recall Mode	None	None		C-Max	None	None	C-Max
v/c Ratio	0.93	0.91	0.82	1.03	0.49	1.03	0.55
Control Delay	78.6	77.0	30.2	41.0	9.8	91.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	77.0	30.2	41.0	9.8	91.5	13.7
Queue Length 50th (ft)	178	167	250	~657	159	~276	258
Queue Length 95th (ft)	#278	#260	#435	m534	m146	#393	315
Internal Link Dist (ft)	132			368			575
Turn Bay Length (ft)							
Base Capacity (vph)	472	458	726	2058	875	629	2177
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.91	0.82	1.03	0.49	1.03	0.55

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 111 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.























m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Catasauqua Road & Airport Road



HCM Signalized Intersection Capacity Analysis  
 2: Off Track Betting & Airport Road

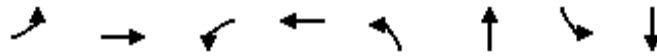
2/10/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.85		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1615		1770	1618		1805	3435		1770	3426	
Flt Permitted	0.54	1.00		0.74	1.00		0.13	1.00		0.05	1.00	
Satd. Flow (perm)	1006	1615		1384	1618		241	3435		88	3426	
Volume (vph)	99	0	21	23	1	106	27	2358	20	140	1538	56
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	0	22	24	1	112	28	2482	21	147	1619	59
RTOR Reduction (vph)	0	20	0	0	69	0	0	0	0	0	2	0
Lane Group Flow (vph)	104	2	0	24	44	0	28	2503	0	147	1676	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm			pm+pt			Perm			pm+pt		
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.0	13.0		19.4	19.4		80.2	80.2		92.6	92.6	
Effective Green, g (s)	13.0	13.0		19.4	19.4		80.2	80.2		92.6	92.6	
Actuated g/C Ratio	0.11	0.11		0.16	0.16		0.67	0.67		0.77	0.77	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	109	175		231	262		161	2296		186	2644	
v/s Ratio Prot		0.00		0.00	c0.03			c0.73		c0.06	0.49	
v/s Ratio Perm	c0.10			0.01			0.12			0.55		
v/c Ratio	0.95	0.01		0.10	0.17		0.17	1.09		0.79	0.63	
Uniform Delay, d1	53.2	47.8		42.9	43.4		7.5	19.9		41.7	6.1	
Progression Factor	1.00	1.00		1.00	1.00		0.41	0.37		1.27	0.64	
Incremental Delay, d2	71.1	0.0		0.2	0.3		0.6	42.6		18.2	1.0	
Delay (s)	124.3	47.8		43.1	43.7		3.6	50.0		71.0	4.9	
Level of Service	F	D		D	D		A	D		E	A	
Approach Delay (s)		110.9			43.6			49.5			10.3	
Approach LOS		F			D			D			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			35.5			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			95.7%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2: Off Track Betting & Airport Road

2/10/2006



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	99	0	23	1	27	2358	140	1538
Lane Group Flow (vph)	104	22	24	113	28	2503	147	1678
Turn Type	Perm		pm+pt		Perm		pm+pt	
Protected Phases		4	3	8		2	1	6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	3	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	17.0	17.0	8.0	25.0	85.0	85.0	10.0	95.0
Total Split (%)	14.2%	14.2%	6.7%	20.8%	70.8%	70.8%	8.3%	79.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lead	Lag		Lag	Lag	Lead	
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.95	0.08	0.10	0.36	0.18	1.07	0.79	0.62
Control Delay	126.0	0.6	43.0	17.6	3.9	43.9	57.3	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.0	0.6	43.0	17.6	3.9	43.9	57.3	4.8
Queue Length 50th (ft)	81	0	16	20	3	~1128	74	180
Queue Length 95th (ft)	#195	0	41	74	m3n#1104	m#177	m200	
Internal Link Dist (ft)		643		761		1306		323
Turn Bay Length (ft)								
Base Capacity (vph)	110	263	237	351	156	2343	186	2692
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.08	0.10	0.32	0.18	1.07	0.79	0.62

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 61 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Off Track Betting & Airport Road

  10 s   85 s	  17 s   8 s
 95 s	 25 s

# HCM Signalized Intersection Capacity Analysis

## 3: Lloyd Street & Airport Road

2/10/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.99			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1811	1615	1805	3424		1770	3437	
Flt Permitted		0.53			0.79	1.00	0.11	1.00		0.05	1.00	
Satd. Flow (perm)		975			1471	1615	204	3424		87	3437	
Volume (vph)	170	19	14	101	44	54	9	2200	76	24	1594	5
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	20	15	106	46	57	9	2316	80	25	1678	5
RTOR Reduction (vph)	0	2	0	0	0	46	0	2	0	0	0	0
Lane Group Flow (vph)	0	212	0	0	152	11	9	2394	0	25	1683	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%	0%	5%	2%	2%	5%	0%
Turn Type	Perm			Perm		Perm	Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		24.0			24.0	24.0	81.6	81.6		88.0	88.0	
Effective Green, g (s)		24.0			24.0	24.0	81.6	81.6		88.0	88.0	
Actuated g/C Ratio		0.20			0.20	0.20	0.68	0.68		0.73	0.73	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		195			294	323	139	2328		97	2520	
v/s Ratio Prot								c0.70		0.01	c0.49	
v/s Ratio Perm		c0.22			0.10	0.01	0.04			0.18		
v/c Ratio		1.09			0.52	0.04	0.06	1.03		0.26	0.67	
Uniform Delay, d1		48.0			42.8	38.7	6.4	19.2		58.4	8.4	
Progression Factor		1.00			1.00	1.00	1.14	0.95		1.44	1.46	
Incremental Delay, d2		89.0			1.5	0.0	0.5	21.5		1.1	1.2	
Delay (s)		137.0			44.4	38.7	7.8	39.6		85.1	13.4	
Level of Service		F			D	D	A	D		F	B	
Approach Delay (s)		137.0			42.8			39.5			14.4	
Approach LOS		F			D			D			B	

### Intersection Summary

HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues

3: Lloyd Street & Airport Road

2/10/2006



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕↕	↕	↕↕
Volume (vph)	170	19	101	44	54	9	2200	24	1594
Lane Group Flow (vph)	0	214	0	152	57	9	2396	25	1683
Turn Type	Perm		Perm		Perm	Perm		pm+pt	
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phases	4	4	8	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	8.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	84.0	84.0	8.0	92.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	70.0%	70.0%	6.7%	76.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
v/c Ratio		1.08		0.52	0.15	0.06	1.01	0.21	0.67
Control Delay		132.2		50.0	11.3	9.0	34.1	9.4	13.7
Queue Delay		0.0		0.0	0.0	0.0	0.6	0.0	0.0
Total Delay		132.2		50.0	11.3	9.0	34.7	9.4	13.7
Queue Length 50th (ft)		~184		106	0	2	~1078	7	384
Queue Length 95th (ft)		#343		177	36	m3	#1185	m11	434
Internal Link Dist (ft)		386		375			884		227
Turn Bay Length (ft)									
Base Capacity (vph)		198		294	369	145	2376	121	2522
Starvation Cap Reductn		0		0	0	0	5	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		1.08		0.52	0.15	0.06	1.01	0.21	0.67

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

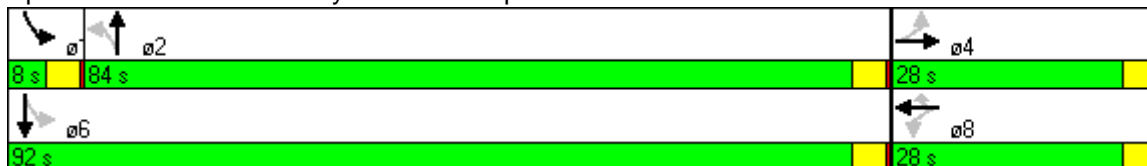
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.































m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Lloyd Street & Airport Road



HCM Signalized Intersection Capacity Analysis  
 4: American Parkway & Airport Road

2/10/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 	 		 	 	 		 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3432		1770	3438	1583
Flt Permitted	0.95	1.00	1.00	0.74	1.00	1.00	0.09	1.00		0.08	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1385	1863	1583	165	3432		142	3438	1583
Volume (vph)	981	20	94	20	20	20	32	1279	20	20	1134	561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1033	21	99	21	21	21	34	1346	21	21	1194	591
RTOR Reduction (vph)	0	0	56	0	0	20	0	1	0	0	0	0
Lane Group Flow (vph)	1033	21	43	21	21	1	34	1366	0	21	1194	591
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Turn Type	Prot		Perm	Perm		Perm	pm+pt			pm+pt		Free
Protected Phases	7	4				8		5	2		1	6
Permitted Phases			4	8		8	2			6		Free
Actuated Green, G (s)	41.8	51.9	51.9	6.1	6.1	6.1	57.9	54.4		54.3	52.6	120.0
Effective Green, g (s)	41.8	51.9	51.9	6.1	6.1	6.1	57.9	54.4		54.3	52.6	120.0
Actuated g/C Ratio	0.35	0.43	0.43	0.05	0.05	0.05	0.48	0.45		0.45	0.44	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1196	806	685	70	95	80	126	1556		87	1507	1583
v/s Ratio Prot	c0.30	0.01				0.01		0.01	c0.40		0.00	0.35
v/s Ratio Perm			0.03	0.02		0.00	0.12			0.11		c0.37
v/c Ratio	0.86	0.03	0.06	0.30	0.22	0.01	0.27	0.88		0.24	0.79	0.37
Uniform Delay, d1	36.4	19.5	19.9	54.9	54.7	54.1	21.6	29.8		24.4	29.0	0.0
Progression Factor	1.06	0.81	1.32	1.00	1.00	1.00	1.00	1.00		0.82	0.96	1.00
Incremental Delay, d2	5.8	0.0	0.0	2.4	1.2	0.1	1.2	7.3		1.1	3.3	0.5
Delay (s)	44.3	15.9	26.3	57.3	55.8	54.2	22.7	37.1		21.1	31.2	0.5
Level of Service	D	B	C	E	E	D	C	D		C	C	A
Approach Delay (s)		42.2			55.8			36.8			21.1	
Approach LOS		D			E			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			32.0	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				4.0				
Intersection Capacity Utilization			77.3%	ICU Level of Service				D				
Analysis Period (min)			15									

c Critical Lane Group

Queues

4: American Parkway & Airport Road

2/10/2006



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↕↔	↖	↕↕	↖
Volume (vph)	981	20	94	20	20	20	32	1279	20	1134	561
Lane Group Flow (vph)	1033	21	99	21	21	21	34	1367	21	1194	591
Turn Type	Prot		Perm	Perm		Perm	pm+pt		pm+pt		Free
Protected Phases	7	4			8		5	2	1	6	
Permitted Phases			4	8		8	2		6		Free
Detector Phases	7	4	4	8	8	8	5	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	8.0	8.0	8.0	20.0	8.0	20.0	
Total Split (s)	46.0	59.0	59.0	13.0	13.0	13.0	9.0	53.0	8.0	52.0	0.0
Total Split (%)	38.3%	49.2%	49.2%	10.8%	10.8%	10.8%	7.5%	44.2%	6.7%	43.3%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	
v/c Ratio	0.86	0.03	0.14	0.25	0.19	0.18	0.22	0.83	0.15	0.76	0.37
Control Delay	46.0	15.0	5.2	57.8	55.4	22.6	19.9	34.1	15.2	30.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	46.0	15.0	5.2	57.8	55.4	22.6	19.9	34.7	15.2	30.8	0.5
Queue Length 50th (ft)	333	10	15	16	16	0	13	457	7	502	0
Queue Length 95th (ft)	477	m16	37	43	42	26	32	#704	m10	m583	m0
Internal Link Dist (ft)		896			1316			786		884	
Turn Bay Length (ft)											
Base Capacity (vph)	1202	854	779	104	140	138	154	1648	144	1577	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	80	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.02	0.13	0.20	0.15	0.15	0.22	0.87	0.15	0.76	0.37

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 72 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

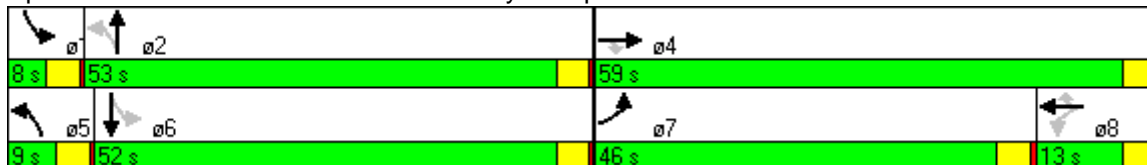
Control Type: Actuated-Coordinated

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.























