APPENDIX 31
LOCAL IMPACT REPORT

This section of the application contains a summary in three parts of the anticipated impacts to local conditions of infrastructure, transportation and other municipal services as required in the application form. Following this introduction are complete reports from members of the project consulting team documenting the conditions and recommendations for three topics:

- Transportation, transit and parking
- Economic development and municipal services, and
- Utility capacities and infrastructure impacts

Transportation Overview

A transportation and parking assessment was carried out to investigate the transportation and parking requirements of the proposed casino development on North Shore Drive between the Carnegie Science Center and the West End Bridge.

The casino site is very well situated with respect to major highways, which provide high capacity access directly to the surface streets in the area immediately surrounding the site, and well situated for public transit service and access from the Ohio River. In addition, existing traffic volumes on adjacent streets are lowest during the times when the proposed casino is expected to be at peak operation.

A minimum of 4,100 parking spaces for patrons will be provided in structured parking on the site. The proposed parking structure presents an opportunity to supplement the existing parking supply for events at adjacent properties such as Heinz Field. Parking for employees is proposed at an off-site location within a ten-minute drive of the casino that will be linked to the site by a shuttle bus. For the initial Phase 1 operation, approximately 500 off-site parking spaces are proposed for employees.

Recommended Transportation Improvements

The current street connections between Allegheny Avenue, Reedsdale Street and North Shore Drive (east of the site) would require some modifications due to the existing one-way configuration of adjacent streets, and the physical barriers created by the Ohio River and existing freeway and ramp structures.

With a number of relatively minor changes to the existing road network, local access to the site could be improved significantly and will be able to support the traffic generated by the proposed development. A variety of local transportation improvements (subject to approvals from City of Pittsburgh and PennDOT officials) are recommended to improve vehicular access into the casino site.

The casino developer is committed to carrying out the above road improvements prior to the casino opening. Further transportation infrastructure improvements such as a direct ramp from the West End Bridge present an opportunity to provide direct access for customers to the parking decks, but will require more detailed study to determine feasibility.

Economic Development and Municipal Services

The Majestic Star Casino is anticipated to generate over $22,000,000 in local tax revenue to the City of Pittsburgh annually. At the same time, it will also have a number of indirect positive impacts on the local tourist economy because of its proximity to other attractions, such as Heinz Field, PNC Park, the Carnegie Science Center, and its year-round ability to enhance the existing array of amenities. It is expected to yield almost a 30% increase in downtown hotel occupancy. At the same time, the casino is not expected to impose any increased burdens on local public safety departments.

Utilities and Infrastructure

Based on the available information derived through a “PA One-Call” and follow up investigation with the various utilities involved, there are no known conflicts with the existing utilities, either on, or surrounding the site. Additionally, most of the major utility companies, including Duquesne Light Company, Equitable Gas and Verizon indicate that there is sufficient capacity around the site to meet the expected demands of the project. Preliminary analysis of both storm water and sanitary needs indicates that there is also sufficient available capacity to meet these needs without significant impact, though further detailed study will be required to finalize those assessments.

PITG Gaming, LLC

THE MAJESTIC STAR CASINO, PITTSBURGH TRANSPORTATION AND PARKING ASSESSMENT

FINAL REPORT

DECEMBER 2005

IBI GROUP

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1. EXECUTIVE SUMMARY

This transportation and parking assessment is intended to investigate the transportation and parking requirements of a proposed casino development on a site in the North Shore of Pittsburgh in support of an application to the Pennsylvania Gaming Control Board for a license to operate a casino in Pittsburgh. The site is located on North Shore Drive, east of the West End Bridge, and west of the Carnegie Science Center.

The casino license would permit operation of a 3,000 slot casino facility, which would be permitted to expand up to 5,000 slots after a minimum of six months of operation. This transportation analysis has considered the operation of the full site build-out with 5,000 slots as requested by City of Pittsburgh transportation staff.

The site is very well situated with respect to major highways, which provide high capacity access directly to the surface streets in the area immediately surrounding the site, and well situated for public transit service and access from the Ohio River. In addition, existing traffic volumes on adjacent streets are lowest during the times when the proposed casino is expected to be at peak operation.

The current street connections between Allegheny Avenue, Reedsdale Street and North Shore Drive (east of the site) would need some modifications due to the existing one-way configuration of adjacent streets, and the physical barriers created by the Ohio River and existing freeway and ramp structures.

With a number of relatively minor changes to the existing road network, local access to the site could be improved significantly and will be able to support the traffic generated by the proposed development. A variety of local transportation improvements (subject to approvals from City and PennDOT officials) are recommended to improve vehicular access into the casino site, including:

1. Traffic signal installation and reconfiguration of Reedsdale Street/North Shore Drive intersection;

2. Traffic signal installation and reconfiguration of Reedsdale Street/North Point Drive/Lighthill Street intersection; and

3. Traffic Signal installation and minor intersection reconfiguration at proposed Porte Cochere entrance on North Shore Drive with provision for westbound traffic on North Shore Drive to the proposed porte cochere.

The casino developer is committed to funding the above road improvements to allow construction prior to the casino opening. Further transportation infrastructure improvements such as a direct ramp from the West End Bridge present an opportunity to provide direct access for customers to the parking decks to further mitigate the transportation impacts of the casino, but will require more detailed study to determine feasibility. Issues for more detailed study include roadway geometrics, the final location of the casino parking structures, possible need for additional land acquisition, regulatory approvals, and construction cost.

In the proposed site plan, the primary casino parking entrance will be on Reedsdale Street west of North Shore Drive, with the main ceremonial entrance located on North Shore Drive. Service and truck access will also be located at the west end of the site accessed from Reedsdale Street.

A minimum of 5,100 parking spaces for patrons will be provided in structured parking on the site. The proposed parking structure presents an opportunity to supplement the existing parking supply for events at adjacent properties such as Heinz Field. Parking for employees is proposed at an off-site location within a ten minute drive of the casino that will be linked to the site by a shuttle bus. For the initial Phase 1 operation, approximately 500 off-site parking spaces are proposed for employees.

The Three Rivers Heritage Trail currently provides pedestrian and bicycle travel along the North Shore from the Carnegie Science Centre to the east past the stadium areas. At present, the roadways and land uses immediately to the north and west of the site are not very pedestrian friendly. The plan for the North Shore Casino site will include an extension of the trail system through the site and a considerable improvement to the pedestrian level of service along the property frontages that have amenable uses.

2. INTRODUCTION

This transportation and parking assessment is intended to investigate the transportation and parking requirements of a proposed casino development on a site in the North Shore of Pittsburgh in support of an application to the Pennsylvania Gaming Control Board for a license to operate a casino in Pittsburgh.

The casino license would permit operation of a 3,000 slot casino facility, which would be permitted to expand up to 5,000 slots after a minimum of six months of operation. This transportation analysis has considered the operation of the full site build-out with 5,000 slots as requested by City of Pittsburgh transportation staff.

2.1 Study Scope

The objectives of this study were to:

- Determine appropriate trip generation rates and apply during weekday and weekend peak hours;
- Investigate and describe on a functional level any physical works required on adjacent streets to facilitate access, such as signalization and widening for additional lanes;
- Provide analysis of parking requirements and layouts; and
- Comment on the ability of the transportation network to accommodate a 5,000 slot Casino at the North Shore site.

The following report describes the above assessment. In addition, a proposed scope of work for the transportation and parking impact studies for casino gaming in Pittsburgh was produced by the City of Pittsburgh and issued in September 2005. The assessment detailed in this report was carried out in conformance with the City's scope of work.

3. PRELIMINARY REVIEW OF ALTERNATIVE SITES

Prior to selecting the proposed site, an initial review of the transportation related services was undertaken to determine the relative merits of locating the casino site on the North Shore, or at alternative locations within the City. Other locations considered included the downtown area, the Station Square area and an alternative North Shore location. This high level assessment included the following factors:

- Access to the site and the area road network;
- Transit and water travel access;
- Pedestrian facilities and access; and
- Potential parking provisions.

Provided below is a summary of this high level assessment.

Road Access

The proposed North Shore site is located in close proximity to I-279, State Route 28, State Route 65 and the West End Bridge. The arterial road network in the vicinity of the site has been developed with major generators such as Heinz Field and PNC Park in mind. As such, the arterial road facilities and the access to and from the freeway facilities are, for the most part, underutilized during the a.m. and p.m. weekday peak travel periods, and during the weekends.

Alternative site locations in the downtown and Station Square areas are impacted by weekday peak traffic periods, and casino traffic traveling to and from those locations would require a greater degree of arterial roadway travel.

Transit and Water Travel

The North Shore site will have good access to transit with the planned extension of the Light Rail Transit (LRT) system to the Reedsdale Street/Allegheny Avenue intersection. In addition, the river frontage is amenable to providing a mooring area for a water taxi facility, ferry services or personal watercraft docking.

The alternative site locations within the North Shore area and the downtown area have comparable transit access via the proposed LRT extension and existing surface routes, respectively. Although transit services are provided at the east end of the Station Street area, the west end of the site is a considerable walking distance from the transit station.

The Station Street area has some access to the river system via existing ferry services; however, none of the alternative sites considered have the degree of direct access to the river system that the North Shore site enjoys.

Pedestrian Access

The Three Rivers Heritage Trail currently provides pedestrian and bicycle travel along the North Shore from the Carnegie Science Center east past the stadium areas. There are excellent opportunities to upgrade the existing trail system through the North Shore site. Those choosing to access the site and its riverfront amenities will be able to do so with limited conflict with arterial road traffic.

The other sites considered do not directly link to the Three Rivers Heritage Trail or other major pedestrian/trail systems. In addition, the pedestrian environment provided adjacent to the alternative North Shore site, Station Street and downtown locations, is poor and consists of major arterial roadways with a primary role of moving vehicular traffic.

Parking

The North Shore site has the land area to provide at least 5,000 parking spaces in an efficient and aesthetically pleasing manner. In addition to the on-site parking facilities, there are a number of large existing and future parking facilities that may be accessible to staff and other off-site parking demands, located adjacent to Heinz Field.

A number of the other alternative sites, specifically the downtown and Station Square sites, could be constrained in terms of on-site parking provisions and readily available adjacent parking opportunities.

Summary

Of all the possible locations, the North Shore site west of North Shore Drive provides the best overall potential for accommodating a significant amount of traffic and parking demand without undue impacts on the operation of adjacent streets or significant adverse impacts on neighboring areas.

4. SITE CONTEXT

4.1 Existing Uses

At present, the subject site is largely vacant and is used for off-site parking for the nearby Allegheny General Hospital. This activity currently generates commuter traffic and shuttle bus activity in the morning and afternoon peak periods, corresponding to the shift change times at the hospital, but traffic movements to and from the site are low during other times of the day. Traffic movement to and from the site is essentially non-existent during evenings and weekends, unless parking on the site is used for an event in the North Shore area.

There are several significant land uses in the immediate vicinity of the subject site, including the Carnegie Science Center immediately to the east on North Shore Drive, Heinz Field east of Allegheny Avenue, and PNC Park on West General Robinson Street east of Mazeroski Way.

4.2 Proposed Development

The proposed casino development will include an ultimate capacity for 5,000 slot machines which, along with the associated public and service areas, will result in a building area of approximately 750,000 square feet. The development is to be undertaken in phases, with the initial development in Phase 1 providing 3,000 slots and associated parking. The Phase 2 expansion will comprise the additional 2,000 slots and increased parking provision.

The site will provide in the order of 3,100 parking spaces for Phase 1, a valet parking service and porte cochere for drop-off and pick-up, off-site parking for employees serviced by shuttle buses, and will provide for arrivals by buses. Additional parking to provide a minimum of 5,100 on-site parking spaces will be provided for the Phase 2 development. Site expansion will allow provision of additional parking spaces if required. The site is also able to provide for bus, pedestrian and cycling access, and access for people with special needs.

4.3 Study Area

The highest level of traffic activity is expected to be in the evenings and on weekends, but the facility will be open 24 hours per day and will therefore also be used during normal business hours. However, the busiest periods for the casino are not expected to coincide with the typical peak hours for commuter traffic. The transportation analysis has therefore been limited to immediate vicinity of the casino, and to the access routes to and from the state and interstate highway network.

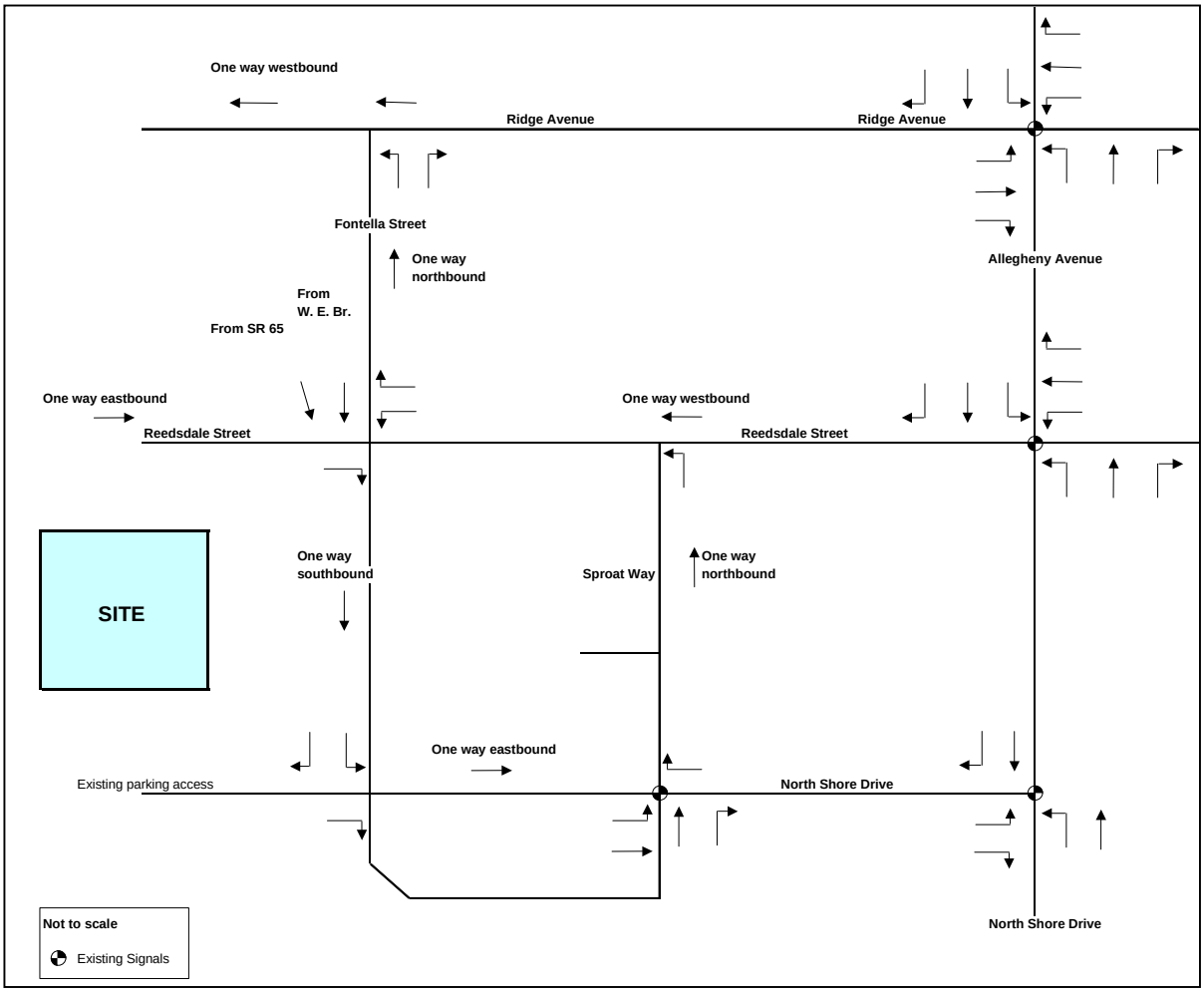
The study intersections and their existing traffic control are summarized in **Exhibit 4-1** below.

Exhibit 4-1 – Intersection Control

Intersection	Control Type
Reedsdale Street and North Shore Drive	Unsignalized ramp and street junction
Reedsdale Street and Allegheny Avenue	Signalized
North Shore Drive and Allegheny Avenue	Signalized
North Shore Drive and Sproat Way	Pedestrian signal
Reedsdale Street and Sproat Way	Stop control for Sproat Way

The existing street network is shown in Exhibit 4-2 below, indicating which street sections are currently one-way.

Exhibit 4-2 – Existing Street Network Configuration



4.4 Horizon Year and Analysis Periods

A base year of 2005 was selected for the analysis. A future horizon of 2008 was selected to reflect the possible casino opening at the request of City Transportation Planning staff. While it is expected that only the Phase 1 development would be operational at that time, it has been assumed for the purposes of the traffic and parking analysis in this report that the full Phase 2 development would be operational in 2008. This approach provides a conservative "worst-case" assessment.

The weekday evening peak hour of the adjacent road network, and a Saturday casino peak hour were established as the key analysis periods to represent the worst-case traffic scenarios. The weekday evening peak period reflects moderate trip generation from the site in combination with the 4:30-5:30 p.m. traffic peaks along the adjacent roadways, and the Saturday peak reflects the highest expected arrival peak based on attendance records at other casino operations.

Traffic in the area is also significant at 7:30-8:30 a.m., however during that period, the trip generation for the casino is expected to be very low. Notwithstanding, where alterations to the existing street network are proposed, analysis has been carried out to ensure the existing commuter traffic demand on adjacent streets can be accommodated in the future.

Due to the nature of adjacent land uses, in particular Heinz Field, Sunday afternoon traffic conditions after a Steelers home game were also considered.

In summary, this report analyzes future traffic conditions in 2008 with and without a 5,000 slot casino for the following time periods:

- Weekday a.m. street peak hour;
- Weekday p.m. street peak hour;
- Saturday evening casino peak hour; and
- Sunday Heinz Field event peak hour.

5. DATA COLLECTION

5.1 Traffic Volumes and Collision Data

Traffic count data at adjacent intersections was obtained from manual turning counts conducted in November 2005. These volumes were compared to the traffic volumes contained in the study for the North Shore Intermodal Center (ITC) on Reedsdale Street, prepared by DMJM+HARRIS on May 15, 2003. The ITC report also contained detailed data on traffic conditions during a Steelers home game at Heinz Field.

Collision data for adjacent intersections has been requested from the City, but had not been received at the time of writing this report.

5.2 Field Studies

IBI Group staff conducted field studies including observations along the frontage of the site and at adjacent intersections, to review the following:

- General traffic operations at the study area intersections;
- Sight distance provisions at the existing and potential driveway accesses; and
- Operational concerns.

Site visits were made on January 19, 2005 and on February 9, 2005 to review intersection configurations and traffic operations, and to conduct a preliminary sight line review. The site visits included a review of intersection operations during the morning and afternoon peak hours of traffic.

6. EXISTING TRANSPORTATION ACCESS AND OPERATIONS

6.1 Area Road Network

The site is located in close proximity to I-279 (including the HOV facility), State Route 28, State Route 65, the West End Bridge, and I-376 via the Fort Duquesne Bridge. The arterial road network in the vicinity of the site has been developed with major generators such as Heinz Field and PNC Park in mind. As such, the arterial road facilities and the accesses to and from the freeway facilities are, for the most part, underutilized during the a.m. and p.m. weekday peak travel periods, and during the weekends. Exceptions to this are Heinz Field or other area events where significant congestion and queuing occurs in the vicinity of the stadiums for approximately 1-2 hours before and after the event.

A key existing constraint of the subject site is that Reedsdale Street and North Shore Drive (along the frontage of the site) are currently one-way eastbound streets. In addition, there are currently four lanes on North Shore Drive adjacent to the site, which are fed by Reedsdale Street, the West End Bridge and SR 65.

The photos below show (left) the sight distance for eastbound traffic and southbound traffic along the site's frontage on Reedsdale Street and North Shore Drive, and (right) westbound Reedsdale Street approaching Sproat Way with the North Shore Drive intersection in the background.

6.1.1 FREEWAY/ARTERIAL ROAD ACCESS

Inbound access to the site is provided via the following routes:

- The West End Bridge, SR 65 and Reedsdale Street connect directly to North Shore Drive;

- I-279 south, I-279 north (including the HOV facility) and the I-376 via the Fort Duquesne Bridge connect directly to westbound Reedsdale Street. Reedsdale Street provides access to Allegheny Avenue and North Shore Drive.

Both these major inbound routes appeared to have residual capacity during the a.m. and p.m. commuter peak and more so during the anticipated casino peak traffic generation times (Friday and Saturday evening).

Outbound egress from the site is provided via the following routes:

- The West End Bridge and SR 65 are accessed via northbound Fontella Street or Allegheny Avenue to westbound Ridge Avenue. The West End Bridge also provides access to Route 19, which links to I-279 South;

- I-279 South and the Fort Duquesne Bridge are accessed via Allegheny Avenue to eastbound Ridge Avenue. The Fort Duquesne Bridge provides access to I-376; and

- I-279 North is accessed via a ramp on eastbound General Robinson Street approximately ½ mile east of the site. Access to the I-279 HOV lanes is provided from General Robinson Street approximately ¼ mile east of the site.

These outbound routes appeared to have residual capacity during the a.m. and p.m. commuter peak and more so during the anticipated casino peak traffic generation time.

Based on our preliminary assessment of the freeway and arterial road access, the provision of "wayfinding" guide signage and tourist-oriented destination signage (TODs) for the proposed casino would be relatively straightforward.