Splits and Phases: 4: American Parkway & Airport Road





HCM Signalized Intersection Capacity Analysis  
 5: American Parkway & N. Irving Street

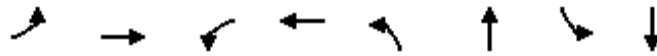
2/10/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3525		1770	1785		1770	1817	
Flt Permitted	0.39	1.00		0.18	1.00		0.21	1.00		0.55	1.00	
Satd. Flow (perm)	735	3513		333	3525		386	1785		1016	1817	
Volume (vph)	70	970	51	29	549	15	25	248	96	15	318	62
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1021	54	31	578	16	26	261	101	16	335	65
RTOR Reduction (vph)	0	6	0	0	3	0	0	22	0	0	12	0
Lane Group Flow (vph)	74	1069	0	31	591	0	26	340	0	16	388	0
Turn Type	Perm		Perm		pm+pt		Perm					
Protected Phases	2		6		3		8				4	
Permitted Phases	2		6		8		4					
Actuated Green, G (s)	29.9	29.9		29.9	29.9		22.1	22.1		16.5	16.5	
Effective Green, g (s)	29.9	29.9		29.9	29.9		22.1	22.1		16.5	16.5	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.37	0.37		0.28	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	366	1751		166	1757		179	657		279	500	
v/s Ratio Prot	c0.30				0.17		0.00		c0.19		c0.21	
v/s Ratio Perm	0.10		0.09		0.05		0.05		0.02			
v/c Ratio	0.20	0.61		0.19	0.34		0.15	0.52		0.06	0.78	
Uniform Delay, d1	8.4	10.9		8.3	9.1		13.5	14.8		16.0	20.0	
Progression Factor	0.75	0.87		1.07	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	1.3		2.4	0.5		0.4	0.7		0.1	7.4	
Delay (s)	7.3	10.7		11.2	9.6		13.8	15.5		16.1	27.4	
Level of Service	A	B		B	A		B	B		B	C	
Approach Delay (s)	10.4		9.7		15.4		27.0					
Approach LOS	B		A		B		C					
<b>Intersection Summary</b>												
HCM Average Control Delay	13.7		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	60.0		Sum of lost time (s)		12.0							
Intersection Capacity Utilization	62.5%		ICU Level of Service		B							
Analysis Period (min)	15											
c Critical Lane Group												

Queues

5: American Parkway & N. Irving Street

2/10/2006



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↶↷	↶	↶↷	↶	↷	↶	↷
Volume (vph)	70	970	29	549	25	248	15	318
Lane Group Flow (vph)	74	1075	31	594	26	362	16	400
Turn Type	Perm		Perm		pm+pt		Perm	
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	6	6	3	8	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	28.0	8.0	32.0	24.0	24.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	13.3%	53.3%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.20	0.57	0.18	0.31	0.10	0.59	0.06	0.78
Control Delay	8.6	10.3	14.2	9.5	11.1	15.3	14.5	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.3	14.2	9.5	11.1	15.3	14.5	24.0
Queue Length 50th (ft)	15	167	6	55	7	104	4	126
Queue Length 95th (ft)	m33	247	27	134	16	130	15	199
Internal Link Dist (ft)		298		896		1200		711
Turn Bay Length (ft)								
Base Capacity (vph)	366	1898	168	1902	252	852	338	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.57	0.18	0.31	0.10	0.42	0.05	0.65

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

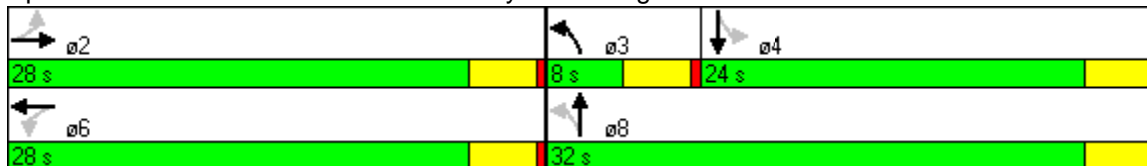
Offset: 26 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated























m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: American Parkway & N. Irving Street



HCM Signalized Intersection Capacity Analysis  
6: American Parkway & Agere Driveway

2/10/2006

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3518		1770	3539	1583		1791	1583	1770	1863	1583	
Flt Permitted	0.58	1.00		0.48	1.00	1.00		0.92	1.00	0.75	1.00	1.00	
Satd. Flow (perm)	1076	3518		887	3539	1583		1709	1583	1405	1863	1583	
Volume (vph)	96	293	12	222	270	770	4	1	41	58	1	7	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	101	308	13	234	284	811	4	1	43	61	1	7	
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	29	0	0	5	
Lane Group Flow (vph)	101	316	0	234	284	811	0	5	14	61	1	2	
Turn Type	pm+pt			pm+pt		Free	Perm		Perm	Perm		Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases	2			6		Free	8		8	4		4	
Actuated Green, G (s)	25.8	19.9		32.2	23.1	60.0		19.0	19.0	19.0	19.0	19.0	
Effective Green, g (s)	25.8	19.9		32.2	23.1	60.0		19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio	0.43	0.33		0.54	0.38	1.00		0.32	0.32	0.32	0.32	0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	531	1167		610	1363	1583		541	501	445	590	501	
v/s Ratio Prot	0.02	0.09		0.06	0.08						0.00		
v/s Ratio Perm	0.06			0.15		c0.51		0.00	0.01	0.04		0.00	
v/c Ratio	0.19	0.27		0.38	0.21	0.51		0.01	0.03	0.14	0.00	0.00	
Uniform Delay, d1	10.3	14.7		7.5	12.3	0.0		14.0	14.1	14.6	14.0	14.0	
Progression Factor	1.00	1.00		0.90	0.94	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.6		0.2	0.0	0.5		0.0	0.1	0.6	0.0	0.0	
Delay (s)	10.5	15.3		7.0	11.7	0.5		14.1	14.2	15.3	14.0	14.0	
Level of Service	B	B		A	B	A		B	B	B	B	B	
Approach Delay (s)		14.2			4.0			14.2			15.1		
Approach LOS		B			A			B			B		
<b>Intersection Summary</b>													
HCM Average Control Delay			7.0									HCM Level of Service	A
HCM Volume to Capacity ratio			0.51										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	0.0
Intersection Capacity Utilization			40.7%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Queues

6: American Parkway & Agere Driveway

2/10/2006



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖↗	↖		↖	↖	↖	↖	↖
Volume (vph)	96	293	222	270	770	4	1	41	58	1	7
Lane Group Flow (vph)	101	321	234	284	811	0	5	43	61	1	7
Turn Type	pm+pt		pm+pt		Free	Perm		Perm	Perm		Perm
Protected Phases	5	2	1	6			8			4	
Permitted Phases	2		6		Free	8		8	4		4
Detector Phases	5	2	1	6		8	8	8	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	21.0	16.0	25.0	0.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	20.0%	35.0%	26.7%	41.7%	0.0%	38.3%	38.3%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lag							
Lead-Lag Optimize?											
Recall Mode	None	C-Max	None	None		Max	Max	Max	Max	Max	Max
v/c Ratio	0.18	0.27	0.41	0.20	0.51		0.01	0.08	0.14	0.00	0.01
Control Delay	7.7	15.7	7.2	12.1	0.8		14.2	5.9	15.7	14.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	15.7	7.2	12.1	0.8		14.2	5.9	15.7	14.0	9.1
Queue Length 50th (ft)	16	43	36	46	0		1	0	15	0	0
Queue Length 95th (ft)	34	73	m61	m48	m0		7	18	39	3	7
Internal Link Dist (ft)		811		239			406			333	
Turn Bay Length (ft)											
Base Capacity (vph)	592	1170	640	1412	1583		542	531	445	590	506
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.17	0.27	0.37	0.20	0.51		0.01	0.08	0.14	0.00	0.01

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

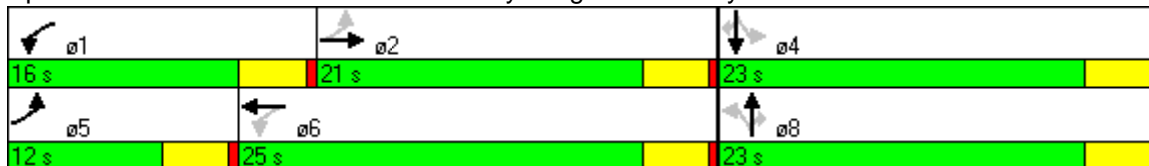
Offset: 7 (12%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

























m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: American Parkway & Agere Driveway



HCM Signalized Intersection Capacity Analysis  
6: American Parkway & Agere Driveway

2/10/2006

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3519		1770	3539	1583		1770	1583	1770	1863	1583	
Flt Permitted	0.51	1.00		0.28	1.00	1.00		0.76	1.00	0.75	1.00	1.00	
Satd. Flow (perm)	941	3519		528	3539	1583		1410	1583	1394	1863	1583	
Volume (vph)	9	344	13	308	402	70	13	0	290	573	1	72	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	9	362	14	324	423	74	14	0	305	603	1	76	
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	140	0	0	35	
Lane Group Flow (vph)	9	374	0	324	423	74	0	14	165	603	1	41	
Turn Type	pm+pt			pm+pt			Free	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6				8			4	
Permitted Phases	2			6		Free	8		8	4		4	
Actuated Green, G (s)	22.9	22.1		47.0	42.2	120.0		65.0	65.0	65.0	65.0	65.0	
Effective Green, g (s)	22.9	22.1		47.0	42.2	120.0		65.0	65.0	65.0	65.0	65.0	
Actuated g/C Ratio	0.19	0.18		0.39	0.35	1.00		0.54	0.54	0.54	0.54	0.54	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	185	648		423	1245	1583		764	857	755	1009	857	
v/s Ratio Prot	0.00	0.11		c0.13	0.12							0.00	
v/s Ratio Perm	0.01			c0.17		0.05		0.01	0.10	c0.43			0.03
v/c Ratio	0.05	0.58		0.77	0.34	0.05		0.02	0.19	0.80	0.00		0.05
Uniform Delay, d1	39.5	44.7		28.1	28.6	0.0		12.7	14.1	22.2	12.6		12.9
Progression Factor	1.00	1.00		0.99	0.94	1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.1	3.7		7.9	0.2	0.1		0.0	0.5	8.6	0.0		0.1
Delay (s)	39.6	48.4		35.7	27.2	0.1		12.8	14.6	30.8	12.6		13.0
Level of Service	D	D		D	C	A		B	B	C	B		B
Approach Delay (s)		48.2			28.1			14.5			28.8		
Approach LOS		D			C			B			C		
<b>Intersection Summary</b>													
HCM Average Control Delay			29.9				HCM Level of Service			C			
HCM Volume to Capacity ratio			0.78										
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			8.0			
Intersection Capacity Utilization			75.4%				ICU Level of Service			D			
Analysis Period (min)			15										
c Critical Lane Group													

Queues

6: American Parkway & Agere Driveway

2/10/2006



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗		↖	↗	↖	↗	↗
Volume (vph)	9	344	308	402	70	13	0	290	573	1	72
Lane Group Flow (vph)	9	376	324	423	74	0	14	305	603	1	76
Turn Type	pm+pt		pm+pt		Free	Perm		Perm	Perm		Perm
Protected Phases	5	2	1	6			8			4	
Permitted Phases	2		6		Free	8		8	4		4
Detector Phases	5	2	1	6		8	8	8	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	8.0	22.0	29.0	43.0	0.0	69.0	69.0	69.0	69.0	69.0	69.0
Total Split (%)	6.7%	18.3%	24.2%	35.8%	0.0%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lag							
Lead-Lag Optimize?											
Recall Mode	None	C-Max	None	None		Max	Max	Max	Max	Max	Max
v/c Ratio	0.04	0.58	0.81	0.32	0.05		0.02	0.31	0.80	0.00	0.09
Control Delay	25.1	49.1	37.5	26.1	0.1		12.9	2.3	32.0	13.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	49.1	37.5	26.1	0.1		12.9	2.3	32.0	13.0	3.1
Queue Length 50th (ft)	4	143	200	108	0		5	0	362	0	0
Queue Length 95th (ft)	15	201	224	145	m0		15	41	541	3	23
Internal Link Dist (ft)		811		239			406			333	
Turn Bay Length (ft)											
Base Capacity (vph)	232	651	446	1339	1583		764	997	755	1009	892
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.58	0.73	0.32	0.05		0.02	0.31	0.80	0.00	0.09

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

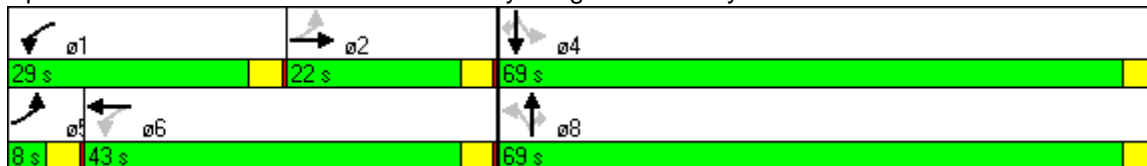
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: American Parkway & Agere Driveway



*Re*  
**Discover**  
*the city*  
**Allentown**

**DONALD S. LICHTY**  
**Chief Utility Engineer**  
Bureau of Water Resources  
610.437.7681 Fax 610.437.8790  
lichty@allentowncity.org

December 5, 2005

Mr. Steve Henning, P.E., Manager, Environmental Div.  
The Pidcock Company  
2451 Parkwood Drive  
Allentown, PA 18103-9608

**RE: PROPOSED AGERE PROPERTY DEVELOPMENT  
HOTEL/CASINO COMPLEX**

Dear Mr. Henning:

Please be advised that the City is willing and able to provide water and sanitary sewer service for the above.