6.1.2 EXISTING LOCAL ACCESS

Inbound Access

Under existing conditions, localized access to the site could be provided via eastbound Reedsdale Street and North Shore Drive. At present the connections between Allegheny Avenue, Reedsdale Westbound and North Shore Drive (east of the site) are poor. Provided below are the access issues that need to be addressed by a road improvement plan:

Reedsdale Street Westbound – connects to North Shore Drive via a single, stop-controlled left turn lane. Without modifications to the intersection, drivers inbound to the casino must cross four lanes of southbound traffic on North Shore Drive to enter the site access.

Allegheny Avenue – inbound drivers can use Allegheny Avenue to connect to Reedsdale Street or North Shore Drive, which takes westbound drivers to northbound Sproat Way, with no direct access to the subject site. All access from the east must use westbound Reedsdale Street.

Merge Activity - Ramps from West End Bridge and SR 65 to North Shore Drive feed into the intersection of Reedsdale Street and North Shore Drive. Inbound drivers on the West End Bridge must merge across three lanes on North Shore Drive to access the site. Inbound drivers from SR 65 must merge across two lanes on North Shore Drive to access the site. Without modifications to

the intersection, both of these merge movements to the site are problematic as only 300 feet of road length is available along the site frontage on North Shore Drive.

Access to West end of Site - Beaver Avenue/Reedsdale Street provides the only access to the west end of the site. West of the site, Beaver Avenue/Reedsdale Street is a one-way southbound/eastbound street, and due to the physical barriers of the Ohio River and State Route 65, is only accessible from the east at a point approximately ½ mile north of the site. Under existing conditions, access to the west of the site is difficult, but could be considered for service (truck) access.

Outbound Access

Under existing road conditions direct egress to the west is not possible. All vehicles exiting the site must travel on eastbound Reedsdale Street to North Shore Drive. However, during peak hours of casino operation, we do not see capacity issues with the current egress opportunities from the site.

Game Day at Heinz Field

Special traffic conditions occur on days when the Steelers have a home game, which take place approximately 10-12 days per year, predominantly on Sundays. During these occasions, vehicles arriving for the game cause significant congestion on North Shore Drive for up to two hours before the game start time. The ability to provide access to the proposed casino will be limited during these times. Of particular importance will be the ability to provide access to the casino without reducing the ability to accommodate the existing traffic demands caused by Steelers home games.

It is understood that there is very little traffic activity on Reedsdale Street and North Shore Drive while the game is in progress from 12 p.m., but that vehicles leave the parking lots after approximately 4 pm depending on the length of the game, and that considerable queuing occurs between 4 p.m. and 5 p.m. Overall, the impact of traffic generated by Steelers home games is expected to impact the casino between 10 a.m. and 12 p.m., and 4 p.m. to 6 p.m. on approximately ten Sundays per year.

6.2 Transit System

Planned extension of the Port Authority's Light Rail Transit (LRT) system will provide transit access via the North Shore Connector to the proposed Allegheny Avenue Station located at the Reedsdale Street/Allegheny Avenue intersection. The LRT station will be located above the intersection and will be located approximately 1,200 ft from the primary casino access.

From consultation with the Port Authority, it is understood that the earliest completion date for the North Shore Connector LRT is estimated at 2010. This date is outside the 2008 time horizon being considered in this study, and the use of the future LRT connection has not been explicitly taken into account in analysis of traffic conditions in 2008.

A proposal was made by the Port Authority for a 2,400 space parking structure and bus terminal at the proposed LRT station. The overall facility would be known as the North Shore Intermodal Transportation Center (ITC). It is expected that the North Shore ITC would not be constructed until the LRT station is completed, and the ITC has also not been included in the 2008 horizon year. However, from consultation with the Port Authority, it is understood that the parking structure is not currently being considered for implementation, as the Port Authority's focus is on a proposed parking structure at the proposed North Side Station east of Mazeroski Way.

Current public transit services in the study area include three routes provided by the Port Authority and one route operated by the Beaver County Transit Authority (BCTA). Only one of the existing Port Authority routes (Route 16A Ohio River Boulevard) provides service directly past the site. The other two Port Authority routes (16D Manchester and 501 Manchester-Wilkinsburg) provide access to Allegheny Avenue. The BCTA route provides service from Chippewa to downtown Pittsburgh, and travels from SR 65 to General Robinson Street. The routes generally provide service at headways of 30 minutes, although routes 16A and 16D provide 15 minute service during peak periods.

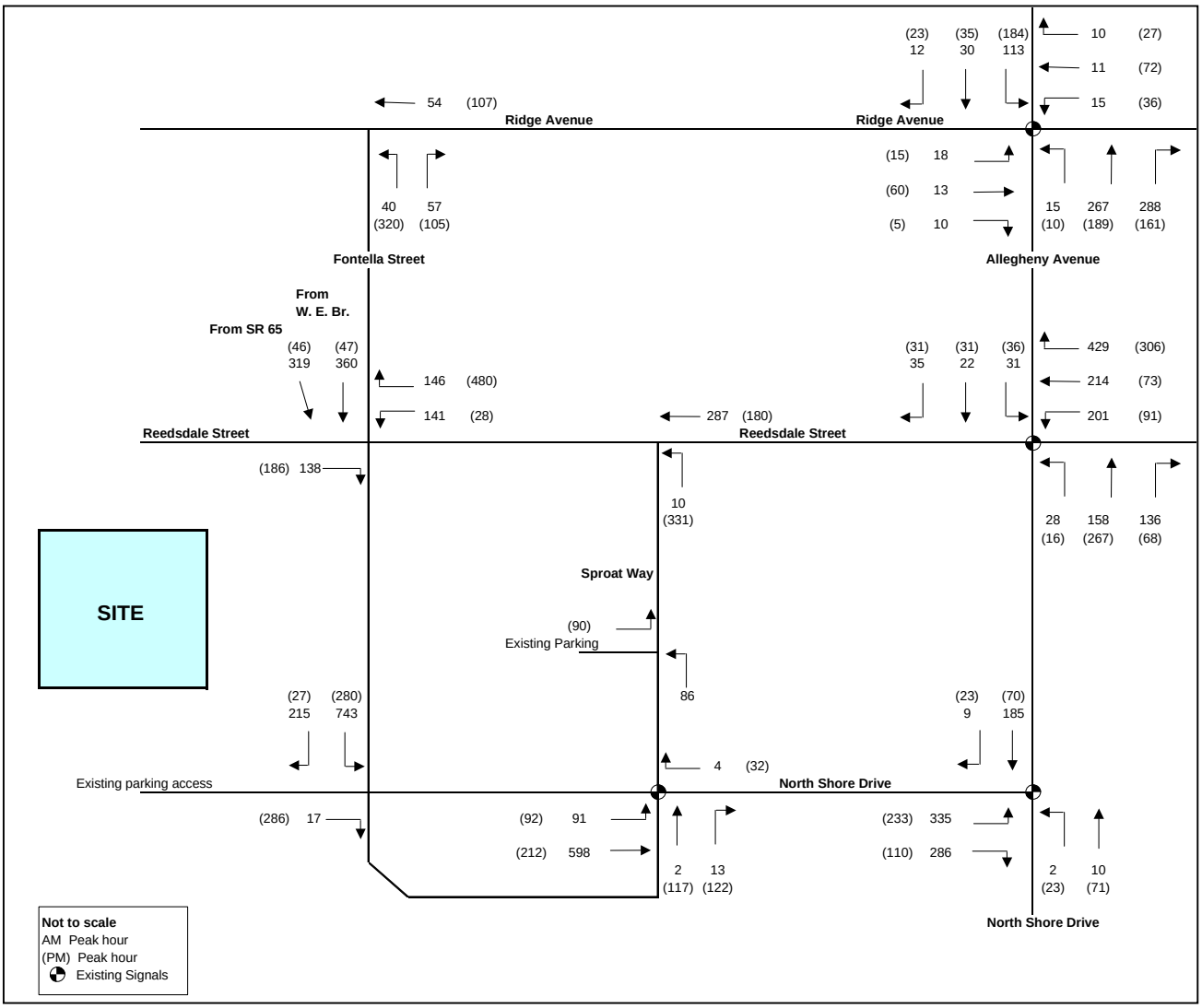
For Steelers home games at Heinz Field, the Port Authority provided 16 special bus routes in 2005, including 11 Steelers Suburban Routes and five Heinz Field Shuttles for fans parking in or near Downtown Pittsburgh. The BCTA also provides two “Steelers Express” routes to Heinz Field. A reduced number of suburban routes and shuttles are provided for Panthers Games.

The routes and frequencies could be modified to better service the casino, subject to discussion with the Port Authority and BCTA. Road improvements proposed to facilitate development of the casino would also provide opportunities for improved transit access to North Shore Drive in the vicinity of the proposed casino and the Carnegie Science Center.

6.3 Existing Traffic Volumes

Included in **Exhibit 6-1** is a summary of the existing (2005) traffic volumes based on the counts listed in Section 5 of this report.

Exhibit 6-1 – Existing (2005) a.m. and p.m. Peak Traffic Volumes

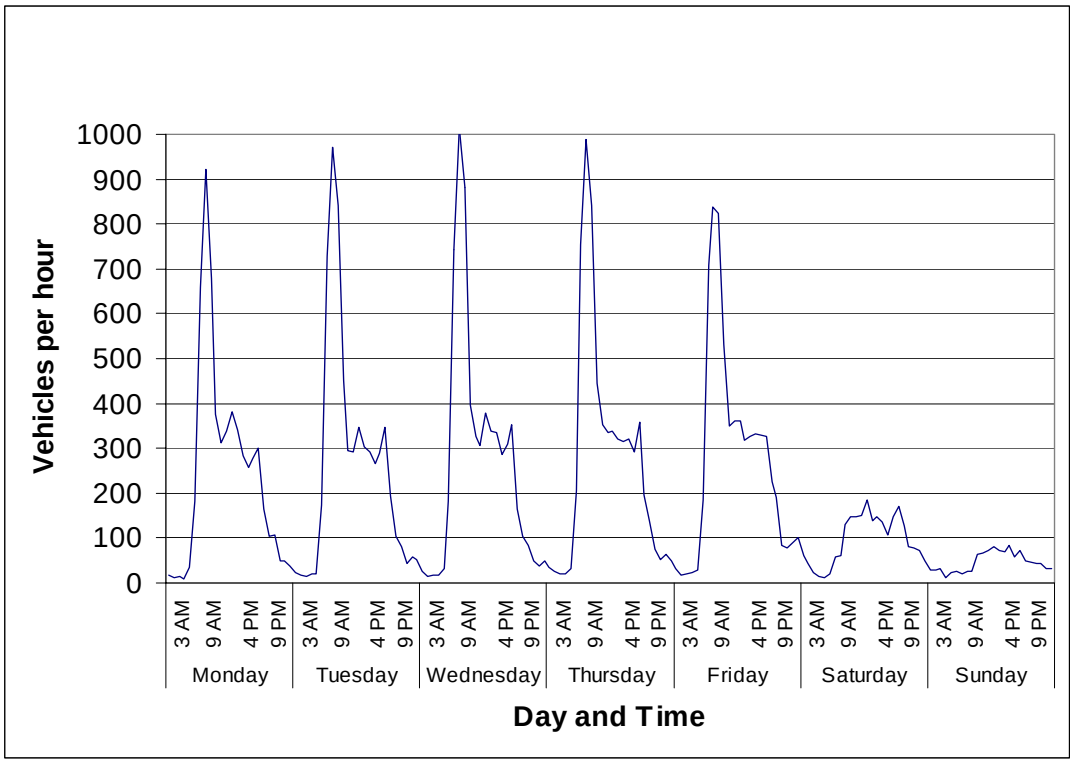


The traffic volumes indicate the study area experiences a very strong tidal traffic flow effect. In the a.m. peak hour, approximately 1,000 southbound vehicles pass the site on North Shore Drive, while in the p.m. peak hour, this volume is greatly reduced to approximately 300 vehicles per hour. The traffic volumes leaving the study area on Fontella Street and Allegheny Avenue to the north do not exhibit as much variation between the a.m. and p.m. commuter peak hours, with an increase of only 250 outbound vehicles from the a.m. to the p.m. peak hours. This indicates that the bulk of vehicles entering the study area in the morning appear to park east of Heinz Field and choose another route to leave the area in the evening.

The traffic count data also indicates that approximately 215 vehicles enter the subject site in the morning peak hour, and approximately 290 vehicles leave the subject site during the evening peak hour. These vehicles are related to the existing parking operation on the site and have been removed from the immediate road network for analysis of future casino traffic conditions.

Seven day automatic traffic recorder (ATR) counts were also conducted on selected streets in the study area in November and December 2005. The seven day traffic pattern on North Shore Drive outside the subject site is shown in **Exhibit 6-2** below.

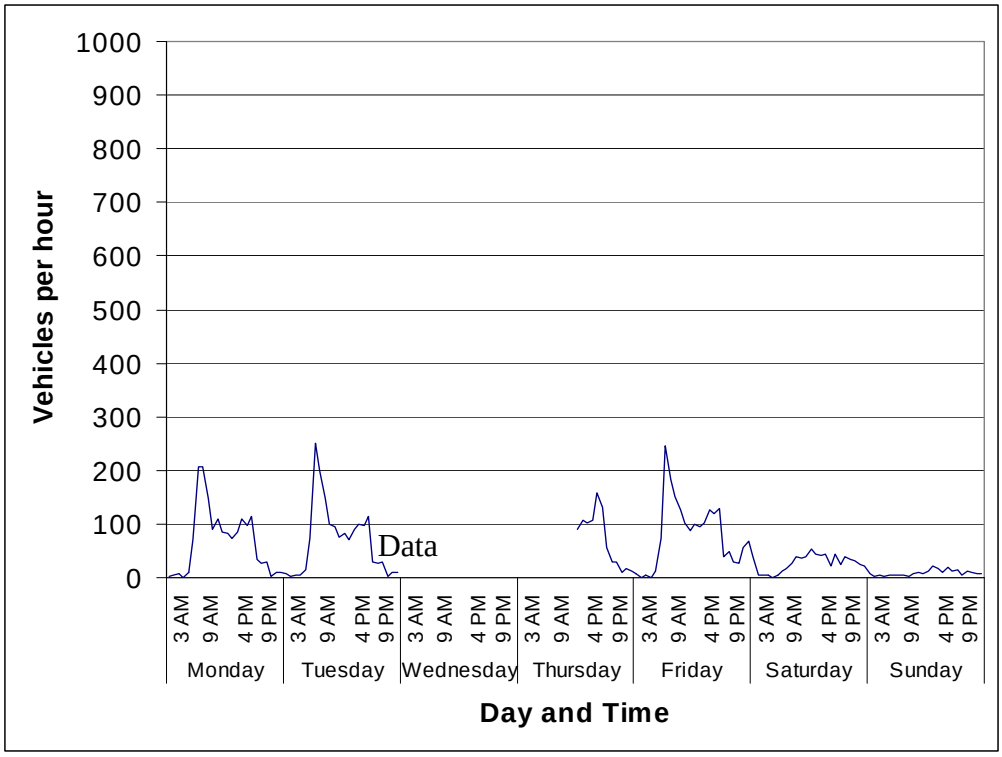
Exhibit 6-2 – Seven Day Traffic Pattern on North Shore Drive



The above exhibit clearly shows the existing sharp peak in traffic demand at approximately 8 a.m., followed by a relatively steady traffic demand of approximately 300-350 vehicles per hour until 5 p.m., after which traffic demand reduces to below 100 vehicles per hour from 7 p.m. to 5 a.m.. On Saturday, traffic volumes on North Shore Drive reach a maximum of 200 vehicles per hour, and on Sunday the volume does not exceed 100 vehicles per hour.

Seven day traffic counts were also undertaken on Reedsdale Street between Allegheny Avenue and Fontella Street. Due to the need to avoid counting over the Thanksgiving period, and repeated public interference with the counting equipment, a full count record was not obtained for this location. However, the traffic pattern on Reedsdale Street east of the subject site is shown in **Exhibit 6-3** below.

Exhibit 6-3 – Seven Day Traffic Pattern on Reedsdale Street



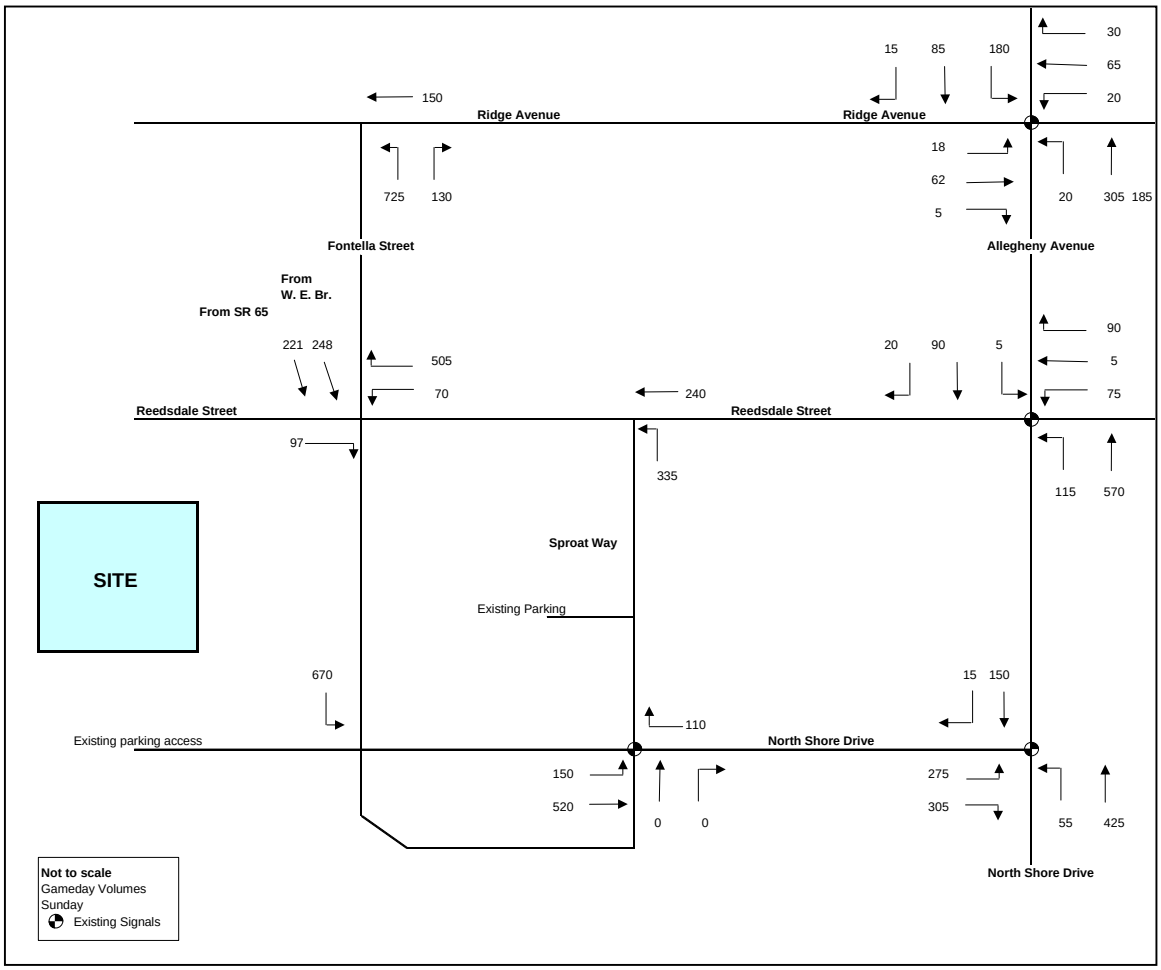
The above exhibit shows existing peaks in weekday traffic demand at approximately 8 a.m., followed by a relatively steady traffic demand of approximately 100 vehicles per hour until 5 p.m., after which traffic demand reduces to below 50 vehicles per hour from 7 p.m. to 5 a.m.. On Saturday and Sunday, traffic volumes on Reedsdale Street reach a maximum of 50 vehicles per hour.

Exhibits 6-2 and 6-3 above confirm that when the peak evening traffic demands occur for the proposed casino, the adjacent streets experience minimal existing traffic volumes.

6.3.1 EVENT PEAK TRAFFIC

Traffic volumes for a Steelers home game were obtained from the traffic assessment conducted for the proposed North Shore ITC, which contained traffic data for a 4 p.m. to 5 p.m. event peak hour. The event peak hour traffic volumes are shown below in **Exhibit 6-4**.

Exhibit 6-4 – Event Peak Hour Traffic Volumes



The volumes are generally lower than those experienced during weekday peak hours, but the congestion at parking and entrance areas and queue spillbacks from access points to the highway network reduce traffic capacity.

6.4 Existing Traffic Operations

Intersection capacity analysis was undertaken using the Highway Capacity Manual (HCM) methodology and in particular, the Synchro 6.0 software package. The analysis reflects 2005 traffic, current signal timings, and existing lane configurations. The a.m. and p.m. peak hour analysis results as analyzed for a peak 15-minute period are included in **Exhibit 6-5**. Full analysis summaries are included in **Appendix A**.

Exhibit 6-5 – Existing 2005 Intersection Operations

Intersection	Period	Overall	Critical		Comments
		LOS	LOS	V/C	
Allegheny/Reedsdale	A.M. Peak	A	B	0.34	No capacity issues
Allegheny/North Shore		A	B	0.38	No capacity issues
Allegheny/Reedsdale	P.M. Peak	A	B	0.51	No capacity issues
Allegheny/North Shore		A	B	0.29	No capacity issues
Allegheny/Reedsdale	Saturday Evening Peak	A	B	0.34	No capacity issues
Allegheny/North Shore		A	B	0.10	No capacity issues

Note: Critical movements generally defined as V/C >0.85

Based on a review of the above analysis, the following are apparent for the streets and intersections in the study area:

- Under existing conditions, the weekday a.m. peak hour experiences higher traffic demand than the p.m. peak hour;
- There are no capacity issues at adjacent signalized intersections during the a.m., p.m. or Saturday evening peak hours.

6.4.1 EXISTING EVENT PEAK TRAFFIC OPERATIONS

At the conclusion of Steelers home games at Heinz Field, traffic signals are switched to manual police control. For games finishing at 4 p.m., intersections adjacent to Heinz Field are under police control from approximately 4 p.m. to 5 p.m., subject to vehicular traffic and pedestrian demand. Extensive queuing was observed as vehicles merged onto highway ramps or were delayed at other intersections outside the study area. During this period, pedestrian activity was observed to be very heavy on Allegheny Avenue. The observations noted that traffic decreased dramatically at 5 p.m., and that parking lots were generally empty and queues dissipated by 5:15-5:30 p.m.

The traffic analysis of event traffic conditions carried out in the traffic assessment for the proposed North Shore ITC indicated failure of the intersection of Allegheny Avenue and Reedsdale Street during the hour following the conclusion of the football game.

7. ACCESS REQUIREMENTS

The assessment of the required number of accesses and their configurations included the following components:

- The anticipated number of peak hour trips to/from the site, i.e. the trip generation;
- The direction of arrival/departure of these trips, i.e., trip distribution;
- The capacity of the roadway and the access intersections now and into the foreseeable future; and

- Other roadway and site operational requirements.

Each of these factors is outlined below, followed by a summary of the access requirements for the proposed casino development.

7.1 Trip Generation Potential

7.1.1 TRIP GENERATION FOR CASINO

Trip generation for the proposed casino was estimated using a combined approach incorporating a first principles estimate, estimates based on trip generation rates available in ITE literature, and checked against the expected turnover of the parking facility during peak hour conditions. The expected number of daily person visits was used in conjunction with assumptions of the number of people expected to use an automobile to arrive at the site. The following section describes the process used to arrive at the estimated peak hour traffic for design purposes.

Daily Visits

Daily attendance estimates were derived from attendance data at the Majestic Star Casino and Trump Casino in Indiana, which together contain approximately 3,265 slot machines. However, the Indiana data represents a case where there are a total of five casinos that patrons can visit in the immediate area. The total annual person visits for the five casinos in Indiana in 2004 was 14 million visits for a total of 8,900 slots. For an equivalent 5,000 slot facility, the annual attendance would be 8 million people per year. In the case of a Pittsburgh casino, attendance could be higher due to the lack of other gaming venues in the immediate area. Accordingly, the design levels for daily attendance have been increased for the proposed North Shore Casino, as shown in **Exhibit 7-1** below.

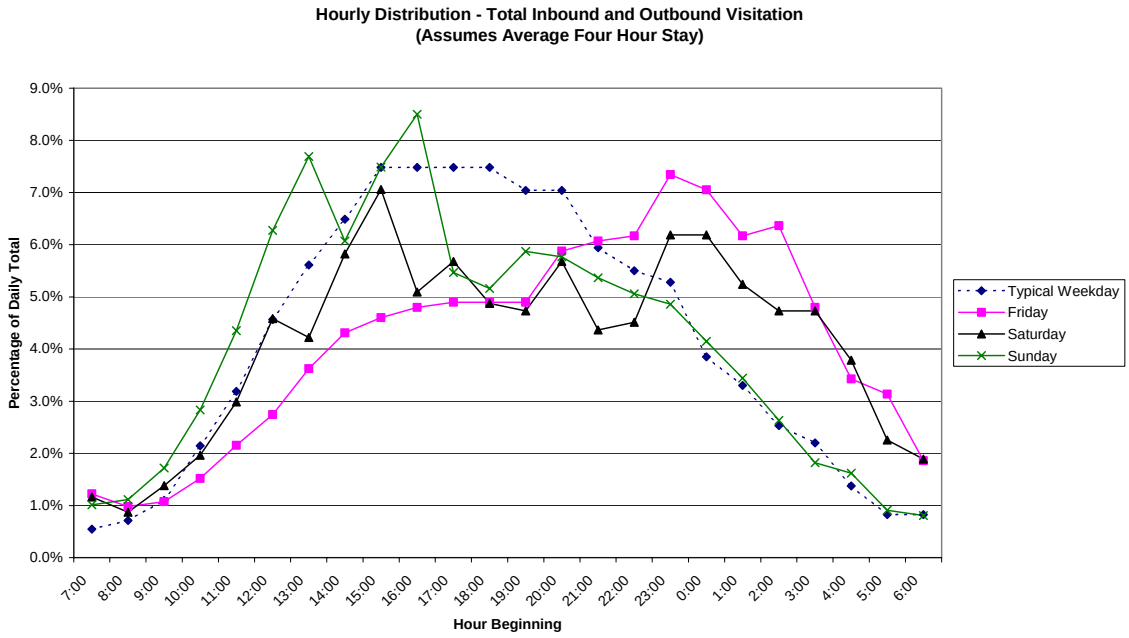
Exhibit 7-1 - Design Level of Daily Person Visits

Day	Recorded Average Visits (MSC/Trump 3265 slots)	Estimated Daily Visits Per Slot	Estimated Daily Visits Per 5000 Slots	Daily Visit Design Levels
Sunday	15600	4.8	23,890	30,000
Weekday	11500	3.5	17,611	20,000
Friday	16500	5.1	25,268	30,000
Saturday	20200	6.2	30,934	36,000

Hourly Variation

Hourly arrival and departure patterns were obtained from data measured at Casino Niagara in Niagara Falls, Canada. When surveyed, Casino Niagara had annual attendance of approximately 10 million per year for a 3,000 slot facility. The proposed North Shore Casino is expected to draw a maximum of 10 million visits per year. The total inbound hourly visits as a percentage of the daily visits are shown in **Exhibit 7-2** below.

Exhibit 7-2 – Hourly Variation of Visits



The number of automobiles entering the proposed North Shore Casino site was calculated using the following assumed parameters, based on Casino Niagara data, but adjusted to reflect a lower percentage of people walking to the site for the North Shore location.

- Automobile modal split: 90% by car (assumes remaining 10% arrives by taxi, charter bus, water taxi or walking); and

- Vehicle occupancy: 1.5 persons per vehicle on weekdays and 2.0 persons per vehicle on weekends (2.3 persons per vehicle measured at Casino Niagara).

A peak hour factor was used to determine the percentage of the daily attendance that arrives during the peak hours of the casino. For the Friday p.m. peak, the 5% factor measured at Casino Niagara was increased to 10% for this analysis. For the Saturday casino peak, the 10% factor measured at Casino Niagara was increased to 15% for this analysis.

The number of vehicles expected to enter the site was calculated for each of the peak hours identified in **Exhibit 7-2** above, and the resulting estimated peak inbound and outbound trips are shown in **Exhibit 7-3** below for the full development.

Exhibit 7-3 – Estimated Maximum Trip Generation for 5,000 Slot Casino

	Persons		Vehicle Trips	
Peak	**Inbound**	**Outbound**	**Inbound**	**Outbound**
A.M. Friday	420	350	210	180
P.M. Weekday	2,690	2,100	1,350	1,050
P.M. Saturday	4,010	2,940	2,000	1,470
Steelers Sunday	2,130	490	1,060	240

7.1.2 TRIP GENERATION FOR NON-CASINO COMPONENTS

The site is generally designed to operate as one facility with associated restaurants, bars and entertainment for patrons. For the purposes of this traffic assessment, only the proposed uses that may attract trips independently of the casino have been included separately in calculation of trip generation. These uses include specialty restaurants and other entertainment uses that may draw some patrons that do not visit any other components of the site. However, these uses are still expected to have a significant amount of synergy with the casino, and reductions in trip rates have been applied accordingly.

The peak hours for attraction to specific non-casino uses do not necessarily coincide with the peak hours of the casino itself. Peak adjustment factors were therefore applied to represent non-casino trips generated during the peak casino times. The peak adjustment factors and shared trips are shown in **Exhibit 7-4** below.

Exhibit 7-4 – Modification Factors for Non-casino Components

	Peak Adjustment Factor	Shared trips (synergy)
Specialty Restaurant	80%	50%
Retail	50%	50%
Other Entertainment	80%	70%

The total combined trip generation used in the analysis is shown in **Exhibit 7-5** below.

Exhibit 7-5 – Estimated Maximum Trip Generation for 5,000 Slot Casino

	Vehicle Trips	
Peak	**Inbound**	**Outbound**
A.M. Friday	600	500
P.M. Weekday	1,510	1,260
P.M. Saturday	2,350	1,620
Steelers Sunday	1,590	360

7.1.3 REALITY CHECK FOR TRIP GENERATION

To determine the maximum hourly trip generation for the casino, a simple check was carried out assuming a daily total of 36,000 visitors. If 90% of visitors are assumed to arrive by automobile at a rate of two people per vehicle, this would generate approximately 32,400 two-way vehicle trips per day. If the peak hour is assumed to be 10% of the daily total, then approximately 3,240 two way vehicle trips would result. This compares with the approach used above where approximately 3,500 two-way vehicle trips are estimated during the Saturday peak hour. It is also noted that this level of trip generation represents a turnover of 40% of the proposed 5,100 space parking structure in one hour. This is considered to be a high hourly turnover for a parking facility servicing a 24-hour casino, and indicates that that the trip generation assumptions have resulted in a conservatively high estimate of traffic.

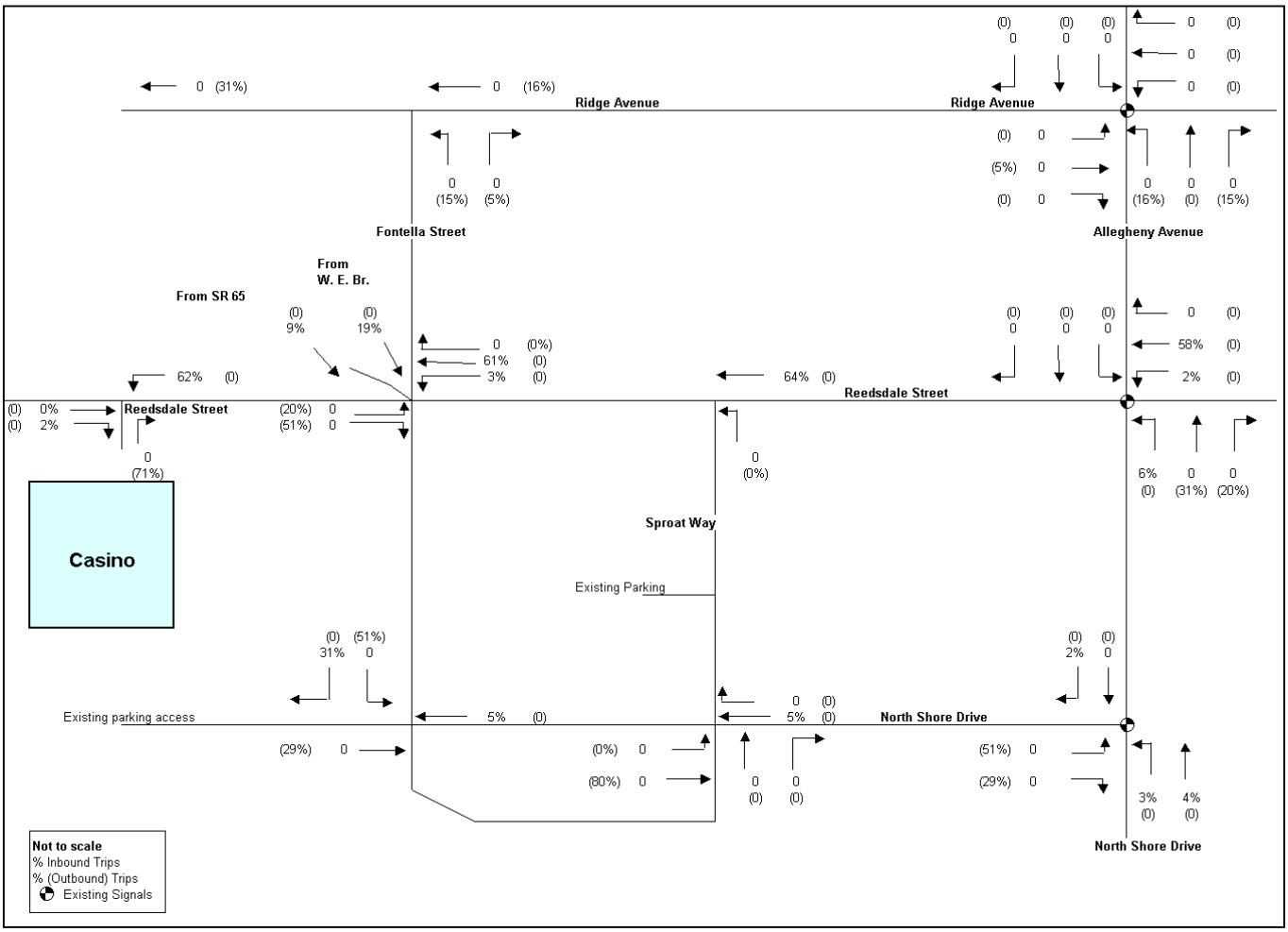
7.2 Trip Distribution and Assignment

Trips to and from the proposed casino were assigned and distributed to the street network using similar assumptions used in the traffic assessment for the proposed North Shore Intermodal Transportation Center. These assumptions were based on the Regional Travel Demand Model maintained by the Southwest Pennsylvania Commission (SPC). The traffic assignment is as follows:

- North Side neighborhoods 5%
- North 40%
- West 30%
- East/South 25%

The automobile trip distribution based on the above assignment is illustrated in **Exhibit 7-6** below, based on the trip distribution matrix issued by the City of Pittsburgh, and modified to take account of the adjacent street and highway network. For analysis of future total traffic, casino trips have been distributed based on the minor road network changes discussed in Section 8 of this report.

Exhibit 7-6 – Automobile Trip Distribution



7.3 Truck Access

The main need for truck access is generated by the need for armored trucks, food service trucks and garbage trucks. This type of servicing is typically carried out by single unit trucks, with occasional deliveries by semi-trailer trucks depending on the other types of land use activities that may be included on the site. Separate loading areas will be provided for the casino and for other restaurant uses on the site, and access to all the loading areas will be from Reedsdale Street.

The proposed site plan contains casino truck docks accessed from Lighthill Street for two semi-trailer trucks, and three large single-unit trucks. An additional loading dock is provided to accommodate a trash compactor. This loading area will accommodate the truck loading demands generated by the casino and its food court, buffet and entertainment areas. A minimum height clearance of approximately 15 feet will be provided to any loading areas that are internal to the structure. A separate secure loading area to serve armored trucks will be provided with access from Reedsdale Street.

Following award of the casino license to this site, a detailed truck loading management plan (TLMP) will be prepared in consultation with the City of Pittsburgh and adjacent stakeholders as discussed in Section 12 of this report. Delivery routes would be specified in service contracts and, subject to the TLMP, would be expected to require trucks to approach the site from the west along Beaver Avenue to North Point Drive or Reedsdale Street.

7.3.1 TRUCK TRIP GENERATION

Truck deliveries are expected to occur mainly during normal working hours. During the peak Saturday evening peak hour (7-8 p.m.) no significant truck activity is expected, other than potential visits by armored trucks. During peak loading activity, demands of up to approximately 20 trucks per hour are anticipated for the entire site. Collection of compacted refuse and recyclables is expected to occur once each per day.

7.4 Emergency Access Considerations

Consideration must be given to the site operations in emergency situations. In addition, there may be circumstances where the primary access is fully or partially unavailable due to an incident or for maintenance or construction activities. In these cases, reasonable alternative accesses are required for inbound and outbound traffic and for emergency vehicles.

The site is accessible from Reedsdale Street and North Shore Drive, providing two alternate routes for emergency access. For response to an emergency incident, emergency vehicles could access the Riverfront Trail from Lighthill Street to access the river frontage of the proposed casino building.

7.5 Transit and Ferry Access

7.5.1 TRANSIT ACCESS

Port Authority Transit

Based on existing bus service in the vicinity of the subject site, there is little capacity for Port Authority buses to carry a significant number of passengers destined to and from the casino site. However, if the Port Authority wishes to provide service to and from the casino site to meet the expected demand from visitors and employees, one of the bus platforms at the proposed on-site bus terminal can be designated for use by Port Authority buses. Alternatively, a bus stop would be provided on the south side of North Shore Drive just east of the proposed porte cochere access. The final location of bus stops would be determined through consultation with the City and Port Authority.

The proposed LRT station at the intersection of Reedsdale Street and Allegheny Avenue is anticipated to be operating in 2010, at which time the transit connection to the North Shore in general, and to the vicinity of the casino site in particular, will be improved significantly. Following completion of the Intermodal Transportation Center, Port Authority buses will service the LRT station on a regular basis. As the LRT station will be one block east of the casino site, it is not envisaged that Port Authority buses would service the subject site directly.

Charter Buses and Patron Shuttle Buses

The proposed site design will provide a bus facility on Reedsdale Street that will accommodate six tour buses, with any long-term bus parking provided at an off-site bus parking area. The pick-up/drop-off facility will facilitate bus access for off-site parking shuttles and for charter buses. An

indoor waiting room and a direct pedestrian connection will be provided from the bus facility into the casino.

Access will be provided only for charter bus operators licensed by the casino, which will allow the casino to control and schedule charter bus arrivals and departures to ensure effective use of the proposed bus facility. Patron shuttle buses may also be provided to link the site to nearby parking facilities and potentially to either the Wood Street or Gateway Center LRT stations, subject to agreement with the City and Port Authority.

From Monday to Thursday, charter buses would likely be scheduled at 15 minute intervals on four of the bus platforms, resulting in approximately 16 charter buses per hour. The remaining two platforms would be reserved for use by arriving and departing shuttle buses to carry casino patrons to and from off-site destinations. The overall number of buses serviced on the site is estimated to be approximately 25 buses per hour.

On Friday evenings, charter bus activity is expected to be lower than experienced from Monday to Thursday, which would free up one additional bus platform for parking shuttle buses. On Saturdays and Sundays, charter bus activity would be approximately 8-10 buses per hour and could be accommodated by two of the six proposed bus platforms, leaving four platforms for use by shuttle buses. Assuming shuttle buses arrive at 10-15 minute headways, the bus facility would accommodate approximately 25 shuttle buses per hour, totaling approximately 35 charter and shuttle buses during peak Saturday operation.

Employee Shuttle Buses

A dedicated area will be provided at the west end of the site for employee pick-up and drop-off activity, including accommodation of employee shuttle bus activity. It is expected that the casino operator will provide employees a minimum of two shuttle buses scheduled for continuous operation with headways of 20 minutes or less to an off-site employee parking facility and potentially to either the Wood Street or Gateway Center LRT stations, subject to agreement with the City and Port Authority. Service would be increased during major shift changes.

7.5.2 FERRY ACCESS

The river frontage will provide a mooring area for ferries as well as a facility for water taxis or personal watercraft. While use of ferries may be high during weekday evenings and weekends, it is expected that only a small proportion of total daily visitors to the casino will arrive by ferry and the automobile trip generation has not been adjusted to account for patrons using this mode of travel.

7.6 Limousine and Taxi Access

The main ceremonial entrance to the casino with the porte cochere will be located at the southeast of the site on North Shore Drive. This access will be used by limousines, taxis, and patrons requiring valet parking. A set down area will be provided adjacent to the main entrance to the building. Valet retrieval and an on-site holding area for taxis and limousines will be located in the basement of the parking structure, with direct ramp access to and from the porte cochere to the valet parking area on the basement level.

7.7 Pedestrian Access

The Three Rivers Heritage Trail currently provides pedestrian and bicycle travel along the North Shore from the Carnegie Science Centre east past the stadium areas. The casino site plan

includes an extension of the trail system along the river frontage through the subject site. A design competition is currently being held by the Riverlife Task Force to design an improved pedestrian connection across the West End Bridge in order to improve accessibility through the Three Rivers Park.

The West End Pedestrian Bridge Competition invites entrants to design a new pedestrian crossing, anchored to the existing West End Bridge. Entrants are asked to consider creative approaches for connecting pedestrians, cyclists, boaters and other users to both shores of the river. The preferred designs for further development will be selected in February 2006.

The proposed casino site plan will not adversely impact existing access to the West End Bridge, but will provide improved pedestrian, cyclist and boating access along the frontage of the casino site.

7.8 Summary of Access Requirements

Based on the review of future intersection operations and the traffic demands associated with the proposed casino, it has been concluded that two permanent accesses are required from a capacity and operational perspective. One full turns signalized access and one right-in/right-out access are considered the minimum access provisions necessary for future site traffic operations.

The accesses will be required to accommodate a peak of approximately 2,350 inbound and 1,620 outbound vehicle trips for the casino activity during the Saturday evening peak hour. A minimum of two inbound and two outbound lanes are considered necessary to accommodate these volumes. At other times, when the level of background traffic on the adjacent street network is at its peak, traffic generated by the casino is estimated at lower levels, reaching approximately 1,500 inbound and 1,260 outbound vehicle trips during the weekday p.m. peak hour of traffic.

The proposed access points must also to be able to accommodate the existing high commuter traffic volumes on North Shore Drive during the a.m. peak hour, and provide flexibility to deal with peak volumes during event traffic generated by Steelers home games at Heinz Field.

8. ACCESS ANALYSIS

During preparation of the proposed site plan, investigation of potential access configurations was carried out. The following section describes the results of the qualitative analysis and describes the recommended configuration and operation of access points and the need for modifications to the existing street network.