Very truly yours,

*Donald S. Lichty*

Donald S. Lichty, P.E.  
Chief Utility Engineer

DSL:mdr

xc: Richard Rasch, Utility Engineer



# EXHIBIT "M"



March 3, 2006

Mr. Thomas Decker, Chairman  
Pennsylvania Gaming Control Board  
5<sup>th</sup> Floor Verizon Towers  
Strawberry Square  
303 Walnut Street  
Harrisburg, PA 17106-9060

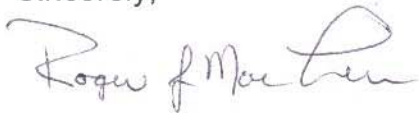
Dear Mr. Decker:

The Allentown Police Department currently serves a population of approximately 106,000 residents. We are an agency that is accredited by the Pennsylvania Chiefs of Police Association as well as a recognized agency by The Commission on Accreditation of Law Enforcement Agencies.

The City of Allentown hosts numerous events including Mayfair, Sportsfest, Drum and Bugle Corps competitions and The Great Allentown Fair, to name a few. These events bring large numbers of people into our city. In all of these instances the Allentown Police Department has had the ability to adequately handle the additional calls for service generated by such events.

Although I would expect incidents to be few, I have no doubt that the Allentown Police Department will be able to respond to any incidents that may arise with the placement of the casino in Allentown.

Sincerely,



Roger J. MacLean  
Chief of Police

RJM/sar

xc: Anne LaCour Need, Executive Director  
Pennsylvania Gaming Control Board



A Pennsylvania State-Accredited Law Enforcement Agency  
Public Safety Building • 425 Hamilton Street • Allentown, PA 18101-1603

An Equal Opportunity Employer • Hearing Impaired - TTY 610.437.7551 • Printed on Recycled Paper



# EXHIBIT "N"

# Allentown

March 3, 2006

Mr. Thomas Decker, Chairman  
Office of the Clerk  
Pennsylvania Gaming Control Board  
5<sup>th</sup> Floor Verizon Towers-Strawberry Square  
303 Walnut Street  
Harrisburg PA 17106

Dear Mr. Decker:

On behalf of the City of Allentown Fire Department, I would like to state that building the Tropicana Casino in Allentown would certainly be a benefit to both you and the City.

The City has a paid fire department with round-the-clock professional service available to all citizens and businesses within the city and surrounding communities, including the Lehigh Valley International Airport.

Our fire department consists of six (6) fire stations strategically located throughout the city to provide emergency service to any location within minutes of receiving an emergency response call. Two stations are located within a 3-minute response time to the proposed casino location.

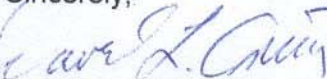
As a high-rise response, the fire department would automatically dispatch three (3) engines, two (2) truck companies, and a battalion chief, with total manpower of 12, to your location. If a second alarm is needed, two (2) additional units would be dispatched, with five (5) personnel. With a third alarm, two (2) additional units, along with eight (8) personnel, would respond. In addition, should an incident require further assistance, our fire department has a working mutual aid agreement with surrounding municipality fire departments.

Our firefighting staff is highly trained in all aspects of fire suppression, rescue, and emergency medical service enabling us to provide assistance to our full-time paramedic service.

Locating the Tropicana Casino in our city would also benefit our fire department. The additional revenue generated by this business would assist us in our long-range plan to increase our staffing levels, update our aging fleet of apparatus, and update the information technology in our department.

The Allentown Fire Department would certainly welcome you to our city and provide you the utmost in professional fire service.

Sincerely,



DAVID L. ONCAY  
Deputy Fire Chief

Xc: Anne Lacour Need, Executive Director, Pennsylvania Gaming Control Board



City Hall • 435 Hamilton Street • Allentown, PA 18101-1699

An Equal Opportunity Employer • Hearing Impaired - TTY 610.437.7551 • Printed on Recycled Paper



The Honorable Edward Pawlowski  
 Mayor, City of Allentown  
 435 Hamilton Street  
 Allentown PA 18101

Dear Mayor Pawlowski:

On behalf of Tropicana Pennsylvania, LLC, the developer of the Lehigh Valley Tropicana in Allentown, I extend our appreciation for the opportunity to review our proposed casino, hotel, and entertainment facility. We believe that the project presents significant economic development benefits to Allentown, the Lehigh Valley, and the Commonwealth of Pennsylvania.

The new Pennsylvania gaming statute, Act 71, directs significant funds to host municipalities. Those mandated benefits, incorporated as part of a 54% state tax structure, leave little flexibility for operators to enter into local agreements in excess of the statutory guarantees. However, you have presented us with a thoughtful list of community enhancements that will strengthen our commitment to the Allentown community. My management has authorized me to extend our commitment to provide additional benefits that are consistent with our discussions with you and your staff.

Our commitment to fulfill each of the following is conditioned upon the final and unappealable issuance of a Category 2 gaming license and all necessary building permits from the City and other governing agencies.

#### **Public Safety Enhancements**

Lehigh Valley Tropicana will voluntarily contribute a one-time payment of \$1,250,000 to the City of Allentown. It is our understanding that these funds will be used toward the construction and development of a City Police substation in Allentown's East Side neighborhood; the acquisition of an emergency service vehicle; and purchase of a ladder truck for use by the Allentown Fire Department. This payment will be made when the structure of the facility is substantially complete.

#### **Problem Gambling Social Services Funding**

Act 71 addresses operator responsibilities with respect to problem gamblers. The State Department of Health will administer funds from the Compulsive and Problem Gambling

LEHIGH VALLEY TROPICANA

THE SOVEREIGN BUILDING · 609 HAMILTON MALL · ALLENTOWN, PA 18101  
 TEL (610) 740-1005, EXT: 405 · FAX (610) 433-3090

Mayor Edward Pawlowski

Page 2

March 3, 2006

Treatment Fund to distribute to eligible county organizations. We respect your concern that Allentown social service agencies be equipped to address potential compulsive or problem gambling problems as soon as our facility is operational. Lehigh Valley Tropicana will voluntarily contribute a total of \$500,000 to qualified Allentown social service agencies specializing in treatment of addicted behaviors. The payments will be spread over five (5) years as recommended by the City and grants will be awarded to agencies identified by the City.

### **Employer Assisted Home Ownership Program**

Lehigh Valley Tropicana will include an employer-provided benefit that assists its employees to become home owners. We will administer a fund totaling \$250,000 in support of this program. The specific details of the program will be determined in collaboration with our employees. We anticipate that the program benefit will be initially offered during our second year of operation. We also expect to offer the program in phases, staggered over multiple years to meet employee demand. Our program will focus on these most common barriers to homeownership:

- Affordability.
- Cash at closing.
- Financial literacy.
- Navigating the home purchasing and home ownership process.

### **Building Trades Council Commitment**

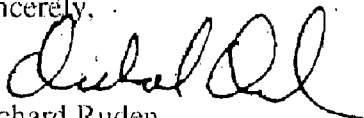
I have attached a copy of a letter that we executed with William Newhard, the Vice President of the Lehigh, Northampton, Pike, and Monroe Counties Building and Construction Trades Council.

### **UNITEHERE Commitment**

I have attached a copy of a letter that I sent to Chris Magoulas, Deputy Director, Gaming for UNITEHERE.

We are encouraged by the overwhelming expression of support for our project offered by Allentown community groups, businesses development interests, and local elected officials. We look forward to working with you and those groups in promoting our project to the Pennsylvania Gaming Control Board.

Sincerely,



Richard Ruden

Tropicana Pennsylvania, LLC

**Appendix "P"**

**POTENTIAL ECONOMIC IMPACTS OF THE  
LEHIGH VALLEY TROPICANA,  
A PROPOSED CASINO ENTERTAINMENT FACILITY IN  
THE CITY OF ALLENTOWN**

**Supplemental  
Report Submitted to:**

Aztar Corporation  
Suite 400  
2390 East Camelback Road  
Phoenix, AZ 85016

**Submitted by:**

Econsult Corporation  
6<sup>th</sup> Floor  
3600 Market Street  
Philadelphia, PA 19104

March 2006

## EXECUTIVE SUMMARY

**Tropicana Pennsylvania LLC (“Tropicana”)**, a subsidiary of Aztar Corporation, has submitted an application to obtain one of the five Category 2 gaming licenses for the purpose of developing a casino entertainment facility (d/b/a “Lehigh Valley Tropicana”) on land that it has acquired in the City of Allentown. The Tropicana proposal contemplates a two-stage development, phased in such a fashion that the start of the second phase will commence upon the full ramp up of operations of the first phase, estimated at this time to be five (5) years after the initial facility opens for business.

If awarded a license, this proposed facility would have a tremendous beneficial effect on one of Pennsylvania’s poorest and most fiscally struggling cities. Allentown has lower household median income and significantly higher rates of poverty and unemployment than the State of Pennsylvania. More alarming, large areas (measured by Census tracts) of Allentown have rates that are much higher, indicating economic distress. As a local economic development initiative, it would be difficult to identify a location with greater upside potential.

Using standard econometric models, Econsult Corporation has estimated significant potential regional (Lehigh & Northampton Counties) and statewide economic impacts<sup>1</sup> of both phases of Tropicana’s proposed casino entertainment facility. These potential impacts are the sum of the direct spending by the casino entertainment facility and the additional spending its expenditures generate by suppliers (called indirect spending) and by employees (called induced spending). These impacts are anticipated to be in the form of increased spending, employment and earnings, and tax revenues generated by the new construction, the ongoing operations and the ancillary spending outside of the facility by visitors<sup>2</sup>.

Potential impacts are also likely to include qualitative benefits that could accrue to the city, region and state if the application is accepted and the project is implemented. The City of Allentown stands to benefit significantly, as its citizens would see increased employment and business opportunities and the City would find significant new revenue sources. These estimated impacts are summarized by project phase, below:

---

<sup>1</sup> Since the region is defined as two Pennsylvania counties, all of the regional impacts are included in the state impacts.

<sup>2</sup> Much of this potential ancillary spending is from an expected increase in tourists, which can be a significant benefit to the city and region.

## PHASE 1 IMPACTS

### Economic Output/Spending Impacts

- *One-time construction spending*

Our estimates of the direct expenditures associated with the construction costs are based on project information provided by Tropicana. Of the anticipated \$325 million overall development cost, we expect \$144 million will be spent on construction directly in the region and \$196 million directly in the state during the construction period. Based on the calculated construction expenditure multipliers of 1.88 and 2.42 respectively, the potential total economic spending impact generated by these construction expenditures could be greater than \$270 million for the region, and nearly \$475 million statewide.

- *Ongoing, annual steady state (full operations) spending on operations*

We estimate the annual direct spending associated with the ongoing operations of the facility would be \$82 million at start-up growing to \$95 million by full operations for the region and \$92 million to \$108 million for the state. The total annual regional economic impact generated by these expenditures would grow from \$157 million at start up to \$181 million at the steady state. The annual impact for the state would grow from \$214 million to nearly \$250 million per year.

- *Visitors and ancillary spending by visitors*

Based on visitor estimates and details provided by Tropicana, we estimate that the region would potentially experience over 120,000 overnight visitors by the steady state year, generating almost 25,000 non-Tropicana room nights for other hotels. After excluding the visitors anticipated to come from the two counties, we estimate 2.4 million daytripper visitors. Combined, we estimate non-Tropicana (ancillary) direct spending to grow from \$17 million to over \$28 million by the steady state year. This spending could generate from \$30 million growing to \$49 million of new regional spending and from \$37 million to \$61 million of economic impact to the state economy.

### Employment and Earnings Impacts

The potential employment impacts are also significant, not only for both phases of the construction period, but also annually to support ongoing operations of the facility and the ancillary spending by visitors. Employment impacts include direct employment on construction and for operating the facility, while indirect and induced spending generates additional jobs. Employment and earnings impacts may be the most important benefit to the quality of life for city and regional residents. For the region, the construction phase could generate nearly 2,000 direct and indirect jobs and over



\$79 million in earnings to workers. The statewide employment impact for construction would be much larger: nearly 4,500 jobs and over \$150 million in earnings.

Ongoing operations and ancillary spending by the steady state year could annually generate nearly 3,000 regional jobs, with over \$102 million in wages and earnings, and nearly 4,300 jobs and nearly \$130 million in earnings statewide. These estimates include the 1,300 permanent full time jobs expected to be created at the facility.

### **Fiscal (tax) Impacts**

In addition to the economic benefits described above, we estimate significant tax and revenue impacts for the City, the School District, as well as the County and the State. For each of the development phases, we use the data provided by Tropicana to estimate the direct fiscal impact (taxes generated by the direct expenditures and earnings). We then use the input-output model to estimate potential additional taxes associated with the indirect and induced spending and earnings.

The primary local tax impacts will be property taxes (municipal, county and school district), Allentown's 1% earned income tax (EIT), the 4% LVCVB Hotel tax, and the 4% casino revenue host fee, split 2% (or \$10 million, whichever is greater) to Allentown and 2% to the County. We estimate Allentown City and School District could receive over \$0.4 million (combined) in EIT revenues associated with the construction project, and that by the steady state year local taxes and revenues could exceed \$20 million, annually.