8.1 Study Area Constraints/Considerations

In determining the proposed location for the access, the following factors were considered:

- **Safety** – proper roadway alignment, sight distances and intersection design must be provided;
- **Operations at the Reedsdale Street/North Shore Drive Intersection** – will require approvals from City and PennDOT transportation staff to ensure proposed site accesses do not compromise the operation of this intersection;
- **Ability to accommodate existing and future background traffic volumes in addition to site traffic** – The access position and configuration should present minimal adverse impacts to traffic travelling through the study area to reach other sites, and maintain the ability to accommodate event peak traffic demand and queuing; and
- **Access restrictions created by existing road and highway configurations** – the physical barriers presented by SR 65 and the restrictions caused by adjacent one-way streets limit the route choices for traffic to get to and from the site.

8.1.1 SIGHT DISTANCE

The sight lines for eastbound vehicles on Reedsdale Street are currently limited by the horizontal curve at the intersection with North Shore Drive. Sight distances to any proposed access points should meet the criteria outlined in the American Association of State Highway Officials (AASHTO) Geometric Design of Highways and Streets. Sight distance requirements will be reviewed in detail with City and PennDOT staff when detailed design is carried out, but the functional access plans have been prepared with the stopping sight distance criteria in mind.

In this case, should a motorist leave the subject site access with an approaching vehicle on North Shore Drive, the sight distance should be sufficient for either motorist to stop and avert a collision. For a design speed of 40 mph, a distance of 305 feet is required for a passenger vehicle to come to a complete stop.

8.2 General Access Options

The following sections describe the general options for access to the site. Recommendations for changes to the road network to facilitate access to the site are contained below.

8.2.1 USE EXISTING ROAD NETWORK WITHOUT MODIFICATION

The existing intersection of Reedsdale Street and North Shore Drive is also the termination point for exit ramps from West End Bridge and State Route 65 to North Shore Drive. Reedsdale Street

westbound connects to North Shore Drive via a single, stop-controlled left turn lane, and access to Reedsdale Street west of North Shore Drive is not possible.

While the intersection appears to function adequately under existing conditions, the addition of a significant amount of inbound traffic to the proposed casino site cannot be easily accommodated without physical modification and/or signalization.

Inbound casino traffic from the West End Bridge must merge across three lanes of southbound traffic on North Shore Drive to access the site. Inbound casino traffic from State Route 65 must merge across two lanes on North Shore Drive to access the site. Inbound casino traffic from westbound Reedsdale Street must cross four lanes on North Shore Drive to enter the site access. All of these merge movements to the site would be problematic without signalization to separate and control the conflicting movements on North Shore Drive. In addition, the existing intersection configuration does not provide for traffic leaving the proposed casino and wishing to travel northbound to Fontella Street.

Due to the combination of safety and operational issues, use of the existing road network without modifications to accommodate the casino related trips is not recommended.

8.2.2 POTENTIAL ROADWAY IMPROVEMENTS

As noted earlier, the existing unsignalized intersection of Reedsdale Street and North Shore Drive provides poor access for the casino site due to the existing one-way configuration of adjacent streets, and physical barriers created by existing freeway and ramp structures.

Preliminary qualitative assessment of the intersection of Reedsdale Street and North Shore Drive indicated that only a limited number of modifications would be feasible, and that some modifications may not provide significant benefits for casino traffic, or may result in disadvantages for traffic circulation for other stakeholders such as the Steelers and the Science Center.

However, the preliminary quantitative analysis carried out to determine the traffic impact of modifying the intersection indicated that signalization (using the configuration recommended in this report) could be carried out without significant adverse impacts to other traffic on the SR 65 exit ramp and the West End Bridge exit ramp.

Any intersection modifications would be subject to detailed design and approvals from City and PennDOT officials.

8.2.3 LOCATE PRIMARY SIGNALIZED INTERSECTION ON REEDSDALE STREET

The main entrance and exit to the proposed parking structure is proposed at the west end of the site on Reedsdale Street, at the intersection of Reedsdale Street and North Point Drive.

Signalizing the intersection of Reedsdale Street and North Shore Drive, and provision of two-way traffic on Reedsdale Street between North Point Drive and North Shore Drive is required to provide access to and from the primary casino site entrance at Lighthill Street. In order to provide westbound traffic lanes on Reedsdale Street between the site access and North Shore Drive, widening of Reedsdale Street is required. A 24-foot wide piece of property along the northern casino site boundary would be conveyed to the City of Pittsburgh to provide the required road right of way.

Provision of the signal at Reedsdale Street/North Shore Drive will also serve to separate movements approaching the casino and allow traffic from SR 65 and the West End Bridge exit

ramps to change lanes on North Shore Drive in order to enter the porte cochere. Due to geometric and safety considerations, right turns would not be permitted from the SR 65 and the West End Bridge ramps to westbound Reedsdale Street.

8.2.4 LOCATE PORTE COCHERE SIGNALIZED ACCESS AT NORTH SHORE DRIVE

The main ceremonial entrance to the casino with the porte cochere will be located at the southeast of the site on North Shore Drive. This access can also serve as an alternative access for traffic arriving from the east along North Shore Drive and from the stadium areas.

Sufficient distance is provided for lane changes to permit traffic arriving from the east on Reedsdale Street to merge across southbound lanes and enter the site. It is noted that the recommended phasing for the proposed signalized intersection of North Shore Drive and Reedsdale Street separates movements from Reedsdale Street and SR 65/West End Bridge to ensure that lane changes can occur safely.

The location provides the maximum possible queuing space for southbound traffic on North Shore Drive, reducing potential for queuing to extend onto the exit ramps for SR 65 and the West End Bridge during peak traffic conditions.

8.2.5 ACCESS TO SELF-PARK GARAGE FROM REEDSDALE STREET

The primary access to the self-park garage is to be located on Lighthill Street at North Point Drive/Reedsdale Street. Due to the low volumes on Reedsdale Street and North Point Drive west of the subject site, it is expected that the access intersection could operate without signalization. However, two lanes for left turning inbound traffic would be provided, along with two lanes for outbound right turning traffic. Therefore, a traffic signal is proposed at this location to provide entering and exiting traffic with a dedicated signal phase for safe and efficient operation.

8.2.6 ALTERNATIVE ROAD ACCESS MODIFICATIONS

To provide further improvements beyond the changes proposed on Reedsdale Street, a number of other roadway network improvements were investigated. Potential exists to construct a ramp directly to the second level of the proposed parking structure from the West End Bridge Ramp to Reedsdale Street. This would have the advantage of reducing congestion at the North Shore Drive casino access, but would require area for stacking/queuing distance where the ramp enters the parking structure.

The above potential alternative change to the road network has not been analyzed in detail as analysis indicates that the proposed signal at the North Shore Drive/Reedsdale Street intersection can accommodate the traffic generated by the casino. Following operation of the casino for one year, detailed traffic analysis will be carried out to determine the benefits of these alternative road improvements. Following detailed traffic analysis, consultation with the City of Pittsburgh, PennDOT, or other approval agencies will be required in order to secure approvals for these other potential changes to the road network.

8.2.7 PEDESTRIAN ACCESS AND CIRCULATION

The Three Rivers Heritage Trail currently provides pedestrian and bicycle travel along the North Shore from the Carnegie Science Centre to the east past the stadium areas. At present, the roadways and land uses immediately to the north and west of the site are not very pedestrian friendly.

The overall plan for the North Shore Casino site will include an extension of the trail system through the site and a considerable improvement to the pedestrian level of service along the property frontages that have amenable uses.

Pedestrian access to and from the casino will be directed to the Three Rivers Heritage Trail and North Shore Drive. The Reedsdale Street road frontage and the intersection with North Shore/ West End Bridge and State Route 65 will be the primary vehicular access locations. Accordingly, our pedestrian circulation plan will ensure that pedestrians are directed into the site along the east and south frontages. In addition, the southwest area of the site will be designed to provide future opportunities to connect the waterfront pedestrian facilities to any redevelopment of like uses to the west.

The balcony, patio and amphitheatre facilities located on the south building frontage will provide an active pedestrian environment, which will create a safe and secure environment during all times of the day.

Pedestrian travel to and from the east will be accommodated along the trail system or via a signalized intersection at North Shore Drive and casino's porte cochere area. With the redevelopment of the subject site, there are great opportunities to improve the pedestrian sidewalk facilities along North Shore Drive to Heinz Field and along the frontage of the Science Center.

8.3 Operations at Proposed Signalized Intersections

Traffic control signal opportunities will be reviewed with City and PennDOT staff to provide the best possible access operations while maintaining capacity for through traffic during all times of the day. In general, it is recommended that the traffic signals be operated in semi-actuated mode of control with provisions to maximize main street green times.

Provided below is a summary of the justification for installation of signals, and a summary of potential traffic signal operations.

8.3.1 TRAFFIC SIGNAL WARRANT

As proposed, traffic signal control is recommend at the North Shore/Casino Porte Cochere, the North Shore/Reedsdale Street/West End Bridge/SR 65 intersection and the Reedsdale Street/Casino Parking Access intersection. Traffic signal warrants were reviewed based on PennDOT guidelines, specifically:

- Warrant 1 – Minimum Vehicular Volume;
- Warrant 2 – Interruption of Continuous Flow; and
- Warrant 8 – Combination Warrant.

The standard Penn DOT signal warrant is generally based on three and four legged intersections with the major street approach being defined as the higher volume roadway or the one with the lesser form of traffic control. The three intersections being considered for traffic signal control do not reflect "typical" configurations; therefore, we have provided below our assumptions relating to the input into the traffic signal warrant method.

Intersection	Main Street (Movements Included)	Minor Street (Movements Included)
North Shore/ Reedsdale/ West End Bridge/ SR 65	Reedsdale - Eastbound and westbound approaches	West End Bridge/SR 65 – Southbound traffic from both ramps
North Shore/ Casino South Access	North Shore Drive – Southbound traffic from West End Bridge and SR 65	Casino Access – Eastbound approach
Reedsdale/ Casino North Access	Reedsdale – Eastbound Reedsdale traffic and westbound left turns into Casino north access	Casino Access - Northbound right turn movement

Eight hour traffic volumes were not readily available for all existing turning movement and link volumes. In addition, casino trip generation was not available on an hour-by-hour basis.

Eight hour traffic volume estimates were generated for the main street approaches and highest minor street approach based on the following:

- Existing hourly counts collected by automatic traffic recorders on North Shore Drive and Reedsdale Street east of North Shore Drive;
- Peak period turning movement counts undertaken at the North Shore/Reedsdale/West End Bridge/SR 65 intersection;
- P.M. peak design hourly volumes from the Casino trip assignment factored to reflect a typical casino demand profile for the remainder of the day;
- Engineering judgment to apply time-of-day factors where hourly volume data was not available and where an appropriate surrogate with similar operating characteristics was not accessible.

Although the above methodology for predicting future volumes for the eight highest hours of the roadway and site is not ideal, it does provide us with a relative assessment of the need for traffic signal control at the three proposed intersections.

The proposed signalized intersections generally have major street and minor street approaches with two or more lanes. Provided below is a description of the threshold criteria outlined in the PennDOT guidelines for traffic signal justification at these two locations.

Exhibit 8-1 – Applicable PennDOT Warrant Requirements at North Shore Drive Intersections

Warrant	Requirement	
	Major Street	**Minor Street**
Warrant 1	> 600 vehicles per hour on both approaches for each of the eight highest hours of a typical day	> 200 vehicles per hour on the higher volume approach for each of the eight highest hours of a typical day
Warrant 2	> 900 vehicles per hour on both approaches for each of the eight highest hours of a typical day	> 100 vehicles per hour on the higher volume approach for each of the eight highest hours of a typical day
Combination Warrant	Warrant 1 and Warrant 2 satisfied a minimum of 80%	Warrant 1 and Warrant 2 satisfied a minimum of 80%

Included in **Exhibit 8-2, Exhibit 8-3 and Exhibit 8-4** are the traffic signal warrant calculations for the three proposed intersections.

Exhibit 8-2 - Traffic Signal Warrant - North Shore/Reedsdale Strret/West End Bridge/SR 65

Warrant 1	**Hour Ending**								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	
Vehicles per hour on Major Street (total of both approaches)	1115	1241	1582	1650	1668	1980	1821	1598	
	600	600	600	600	600	600	600	600	
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicles per hour on higher-volume minor-street approach (one direction only)	1156	1061	649	642	655	760	595	483	
	200	200	200	200	200	200	200	200	
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Warrant 2	**Hour Ending**								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	
Vehicles per hour on Major Street (total of both approaches)	1115	1241	1582	1650	1668	1980	1821	1598	
	900	900	900	900	900	900	900	900	
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicles per hour on higher-volume minor-street approach (one direction only)	1156	1061	649	642	655	760	595	483	
	100	100	100	100	100	100	100	100	
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Exhibit 8-3 - Traffic Signal Warrant - North Shore Drive/Casino Porte Cochere (South Access)

Warrant 1	Hour Ending								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	
Vehicles per hour on Major Street (total of both approaches)	1495	1465	1199	1211	1233	1448	1256	1061	
	600	600	600	600	600	600	600	600	
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicles per hour on higher-volume minor-street approach (one direction only)	180	214	292	302	307	365	350	307	
	200	200	200	200	200	200	200	200	
	90%	100%	100%	100%	100%	100%	100%	100%	99%

Warrant 2	Hour Ending								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	
Vehicles per hour on Major Street (total of both approaches)	1495	1465	1199	1211	1233	1448	1256	1061	
	900	900	900	900	900	900	900	900	
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicles per hour on higher-volume minor-street approach (one direction only)	180	214	292	302	307	365	350	307	
	100	100	100	100	100	100	100	100	
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Exhibit 8-4 - Traffic Signal Warrant – Reedsdale Street/Casino North Access

Warrant 1	Hour Ending								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	8:00 - 9:00	
Vehicles per hour on Major Street (total of both approaches)	615	727	991	1004	1022	1099	1060	898	
	600	600	600	600	600	600	600	600	
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicles per hour on higher-volume minor-street approach (one direction only)	442	525	716	740	752	895	859	776	
	200	200	200	200	200	200	200	200	
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Warrant 2	Hour Ending								
	7:00- 8:00	8:00-9:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	8:00 - 9:00	
Vehicles per hour on Major Street (total of both approaches)	615	727	991	1004	1022	1099	1060	898	
	900	900	900	900	900	900	900	900	
	68%	81%	100%	100%	100%	100%	100%	100%	94%
Vehicles per hour on higher-volume minor-street approach (one direction only)	442	525	716	740	752	895	859	776	
	100	100	100	100	100	100	100	100	
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Based on the application of the PennDOT guidelines, traffic signal control is warranted at all three proposed intersections. In addition to the warranting process, the following engineering considerations were also considered in this assessment:

- The above signal warrants were based on estimates of existing roadway volumes plus the casino site traffic, i.e., future background and future total traffic estimates will be greater than those that have been use in the above calculations. Thus the volumes assumed in the warrants are conservative;
- The North Shore/Reedsdale Street/West End Bridge/SR 65 and Reedsdale Street/Casino North Access intersections have atypical designs and will likely require traffic signal control to separate and properly accommodate conflicting movements;
- Under traffic signal control, the roadway authorities have greater control over the operation and queuing of critical turning movement and ramps, specifically the ramps from SR 65 and the West End Bridge; and
- Special event timings can be scheduled into the traffic signal controllers to respond to short-term peak flows during these events.

8.3.2 MODE OF CONTROL AND DETECTION

It is recommended that the proposed intersection of Reedsdale Street/West End Bridge/North Shore Drive be operated under semi-actuated control with stop bar detectors provided for eastbound and westbound movements. A set-back detector to detect the presence of six or more left turning vehicles is recommended for the southbound lanes. This detector could be used to extend the green time and clear queues before impacting on mainline traffic on SR 65. The optimum location for the stop bar and setback detection loops would be established during the detailed design phase.

The other intersections would also likely be operated under semi-actuated control to ensure acceptable operations for existing traffic flows on North Shore Drive and Reedsdale Street.

8.3.3 CYCLE LENGTH

The adjacent signalized intersections on Allegheny Avenue currently operate with different peak hour cycle lengths. The intersection of Reedsdale Street and Allegheny Avenue operates with a 70 second cycle, while the intersection of North Shore Drive and Allegheny Avenue operates with a 90 second cycle.

To provide the best potential for co-ordination with the existing traffic signal at the intersection of North Shore Drive and Allegheny Avenue, it has been assumed that a new signals would operate with a 90 second cycle during peak traffic conditions and a 70 second cycle during off-peak periods.

8.3.4 TIME OF DAY PLANS

Provided below are qualitative recommendations for the operations of the casino access traffic signal controls. They are provided to give an indication of the signal operations that should be pursued to provide a good level of service to casino traffic while not adversely affecting through volumes on North Shore Drive during key times of the day.

A.M. Peak Hour

During the a.m. peak hour, the primary traffic movement will be through traffic on North Shore Drive from SR 65 and the West End Bridge to Allegheny Avenue.

While it is expected that demand for traffic entering and exiting the casino site will be low, it is desirable to limit queuing on North Shore Drive and the West End Bridge/SR 65 ramps by providing set-back detectors for southbound queued vehicles to indicate the presence of six or more vehicles queued in the southbound lanes and to call the southbound phase. The need for such an operation will need to be confirmed through field observations of actual operating conditions once the site is occupied.

During the a.m. peak period, outbound traffic will be relatively low and the side street green time could be reduced to a maximum of 25 seconds of the 90 second cycle length. This phase would be “callable” by side street detection and could be “gapped out” after side street traffic is served.

Mid-Day Operations

During the mid-day operations, it is recommended that the signal operate with a side street phase of up to 35 seconds with the provision for the side street to "gap out" and return to main street green, should side street flow be low.

P.M. Peak Hour Operations

During the p.m. peak period, North Shore Drive traffic will be lower than the a.m. peak, but inbound and outbound site traffic will be increased in the evening peak. The intersection analysis included in Section 9 assumes a 35 second side street phase in the 90 second cycle length. Under these conditions, both main street and side street traffic will operate under satisfactory conditions.

Evening and Weekend Operations

During evenings and weekends, North Shore Drive traffic will be lower than on weekdays (except during major events at nearby stadiums), but inbound and outbound site traffic will likely be higher than site traffic during regular commuter peaks. The intersection analysis included in Section 9 assumes a 35 second side street phase in the 90 second cycle length. Under these conditions, both main street and side street traffic will operate under satisfactory conditions.

Special Event Operations

Intersections in the study area are operated under police control during event peak conditions such as Steelers home games at Heinz Field. It is anticipated that during event peak traffic conditions, police will continue to provide manual traffic control and may elect to override normal traffic signal operation, as is currently the case.

9. FUTURE ROADWAY AND ACCESS OPERATIONS

To determine the impacts of casino traffic on the adjacent road network, traffic capacity analysis was carried out for the 2008 horizon year with and without the casino development.

9.1 Background Traffic Estimates

Background traffic estimates were based on a growth rate of 0.5% per annum for peak hour traffic, as confirmed with transportation planning staff from the SPC. The same growth rate was used in the traffic analysis carried out for the North Shore ITC to determine traffic growth up to 2015. The growth rate of 0.5% per annum has been used to develop background traffic volumes for a 2008 horizon year to represent the potential opening of the casino.

Since the Port Authority has advised that the LRT project to connect the North Shore with the downtown will not be complete before 2010, it is assumed that the North Shore ITC will also not be constructed and operating by the 2008 horizon.

From consultation with transportation planning staff at the City of Pittsburgh, it is understood that there are no known projects for which zoning or other planning applications have been made in the immediate vicinity of the site. Therefore, for the analysis of the 2008 horizon, no allowance for specific development projects has been made over and above the general traffic growth rate of 0.5% per annum.

9.2 2008 Background Traffic Operations

Intersection capacity analysis of the 2008 background total traffic volumes was undertaken with the same methodology outlined for the existing (2005) intersection capacity analysis. The analysis reflects 2005 traffic increased by 0.5% per annum to 2008, current signal timings, and existing lane configurations. The a.m. and p.m. peak hour analysis results as analyzed for a peak 15-minute period are included in **Exhibit 9-1**. Full analysis summaries are included in **Appendix A**.

Exhibit 9-1 – Background 2008 Intersection Operations

Intersection	Period	Overall	Critical		Comments
		LOS	LOS	V/C	
Allegheny/Reedsdale	A.M. Peak	A	B	0.40	No capacity issues
Allegheny/North Shore		A	B	0.41	No capacity issues
Allegheny/Reedsdale	P.M. Peak	A	B	0.56	No capacity issues
Allegheny/North Shore		A	B	0.33	No capacity issues
Allegheny/Reedsdale	Saturday Evening Peak	A	B	0.37	No capacity issues
Allegheny/North Shore		A	B	0.11	No capacity issues

Note: Critical movements generally defined as V/C >0.85

The analysis does not indicate any significant difference from the levels of service under existing conditions, and confirms that the adjacent street network has significant spare capacity to accommodate traffic from new development in 2008.

9.3 2008 Total Traffic Estimates

Trip generation for the proposed development was added to future background traffic to analyze traffic conditions during the following time periods:

- Weekday a.m. and p.m. peak hours;
- Saturday p.m. peak hour; and
- Event peak hour (Steelers home game).

The total traffic volumes on the street network within the study area with full build-out of the proposed casino are shown on the following exhibits.

Exhibit 9-2 – 2008 Total Weekday Peak Hour Volumes

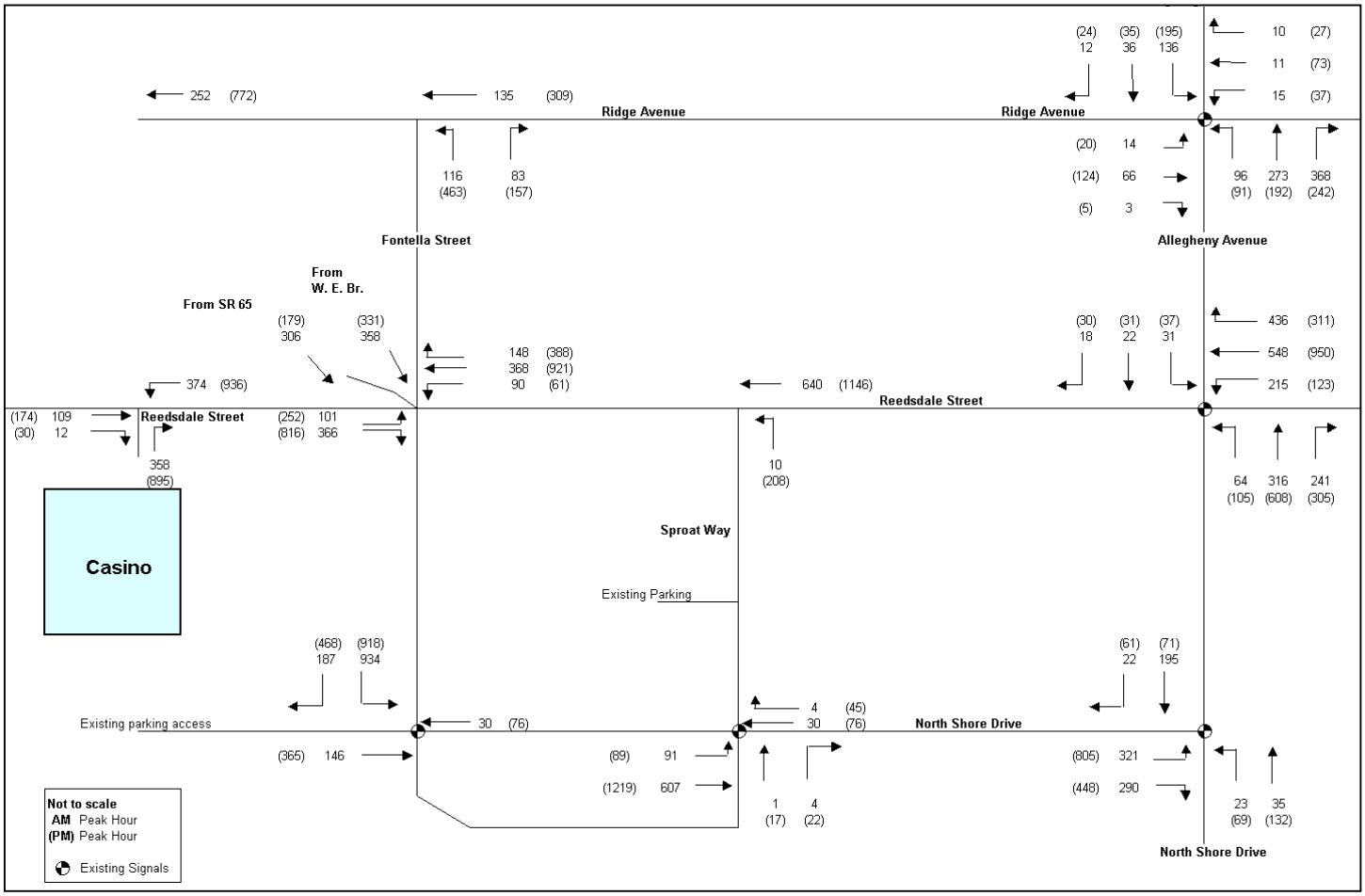


Exhibit 9-3 – 2008 Saturday P.M. Total Peak Hour Volumes

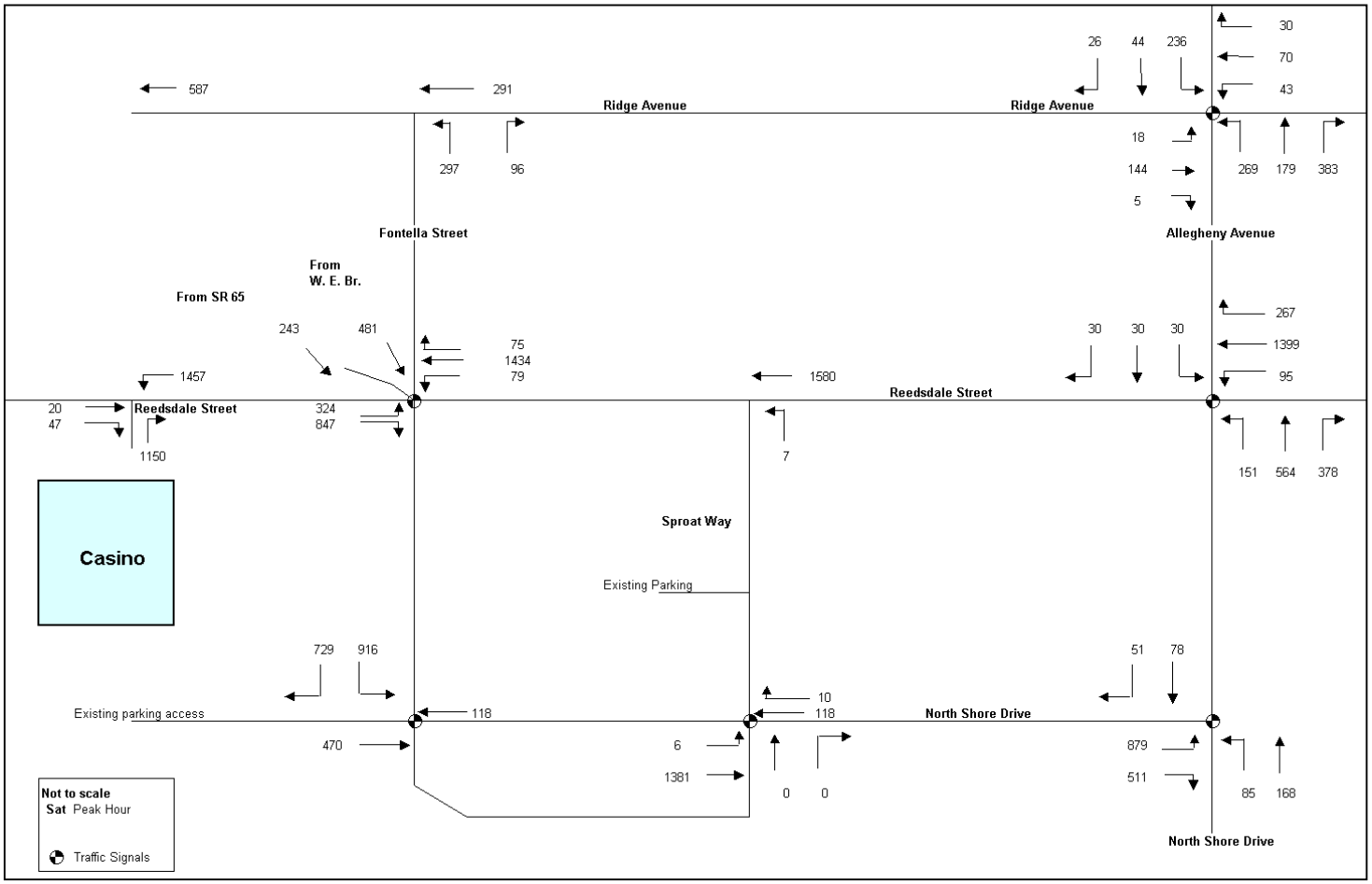
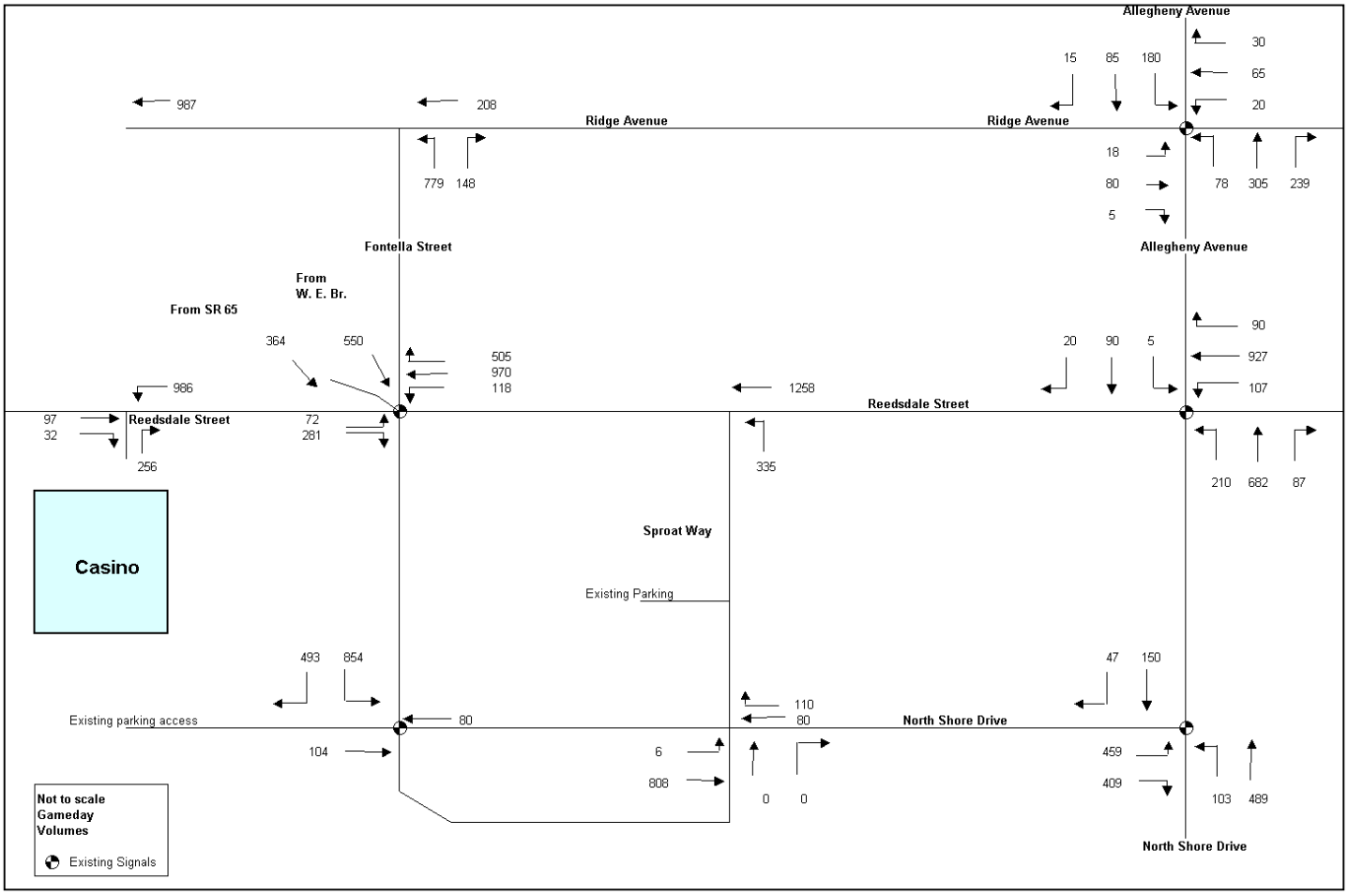


Exhibit 9-4 – 2008 Event Peak Total Peak Hour Volumes



9.4 2008 Total Traffic Operations

Intersection capacity analysis of the 2008 future total traffic volumes as shown above was undertaken with the same methodology outlined for the existing (2005) intersection capacity analysis. The peak hour analysis results are included in **Exhibits 9-5 to 9-7**. Full analysis summaries are included in **Appendix A**.

Exhibit 9-5 – Weekday Total 2008 Intersection Operations

Intersection	Period	Overall	Critical		Comments
		LOS	LOS	V/C	
Allegheny/Reedsdale	A.M. Peak	A	C	0.60	No significant delays
Allegheny/North Shore		A	B	0.36	No significant delays
Reedsdale/North Shore		B	C	0.53	No significant delays
North Shore/Porte Cochere		A	C	0.34	Delay for eastbound traffic exiting casino
Reedsdale/Lighthill		C	D	0.62	Westbound left delay
Allegheny/Reedsdale	P.M. Peak	C	E	0.85	Northbound through delay
Allegheny/North Shore		A	B	0.59	No significant capacity issues
Reedsdale/North Shore		B	C	0.82	Eastbound left queuing 200 feet
North Shore/Porte Cochere		B	C	0.58	No significant capacity issues
Reedsdale/Lighthill		B	D	0.68	Westbound left delay

Note: Critical movements generally defined as V/C >0.85

Exhibit 9-6 – Saturday P.M. Total Peak Hour Intersection Operations

Intersection	Period	Overall	Critical		Comments
		LOS	LOS	V/C	
Allegheny/Reedsdale	Saturday Evening Peak	D	E	1.00	Westbound through operating at capacity
Allegheny/North Shore		B	B	0.62	No significant capacity issues
Reedsdale/North Shore		D	E	1.02	Eastbound left queuing 600 feet
North Shore/Porte Cochere		B	D	0.69	No significant capacity issues
Reedsdale/Lighthill		C	D	0.83	Westbound left delay

The above analysis indicates that with Saturday peak hour trip generation assumed at approximately 4,000 two-way automobile trips during the peak hour, capacity problems would begin to become apparent along Reedsdale Street east of the subject site. However, it is noted that the peak capacity conditions represent a turnover of approximately 40% of the parking garage, which is considered to be a worst-case scenario that is unlikely to occur on a regular basis. During weekday peak hour conditions, traffic from the proposed casino can be accommodated without significant capacity issues.

9.5 2008 Event Traffic Operations

The traffic management plan for Steelers home games is understood to include temporary changes to deal with traffic exiting the stadium area. As noted earlier, intersections in the study area are operated under police control during event peak conditions. The event peak analysis below is based on normal traffic signal operation.

Exhibit 9-7 – Sunday Event Total Peak Hour Intersection Operations

Intersection	Period	Overall	Critical		Comments
		LOS	LOS	V/C	
Allegheny/Reedsdale	Sunday Event Peak	D	F	1.04	Northbound through delay and queuing
Allegheny/North Shore		D	F	0.61	Queue spillback from Allegheny/Reedsdale
Reedsdale/North Shore		C	E	0.95	Southbound queuing 560 feet
North Shore/Porte Cochere		A	D	0.51	Eastbound and westbound capacity reduced to accommodate North Shore Drive volumes
Reedsdale/Lighthill		B	C	0.73	Westbound left delay

While the above analysis indicates capacity conditions during the event peak hour, these major events occur approximately 10 times per year, are known about well in advance, and represent a short-lived inconvenience. It is expected that regular patrons of the casino will adjust their trip patterns on Sundays when Steelers home games are scheduled, and that Sunday casino traffic during an event peak would be reduced accordingly.

10. PARKING REQUIREMENTS AND DEMAND

10.1 City of Pittsburgh Parking Requirements

The Pittsburgh Urban Zoning Code amendments regarding Gaming uses do not contain a specific parking requirement for a Gaming Enterprise, but require a parking demand analysis in accordance with Section 914.02.B of the Zoning Code.

10.2 Existing Parking Facilities

At present, the east part of the North Shore Casino site is a surface parking area that services a number of area developments through a shuttle service. The proposed casino concept will preclude this use, as it will not be maintain in the future. The following is a general overview of other parking supply in the area of the site:

- **Science Centre and Sproat Way Parking** – Existing sites to the immediate east of the North Shore Casino site have on-site parking; however, it is not for general public use;

- **Heinz Field** - surface parking areas are located to the east of the Heinz Field complex. These facilities are generally underutilized during the majority of the year; with the exception of game day and special events; and

- **On-Street Parking** – Formal on-street parking is not permitted on the roadways in the general vicinity of the subject site. On-street parking is available on roadways north of SR 65 within the light industrial and residential areas. The walking distance to this parking supply would be in excess of ten minutes and is not conducive to use by casino patrons.

Under existing conditions, there are no readily available parking areas that could be dedicated to full time casino supply in the immediate vicinity of the site. It is the intention to provide the necessary parking on the casino site for regular operations. Opportunities to provide shared parking during certain periods of the weekday or weekend, to reduce overall parking supply in the area, are outlined in a later section.

10.3 Estimated Future Parking Demand

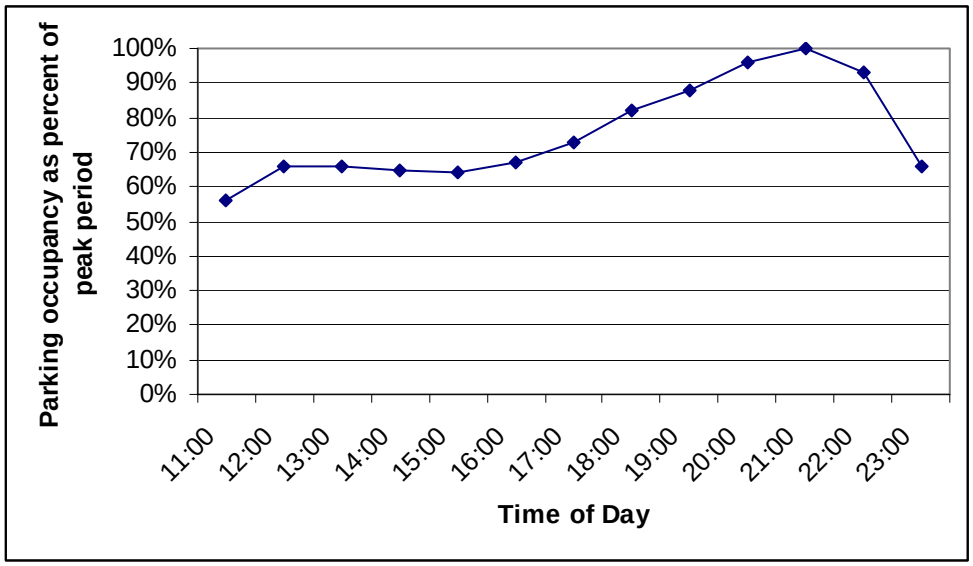
Based on information measured at existing casino sites and published in ITE sources, the parking provision rates are in the range of 1.0 to 1.5 parking spaces per slot machine or per gaming position.

Based on Phase 1 development containing 3,000 slot machines, the parking provision at 1.0 parking spaces per slot machine equates to 3,000 parking spaces. To allow for some additional parking for specialty restaurants or other land uses on the site, a parking garage containing 3,100 parking spaces is proposed for the Phase 1 development. Staff parking for approximately 500 spaces in addition to the on-site parking will be provided at an off-site location.

For the Phase 2 development, expansion onto the site to the west of the subject site is proposed in order to provide an additional 2,000 parking spaces for the additional 2,000 slot machines. Additional off-site staff parking will be provided as necessary to accommodate future staff increases.

The parking demand pattern over the day is shown in **Exhibit 10-1** below for a casino site contained in the ITE Parking Generation document.

Exhibit 10-1 – Estimated Hourly Range of Parking Demand at Casino



The above exhibit indicates that there will likely be a peak in parking demand between the hours of 7 p.m. and 11 p.m. and that, outside this period, the parking demand is expected to be approximately 60-70% of the peak parking demand. During normal business hours, parking demand for the proposed 5,000 slot casino is anticipated to be in the range of 3,000 to 3,500 spaces, which could easily be accommodated by the proposed 5,100 space parking structure on the subject site.

This pattern suggests that there are good opportunities to share parking with the sporting facilities to the east. Subject to agreements with the owners and operators of the existing parking lots, use of these adjacent parking facilities could be considered as a means to accommodate peak parking demands.

10.4 Parking Layout and Control

The parking layout for a casino needs to be logical and understandable to visitors, and must provide sufficient parking stall dimensions to allow ease of use.

The dimensions used in the functional design of the parking structure are an 18 foot long by nine and a half foot wide parking stall. Aisle widths of 24 feet result in an overall parking module width of 60 feet.

Given the expected size of the parking facility, it is considered important to provide a speed ramp or express ramp to connect the higher floors of the parking structure to the entries and exits at the ground floor level. This removes the need for vehicles to circulate through an entire level of parking in order to access a higher or lower level. A vehicle parked at the top floor of the structure would be able to use the speed ramp to descend directly to the exit.

It is proposed that the parking structure would not have any gates or barriers at the entry points, and that entry would be essentially a free flow operation. This will result in minimal queuing at entry points and limit potential spillback effects on adjacent streets.

10.5 Potential for Shared Parking

Shared parking involves the use of one parking facility by more than one land-use activity, typically taking advantage of different parking demand patterns by time of day for each use. As noted earlier in this report, the timing of the casino peak demand is likely to be different than the peak for either commuting parking or parking for the nearby stadium. As such, it is considered that significant opportunities for shared parking exist in the immediately adjacent North Shore area.

10.6 Special Event Parking

The subject site is located close to other facilities on the North Shore such as Heinz Field and PNC Park that generate significant parking demand during home games or other events.

The addition of approximately 5,000 parking spaces in the vicinity of Heinz Field would be a positive resource to accommodate the parking demands from Steelers home games and other events. The proposed casino parking structure could potentially be used to augment the existing parking supply for events at nearby facilities. It is anticipated that a mutual agreement would be pursued to enable Heinz Field patrons to use the casino parking garage as a parking reservoir.

10.7 Off-site Employee Parking

Parking for employees is proposed at an off-site location within a ten minute drive of the casino that will be linked to the site by a shuttle bus. For the initial Phase 1 operation, approximately 500 off-site parking spaces are proposed. The site is able to accommodate significantly more parking spaces if required. The location of the site and more specific details of the proposed shuttle bus service will be provided following award of the casino license.

11. TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) techniques can be used to reduce automobile trip demand and parking demand. In particular, casino management has a significant opportunity to implement TDM programs for employee parking.