Importantly, City officials have given preliminary indication that no significant additional municipal operating expenditures would result for various departments when the casino entertainment facility is up and running. To the extent there may be some marginal, unforeseen increases in future municipal costs, the total city revenue benefits should far exceed them for any given year.

During the construction period we estimate state taxes of over \$10 million, in addition to the \$50 million license fee, and by the steady state year we forecast annual state taxes to be in excess of \$170 million, including the non-local portion of Act 71 taxes imposed by the state, which are estimated to be over \$160 million by the steady state year.<sup>3</sup>

---

<sup>3</sup> The state gaming tax revenues include 34% to the State Gaming Fund, 12% to the PA Race Horse Development Fund, and 5% to the PA Gaming Economic Development and Tourism Fund.

## **PHASE 2 IMPACTS**

Phase 2 contemplates not only an expansion of the gaming facility and operations to accommodate more slot machines, but also a 250-room addition to the hotel. These expansions would generate increases in all of the impacts noted before, and the expanded impacts are summarized below:

### **Economic Output/Spending Impacts**

- *One-time construction spending*

Of the anticipated \$200 million overall development cost, we expect \$114 million will be spent directly on construction in the region and \$155 million directly in the state during the construction period. Based on the calculated construction expenditure multipliers of 1.84 and 2.42 respectively, the potential total economic spending impact generated by these construction expenditures could be nearly \$210 million for the region, and over \$375 million statewide.

- *Ongoing, annual steady state spending on operations*

We estimate the annual direct spending associated with the ongoing operations of the expanded facility would be \$121 million for the region and \$ 137 million for the state. The total annual regional economic impact generated by these expenditures would be \$230 million and the \$317 million for the state.

- *Visitors and ancillary spending by visitors*

Based on visitor estimates and details provided by Tropicana, we estimate that the region would potentially experience nearly 157,000 overnight visitors once the expansion is in place, generating almost 19,000 non-Tropicana room nights for other hotels. Combined, we estimate non-Tropicana (ancillary) direct spending to be \$45 million per year. This spending could generate over \$78 million of new regional spending and \$97 million of economic impact to the state economy.

### **Employment and Earnings Impacts**

The potential employment impacts associated with Phase 2 are also significant. For the region, the Phase 2 construction could generate over 1,500 direct and indirect jobs and over \$62 million in earnings to workers. Annual ongoing operations and ancillary spending combined could generate nearly 4,000 regional jobs, including the 1,750 persons expected to be directly employed at the facility (a Phase 2 increase of 450 permanent full time jobs).

Once again, the state would see even larger employment gains: Over 3,500 jobs generated by the construction activities, and over 5,700 jobs created statewide by ongoing operations and ancillary spending combined

### **Fiscal (tax) Impacts**

Estimates of state and local fiscal impacts would likewise be proportionally higher than for the first phase steady state.

We estimate Allentown City and School District could receive \$0.3 million combined in EIT revenues associated with the Phase 2 construction project, and that the expanded operations and ancillary spending would generate in excess of \$23 million annually to the City, School District and County. Since the facility's impact on city expenditures is expected to be *de minimus*, these revenues are likely to directly improve the financial conditions of the City and the School District.

During the Phase 2 construction period we estimate state taxes of nearly \$9 million, and we forecast annual state taxes generated by ongoing operations and ancillary spending activity to be nearly \$210 million, including the non-local portion of the Act 71 casino taxes imposed by the state, which are estimated to be over \$196 million.

## **QUALITATIVE IMPACTS - GENERATED BY BOTH PHASES**

In addition to significant economic and fiscal impacts generated by the operations of the casino entertainment facility, important spin-off benefits to the city, the region and the state are likely. For instance, there will be an opportunity to capitalize on a planned minor league ballpark to be built on an adjacent parcel, as well as the potential positive impact on downtown Allentown generated by additional visitors. Cultural, historical and other entertainment and activities could all be impacted positively. In addition to quantitative economic impacts, the proposed Tropicana project could generate several important unique qualitative benefits for the city and region<sup>4</sup>. While these are all valuable, it is difficult to place a dollar estimate on their values, since they are not directly exchanged in the marketplace.

Such benefits could include:

- Revitalization of an older central city with new uses
- Opportunity to regain tax base growth for the city and county
- Reuse of a large, formerly industrial site
- Opportunity to increase business in the nearby downtown core
- Expanded employment opportunities for residents in higher unemployment rate areas
- Expanded entertainment opportunities for residents
- Opportunity for LVCVB to package and market to increase overall regional tourism
- Opportunity for additional airport passenger traffic

---

<sup>4</sup> We look at unique benefits associated with this particular proposal. For example, all proposed projects would generate funds for school district property tax rate reductions via a statewide formula, and every project location would enjoy the 4% host fee revenues.

### SUMMARY OF POTENTIAL REGIONAL ECONOMIC IMPACTS

Description	PHASE 1					PHASE 2		
	Construction One-Time	Operating Startup Year 1	Ancillary Startup Year 1	Operating Steady State Year 5	Ancillary Steady State Year 5	Construction Phase 2	Operating Phase 2	Ancillary Phase 2
Regional Direct Expenditures	\$143.8	\$81.9	\$17.1	\$94.9	\$28.3	\$113.9	\$120.7	\$44.9
Regional Indirect & Induced Expenditures	\$126.5	\$75.0	\$12.7	\$86.1	\$20.9	\$95.5	\$109.6	\$33.2
<b>Regional Total Output</b>	<b>\$270.3</b>	<b>\$156.9</b>	<b>\$29.8</b>	<b>\$181.0</b>	<b>\$49.2</b>	<b>\$209.4</b>	<b>\$230.3</b>	<b>\$78.1</b>
Regional Multiplier	1.88	1.92	1.74	1.91	1.74	1.84	1.91	1.74
Total Regional Earnings	\$79.0	\$77.0	\$8.7	\$87.4	\$14.6	\$62.5	\$111.5	\$22.8
Total Regional Employment	1,962	2,090	389	2,342	656	1,554	2,972	1,034

### SUMMARY OF POTENTIAL STATE ECONOMIC IMPACTS

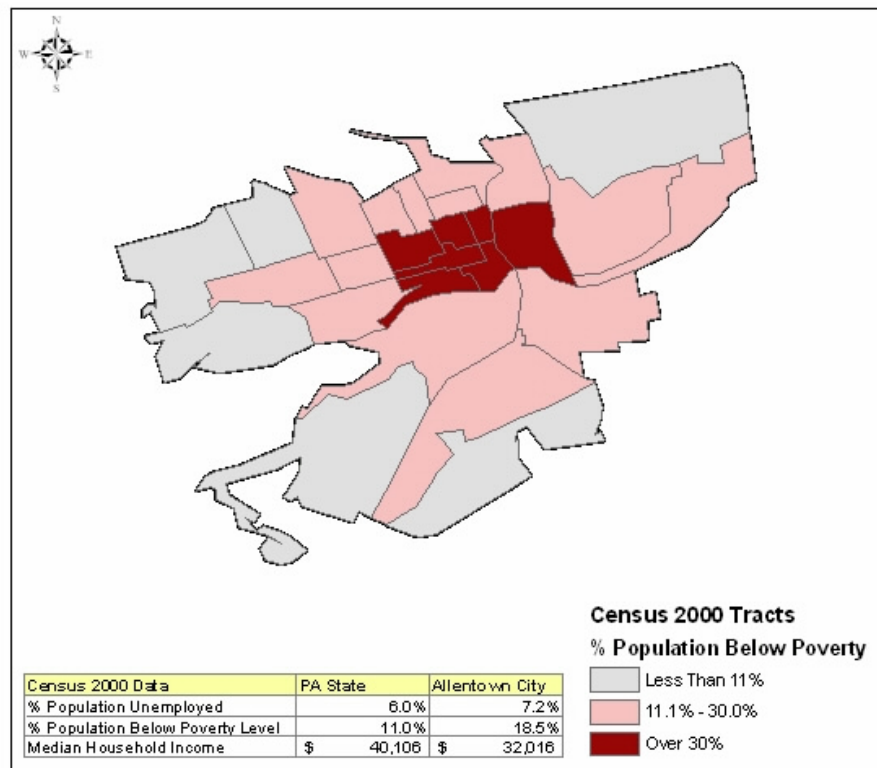
Description	PHASE 1					PHASE 2		
	Construction One-Time	Operating Startup Year 1	Ancillary Startup Year 1	Operating Steady State Year 5	Ancillary Steady State Year 5	Construction Phase 2	Operating Phase 2	Ancillary Phase 2
State Direct Expenditures	\$196.2	\$92.2	\$17.1	\$107.5	\$28.3	\$155.1	\$136.8	\$44.9
State Indirect & Induced Expenditures	\$278.3	\$122.2	\$19.7	\$141.6	\$32.8	\$220.4	\$180.2	\$52.1
<b>State Total Output</b>	<b>\$474.5</b>	<b>\$214.4</b>	<b>\$36.8</b>	<b>\$249.1</b>	<b>\$61.1</b>	<b>\$375.5</b>	<b>\$317.0</b>	<b>\$97.0</b>
State Multiplier	2.42	2.33	2.15	2.32	2.16	2.42	2.32	2.16
Total State Earnings	\$152.5	\$96.1	\$11.1	\$110.1	\$18.5	\$120.6	\$140.4	\$29.3
Total State Employment	4,463	2,970	540	3,369	906	3,532	4,277	1,445

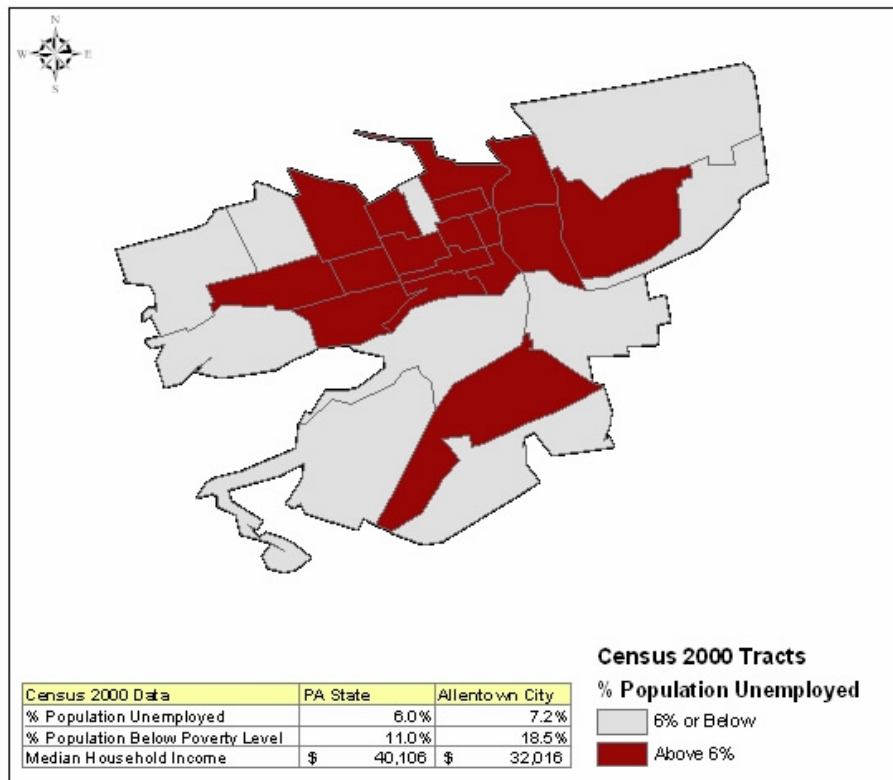
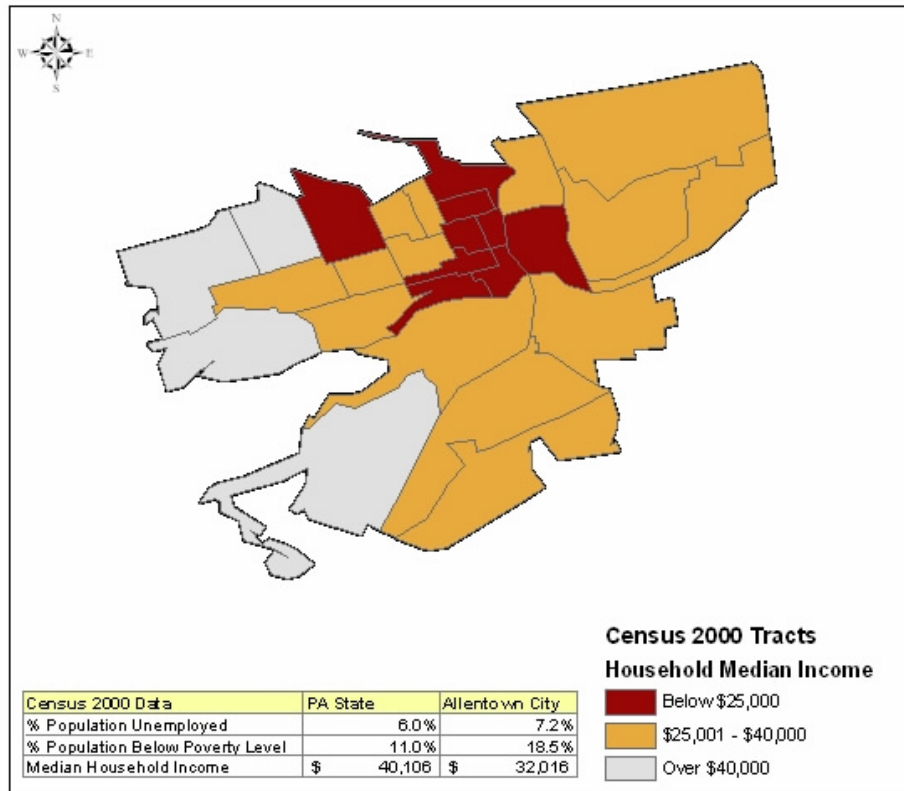
## 1.0 INTRODUCTION

The Pennsylvania Race Horse Development and Gaming Act provides for two slot machine parlor licenses (called Category 2 licenses) in areas outside of the Cities of Philadelphia and Pittsburgh at locations other than horse racetracks. Tropicana Pennsylvania LLC (“Tropicana”), a subsidiary of Aztar Corporation, has submitted an application to obtain one of the five Category 2 gaming licenses for the purpose of developing a casino entertainment facility (d/b/a “Lehigh Valley Tropicana”) on land that it has acquired in the City of Allentown. The Tropicana proposal contemplates a two-stage development, phased in such a fashion that the start of the second phase will commence upon the full ramp up of operations of the first phase, estimated at this time to be five (5) years after the initial facility opens for business.

### A Significant Economic Development Opportunity

If awarded a license, this proposed facility would have a tremendous beneficial effect on one of Pennsylvania’s poorest and most fiscally struggling cities. As illustrated below, Allentown has lower household median income and significantly higher rates of poverty and unemployment than the State of Pennsylvania. More alarming, large areas (measured by Census tracts) of Allentown have rates that are much higher, indicating economic distress. In the maps below, colored portions indicate census tracts where the conditions are worse than the state averages. As a local economic development initiative, it would be difficult to identify a location with greater upside potential.





## Types of Impacts

This report analyzes and estimates the potential regional and statewide economic impacts of both phases of Tropicana's proposed casino entertainment facility.<sup>5</sup> These impacts are anticipated to be in the form of increased spending, employment and earnings, and tax revenues generated by the new construction, the ongoing operations and the ancillary spending outside of the facility by visitors.<sup>6</sup>

We also identify and examine a set of potential qualitative benefits that could accrue to the city, region and state if this proposal is a success and the project is implemented.

Section 2 deals with the potential impacts associated with Phase 1 of the project, while Section 3 deals with Phase 2 impacts.

### Economic (Spending) Impacts

First, we estimate the potential economic impacts of the proposed Allentown casino entertainment facility in terms of the first of three measures of economic activity: total sales or output (total economic activity). Our estimates of the economic impacts are based on **direct** spending on (1) construction (a one-time impact) and (2) annual operations of the casino/hotel combined with "ancillary" spending by visitors outside of the casino (ongoing annual impacts). Operating expenditures will include casino/hotel spending on payroll, food and other supplies, advertising, and other services. Ancillary spending includes spending outside of the casino on transportation, meals and refreshments, souvenirs, retail, lodging (exclusive of the Tropicana hotel), or other entertainment.

These **direct** expenditures created by the casino/hotel will generate additional economic activity by way of **indirect** and **induced** expenditures. **Indirect** expenditures are those expenditures resulting from all intermediate rounds of goods and services produced by various firms that are stimulated by the direct expenditures (construction, operations, and ancillary). For example, the casino/hotel might purchase linen services from a supplier who would in turn purchase linens, detergent, delivery vehicles, etc., from other businesses. Since some of these items are produced in the region, the casino/hotel's expenditures for linen services will generate additional rounds of expenditure in the region and state. **Induced** expenditures are those that are generated through the spending of households' incomes (salaries and wages) earned as part of the direct and indirect expenditures. For example, employees of a construction firm will spend their earnings on various items (housing, food, clothing), and since some of these items are produced in the region, the construction period expenditures will generate additional rounds of expenditures in the region.

---

<sup>5</sup> For purposes of this report, "local" means the City of Allentown, the "region" refers to Lehigh and Northampton counties, and the "state" is the entire state of Pennsylvania. All of the regional impacts are included in the state impacts.

<sup>6</sup> In addition to significant economic and fiscal impacts generated by the operations of the casino entertainment facility, important spin-off benefits to the city, the region and the state are likely. For instance, there will be an opportunity to capitalize on a planned minor league ballpark to be built on an adjacent parcel, as well as the potential positive impact on downtown Allentown generated by additional visitors. Cultural, historical and other entertainment and activities could all be impacted positively.



Together, the direct, indirect, and induced expenditures sum to the **total** economic activity or output generated by the casinos/hotel. The construction expenditures and the associated indirect and induced expenditures will have a one-time impact, while the operating and ancillary expenditures and their associated indirect and induced expenditures will have ongoing, annual economic impacts.

### **Employment Impacts**

Second, we estimate the potential economic impacts of the proposed Allentown casino/hotel in terms of the two additional measures of economic activity: total earnings (wages and salaries), and total employment. These are based on estimates (provided by Tropicana) of the direct employment anticipated for the construction and the ongoing operations of the facility. Using an input-output model, we then calculate the earnings and employment generated by the indirect and induced spending.<sup>7</sup>

### **Fiscal Impacts**

In addition to the economic variables described above, we estimate the tax, or fiscal, impacts for the City, (and County and School District) and the state. For each of the development Phases, we use the data provided by Tropicana to estimate the direct fiscal impact (taxes generated by the direct expenditures and earnings). We then use the input-output model to estimate potential taxes associated with the indirect and induced spending and earnings.

### **Qualitative Impacts**

In addition to quantitative economic impacts, the proposed Tropicana project could generate several important unique qualitative benefits for the city and region<sup>8</sup>. While these are all valuable, it is difficult to place a dollar estimate on their values, since they are not directly exchanged in the marketplace. Such benefits could include:

- Revitalization of an older central city with new uses
- Opportunity to regain tax base growth for the city and county
- Reuse of a large, formerly industrial site
- Opportunity to increase business in the nearby downtown core
- Expanded employment opportunities for residents in higher unemployment rate areas
- Expanded entertainment opportunities for residents
- Opportunity for LVCVB to package and market to increase overall regional tourism
- Opportunity for additional airport passenger traffic

---

<sup>7</sup> As noted in Section 2.2, we have used U.S. Department of Commerce's Regional Input-Output Modeling System II (RIMS II) models for the region and state. The model is described in detail in an Appendix to this report. For regional and state employment estimates, TOTAL employment impacts include direct employment estimates.

<sup>8</sup> We look at unique benefits associated with this particular proposal. For example, all proposed projects would generate funds for school district property tax rate reductions via a statewide formula, and every project location would enjoy the 4% host fee revenues.

## 2.0 POTENTIAL IMPACTS OF THE PROPOSED CASINO ENTERTAINMENT FACILITY: PHASE 1

### 2.1 TYPES OF DIRECT EXPENDITURES

Our objective is to estimate the potential economic impacts that could be generated by the construction and subsequent ongoing operation of the first phase of the proposed casino/hotel. The first step in forecasting these potential impacts is to estimate the **direct expenditures** associated with the three primary economic activities associated with the proposed project:

- One-time construction spending
- Ongoing, annual steady state spending on operations<sup>9</sup>
- Ongoing, annual ancillary spending of visitors outside of the casino/hotel

We focus on **direct expenditures** that are anticipated to be spent inside the region or inside the state. We examine and report on each in turn.

#### 2.1.1 CONSTRUCTION EXPENDITURES (ONE-TIME)

Our estimates of the direct expenditures associated with the one-time construction costs are based on information provided by Tropicana. These data were used to develop overall project cost estimates. Working with Tropicana officials, we then estimated what the proportion of those construction and other expenditures would likely be (1) in the region and (2) in the state. Since the former is fully contained in the latter, the state percentages will always be as high or higher than the regional percentages. These estimates serve as the “direct expenditures” used to generate the impacts calculated by the input-output model for the construction period.

Three important items are excluded from the input-output analysis. Land acquisition is not included in the impact model because it represents the transfer of an asset rather than the economic spending associated with actual production of goods or services in the region or state. Similarly, capitalized interest and other financing costs are not necessarily earned in the region or state, and are therefore not included in the model. Finally, the \$50 million Category 2 state license fee is excluded from the model, since it is included in the state revenues. It is important to note that since this fee is the same for all Category 2 licenses, there is no advantage or disadvantage to any one applicant relative to another for this category.

---

<sup>9</sup> We include both 1<sup>st</sup> year “start up” expenditures and the full or “steady state” level of expenditures associated with full operations, anticipated to be year 5. One significant advantage of this particular proposal is its readiness to begin and speed at which it will be up and running. The start-up year expenditures are expected to be almost 90% of those of the steady-state year. We also provide start-up and steady-state estimates for ancillary spending.

The basic cost assumptions and estimates are detailed in Table 2.1.1 below, with shaded expenditure categories representing items excluded from the expenditure analyses.

**Table 2.1.1**  
**One-Time Construction Development DIRECT Expenditures**  
**(\$ millions)**

Expenditure Description	Phase 1 Total	% Region	% State	Total, Region	Total, State	Industry Code	Industry Description
Construction Costs	\$140.0	75%	100%	\$105.0	\$140.0	7	Construction
Architectural, Engineering, Interior Design (5% of Construction)	\$7.0	50%	75%	\$3.5	\$5.2	7	Construction
Permits and Fees (2% of Construction)	\$2.8	100%	100%	\$2.8	\$2.8	7	Construction
Gaming Equipment - Machines (includes bases)	\$56.5	5%	10%	\$2.8	\$5.7	27	Wholesale Trade
Non Casino Signage	\$2.5	50%	100%	\$1.3	\$2.5	47	Professional, scientific, and technical services
Systems (Surveillance, Accounting, Telephone, MIS, Paging, etc)	\$7.0	50%	50%	\$3.5	\$3.5	47	Professional, scientific, and technical services
Other Operating Equipment and Supplies (Uniforms, Transportation, Facilities)	\$5.0	50%	100%	\$2.5	\$5.0	48	Management of companies and enterprises
Legal Fees, Insurance, Taxes, Project Management Fees	\$5.0	50%	100%	\$2.5	\$5.0	47	Professional, scientific, and technical services
Category 2 License Fee	\$50.0	0%	0%				
Land Costs	\$10.8	0%	0%				
Capitalized Interest	\$11.9	0%	0%				
Project Contingency	\$26.5	75%	100%	\$19.9	\$26.5	7	Construction
<b>Total Expenditures</b>	<b>\$325.0</b>			<b>\$143.8</b>	<b>\$196.2</b>		

### 2.1.2 CASINO/HOTEL OPERATIONAL SPENDING (ONGOING)

We have also relied on pro forma estimates delivered by Tropicana of direct spending for operations of the casino, the hotel and the restaurants. Again working with Tropicana, we estimated the proportion of this direct spending most likely to occur in the region and in the state, to form the basis for our direct expenditures utilized in the model. We include separate calculations for the startup year and the steady state year.

**Table 2.1.2  
Startup (Year 1) Operating DIRECT Expenditures  
(\$ millions)**

Expenditure Description	Phase 1 Total	% Region	% PA	Total, Region	Total, PA	Industry Code	Industry Description
Salaries, wages benefits	\$45.5	100%	100%	\$45.5	\$45.5	60	Households
Cost of goods sold	\$18.1	70%	95%	\$12.7	\$17.2	27	Wholesale Trade
Marketing/ advertising	\$16.2	70%	95%	\$11.4	\$15.4	47	Professional, services
Utilities	\$3.3	100%	100%	\$3.3	\$3.3	6	Utilities
Repairs/ Maintenance	\$3.3	80%	95%	\$2.5	\$3.1	48	Management of enterprises
All Other	\$8.1	80%	95%	\$6.5	\$7.7	59	Other Services
<b>Total Expenditures</b>	<b>\$94.5</b>			<b>\$81.9</b>	<b>\$92.2</b>		

**Table 2.1.3  
Steady State (Year 5) Operating DIRECT Expenditures  
(\$ millions)**

Expenditure Description	Phase 1 Total	% Region	% PA	Total, Region	Total, PA	Industry Code	Industry Description
Salaries, wages benefits	\$50.2	100%	100%	\$50.2	\$50.2	60	Households
Supplies	\$21.6	70%	95%	\$15.1	\$20.5	27	Wholesale Trade
Marketing/ advertising	\$20.2	70%	95%	\$14.1	\$19.2	47	Professional services
Utilities	\$3.7	100%	100%	\$3.7	\$3.7	6	Utilities
Repairs/ Maintenance	\$5.2	80%	95%	\$4.2	\$5.0	48	Management of enterprises
All Other	\$9.4	80%	95%	\$7.6	\$8.9	59	Other Services
<b>Total Expenditures</b>	<b>\$110.3</b>			<b>\$94.9</b>	<b>\$107.5</b>		

### **2.1.3 ANCILLARY ECONOMIC ACTIVITY (ONGOING)**

In addition to patron spending inside the casino and hotel<sup>10</sup>, this project may be expected to generate additional visitor spending outside of the casino complex itself. We wish to estimate the incremental spending by casino patrons (visitors) at other area establishments, including other hotels, restaurants, shops and entertainment and cultural venues. The magnitude of this ancillary spending will be influenced by several factors:

- Total estimated number of patrons/visitors
- Residence of casino patrons (outside of Allentown or Region)
- Proportion of visitors who stay overnight (and length of stay)
- Average daily ancillary expenditures per OVERNIGHT or DAYTRIPPER visitor
- Extent of CVB marketing effort leveraging casino patrons

We have developed estimates of direct ancillary spending based in part on Tropicana's estimates of annual parlor visitors, and using information from experiences of other cities as well as spending information for visitors published by the state.<sup>11</sup> Underlying our estimates are several assumptions, which we think make our estimates conservative.