To implement TDM programs, the casino management will work with CommuteInfo - a program of the Southwestern Pennsylvania Commission, (SPC) operated in partnership with transportation management associations, transportation providers, businesses and non-profit service organizations throughout Southwestern PA. The program provides a regional ridesharing service for commuters interested in alternatives to driving alone to their workplace. The program serves employers and commuters in Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland counties.

The shift work common for casino employees leads to an ideal opportunity to make effective use of TDM measures and use existing HOV facilities. The I-279 HOV lanes accessed from West General Robinson would be available for use by carpooling employees. However, it is noted that major shift changes will, in general, not coincide with weekday a.m. or p.m. peak periods.

12. PARKING AND TRANSPORTATION MANAGEMENT PLANS

Once the casino license is awarded to this site, a number of detailed operational and management plans will be required to satisfy City officials that the transportation impacts of the proposed development will be addressed to the satisfaction of the City, adjacent residents and other stakeholders. A permanent parking and transportation manager will be hired to implement the plans and oversee traffic management issues related to the casino and its neighbourhood impacts.

These plans include the:

Parking Management Plan: to specifically address the policies for parking use and enforcement, with particular attention to potential for off-site parking spillover. Due to the site's location being physically separated from adjacent residential communities, it is not anticipated that significant parking spillover will occur. However, the parking management plan will be prepared in close consultation with the City and public to serve the specific concerns of adjacent residents and stakeholders. The parking management plan would also contain details of how mutual agreements would allow use of the casino parking structure to supplement the existing supply of event parking in the adjacent area.

Traffic Management Plan: to specifically address the policies for measuring and addressing any undesirable off-site traffic impacts such as traffic short-cutting through adjacent residential neighborhoods. As the site's location is physically separated from adjacent residential communities, it is not anticipated that significant shortcutting traffic will be generated by the proposed development. However, the traffic management plan will be prepared in close consultation with the City and public to address the specific concerns of adjacent residents and stakeholders.

Truck Loading Management Plan: to specifically address the policies for measuring and addressing any undesirable off-site truck impacts such as trucks short-cutting through adjacent residential neighborhoods or the management of the on-site loading facilities. As the site is designed to accommodate the required truck loading demands, and as the connections between main highways and the subject site are by way of arterial roads that do not enter residential areas, it is not anticipated that significant truck related traffic in residential areas would be generated by the proposed development. However, a truck loading management plan will be prepared in close consultation with the City and public to address the specific concerns of adjacent residents and stakeholders, and delivery routes would be specified in service contracts and, subject to the TLMP, would be expected to require trucks to approach the site from the west along Beaver Avenue to Reedsdale Street.

13. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented above the following have been concluded/recommended:

1. The proposed North Shore Casino site is ideally placed to make use of available road capacity, water access, pedestrian trail and proposed LRT connections;

2. With modifications to the road network and new signalized intersections, peak hour automobile traffic generated by the proposed 5,000 slot casino can be accommodated;

3. The recommended road modifications, subject to approvals by the City of Pittsburgh and PennDOT, include:

    a. Reconfiguration and signalization of the intersection of Reedsdale Street and North Shore Drive;

    b. Provision for westbound traffic on Reedsdale Street west of North Shore Drive to North Point Drive and widening Reedsdale Street accordingly; and

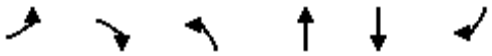
    c. Provision for westbound traffic on North Shore Drive to the proposed porte cochere and signalization of the porte cochere/North Shore Drive intersection.

4. Parking for the full site build-out should be provided at a rate of 1 parking space per slot for 5,100 on-site parking spaces, with off-site parking for employees; and

5. Following award of the casino license to the North Shore Casino site, detailed Parking, Traffic and Truck Loading Management Plans will be developed in close consultation with the City of Pittsburgh and neighborhood stakeholders.

APPENDIX A

TRAFFIC ANALYSIS SUMMARIES



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00				1.00	
Frt	0.998	0.850			0.993	
Flt Protected	0.953			0.992		
Satd. Flow (prot)	3435	1441	0	3511	3510	0
Flt Permitted	0.953			0.955		
Satd. Flow (perm)	3435	1441	0	3380	3510	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2	283			6	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	335	266	2	10	185	9
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	289	2	11	201	10
Lane Group Flow (vph)	370	283	0	13	211	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	12.2	23.2		22.5	11.4	
Actuated g/C Ratio	0.29	0.54		0.53	0.27	
v/c Ratio	0.38	0.31		0.01	0.22	
Control Delay	13.1	1.8		6.0	13.6	
Queue Delay	0.0	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	13.1	1.8		6.0	13.6	
LOS	B	A		A	B	
Approach Delay	8.2			6.0	13.6	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 42.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 27.9%		ICU Level of Service A	
Analysis Period (min) 15			

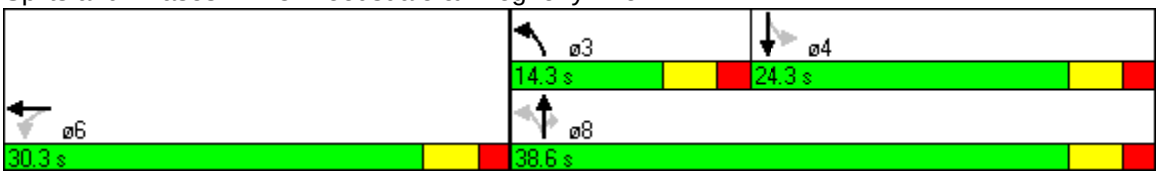
Splits and Phases: 8: North Shore & Allegheny Ave

Lane Group	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
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
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	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.900				0.850		0.947	
Flt Protected				0.950			0.950				0.983	
Satd. Flow (prot)	0	0	0	1770	3185	0	1770	1863	1583	0	1734	0
Flt Permitted				0.950			0.654				0.867	
Satd. Flow (perm)	0	0	0	1770	3185	0	1218	1863	1583	0	1529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					466				148		38	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	201	214	429	28	158	136	31	22	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	218	233	466	30	172	148	34	24	38
Lane Group Flow (vph)	0	0	0	218	699	0	30	172	148	0	96	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	30.3	30.3	0.0	14.3	38.6	38.6	24.3	24.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	44.0%	44.0%	0.0%	20.8%	56.0%	56.0%	35.3%	35.3%	0.0%
Maximum Green (s)				25.0	25.0		9.0	33.3	33.3	19.0	19.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				31.3	31.3		15.6	15.0	15.0		10.4	
Actuated g/C Ratio				0.57	0.57		0.25	0.27	0.27		0.19	
v/c Ratio				0.21	0.34		0.08	0.34	0.27		0.30	
Control Delay				8.3	3.4		12.7	14.6	3.7		15.1	
Queue Delay				0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay				8.3	3.4		12.7	14.6	3.7		15.1	
LOS				A	A		B	B	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					4.5			9.8			15.1	
Approach LOS					A			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 54.6			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave

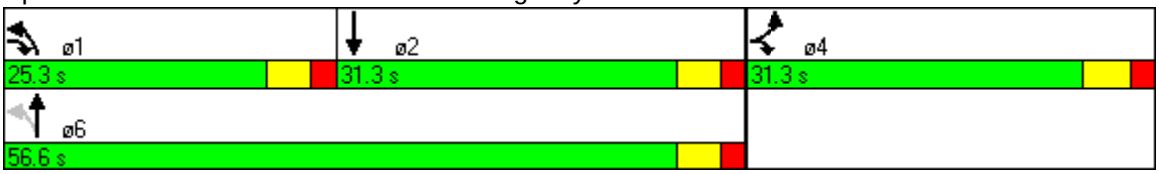


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					0.99	
Frt		0.850			0.963	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	3433	1441	0	3497	3387	0
Flt Permitted	0.950			0.930		
Satd. Flow (perm)	3433	1441	0	3291	3387	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		120			25	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	233	110	23	71	70	23
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	120	25	77	76	25
Lane Group Flow (vph)	253	120	0	102	101	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	31.3	56.6	25.3	56.6	31.3	0.0
Total Split (%)	35.6%	64.4%	28.8%	64.4%	35.6%	0.0%
Maximum Green (s)	25.6		20.0	51.3	26.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	10.5	24.0		23.9	17.6	
Actuated g/C Ratio	0.25	0.50		0.60	0.44	
v/c Ratio	0.29	0.16		0.05	0.07	
Control Delay	12.0	1.8		4.9	9.3	
Queue Delay	0.0	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	12.0	1.8		4.9	9.3	
LOS	B	A		A	A	
Approach Delay	8.7			4.9	9.3	
Approach LOS	A			A	A	

Intersection Summary	
Area Type:	Other
Cycle Length: 87.9	
Actuated Cycle Length: 39.6	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 23.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: North Shore & Allegheny Ave

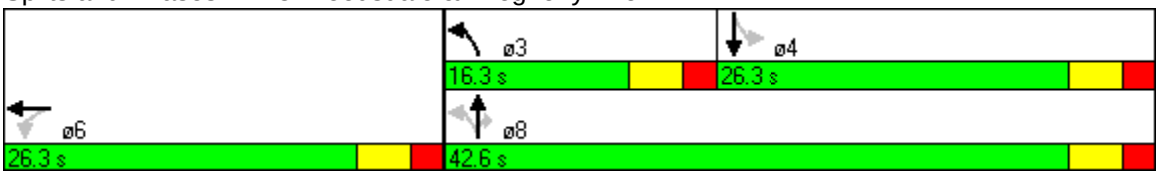


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.879				0.850		0.957	
Flt Protected				0.950			0.950				0.982	
Satd. Flow (prot)	0	0	0	1770	3111	0	1770	1863	1583	0	1751	0
Flt Permitted				0.950			0.649				0.828	
Satd. Flow (perm)	0	0	0	1770	3111	0	1209	1863	1583	0	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					333				74		34	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	91	73	306	16	267	68	36	31	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	79	333	17	290	74	39	34	34
Lane Group Flow (vph)	0	0	0	99	412	0	17	290	74	0	107	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	26.3	26.3	0.0	16.3	42.6	42.6	26.3	26.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	38.2%	38.2%	0.0%	23.7%	61.8%	61.8%	38.2%	38.2%	0.0%
Maximum Green (s)				21.0	21.0		11.0	37.3	37.3	21.0	21.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				25.2	25.2		14.8	14.5	14.5		12.5	
Actuated g/C Ratio				0.53	0.53		0.26	0.30	0.30		0.26	
v/c Ratio				0.11	0.23		0.04	0.51	0.14		0.26	
Control Delay				8.2	2.6		12.1	15.3	3.7		12.2	
Queue Delay				0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay				8.2	2.6		12.1	15.4	3.7		12.2	
LOS				A	A		B	B	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					3.7			13.0			12.2	
Approach LOS					A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 47.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 41.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave

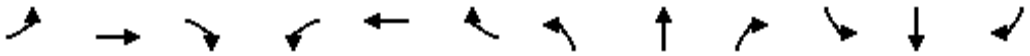


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.993	
Flt Protected	0.950			0.992		
Satd. Flow (prot)	3433	1441	0	3511	3510	0
Flt Permitted	0.950			0.939		
Satd. Flow (perm)	3433	1441	0	3323	3510	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		46			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	53	42	14	74	78	4
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	46	15	80	85	4
Lane Group Flow (vph)	58	46	0	95	89	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	10.2	28.1		43.8	37.2	
Actuated g/C Ratio	0.16	0.38		0.74	0.63	
v/c Ratio	0.10	0.08		0.04	0.04	
Control Delay	11.2	2.4		3.1	7.3	
Queue Delay	0.0	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	11.2	2.4		3.1	7.3	
LOS	B	A		A	A	
Approach Delay	7.3			3.1	7.3	
Approach LOS	A			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 58.9			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.10			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 20.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: North Shore & Allegheny Ave

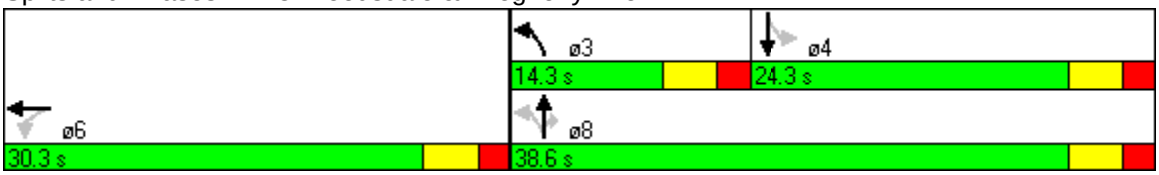


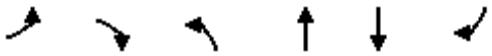
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.868				0.850		0.955	
Flt Protected				0.950			0.950				0.984	
Satd. Flow (prot)	0	0	0	1770	3072	0	1770	1863	1583	0	1750	0
Flt Permitted				0.950			0.647				0.903	
Satd. Flow (perm)	0	0	0	1770	3072	0	1205	1863	1583	0	1606	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					290				59		33	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	48	36	267	10	62	54	30	30	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	39	290	11	67	59	33	33	33
Lane Group Flow (vph)	0	0	0	52	329	0	11	67	59	0	99	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	30.3	30.3	0.0	14.3	38.6	38.6	24.3	24.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	44.0%	44.0%	0.0%	20.8%	56.0%	56.0%	35.3%	35.3%	0.0%
Maximum Green (s)				25.0	25.0		9.0	33.3	33.3	19.0	19.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				42.9	42.9		13.3	13.5	13.5		10.9	
Actuated g/C Ratio				0.67	0.67		0.18	0.21	0.21		0.17	
v/c Ratio				0.04	0.15		0.04	0.18	0.16		0.34	
Control Delay				6.1	1.7		14.5	13.9	5.0		14.8	
Queue Delay				0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay				6.1	1.7		14.5	13.9	5.0		14.8	
LOS				A	A		B	B	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					2.3			10.1			14.8	
Approach LOS					A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 63.6			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 28.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.993	
Flt Protected	0.950			0.993		
Satd. Flow (prot)	3433	1441	0	3514	3510	0
Flt Permitted	0.950			0.955		
Satd. Flow (perm)	3433	1441	0	3380	3510	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		332			6	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	335	266	2	10	185	9
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	419	332	2	12	231	11
Lane Group Flow (vph)	419	332	0	14	242	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	13.0	24.1		22.6	11.5	
Actuated g/C Ratio	0.30	0.55		0.52	0.26	
v/c Ratio	0.41	0.35		0.01	0.26	
Control Delay	13.3	1.9		6.5	14.3	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	13.3	1.9		6.5	14.3	
LOS	B	A		A	B	
Approach Delay	8.3			6.5	14.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 43.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

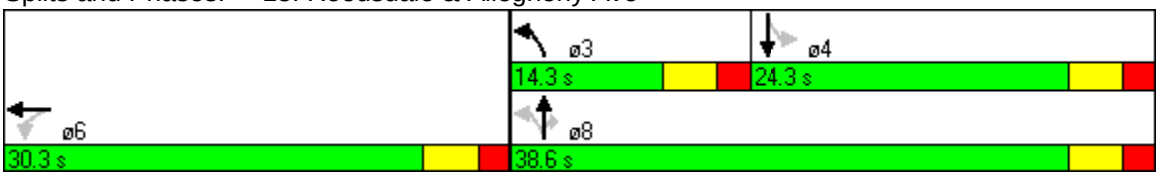
Splits and Phases: 8: North Shore & Allegheny Ave

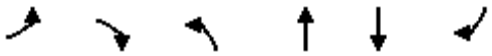
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.900				0.850		0.946	
Flt Protected				0.950			0.950				0.983	
Satd. Flow (prot)	0	0	0	1770	3185	0	1770	1863	1583	0	1732	0
Flt Permitted				0.950			0.634				0.855	
Satd. Flow (perm)	0	0	0	1770	3185	0	1181	1863	1583	0	1507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					536				170		44	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	201	214	429	28	158	136	31	22	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	0	0	0	251	268	536	35	198	170	39	28	44
Lane Group Flow (vph)	0	0	0	251	804	0	35	198	170	0	111	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	30.3	30.3	0.0	14.3	38.6	38.6	24.3	24.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	44.0%	44.0%	0.0%	20.8%	56.0%	56.0%	35.3%	35.3%	0.0%
Maximum Green (s)				25.0	25.0		9.0	33.3	33.3	19.0	19.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				30.7	30.7		16.0	15.5	15.5		10.9	
Actuated g/C Ratio				0.56	0.56		0.26	0.28	0.28		0.20	
v/c Ratio				0.25	0.40		0.09	0.37	0.30		0.33	
Control Delay				8.9	3.6		12.8	14.9	3.6		15.1	
Queue Delay				0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay				8.9	3.6		12.8	14.9	3.6		15.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				A	A		B	B	A		B	
Approach Delay					4.9			10.0			15.1	
Approach LOS					A			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 54.4			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					0.99	
Frt		0.850			0.963	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	3433	1441	0	3497	3386	0
Flt Permitted	0.950			0.919		
Satd. Flow (perm)	3433	1441	0	3253	3386	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		138			29	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	233	110	23	71	70	23
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	291	138	29	89	88	29
Lane Group Flow (vph)	291	138	0	118	117	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	38.3	63.6	25.3	56.6	31.3	0.0
Total Split (%)	40.4%	67.0%	26.7%	59.6%	33.0%	0.0%
Maximum Green (s)	32.6		20.0	51.3	26.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	10.5	21.7		22.6	13.9	
Actuated g/C Ratio	0.25	0.50		0.55	0.34	
v/c Ratio	0.33	0.17		0.06	0.10	
Control Delay	12.9	1.8		5.0	9.8	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	12.9	1.8		5.0	9.8	
LOS	B	A		A	A	
Approach Delay	9.3			5.0	9.8	
Approach LOS	A			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94.9			
Actuated Cycle Length: 41.2			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 24.9%		ICU Level of Service A	
Analysis Period (min) 15			

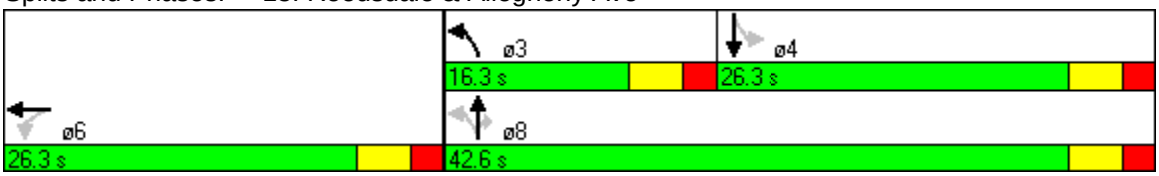
Splits and Phases: 8: North Shore & Allegheny Ave

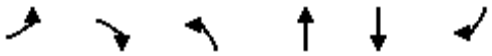
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.879				0.850		0.957	
Flt Protected				0.950			0.950				0.982	
Satd. Flow (prot)	0	0	0	1770	3111	0	1770	1863	1583	0	1751	0
Flt Permitted				0.950			0.631				0.807	
Satd. Flow (perm)	0	0	0	1770	3111	0	1175	1863	1583	0	1439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					382				85		36	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	91	73	306	16	267	68	36	31	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	0	0	0	114	91	382	20	334	85	45	39	39
Lane Group Flow (vph)	0	0	0	114	473	0	20	334	85	0	123	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	26.3	26.3	0.0	16.3	42.6	42.6	26.3	26.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	38.2%	38.2%	0.0%	23.7%	61.8%	61.8%	38.2%	38.2%	0.0%
Maximum Green (s)				21.0	21.0		11.0	37.3	37.3	21.0	21.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				24.4	24.4		15.7	15.4	15.4		13.4	
Actuated g/C Ratio				0.51	0.51		0.28	0.32	0.32		0.28	
v/c Ratio				0.13	0.27		0.05	0.56	0.15		0.29	
Control Delay				8.8	2.7		11.9	15.9	3.4		12.5	
Queue Delay				0.0	0.0		0.0	0.1	0.0		0.0	
Total Delay				8.8	2.7		11.9	15.9	3.4		12.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				A	A		B	B	A		B	
Approach Delay					3.9			13.3			12.5	
Approach LOS					A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 47.9			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave



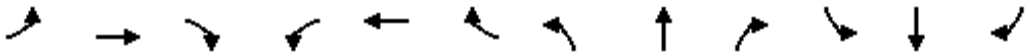


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.993	
Flt Protected	0.950			0.992		
Satd. Flow (prot)	3433	1441	0	3511	3510	0
Flt Permitted	0.950			0.934		
Satd. Flow (perm)	3433	1441	0	3306	3510	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		52			5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	53	42	14	74	78	4
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	66	52	18	92	98	5
Lane Group Flow (vph)	66	52	0	110	103	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	10.4	28.2		42.0	35.5	
Actuated g/C Ratio	0.17	0.39		0.74	0.62	
v/c Ratio	0.11	0.09		0.04	0.05	
Control Delay	11.1	2.3		3.2	7.3	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	11.1	2.3		3.2	7.3	
LOS	B	A		A	A	
Approach Delay	7.2			3.2	7.3	
Approach LOS	A			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 57			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.11			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 20.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: North Shore & Allegheny Ave