In its analysis of the likely impact of gaming in Philadelphia, and based on its analysis of gaming sites throughout the country, Innovation Group (IG) has estimated that only 2-5% of visitors to slots only (and no hotel) facility will stay overnight at the destination.<sup>12</sup> This estimate can clearly be adjusted upward by the associated hotel facility, and also depending upon the aggressiveness of the LVCVB in marketing other regional attractions to complement casino trips and vice versa. Although we assume both of these positive adjustments to the visitor overnight rates would be associated with the Tropicana proposal for Allentown, we start with very conservative assumptions of overnight visitation rates. First, we assume NO overnight stays, nor any day spending, by any visitors from the region (Lehigh and Northampton counties). This means that our overnight stay rates are applied to a much smaller base of visitors. We assume the overnight stay rate is 4.5% in start up Year 1, growing to approximately 5.8% by the steady state Year 5, and increasing to 8.75% when the expansion is completed.

We estimate the direct expenditures associated with ancillary (outside of the casino/hotel) spending to be the sum of the spending by OVERNIGHT visitors and DAYTRIPPERS. In order to make this estimate, we use the following steps:

The first step is to estimate proportion and number of OVERNIGHT and DAYTRIPPERS out of TOTAL estimated visitors (provided by Tropicana = approximately 3.6 million in Year 1). First, we

---

<sup>10</sup> And the restaurants inside the casino entertainment facility, since all of the expenditures by visitors in the complex are already accounted for in the operating expenditures.

<sup>11</sup> Some studies note, quite properly, that in order to estimate net new spending, any additional spending, inside or outside of a casino, must be offset by declines in spending elsewhere in the local economy. We do not anticipate any significant "diverted spending", and we do not include it in this analysis. Certainly the assumption of no ancillary spending by Lehigh or Northampton county residents, as well as not accounting for recapture, mitigates the negative impact of diverted spending.

<sup>12</sup> Philadelphia Gaming Advisory Task Force: The Final Report, 2005.

excluded approximately 1.1 million patrons who are expected to be from the two counties.<sup>13</sup> As noted above, based on visitor travel distance and estimates by Innovation Group for other (non-AC/LV) gaming cities, we estimate 4.5% of visitors (excluding region residents) would be overnight visitors in the start up Year 1, which we believe is very conservative.

**Table 2.1.4  
Estimated Overnight & Daytripper Visitors**

<b>Visitor Trips</b>	<b>Visitors (excl. region)</b>	<b>% Overnight</b>	<b># Overnight</b>	<b>% Daytripper</b>	<b># Daytripper</b>
0-25 miles	73,000	1.0%	730	99.0%	72,270
25-50	1,589,000	1.2%	19,068	98.8%	1,569,932
50-75	516,000	2.5%	12,900	97.5%	503,100
Outer Market	320,000	25.0%	80,000	75.0%	240,000
<b>Total (trips/patrons)</b>	<b>2,498,000</b>	<b>4.5%</b>	<b>112,698</b>	<b>137.8%</b>	<b>2,385,302</b>

The next step is to estimate per visitor spending for overnighters and daytrippers, for each of the locations, adjusting for overnight visitors staying at the new Tropicana hotel. We assume an average length of stay of 1.5 days, and an average room occupancy rate of 1.7 persons. We assume the ADR for non-Tropicana hotels would be \$10 less than the level forecasted by Tropicana for the Tropicana hotel. We further assume that only 20% (growing to 25%) of daytrippers will even spend any money outside of the hotel/casino at all. Based on estimates from the LVCVB and Pennsylvania tourism data for daily spending, we assume a daily per visitor (non-hotel) spending of \$30 for each visitor who spends money outside the casino, overnight or day, growing to \$40 by the steady state year.<sup>14</sup>

Our additional assumptions regarding the ancillary spending of the extra overnight visitors are set forth in Table 2.1.5 below.<sup>15</sup>

<sup>13</sup> Some portion of the anticipated patrons may be locals who previously traveled outside of the region (e.g. to Atlantic City) to participate in gaming activities. This is referred to as "recapture". Their spending, both at the casino and outside, can have the same stimulative impact on the local economy as spending by outside visitors. This phenomenon, referred to as "import substitution", recognizes that increased local spending by residents has a positive multiplier effect, and is not merely shifting spending from one local vendor to another in a zero-sum process.

<sup>14</sup> A finding across (non Atlantic City or Las Vegas) cities with gaming is the low level of this ancillary spending, as the spending outside of the casinos are only a fraction of that spent inside the casino.

<sup>15</sup> We believe that Allentown is likely to fare similar to other gaming cities with regard to the potential ancillary spending. Implicit in our estimates are standard room-occupancy factors and hotel rates, restaurant and retail prices found in many other cities. On an apples-to-apples basis, our estimates are generally comparable with the findings reported by Innovation Group, which often refer to ancillary spending divided by the *total* number of visitors from all sources.

**Table 2.1.5  
Estimated Ancillary Spending: Startup & Steady State**

<b>Ancillary Spending</b>	<b>Startup</b>	<b>Steady State</b>
Tropicana Room nights	74,825	82,125
Room Night/Trip (days) factor	1.5	1.5
Room Occupancy Factor	1.7	1.7
Overnight Trips w/ Tropicana stay	84,802	93,075
Overnight Growth rate (Period)		7.3%
Estimated overnight Visitors	112,698	120,938
Non Tropicana Overnight Visitors	27,896	27,863
Non Tropicana Room nights	24,614	24,585
NOTE: Total ROOMNIGHTS	99,439	106,710
ADR (\$10 less than Tropicana)	\$85	\$96
Outside spending per day	\$30	\$40
Non Tropicana Hotel Spending	\$2,092,225	\$2,360,161
Non Tropicana Other Spending	\$738,432	\$983,400
Total Overnight Ancillary Spending	\$2,092,225	\$2,360,161
% of Daytrippers spending outside	20.0%	25.0%
Daytripper spending per day	\$30	\$40
Daytripper Ancillary spending	\$14,311,812	\$24,979,907
<b>Total Ancillary Spending</b>	<b>\$17,142,469</b>	<b>\$28,323,469</b>

## **2.2 INDIRECT AND INDUCED EXPENDITURES & TOTAL ECONOMIC IMPACTS**

As we discussed in the introduction, the direct expenditures will generate additional economic activity referred to as indirect and induced expenditures. Indirect expenditures are those expenditures resulting from all intermediate rounds of goods and services produced by various firms that are stimulated by the direct spending due to the new direct expenditures (construction, operations, and ancillary). Induced expenditures are those that are generated through the spending of households' earned incomes (salaries and wages) generated by the direct and indirect expenditures. The sum of direct and indirect and induced expenditures comprise the total economic impact of the proposed project.

Once the direct expenditures have been estimated, we use econometric input-output models of the region and state to calculate the indirect and induced expenditures as well as the tax revenues generated by these direct expenditures. Regional input-output models are widely used for such calculations because they are well adapted to this type of analysis. We have used U.S. Department of Commerce's Regional Input-Output Modeling System II (RIMS II) models for the region and state. The model is described in detail in an Appendix to this report.

The potential impact generated by the construction expenditures could be greater than \$270 million for the region, and nearly \$475 million statewide. These impacts, though significant, would occur only during the construction period.

The potential regional impact generated by the ongoing operating expenditures is forecasted to be over \$156 million in the startup year, growing to over \$181 million by the steady state year. The potential state impact is even larger: greater than \$214 million for the region and in excess of \$249 million statewide. These impacts would occur (and likely grow) annually. If we assume a straight-line ramp up to the steady state, the first five years of operation could generate upwards of \$850 million of cumulative regional spending, and nearly \$1.2 billion statewide.

Ancillary spending could also generate a significant amount of additional spending in the region and state. The potential regional impact generated by the ongoing ancillary expenditures could be nearly \$30 million in the startup year, growing to over \$49 million by the steady state year. As with the operating expenditures, the potential state impact is even larger: nearly \$37 million for the region and in excess of \$61 million statewide. These impacts would also occur (and likely grow) annually. As before, if we assume straight-line growth, the first five years could generate cumulative ancillary spending of \$200 million in the region and almost \$250 million statewide.

The following series of tables summarize the full potential economic impacts, along with the associated multipliers, for the region and for the state.



**Table 2.2.1**  
**Regional Total Potential Economic Impact**  
**Construction Expenditures**  
**(\$ millions)**

Description	Construction One-time
Regional Direct Expenditures	\$143.8
Regional Indirect & Induced Expenditures	\$126.5
<b>Regional Total Output</b>	<b>\$270.3</b>
Regional Multiplier	1.88

**Table 2.2.2**  
**Regional Total Potential Economic Impact**  
**Ongoing Operating Expenditures & Ancillary Spending**  
**(\$ millions)**

Description	Operating Expenditures		Ancillary Spending	
	Startup (Year 1)	Steady State (Year 5)	Startup (Year 1)	Steady State (Year 5)
Regional Direct Expenditures	\$81.9	\$94.9	\$17.1	\$28.3
Regional Indirect & Induced Expenditures	\$75.0	\$86.1	\$12.7	\$20.9
<b>Regional Total Output</b>	<b>\$156.9</b>	<b>\$181.0</b>	<b>\$29.8</b>	<b>\$49.2</b>
Regional Multiplier	1.92	1.91	1.74	1.74

**Table 2.2.3**  
**State Total Potential Economic Impact**  
**Construction Expenditures**  
**(\$ millions)**

Description	Construction One-time
State Direct Expenditures	\$196.2
State Indirect & Induced Expenditures	\$278.3
<b>State Total Output</b>	<b>\$474.5</b>
State Multiplier	2.42

**Table 2.2.4**  
**State Total Potential Economic Impact**  
**Ongoing Operating Expenditures & Ancillary Spending**  
**(\$ millions)**

Description	Operating Expenditures		Ancillary Spending	
	Startup (Year 1)	Steady State (Year 5)	Startup (Year 1)	Steady State (Year 5)
State Direct Expenditures	\$92.2	\$107.5	\$17.1	\$28.3
State Indirect & Induced Expenditures	\$122.2	\$141.6	\$19.7	\$32.8
<b>State Total Output</b>	<b>\$214.4</b>	<b>\$249.1</b>	<b>\$36.8</b>	<b>\$61.1</b>
State Multiplier	2.33	2.32	2.15	2.16

## 2.3 EMPLOYMENT IMPACTS

The potential employment impacts are also significant, not only for the construction period (for both Phases), but also annually to support ongoing operations. Furthermore, additional jobs are generated by the additional indirect and induced spending. For the region, the construction phase generates nearly 2,000 jobs and over \$79 million in earnings. Nearly 2,500 jobs will be generated by ongoing operations and ancillary spending during the start up year, increasing to over 3,000 jobs by the steady state year 5. The state will see even larger employment gains: Over 4,400 jobs generated by the construction and over 3,500 jobs created by ongoing operations and ancillary spending in the start up year, growing to over 4,200 jobs by Year 5.

The following tables illustrate these earnings and employment impacts for the region and for the state.