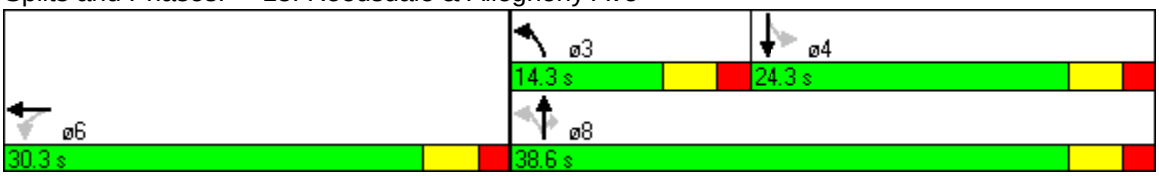


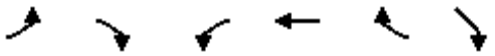
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.868				0.850		0.955	
Flt Protected				0.950			0.950				0.984	
Satd. Flow (prot)	0	0	0	1770	3072	0	1770	1863	1583	0	1750	0
Flt Permitted				0.950			0.628				0.896	
Satd. Flow (perm)	0	0	0	1770	3072	0	1170	1863	1583	0	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					334				68		37	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	48	36	267	10	62	54	30	30	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	0	0	0	60	45	334	12	78	68	38	38	38
Lane Group Flow (vph)	0	0	0	60	379	0	12	78	68	0	114	0
Turn Type				Perm			pm+pt		Perm	Perm		
Protected Phases					6		3	8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		3	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.0	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		9.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	30.3	30.3	0.0	14.3	38.6	38.6	24.3	24.3	0.0
Total Split (%)	0.0%	0.0%	0.0%	44.0%	44.0%	0.0%	20.8%	56.0%	56.0%	35.3%	35.3%	0.0%
Maximum Green (s)				25.0	25.0		9.0	33.3	33.3	19.0	19.0	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes					
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0			0	0	0	0	
Act Effct Green (s)				42.1	42.1		13.6	13.8	13.8		11.3	
Actuated g/C Ratio				0.67	0.67		0.19	0.21	0.21		0.17	
v/c Ratio				0.05	0.18		0.04	0.20	0.17		0.37	
Control Delay				6.3	1.8		14.5	14.0	4.7		15.2	
Queue Delay				0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay				6.3	1.8		14.5	14.0	4.7		15.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				A	A		B	B	A		B	
Approach Delay					2.4			10.1			15.2	
Approach LOS					A			B			B	

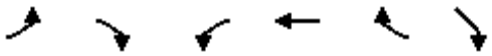
Intersection Summary			
Area Type:	Other		
Cycle Length: 68.9			
Actuated Cycle Length: 63.2			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





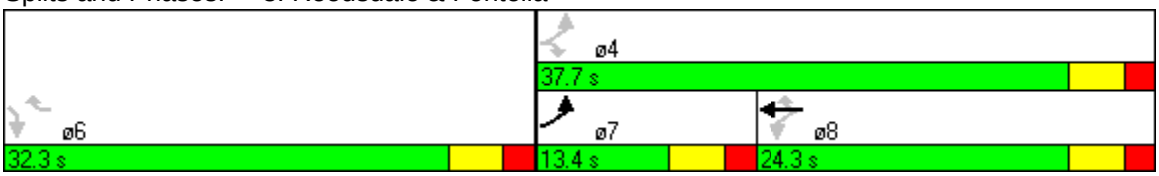
Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	50			0
Storage Lanes	1	2	1			2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	49
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	16	9	16		16	16
Lane Util. Factor	1.00	0.88	1.00	0.95	0.88	0.88
Frt		0.850			0.850	0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	1770	3539	2787	2787
Flt Permitted	0.377		0.950			
Satd. Flow (perm)	702	2787	1770	3539	2787	2787
Right Turn on Red		No	Yes		Yes	
Satd. Flow (RTOR)			98		161	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)				31		
Link Distance (ft)				275		
Travel Time (s)				6.0		
Volume (vph)	101	366	90	368	148	664
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	398	98	400	161	722
Lane Group Flow (vph)	110	398	98	400	161	722
Turn Type	custom	custom	Perm		custom	custom
Protected Phases	7			8		
Permitted Phases	4	4	8		6 8	6
Detector Phases	7	4	8	8	6 8	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.3	21.3	21.3	21.3		21.3
Total Split (s)	13.4	37.7	24.3	24.3	56.6	32.3
Total Split (%)	19.1%	53.9%	34.7%	34.7%	80.9%	46.1%
Maximum Green (s)	8.1	32.4	19.0	19.0		27.0
Yellow Time (s)	3.3	3.3	3.3	3.3		3.3
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	None	None		C-Max
Walk Time (s)		5.0	5.0	5.0		
Flash Dont Walk (s)		11.0	11.0	11.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)	25.7	25.7	15.1	15.1	56.1	36.3
Actuated g/C Ratio	0.37	0.37	0.22	0.22	0.80	0.52
v/c Ratio	0.28	0.39	0.21	0.53	0.07	0.50
Control Delay	14.3	16.3	6.1	26.3	0.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	16.3	6.1	26.3	0.5	14.4
LOS	B	B	A	C	A	B



Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Approach Delay				17.0		
Approach LOS				B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 6:SER, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

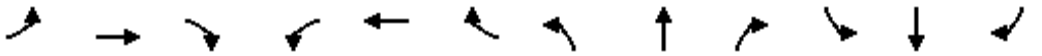
Splits and Phases: 3: Reedsdale & Fontella



Lane Group	EBT	EBR	WBL2	WBL	WBT	NBL	NBR	NEL	NER	NER2
Lane Configurations										
Ideal Flow (vphpl)	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
Leading Detector (ft)	49		49				49		49	
Trailing Detector (ft)	0		0				0		0	
Turning Speed (mph)		9	16	16		16	9	16	9	9
Lane Util. Factor	0.95	0.95	0.97	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt	0.976						0.850		0.865	
Flt Protected			0.950							
Satd. Flow (prot)	3454	0	3433	0	0	0	2787	0	1611	0
Flt Permitted			0.950							
Satd. Flow (perm)	3454	0	3433	0	0	0	2787	0	1611	0
Right Turn on Red							Yes			Yes
Satd. Flow (RTOR)							1314		22	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31				31	31		31		
Link Distance (ft)	332				721	268		384		
Travel Time (s)	7.3				15.9	5.9		8.4		
Volume (vph)	109	20	374	0	0	0	358	0	20	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	22	407	0	0	0	389	0	22	22
Lane Group Flow (vph)	140	0	407	0	0	0	389	0	44	0
Turn Type			Prot				custom		custom	
Protected Phases	4		3							
Permitted Phases							3		2	
Detector Phases	4		3				3		2	
Minimum Initial (s)	4.0		4.0				4.0		4.0	
Minimum Split (s)	21.3		9.3				9.3		21.3	
Total Split (s)	24.3	0.0	43.1	0.0	0.0	0.0	43.1	0.0	22.6	0.0
Total Split (%)	27.0%	0.0%	47.9%	0.0%	0.0%	0.0%	47.9%	0.0%	25.1%	0.0%
Maximum Green (s)	19.0		37.8				37.8		17.3	
Yellow Time (s)	3.3		3.3				3.3		3.3	
All-Red Time (s)	2.0		2.0				2.0		2.0	
Lead/Lag	Lag		Lead				Lead			
Lead-Lag Optimize?	Yes		Yes				Yes			
Vehicle Extension (s)	3.0		3.0				3.0		3.0	
Recall Mode	None		None				None		C-Min	
Walk Time (s)	5.0								5.0	
Flash Dont Walk (s)	11.0								11.0	
Pedestrian Calls (#/hr)	0								0	
Act Effct Green (s)	10.1		17.1				17.1		50.8	
Actuated g/C Ratio	0.11		0.19				0.19		0.56	
v/c Ratio	0.36		0.62				0.24		0.05	
Control Delay	39.2		37.4				0.4		7.1	
Queue Delay	0.0		0.0				0.0		0.0	
Total Delay	39.2		37.4				0.4		7.1	
LOS	D		D				A		A	
Approach Delay	39.2									
Approach LOS	D									

Intersection Summary		
Area Type:	Other	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.62		
Intersection Signal Delay: 21.6	Intersection LOS: C	
Intersection Capacity Utilization 29.5%	ICU Level of Service A	
Analysis Period (min) 15		

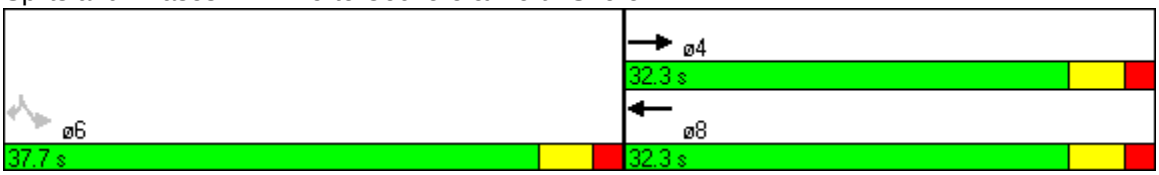
Splits and Phases: 6: Reedsdale & Lighthill



Lane Group	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	4.0
Leading Detector (ft)		49			49					49		49
Trailing Detector (ft)		0			0					0		0
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00
Frt												0.850
Flt Protected										0.950		
Satd. Flow (prot)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Flt Permitted										0.950		
Satd. Flow (perm)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												203
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		302			249			302			334	
Travel Time (s)		6.6			5.5			6.6			7.3	
Volume (vph)	0	145	0	0	50	0	0	0	0	934	0	187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	158	0	0	54	0	0	0	0	1015	0	203
Lane Group Flow (vph)	0	158	0	0	54	0	0	0	0	1015	0	203
Turn Type										custom		custom
Protected Phases		4			8							
Permitted Phases										6		6
Detector Phases		4			8					6		6
Minimum Initial (s)		4.0			4.0					4.0		4.0
Minimum Split (s)		21.3			21.3					21.3		21.3
Total Split (s)	0.0	32.3	0.0	0.0	32.3	0.0	0.0	0.0	0.0	37.7	0.0	37.7
Total Split (%)	0.0%	46.1%	0.0%	0.0%	46.1%	0.0%	0.0%	0.0%	0.0%	53.9%	0.0%	53.9%
Maximum Green (s)		27.0			27.0					32.4		32.4
Yellow Time (s)		3.3			3.3					3.3		3.3
All-Red Time (s)		2.0			2.0					2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Recall Mode		None			None					C-Max		C-Max
Walk Time (s)		5.0			5.0					5.0		5.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		9.3			9.2					55.7		55.7
Actuated g/C Ratio		0.13			0.13					0.80		0.80
v/c Ratio		0.34			0.22					0.26		0.16
Control Delay		29.2			28.7					2.7		1.3
Queue Delay		0.0			0.0					0.1		0.0
Total Delay		29.2			28.7					2.8		1.3
LOS		C			C					A		A
Approach Delay		29.2			28.7							
Approach LOS		C			C							

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 6:SBL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 6.5	Intersection LOS: A
Intersection Capacity Utilization 28.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Porte Cochere & North Shore

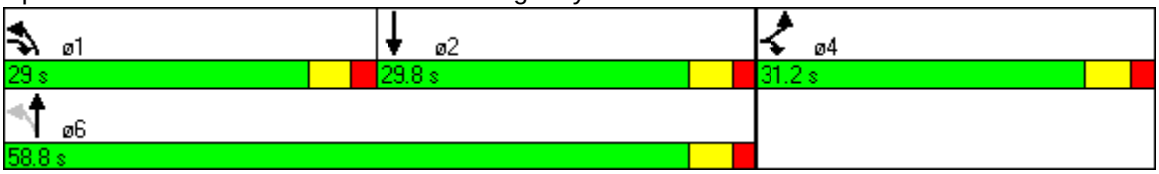


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.985	
Flt Protected	0.950			0.981		
Satd. Flow (prot)	3433	1441	0	3472	3477	0
Flt Permitted	0.950			0.922		
Satd. Flow (perm)	3433	1441	0	3263	3477	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		315			13	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	321	290	23	35	195	22
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	315	25	38	212	24
Lane Group Flow (vph)	349	315	0	63	236	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	31.2	60.2	29.0	58.8	29.8	0.0
Total Split (%)	34.7%	66.9%	32.2%	65.3%	33.1%	0.0%
Maximum Green (s)	25.5		23.7	53.5	24.5	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	12.2	23.2		22.6	11.5	
Actuated g/C Ratio	0.29	0.54		0.53	0.27	
v/c Ratio	0.36	0.34		0.04	0.25	
Control Delay	13.1	1.9		5.9	13.4	
Queue Delay	0.0	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	13.1	1.9		5.9	13.4	
LOS	B	A		A	B	
Approach Delay	7.8			5.9	13.4	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 42.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: North Shore & Allegheny Ave

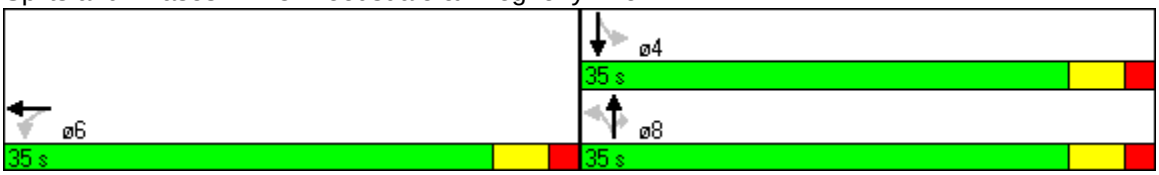


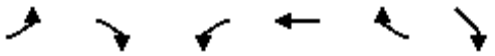
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.934				0.850		0.965	
Flt Protected				0.950			0.950				0.979	
Satd. Flow (prot)	0	0	0	1770	3306	0	1770	1863	1583	0	1760	0
Flt Permitted				0.950			0.706				0.812	
Satd. Flow (perm)	0	0	0	1770	3306	0	1315	1863	1583	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					368				262		20	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	215	548	436	64	316	241	31	22	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	234	596	474	70	343	262	34	24	20
Lane Group Flow (vph)	0	0	0	234	1070	0	70	343	262	0	78	0
Turn Type				Perm			Perm		Perm	Perm		
Protected Phases					6			8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		8	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.7	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		10.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0	35.0	35.0	35.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)				29.7	29.7		29.7	29.7	29.7	29.7	29.7	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				31.3	31.3		17.4	17.4	17.4		17.4	
Actuated g/C Ratio				0.55	0.55		0.31	0.31	0.31		0.31	
v/c Ratio				0.24	0.54		0.17	0.60	0.39		0.17	
Control Delay				8.8	7.1		14.6	21.0	4.0		11.5	
Queue Delay				0.0	0.0		0.0	0.1	0.0		0.0	
Total Delay				8.8	7.1		14.6	21.1	4.0		11.5	
LOS				A	A		B	C	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					7.4			13.8			11.5	
Approach LOS					A			B			B	

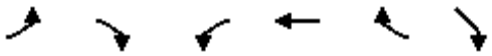
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 56.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	50			0
Storage Lanes	1	2	1			2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	49
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	16	9	16		16	16
Lane Util. Factor	1.00	0.88	1.00	0.95	0.88	0.88
Frt		0.850			0.850	0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	1770	3539	2787	2787
Flt Permitted	0.138		0.950			
Satd. Flow (perm)	257	2787	1770	3539	2787	2787
Right Turn on Red		No	Yes		Yes	
Satd. Flow (RTOR)			29		422	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)				31		
Link Distance (ft)				275		
Travel Time (s)				6.0		
Volume (vph)	252	816	61	921	388	510
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	887	66	1001	422	554
Lane Group Flow (vph)	274	887	66	1001	422	554
Turn Type	custom	custom	Perm		custom	custom
Protected Phases	7			8		
Permitted Phases	4	4	8		6 8	6
Detector Phases	7	4	8	8	6 8	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.3	21.3	21.3	21.3		21.3
Total Split (s)	17.0	46.0	29.0	29.0	53.0	24.0
Total Split (%)	24.3%	65.7%	41.4%	41.4%	75.7%	34.3%
Maximum Green (s)	11.7	40.7	23.7	23.7		18.7
Yellow Time (s)	3.3	3.3	3.3	3.3		3.3
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	None	None		C-Max
Walk Time (s)		5.0	5.0	5.0		
Flash Dont Walk (s)		11.0	11.0	11.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)	40.7	40.7	24.2	24.2	49.5	21.3
Actuated g/C Ratio	0.58	0.58	0.35	0.35	0.71	0.30
v/c Ratio	0.65	0.55	0.10	0.82	0.20	0.65
Control Delay	19.0	10.3	10.3	27.3	0.6	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	10.3	10.3	27.3	0.6	26.1
LOS	B	B	B	C	A	C



Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Approach Delay				19.0		
Approach LOS				B		

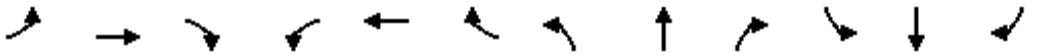
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 6:SER, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Reedsdale & Fontella

Lane Group	EBT	EBR	WBL2	WBL	WBT	NBL	NBR	NEL	NER	NER2
Lane Configurations										
Ideal Flow (vphpl)	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
Leading Detector (ft)	49		49				49		49	
Trailing Detector (ft)	0		0				0		0	
Turning Speed (mph)		9	16	16		16	9	16	9	9
Lane Util. Factor	0.95	0.95	0.97	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt	0.967						0.850		0.865	
Flt Protected			0.950							
Satd. Flow (prot)	3422	0	3433	0	0	0	2787	0	1611	0
Flt Permitted			0.950							
Satd. Flow (perm)	3422	0	3433	0	0	0	2787	0	1611	0
Right Turn on Red							Yes			Yes
Satd. Flow (RTOR)							996		50	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31				31	31		31		
Link Distance (ft)	332				721	268		384		
Travel Time (s)	7.3				15.9	5.9		8.4		
Volume (vph)	174	50	936	0	0	0	895	0	50	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	54	1017	0	0	0	973	0	54	54
Lane Group Flow (vph)	243	0	1017	0	0	0	973	0	108	0
Turn Type			Prot				custom		custom	
Protected Phases	4		3							
Permitted Phases							3		2	
Detector Phases	4		3				3		2	
Minimum Initial (s)	4.0		4.0				4.0		4.0	
Minimum Split (s)	21.3		9.3				9.3		21.3	
Total Split (s)	24.3	0.0	43.1	0.0	0.0	0.0	43.1	0.0	22.6	0.0
Total Split (%)	27.0%	0.0%	47.9%	0.0%	0.0%	0.0%	47.9%	0.0%	25.1%	0.0%
Maximum Green (s)	19.0		37.8				37.8		17.3	
Yellow Time (s)	3.3		3.3				3.3		3.3	
All-Red Time (s)	2.0		2.0				2.0		2.0	
Lead/Lag	Lag		Lead				Lead			
Lead-Lag Optimize?	Yes		Yes				Yes			
Vehicle Extension (s)	3.0		3.0				3.0		3.0	
Recall Mode	None		None				None		C-Min	
Walk Time (s)	5.0								5.0	
Flash Dont Walk (s)	11.0								11.0	
Pedestrian Calls (#/hr)	0								0	
Act Effct Green (s)	12.7		39.3				39.3		26.0	
Actuated g/C Ratio	0.14		0.44				0.44		0.29	
v/c Ratio	0.50		0.68				0.55		0.22	
Control Delay	39.1		22.4				2.1		17.9	
Queue Delay	0.0		0.0				0.0		0.0	
Total Delay	39.1		22.4				2.1		17.9	
LOS	D		C				A		B	
Approach Delay	39.1									
Approach LOS	D									

Intersection Summary		
Area Type:	Other	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green		
Natural Cycle: 70		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.68		
Intersection Signal Delay: 15.5	Intersection LOS: B	
Intersection Capacity Utilization 53.9%	ICU Level of Service A	
Analysis Period (min) 15		

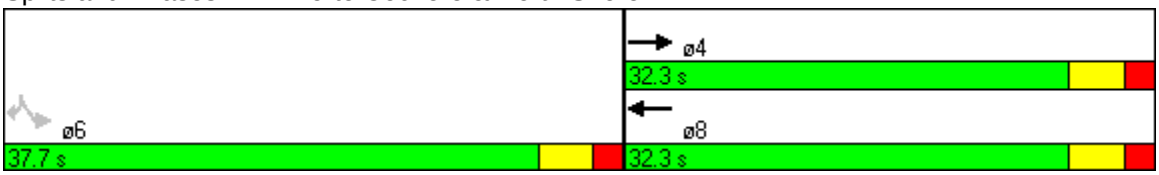
Splits and Phases: 6: Reedsdale & Lighthill

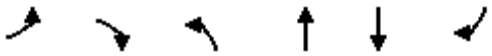


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		49			49					49		49
Trailing Detector (ft)		0			0					0		0
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00
Frt												0.850
Flt Protected										0.950		
Satd. Flow (prot)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Flt Permitted										0.950		
Satd. Flow (perm)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												509
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		302			249			302			334	
Travel Time (s)		6.6			5.5			6.6			7.3	
Volume (vph)	0	365	0	0	100	0	0	0	0	918	0	468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	397	0	0	109	0	0	0	0	998	0	509
Lane Group Flow (vph)	0	397	0	0	109	0	0	0	0	998	0	509
Turn Type										custom		custom
Protected Phases		4			8							
Permitted Phases										6		6
Detector Phases		4			8					6		6
Minimum Initial (s)		4.0			4.0					4.0		4.0
Minimum Split (s)		21.3			21.3					21.3		21.3
Total Split (s)	0.0	32.3	0.0	0.0	32.3	0.0	0.0	0.0	0.0	37.7	0.0	37.7
Total Split (%)	0.0%	46.1%	0.0%	0.0%	46.1%	0.0%	0.0%	0.0%	0.0%	53.9%	0.0%	53.9%
Maximum Green (s)		27.0			27.0					32.4		32.4
Yellow Time (s)		3.3			3.3					3.3		3.3
All-Red Time (s)		2.0			2.0					2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Recall Mode		None			None					C-Max		C-Max
Walk Time (s)		5.0			5.0					5.0		5.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		13.6			13.6					48.4		48.4
Actuated g/C Ratio		0.19			0.19					0.69		0.69
v/c Ratio		0.58			0.30					0.29		0.41
Control Delay		28.8			25.7					7.0		3.3
Queue Delay		0.0			0.0					0.2		0.4
Total Delay		28.8			25.7					7.2		3.6
LOS		C			C					A		A
Approach Delay		28.8			25.7							
Approach LOS		C			C							