### Tropicana Direct employment assumptions (PHASE 1)

- Approximately 750 construction jobs for Phase 1
- 1,300 permanent full time equivalent jobs created
- Average salaries/wages/tips/benefits of \$38K per full time employee

**Table 2.3.1  
Regional Total Earnings & Employment  
Construction Expenditures**

Description	Construction One-Time
Direct Employment	750
<b>Total Regional Employment*</b>	<b>1,962</b>
<b>Average Wage</b>	<b>\$40,265</b>
<b>Total Regional Earnings</b>	<b>\$79.0m</b>

\*Includes direct employment (throughout)

**Table 2.3.2  
Regional Total Earnings & Employment  
Ongoing Operating Expenditures & Ancillary Spending**

Description	Operating Expenditures		Ancillary Spending	
	Startup Year 1	Steady State Year 5	Startup Year 1	Steady State Year 5
Direct Employment	1,300	1,300		
<b>Total Regional Employment</b>	<b>2,090</b>	<b>2,342</b>	<b>389</b>	<b>656</b>
<b>Average Wage</b>	<b>\$36,842</b>	<b>\$37,318</b>	<b>\$22,340</b>	<b>\$22,258</b>
<b>Total Regional Earnings</b>	<b>\$77.0m</b>	<b>\$87.4m</b>	<b>\$8.7m</b>	<b>\$14.6m</b>

**Table 2.3.3**  
**State Total Earnings & Employment**  
**Construction Expenditures**

Description	Construction One-Time
Direct Employment	750
<b>Total State Employment</b>	<b>4,463</b>
<b>Average Wage</b>	<b>34,169</b>
<b>Total State Earnings</b>	<b>\$152.5m</b>

**Table 2.3.4**  
**State Total Earnings & Employment**  
**Ongoing Operating Expenditures & Ancillary Spending**

Description	Operating Expenditures		Ancillary Spending	
	Startup Year 1	Steady State Year 5	Startup Year 1	Steady State Year 5
Direct Employment	1,300	1,300		
<b>Total State Employment</b>	<b>2,970</b>	<b>3,369</b>	<b>540</b>	<b>906</b>
<b>Average Wage</b>	<b>\$32,356</b>	<b>\$32,680</b>	<b>\$20,549</b>	<b>\$20,410</b>
<b>Total State Earnings</b>	<b>\$96.1m</b>	<b>\$110.1m</b>	<b>\$11.1m</b>	<b>\$18.5m</b>

## 2.4 FISCAL IMPACTS

### State Tax Revenues

In addition to the license fee (\$50 million, one-time) and any other fees associated with the award of a license, the Lehigh Valley Tropicana will pay significant taxes to the state based on the level of its activities (in particular the state tax on casino gross revenues), as well as taxes generated by the construction activities. Also, the direct operating activities of the facility and ancillary spending will generate sizable new tax revenues annually to the state, including personal income and sales taxes. We use our own model of the Pennsylvania tax system to estimate the state's annual tax revenue associated with the indirect and induced economic activity generated by the facility's operations and ancillary spending.

Our estimates of the one-time impact of construction expenditures, and ongoing operations and ancillary expenditures on state tax revenues are displayed in Table 2.5.1 below. Note that these estimates include both taxes generated directly in the facility, as well as those generated by the

indirect and induced spending and the ancillary spending. These taxes include the non-local portion of the Act 71 taxes imposed by the state, which will be \$140 million in the start up year, growing to over \$160 million by the steady state Year 5.<sup>16</sup>

**Table 2.4.1  
Potential State Tax Revenues  
Construction Expenditures, Steady State & Startup Operating Expenditures  
& Ancillary Spending (\$millions)**

PA State Tax Description	One-Time Construction	Operating Expenditures		Ancillary Spending	
		Startup (Year 1)	Steady State (Year 5)	Startup (Year 1)	Steady State (Year 5)
Personal Income	\$4.7	\$2.6	\$3.1	\$0.3	\$0.5
Sales and Use	\$4.1	\$5.0	\$5.9	\$0.7	\$1.2
Corporate Net Income	\$1.0	\$0.5	\$0.5	\$0.1	\$0.2
Capital Stock and Franchise	\$0.7	\$0.3	\$0.3	\$0.1	\$0.1
<b>Subtotal Before Gaming Revenue Taxes</b>	<b>\$10.5</b>	<b>\$8.4</b>	<b>\$9.8</b>	<b>\$1.2</b>	<b>\$2.0</b>
<b>Gaming Revenue Taxes</b>	<b>\$50*</b>	<b>\$140.2</b>	<b>\$160.3</b>	<b>-</b>	<b>-</b>
<b>GRAND TOTAL</b>	<b>\$60.5</b>	<b>\$148.6</b>	<b>\$170.1</b>	<b>\$1.2</b>	<b>\$2.0</b>

*\*Gaming License Fee upon award of License*

### Local Tax Revenues

The primary local tax impacts will be property taxes (municipal, county and school district), Allentown's 1% earned income tax (EIT – split 50-50 between the City and School District) the 4% LVCVB Hotel tax, and the 4% casino revenue host fee, split 2% (or \$10 million, whichever is greater) to Allentown and 2% to the County. For purposes of estimating the EIT, we assume that 50% of total construction earnings are subject to the EIT, and for ongoing operations and ancillary spending, that 33% of direct earnings will be subject to the Allentown earned income tax, and 10% of the indirect and induced earnings<sup>17</sup>.

<sup>16</sup> The state gaming tax revenues include 34% to the State Gaming Fund, 12% to the PA Race Horse Development Fund, and 5% to the PA Gaming Economic Development and Tourism Fund.

<sup>17</sup> Allentown's EIT is effectively imposed on residents only. It is collected on non-residents residing in localities that impose their own Act 511 EIT, but those funds are transferred from Allentown to those other jurisdictions. For purposes of the property tax, we assume this will be subject primarily to the current tax rates for improvements (vs. land) and we assume a distribution of: 16% municipal, 16% county, 68% School District. The property tax rates, and their distribution among the taxing authorities, will change significantly once the state's casino revenues are distributed back to localities for property tax reduction. We use current rates only, since it is impossible to estimate what changes might eventually occur.

**Table 2.4.2  
Potential Local Tax Revenues  
Construction Expenditures, Steady State & Startup Operating Expenditures  
& Ancillary Spending (\$ millions)**

Local Tax Description	One-Time Construction	Operating Expenditures		Ancillary Spending	
		Startup (Year 1)	Steady State (Year 5)	Startup (Year 1)	Steady State (Year 5)
1% Earned Income (Allentown)	\$0.4	\$0.2	\$0.2	\$0.1	\$0.1
Property tax	-	\$3.1	\$3.1	-	
LVCVB 4% Hotel Tax	-	\$0.3	\$0.4	\$0.1	\$0.2
Casino City Host fee	-	\$10.0	\$10.0	-	-
Casino 2% County Host Fee	-	\$5.5	\$6.3	-	-
<b>Total</b>	<b>\$0.4</b>	<b>\$19.1</b>	<b>\$20.0</b>	<b>\$0.2</b>	<b>\$0.3</b>

### City Incremental Expenditures

City officials have given preliminary indication that no significant additional municipal operating expenditures would result for various departments when the facility is up and running. To the extent there may be some marginal, incidental increases in municipal costs, the city host fee should more than cover them.

### **3.0 POTENTIAL IMPACTS OF THE PROPOSED CASINO ENTERTAINMENT FACILITY - PHASE 2**

As before, our objective is to estimate the potential economic impacts that could be generated by the construction and subsequent ongoing expanded operations of the Phase 2 expansion of the proposed facility. All of the analyses correspond to those applied to Phase 1, so this section presents findings and summaries rather than the methodological detail. Note that while the construction numbers are all new, the ongoing expenditures represent the new, higher levels of spending, not just the increment associated with Phase 2.

#### **3.1.1 EXPANSION CONSTRUCTION EXPENDITURES (ONE-TIME)**

As before, our estimates of the direct expenditures associated with the expansion related construction costs are based on information provided by Tropicana. We use the same basic cost as for Phase 1, and they are detailed in Table 3.1.1 on the following page. In summary, we estimate direct construction expenditures in the region to be \$114 million and \$155 million in the state.

**Table 3.1.1:  
Phase 2: One Time Construction Development DIRECT Expenditures  
(\$ millions)**

<b>Expenditure Description</b>	<b>Phase 2 Total</b>	<b>% Region</b>	<b>% PA</b>	<b>Total, Region</b>	<b>Total, PA</b>	<b>Industry Code</b>	<b>Industry Description</b>
Construction Costs	\$113.0	75%	100%	\$84.8	\$113.0	7	Construction
Architectural, Engineering, Interior Design (5% of Construction)	\$5.7	50%	75%	\$2.8	\$4.2	7	Construction
Permits and Fees (2% of Construction)	\$2.3	100%	100%	\$2.3	\$2.3	7	Construction
Gaming Equipment - Machines (includes bases)	\$37.9	5%	10%	\$1.9	\$3.8	27	Wholesale Trade
Non Casino Signage	\$1.5	50%	100%	\$0.8	\$1.5	47	Professional, scientific, and technical services
Systems (Surveillance, Accounting, Telephone, MIS, Paging, etc)	\$5.0	50%	50%	\$2.5	\$2.5	47	Professional, scientific, and technical services
Other Operating Equipment and Supplies (Uniforms, Transportation, Facilities)	\$5.0	50%	100%	\$2.5	\$5.0	48	Management of companies and enterprises
Legal Fees, Insurance, Taxes, Project Management Fees	\$3.0	50%	100%	\$1.5	\$3.0	47	Professional, scientific, and technical services
Capitalized Interest	\$7.0	0%	0%				
Project Contingency	\$19.8	75%	100%	\$14.8	\$19.8	7	Construction
<b>Total Expenditures</b>	<b>\$200.2</b>			<b>\$113.9</b>	<b>\$155.1</b>		



### 3.1.2 ONGOING, ANNUAL EXPENDITURES – CASINO/HOTEL OPERATIONS

As before, we have also relied on estimates delivered by Tropicana of direct, pro forma spending on operations of the expanded casino, hotel and restaurants. Working with Tropicana, we also estimated the proportion of this direct spending likely to occur in the region and in the state. We estimate the expanded facility will generate \$121 million of regional spending and \$137 million of statewide spending on an annual basis.<sup>18</sup>

**Table 3.1.2**  
**Phase 2: Annual DIRECT Expenditures (Ongoing)**  
**(\$ millions)**

Expenditure Description	Phase 2 Total	% Region	% PA	Total, Region	Total, PA	Industry Code	Industry Description
Salaries, wages benefits	\$64.2	100%	100%	\$64.2	\$64.2	60	Households
Cost of goods sold	\$28.1	70%	95%	\$19.7	\$26.7	27	Wholesale Trade
Marketing/advertising	\$25.7	70%	95%	\$18.0	\$24.3	47	Professional, scientific, and technical services
Utilities	\$4.7	100%	100%	\$4.7	\$4.7	6	Utilities
Repairs/Maintenance	\$7.0	80%	95%	\$5.6	\$6.7	48	Management of companies and enterprises
All Other	\$10.7	80%	95%	\$8.5	\$10.2	59	Other Services
<b>Total Expenditures</b>	<b>\$140.4</b>			<b>\$120.7</b>	<b>\$136.8</b>		

### 3.1.3 ANCILLARY ECONOMIC ACTIVITY (ONGOING)

We use the same assumptions and methodology to estimate the ancillary direct spending for the first year of the second phase, Year 6. The main difference between the numbers estimated here and those estimated for the steady state Year 5 is the addition of 250 rooms at the Tropicana in the Phase 2 expansion. Since the number of new rooms added to the market exceeds the anticipated growth in demand for that year, we see a downward adjustment in overnight visitors who stay at non-Tropicana hotels.

The Phase 2, Year 6 assumptions and calculations are detailed in Table 3.1.3 below:

<sup>18</sup> We assume that these amounts will grow at least at the rates on inflation into the future.

**Table 3.1.3**  
**Phase 2: Estimated Ancillary DIRECT Spending**

<b>Ancillary Spending</b>	<b>Phase 2 (Year 6)</b>
Tropicana Room nights	156,950
Room Night/Trip (days) factor	1.9
Room Occupancy Factor	1.7
Overnight Trips w/ Tropicana stay	140,429
Overnight Growth rate (Period)	30%
Estimated overnight Visitors	157,210
Non Tropicana Overnight Visitors	16,781
Non Tropicana Room nights	18,755
NOTE: Total ROOMNIGHTS	175,705
ADR (\$10 less than Tropicana)	\$100
Outside spending per day	\$45
Non Tropicana Hotel Spending	\$1,875,502
Non Tropicana Other Spending	\$843,976
Total Overnight Ancillary Spending	\$2,719,478
% of Daytrippers spending outside	30.0%
Daytripper spending per day	\$45
Daytripper Ancillary spending	\$42,150,900
<b>Total Ancillary Spending</b>	<b>\$44,870,378</b>

### 3.2 INDIRECT AND INDUCED EXPENDITURES & TOTAL OUTPUT - PHASE 2

As before, we estimated the indirect and induced spending generated by the direct spending compiled in the previous section. The results are shown in the tables below.

**Table 3.2.1**  
**Phase 2: Regional Total Potential Economic Impact**  
**Construction Expenditures**  
**(\$ millions)**

Description	Phase 2 Construction
Regional Direct Expenditures	\$113.9
Regional Indirect & Induced Expenditures	\$95.5
<b>Regional Total Output</b>	<b>\$209.4</b>
Regional Multiplier	1.84

**Table 3.2.2**  
**Phase 2: Regional Total Potential Economic Impact**  
**Ongoing Operating Expenditures & Ancillary Spending**  
**(\$ millions)**

Description	Phase 2 Operating	Phase 2 Ancillary	Phase 2 Operating + Ancillary
Regional Direct Expenditures	\$120.7	\$44.9	\$165.6
Regional Indirect & Induced Expenditures	\$109.6	\$33.2	\$142.8
<b>Regional Total Output</b>	<b>\$230.3</b>	<b>\$78.1</b>	<b>\$308.4</b>
Regional Multiplier	1.91	1.74	1.86

**Table 3.2.3**  
**Phase 2: State Total Potential Economic Impact**  
**Construction Expenditures**  
**(\$ millions)**

Description	Phase 2 Construction
State Direct Expenditures	\$155.1
State Indirect & Induced Expenditures	\$220.4
<b>State Total Output</b>	<b>\$375.5</b>
State Multiplier	2.42

**Table 3.2.4**  
**Phase 2: State Total Potential Economic Impact**  
**Ongoing Operating Expenditures & Ancillary Spending**  
**(\$ millions)**

Description	Phase 2 Operating	Phase 2 Ancillary	Phase 2 Operating + Ancillary
State Direct Expenditures	\$136.8	\$44.9	\$181.7
State Indirect & Induced Expenditures	\$180.2	\$52.1	\$232.3
<b>State Total Output</b>	<b>\$317.0</b>	<b>\$97.0</b>	<b>\$414.0</b>
State Multiplier	2.32	2.16	2.28

### 3.3 EMPLOYMENT IMPACTS

#### JOBS AND EARNINGS

Our input-output model provides estimates of the jobs and earnings associated with the estimated expenditures. Our estimates of the one-time impact of construction expenditures and ongoing impacts of Phase 2 operating expenditures and ancillary spending on jobs and earnings are displayed below.

##### Tropicana Direct employment assumptions (PHASE 2)

- Approximately 500 construction jobs for Phase 2
- 450 permanent full time equivalent jobs created
- Average salaries/wages/tips/benefits consistent with Phase 1

**Table 3.3.1**  
**Phase 2: Regional Total Earnings & Employment**  
**Construction Expenditures**

Description	Construction One-Time
Direct Employment	500
<b>Total Regional Employment</b>	<b>1,554</b>
<b>Average Wage</b>	<b>\$40,218</b>
<b>Total Regional Earnings</b>	<b>\$62.5m</b>

**Table 3.3.2**  
**Phase 2: Regional Total Earnings & Employment**  
**Ongoing Operating Expenditures & Ancillary Spending**

Description	Phase 2 Operating	Phase 2 Ancillary	Phase 2 Operating + Ancillary
Direct Employment	1,750		
<b>Total Regional Employment</b>	<b>2,972</b>	<b>1,034</b>	<b>4,006</b>
<b>Average Wage</b>	<b>\$37,517</b>	<b>\$22,044</b>	
<b>Total Regional Earnings</b>	<b>\$111.5m</b>	<b>\$22.8m</b>	<b>\$134.3</b>

**Table 3.3.3**  
**Phase 2: State Total Earnings & Employment**  
**Construction Expenditures**

<b>Description</b>	<b>Construction One-Time</b>
Direct Employment	500
<b>Total State Employment</b>	<b>3,532</b>
<b>Average Wage</b>	<b>\$34,145</b>
<b>Total State Earnings</b>	<b>\$120.6m</b>

**Table 3.3.4**  
**Phase 2: State Total Earnings & Employment**  
**Ongoing Operating Expenditures & Ancillary Spending**

<b>Description</b>	<b>Phase 2 Operating</b>	<b>Phase 2 Ancillary</b>	<b>Phase 2 Operating + Ancillary</b>
Direct Employment	1,750		
<b>Total State Employment</b>	<b>4,277</b>	<b>1,445</b>	<b>5,722</b>
<b>Average Wage</b>	<b>\$32,827</b>	<b>\$20,272</b>	<b>\$29,657</b>
<b>Total State Earnings</b>	<b>\$140.4m</b>	<b>\$29.3m</b>	<b>\$169.7</b>

### 3.4 FISCAL IMPACTS – PHASE 2

#### State Tax Revenues

The expanded casino/hotel will pay significant taxes to the state based on the new, increased level of its activities. Also, the direct, indirect and induced spending will generate sizable new tax revenues annually to the state. We use our own model of the Pennsylvania tax system to estimate the state's annual tax revenue associated with this economic activity generated by the casino/hotel. As before, this tax revenue is separate and apart from the specific tax revenue that will be generated directly by the casino/hotel activities.

Our estimates of the one-time impact of construction expenditures, and ongoing operations and ancillary expenditures on state tax revenues are displayed in Table 3.4.1 below. As before, the state gaming tax revenues include 34% to the State Gaming Fund, 12% to the PA Race Horse Development Fund, and 5% to the PA Gaming Economic Development and Tourism Fund.

**Table 3.4.1**  
**Phase 2: Potential State Tax Revenues**  
**Construction Expenditures, Operating Expenditures & Ancillary Spending**  
**(\$ millions)**

<b>PA State Tax Description</b>	<b>Phase 2 Construction</b>	<b>Phase 2 Operating</b>	<b>Phase 2 Ancillary</b>
Personal Income	\$3.7	\$4.2	\$0.9
Sales and Use	\$3.5	\$7.4	\$2.0
Corporate Net Income	\$0.9	\$0.8	\$0.3
Capital Stock and Franchise	\$0.6	\$0.5	\$0.2
<b>Total Before Gaming Revenue Taxes</b>	<b>\$8.7</b>	<b>\$12.9</b>	<b>\$3.4</b>
<b>Gaming Revenue Taxes</b>	<b>-</b>	<b>\$196.3</b>	<b>-</b>
<b>GRAND TOTAL</b>	<b>\$8.7</b>	<b>\$209.2</b>	<b>\$3.4</b>

#### Local Tax Revenues

We estimate Allentown City and School District could receive \$0.3 million combined in EIT revenues associated with the Phase 2 construction project, and that the expanded operations and ancillary spending would generate in excess of \$23 million annually to the City, School District and County. (See Table 3.4.2 below.) Since the facility's impact on city expenditures is expected to be *de minimus*, these revenues are likely to directly improve the financial conditions of the City and the School District.

**Table 3.4.2**  
**Phase 2: Potential Local Tax Revenues**  
**Construction Expenditures, Steady State & Startup Operating Expenditures**  
**& Ancillary Spending**  
**(\$ millions)**

Local Tax Description	Phase 2 Construction	Phase 2 Operating	Phase 2 Ancillary
1% Earned Income	\$0.3	\$0.3	\$0.1
Property tax	-	\$4.6	-
LVCVB 4% Hotel Tax	-	\$0.7	\$0.1
Casino City Host fee	-	\$10.0	-
County 2% Host Fee	-	\$7.7	-
<b>Total</b>	<b>\$0.3</b>	<b>\$23.3</b>	<b>\$0.2</b>



## 4.0 CONCLUSION

### SUMMARY OF POTENTIAL REGIONAL ECONOMIC IMPACTS

Description	PHASE 1					PHASE 2		
	Construction One-Time	Operating Startup Year 1	Ancillary Startup Year 1	Operating Steady State Year 5	Ancillary Steady State Year 5	Construction Phase 2	Operating Phase 2	Ancillary Phase 2
Regional Direct Expenditures	\$143.8	\$81.9	\$17.1	\$94.9	\$28.3	\$113.9	\$120.7	\$44.9
Regional Indirect & Induced Expenditures	\$126.5	\$75.0	\$12.7	\$86.1	\$20.9	\$95.5	\$109.6	\$33.2
<b>Regional Total Output</b>	<b>\$270.3</b>	<b>\$156.9</b>	<b>\$29.8</b>	<b>\$181.0</b>	<b>\$49.2</b>	<b>\$209.4</b>	<b>\$230.3</b>	<b>\$78.1</b>
Regional Multiplier	1.88	1.92	1.74	1.91	1.74	1.84	1.91	1.74
<b>Total Regional Earnings</b>	<b>\$79.0</b>	<b>\$77.0</b>	<b>\$8.7</b>	<b>\$87.4</b>	<b>\$14.6</b>	<b>\$62.5</b>	<b>\$111.5</b>	<b>\$22.8</b>
<b>Total Regional Employment</b>	<b>1,962</b>	<b>2,090</b>	<b>389</b>	<b>2,342</b>	<b>656</b>	<b>1,554</b>	<b>2,972</b>	<b>1,034</b>

### SUMMARY OF POTENTIAL STATE ECONOMIC IMPACTS

Description	PHASE 1					PHASE 2		
	Construction One-Time	Operating Startup Year 1	Ancillary Startup Year 1	Operating Steady State Year 5	Ancillary Steady State Year 5	Construction Phase 2	Operating Phase 2	Ancillary Phase 2
State Direct Expenditures	\$196.2	\$92.2	\$17.1	\$107.5	\$28.3	\$155.1	\$136.8	\$44.9
State Indirect & Induced Expenditures	\$278.3	\$122.2	\$19.7	\$141.6	\$32.8	\$220.4	\$180.2	\$52.1
<b>State Total Output</b>	<b>\$474.5</b>	<b>\$214.4</b>	<b>\$36.8</b>	<b>\$249.1</b>	<b>\$61.1</b>	<b>\$375.5</b>	<b>\$317.0</b>	<b>\$97.0</b>
State Multiplier	2.42	2.33	2.15	2.32	2.16	2.42	2.32	2.16
<b>Total State Earnings</b>	<b>\$152.5</b>	<b>\$96.1</b>	<b>\$11.1</b>	<b>\$110.1</b>	<b>\$18.5</b>	<b>\$120.6</b>	<b>\$140.4</b>	<b>\$29.3</b>
<b>Total State Employment</b>	<b>4,463</b>	<b>2,970</b>	<b>540</b>	<b>3,369</b>	<b>906</b>	<b>3,532</b>	<b>4,277</b>	<b>1,445</b>

## **APPENDIX A: RIMS II INPUT-OUTPUT MODELS**

### **A.1 REGIONAL INPUT-OUTPUT MODELS AND METHODOLOGY**

The regional economic impact estimates in this report are based on a standard regional input-output model developed by the U. S. Department of Commerce, Bureau of Economic Analysis. This model, the Regional Input-Output Modeling System (RIMS II), is a standard and widely used tool for estimating regional economic impacts. The results generated from the RIMS II are widely recognized as reasonable and plausible in cases where the data utilized as the input to the model are accurate and based on reasonable assumptions. This section describes the basic concepts that underlie RIMS II.

In general, if the demand for the output of an industry in a given region increases by \$1 million, total regional output increases by \$1 million. This increase is referred to as the *direct expenditure effect*. However, the economic impact on the region of the \$1 million increase in final demand does not stop with the direct expenditure effect. Regional firms will also be called upon to increase their production to meet the needs of the industry where the initial increase in final demand occurs. Further, other suppliers must also increase production to meet the needs of the initial group of supplier firms. The total increase in expenditures by regional suppliers is considered the “indirect” economic impact of the initial \$1 million in sales, and is included in measures of the total economic impact of the initial \$1 million in sales.

The total economic impact of the \$1 million in initial sales includes one additional element. All economic activity that results from the initial \$1 million in sales, whether direct or indirect, requires workers, and these workers must be paid for their labor. This means that part of the direct and indirect output produced is actually in the form of wages and salaries paid to workers in the various affected industries. These wages and salaries will in turn be spent in part on goods and services produced locally, creating another round of regional economic impacts referred to as “induced” impacts.

Direct expenditures are input into the RIMS II model. The model then produces a calculation of the total expenditures within the regional economy that results from these direct expenditures. This total effect is the sum of the initial direct, indirect, and induced expenditures. The RIMS II model also estimates the proportion of direct, indirect, and induced expenditures that represent income earned by regional households. Finally, the RIMS II model calculates total expenditure impacts that occur within each industrial sector, and translates this estimate into an estimate of the total number of full-time and part-time jobs within each industry required to produce this output.

The RIMS II model is based on regional *multipliers*, which are summary measures of economic impacts generated from direct changes in expenditures, earnings, or employment. Multipliers show the overall impact to a regional economy resulting from a change in a particular industry. Multipliers can vary widely by industry and area. Multipliers are higher for regions with a diverse industry mix. Industries that buy most of their materials from outside the state or region tend to have lower multipliers. Multipliers also tend to be higher for industries located in larger areas, because more of the spending by the industry stays within the area.

## **A.2 FISCAL IMPACT MODEL**

The economic activity estimated to result from an economic development project should result in additional tax revenue for state and local government in the region where that economic activity occurs. Econsult's Fiscal Impact Model is designed to estimate this level of additional tax revenue based on the estimates of economic impact produced by the RIMS II model.

The RIMS II model provides estimates of direct, indirect, and induced expenditures, earnings, and employment within a county, metropolitan area, or state. Econsult combines the output of the RIMS II model with U. S. Census Bureau County Business Patterns data to produce estimates of the distribution of additional employment and earnings by county within a region or state. In addition, U. S. Census Bureau "Journey to Work" data on commuting flows from the 2000 Census are utilized to estimate income earned by residents of each county within a region.

Pennsylvania state business and sales taxes are estimated based on the most recent data on average sales tax base per employee by major industry, as contained in publications from the Pennsylvania Department of Revenue. The RIMS II model produces estimates of additional employment by industry. These estimates, combined with estimates of the average business and sales tax base per employee, and current and projected future tax rates, produce the estimates of additional annual state business and sales tax revenue.

For the current study, the fiscal impact estimates take into account estimated additional revenue from the following major tax sources:

- Local earned income taxes in Pennsylvania (counties other than Philadelphia)
- Pennsylvania and state sales taxes
- Pennsylvania and state individual income taxes
- Pennsylvania Corporate Net Income Tax
- Pennsylvania Capital Stock and Franchise Tax