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 6:SBL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Porte Cochere & North Shore



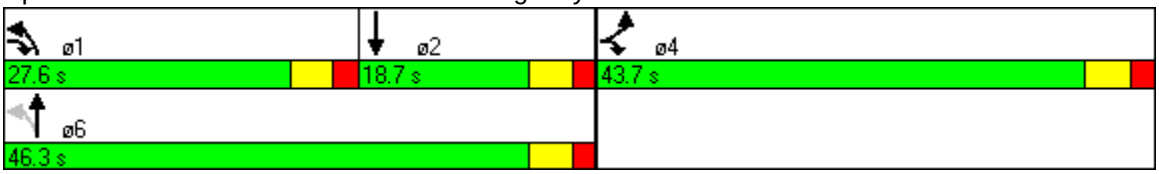


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					0.99	
Frt		0.850			0.931	
Flt Protected	0.950			0.983		
Satd. Flow (prot)	3433	1441	0	3479	3256	0
Flt Permitted	0.950			0.855		
Satd. Flow (perm)	3433	1441	0	3026	3256	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		487			66	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	805	448	69	132	71	61
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	875	487	75	143	77	66
Lane Group Flow (vph)	875	487	0	218	143	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	43.7	71.3	27.6	46.3	18.7	0.0
Total Split (%)	48.6%	79.2%	30.7%	51.4%	20.8%	0.0%
Maximum Green (s)	38.0		22.3	41.0	13.4	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	23.8	35.3		23.0	11.5	
Actuated g/C Ratio	0.43	0.64		0.42	0.21	
v/c Ratio	0.59	0.44		0.16	0.19	
Control Delay	13.2	1.7		12.2	13.6	
Queue Delay	0.1	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	13.3	1.7		12.3	13.6	
LOS	B	A		B	B	
Approach Delay	9.2			12.3	13.6	
Approach LOS	A			B	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 55			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: North Shore & Allegheny Ave

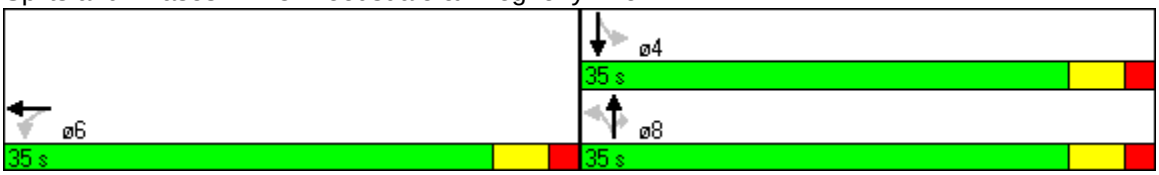


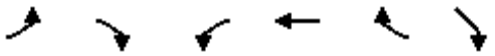
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.963				0.850		0.958	
Flt Protected				0.950			0.950				0.982	
Satd. Flow (prot)	0	0	0	1770	3408	0	1770	1863	1583	0	1752	0
Flt Permitted				0.950			0.729				0.575	
Satd. Flow (perm)	0	0	0	1770	3408	0	1358	1863	1583	0	1026	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					81				332		33	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	123	950	311	105	608	305	37	31	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	134	1033	338	114	661	332	40	34	33
Lane Group Flow (vph)	0	0	0	134	1371	0	114	661	332	0	107	0
Turn Type				Perm			Perm		Perm	Perm		
Protected Phases					6			8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		8	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.7	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		10.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0	35.0	35.0	35.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)				29.7	29.7		29.7	29.7	29.7	29.7	29.7	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				31.1	31.1		27.9	27.9	27.9		27.9	
Actuated g/C Ratio				0.46	0.46		0.42	0.42	0.42		0.42	
v/c Ratio				0.16	0.84		0.20	0.85	0.39		0.24	
Control Delay				12.2	22.2		13.2	30.1	3.1		10.5	
Queue Delay				0.0	0.0		0.0	46.4	0.3		0.0	
Total Delay				12.2	22.2		13.2	76.4	3.4		10.5	
LOS				B	C		B	E	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					21.3			48.0			10.5	
Approach LOS					C			D			B	

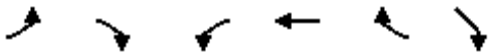
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 67.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 31.8		Intersection LOS: C	
Intersection Capacity Utilization 80.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





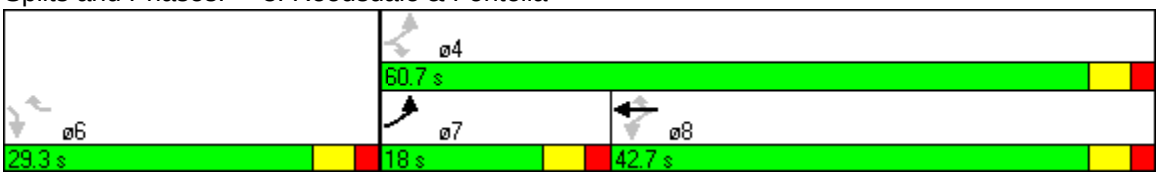
Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	50			0
Storage Lanes	1	2	1			2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	49
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	16	9	16		16	16
Lane Util. Factor	1.00	0.88	1.00	0.95	0.88	0.88
Frt		0.850			0.850	0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	1770	3539	2787	2787
Flt Permitted	0.094		0.950			
Satd. Flow (perm)	175	2787	1770	3539	2787	2787
Right Turn on Red		No	Yes		Yes	
Satd. Flow (RTOR)			21		82	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)				31		
Link Distance (ft)				275		
Travel Time (s)				6.0		
Volume (vph)	324	847	79	1434	75	724
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	352	921	86	1559	82	787
Lane Group Flow (vph)	352	921	86	1559	82	787
Turn Type	custom	custom	Perm		custom	custom
Protected Phases	7			8		
Permitted Phases	4	4	8		6 8	6
Detector Phases	7	4	8	8	6 8	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.3	21.3	21.3	21.3		21.3
Total Split (s)	18.0	60.7	42.7	42.7	72.0	29.3
Total Split (%)	20.0%	67.4%	47.4%	47.4%	80.0%	32.6%
Maximum Green (s)	12.7	55.4	37.4	37.4		24.0
Yellow Time (s)	3.3	3.3	3.3	3.3		3.3
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	None	None		C-Max
Walk Time (s)		5.0	5.0	5.0		
Flash Dont Walk (s)		11.0	11.0	11.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)	56.7	56.7	38.7	38.7	68.0	25.3
Actuated g/C Ratio	0.63	0.63	0.43	0.43	0.76	0.28
v/c Ratio	0.98	0.52	0.11	1.02	0.04	1.01
Control Delay	65.5	10.6	12.4	56.2	0.7	67.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	10.6	12.4	56.2	0.7	67.2
LOS	E	B	B	E	A	E



Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Approach Delay				51.4		
Approach LOS				D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 6:SER, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 46.1		Intersection LOS: D	
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

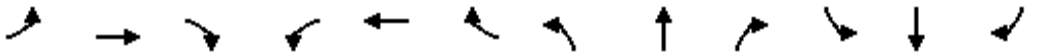
Splits and Phases: 3: Reedsdale & Fontella



Lane Group	EBT	EBR	WBL2	WBL	WBT	NBL	NBR	NEL	NER	NER2
Lane Configurations										
Ideal Flow (vphpl)	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
Leading Detector (ft)	49		49				49		49	
Trailing Detector (ft)	0		0				0		0	
Turning Speed (mph)		9	16	16		16	9	16	9	9
Lane Util. Factor	0.95	0.95	0.97	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt	0.893						0.850		0.865	
Flt Protected			0.950							
Satd. Flow (prot)	3161	0	3433	0	0	0	2787	0	1611	0
Flt Permitted			0.950							
Satd. Flow (perm)	3161	0	3433	0	0	0	2787	0	1611	0
Right Turn on Red							Yes			Yes
Satd. Flow (RTOR)							1664		54	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31				31	31		31		
Link Distance (ft)	332				721	268		310		
Travel Time (s)	7.3				15.9	5.9		6.8		
Volume (vph)	20	50	1457	0	0	0	1150	0	20	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	54	1584	0	0	0	1250	0	22	54
Lane Group Flow (vph)	76	0	1584	0	0	0	1250	0	76	0
Turn Type			Prot				custom		custom	
Protected Phases	4		3							
Permitted Phases							3		2	
Detector Phases	4		3				3		2	
Minimum Initial (s)	4.0		4.0				4.0		4.0	
Minimum Split (s)	21.3		9.3				9.3		21.3	
Total Split (s)	21.3	0.0	47.0	0.0	0.0	0.0	47.0	0.0	21.7	0.0
Total Split (%)	23.7%	0.0%	52.2%	0.0%	0.0%	0.0%	52.2%	0.0%	24.1%	0.0%
Maximum Green (s)	16.0		41.7				41.7		16.4	
Yellow Time (s)	3.3		3.3				3.3		3.3	
All-Red Time (s)	2.0		2.0				2.0		2.0	
Lead/Lag	Lag		Lead				Lead			
Lead-Lag Optimize?	Yes		Yes				Yes			
Vehicle Extension (s)	3.0		3.0				3.0		3.0	
Recall Mode	None		None				None		C-Min	
Walk Time (s)	5.0								5.0	
Flash Dont Walk (s)	11.0								11.0	
Pedestrian Calls (#/hr)	0								0	
Act Effct Green (s)	8.7		50.0				50.0		21.4	
Actuated g/C Ratio	0.10		0.56				0.56		0.24	
v/c Ratio	0.25		0.83				0.55		0.18	
Control Delay	39.1		40.2				0.9		14.1	
Queue Delay	0.0		0.0				0.0		0.0	
Total Delay	39.1		40.2				0.9		14.1	
LOS	D		D				A		B	
Approach Delay	39.1									
Approach LOS	D									

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 23.1	Intersection LOS: C
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

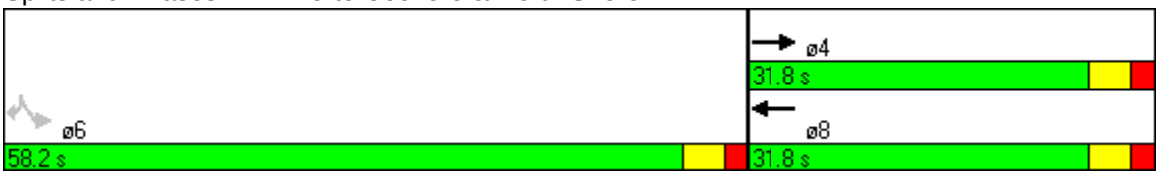
Splits and Phases: 6: Reedsdale & Lighthill



Lane Group	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	4.0
Leading Detector (ft)		49			49					49		49
Trailing Detector (ft)		0			0					0		0
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00
Frt												0.850
Flt Protected										0.950		
Satd. Flow (prot)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Flt Permitted										0.950		
Satd. Flow (perm)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												637
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		302			249			302			334	
Travel Time (s)		6.6			5.5			6.6			7.3	
Volume (vph)	0	470	0	0	120	0	0	0	0	916	0	729
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	511	0	0	130	0	0	0	0	996	0	792
Lane Group Flow (vph)	0	511	0	0	130	0	0	0	0	996	0	792
Turn Type										custom		custom
Protected Phases		4			8							
Permitted Phases										6		6
Detector Phases		4			8					6		6
Minimum Initial (s)		4.0			4.0					4.0		4.0
Minimum Split (s)		21.3			21.3					21.3		21.3
Total Split (s)	0.0	31.8	0.0	0.0	31.8	0.0	0.0	0.0	0.0	58.2	0.0	58.2
Total Split (%)	0.0%	35.3%	0.0%	0.0%	35.3%	0.0%	0.0%	0.0%	0.0%	64.7%	0.0%	64.7%
Maximum Green (s)		26.5			26.5					52.9		52.9
Yellow Time (s)		3.3			3.3					3.3		3.3
All-Red Time (s)		2.0			2.0					2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Recall Mode		None			None					C-Max		C-Max
Walk Time (s)		5.0			5.0					5.0		5.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		18.8			18.8					63.2		63.2
Actuated g/C Ratio		0.21			0.21					0.70		0.70
v/c Ratio		0.69			0.33					0.28		0.61
Control Delay		37.7			31.7					3.9		2.1
Queue Delay		0.0			0.0					0.3		0.7
Total Delay		37.7			31.7					4.2		2.7
LOS		D			C					A		A
Approach Delay		37.7			31.7							
Approach LOS		D			C							

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Porte Cochere & North Shore



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor					0.99	
Frt		0.850			0.941	
Flt Protected	0.950			0.984		
Satd. Flow (prot)	3433	1441	0	3483	3297	0
Flt Permitted	0.950			0.824		
Satd. Flow (perm)	3433	1441	0	2916	3297	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		555			55	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	879	511	85	168	78	51
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	955	555	92	183	85	55
Lane Group Flow (vph)	955	555	0	275	140	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	25.2	36.8		23.1	11.5	
Actuated g/C Ratio	0.45	0.65		0.41	0.20	
v/c Ratio	0.62	0.49		0.22	0.20	
Control Delay	13.7	2.0		12.5	14.8	
Queue Delay	0.2	0.0		0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	13.9	2.0		12.6	14.8	
LOS	B	A		B	B	
Approach Delay	9.5			12.6	14.8	
Approach LOS	A			B	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 56.4			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			

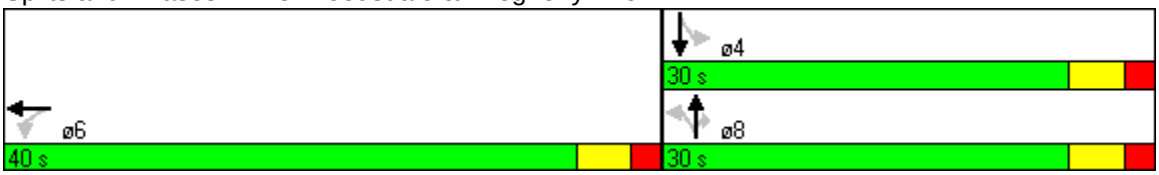
Splits and Phases: 8: North Shore & Allegheny Ave

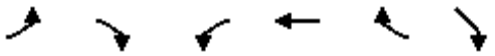
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.976				0.850		0.955	
Flt Protected				0.950			0.950				0.984	
Satd. Flow (prot)	0	0	0	1770	3454	0	1770	1863	1583	0	1750	0
Flt Permitted				0.950			0.737				0.526	
Satd. Flow (perm)	0	0	0	1770	3454	0	1373	1863	1583	0	936	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					46				411		19	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	95	1399	267	151	564	378	30	30	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1521	290	164	613	411	33	33	33
Lane Group Flow (vph)	0	0	0	103	1811	0	164	613	411	0	99	0
Turn Type				Perm			Perm		Perm	Perm		
Protected Phases					6			8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		8	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.7	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		10.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	40.0	40.0	0.0	30.0	30.0	30.0	30.0	30.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	57.1%	57.1%	0.0%	42.9%	42.9%	42.9%	42.9%	42.9%	0.0%
Maximum Green (s)				34.7	34.7		24.7	24.7	24.7	24.7	24.7	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				36.0	36.0		25.3	25.3	25.3		25.3	
Actuated g/C Ratio				0.52	0.52		0.37	0.37	0.37		0.37	
v/c Ratio				0.11	1.00		0.33	0.90	0.49		0.28	
Control Delay				9.2	38.7		18.1	40.2	4.1		15.4	
Queue Delay				0.0	1.4		0.0	56.0	0.2		0.0	
Total Delay				9.2	40.1		18.1	96.2	4.3		15.4	
LOS				A	D		B	F	A		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					38.5			53.6			15.4	
Approach LOS					D			D			B	

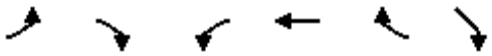
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 69.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 43.4		Intersection LOS: D	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave





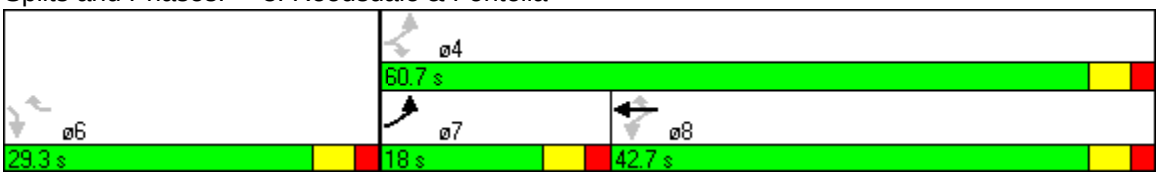
Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	50			0
Storage Lanes	1	2	1			2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	49
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	16	9	16		16	16
Lane Util. Factor	1.00	0.88	1.00	0.95	0.88	0.88
Frt		0.850			0.850	0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	1770	3539	2787	2787
Flt Permitted	0.126		0.950			
Satd. Flow (perm)	235	2787	1770	3539	2787	2787
Right Turn on Red		No	Yes		Yes	
Satd. Flow (RTOR)			47		549	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)				31		
Link Distance (ft)				275		
Travel Time (s)				6.0		
Volume (vph)	72	281	118	970	505	914
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	305	128	1054	549	993
Lane Group Flow (vph)	78	305	128	1054	549	993
Turn Type	custom	custom	Perm		custom	custom
Protected Phases	7			8		
Permitted Phases	4	4	8		6 8	6
Detector Phases	7	4	8	8	6 8	6
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	9.3	21.3	21.3	21.3		21.3
Total Split (s)	18.0	60.7	42.7	42.7	72.0	29.3
Total Split (%)	20.0%	67.4%	47.4%	47.4%	80.0%	32.6%
Maximum Green (s)	12.7	55.4	37.4	37.4		24.0
Yellow Time (s)	3.3	3.3	3.3	3.3		3.3
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	None	None		C-Max
Walk Time (s)		5.0	5.0	5.0		
Flash Dont Walk (s)		11.0	11.0	11.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)	48.4	48.4	36.4	36.4	74.8	33.6
Actuated g/C Ratio	0.54	0.54	0.40	0.40	0.83	0.37
v/c Ratio	0.26	0.20	0.17	0.74	0.23	0.95
Control Delay	9.7	10.0	10.5	25.9	0.5	51.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	10.0	10.5	25.9	0.5	51.1
LOS	A	B	B	C	A	D



Lane Group	EBL	EBR	WBL	WBT	WBR2	SER
Approach Delay				16.7		
Approach LOS				B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 6:SER, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

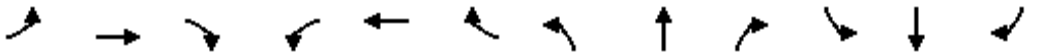
Splits and Phases: 3: Reedsdale & Fontella



Lane Group	EBT	EBR	WBL2	WBL	WBT	NBL	NBR	NEL	NER	NER2
Lane Configurations										
Ideal Flow (vphpl)	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
Leading Detector (ft)	49		49				49		49	
Trailing Detector (ft)	0		0				0		0	
Turning Speed (mph)		9	16	16		16	9	16	9	9
Lane Util. Factor	0.95	0.95	0.97	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt	0.950						0.850		0.865	
Flt Protected			0.950							
Satd. Flow (prot)	3362	0	3433	0	0	0	2787	0	1611	0
Flt Permitted			0.950							
Satd. Flow (perm)	3362	0	3433	0	0	0	2787	0	1611	0
Right Turn on Red							Yes			Yes
Satd. Flow (RTOR)							1280		54	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31				31	31		31		
Link Distance (ft)	332				721	268		339		
Travel Time (s)	7.3				15.9	5.9		7.5		
Volume (vph)	100	50	986	0	0	0	256	0	50	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	54	1072	0	0	0	278	0	54	54
Lane Group Flow (vph)	163	0	1072	0	0	0	278	0	108	0
Turn Type			Prot				custom		custom	
Protected Phases	4		3							
Permitted Phases							3		2	
Detector Phases	4		3				3		2	
Minimum Initial (s)	4.0		4.0				4.0		4.0	
Minimum Split (s)	21.3		9.3				9.3		21.3	
Total Split (s)	21.3	0.0	27.0	0.0	0.0	0.0	27.0	0.0	21.7	0.0
Total Split (%)	30.4%	0.0%	38.6%	0.0%	0.0%	0.0%	38.6%	0.0%	31.0%	0.0%
Maximum Green (s)	16.0		21.7				21.7		16.4	
Yellow Time (s)	3.3		3.3				3.3		3.3	
All-Red Time (s)	2.0		2.0				2.0		2.0	
Lead/Lag	Lag		Lead				Lead			
Lead-Lag Optimize?	Yes		Yes				Yes			
Vehicle Extension (s)	3.0		3.0				3.0		3.0	
Recall Mode	None		None				None		C-Min	
Walk Time (s)	5.0								5.0	
Flash Dont Walk (s)	11.0								11.0	
Pedestrian Calls (#/hr)	0								0	
Act Effct Green (s)	9.8		29.9				29.9		18.3	
Actuated g/C Ratio	0.14		0.43				0.43		0.26	
v/c Ratio	0.34		0.73				0.14		0.23	
Control Delay	28.8		20.6				0.2		13.5	
Queue Delay	0.0		0.0				0.0		0.0	
Total Delay	28.8		20.6				0.2		13.5	
LOS	C		C				A		B	
Approach Delay	28.8									
Approach LOS	C									

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 48.7%	ICU Level of Service A
Analysis Period (min) 15	

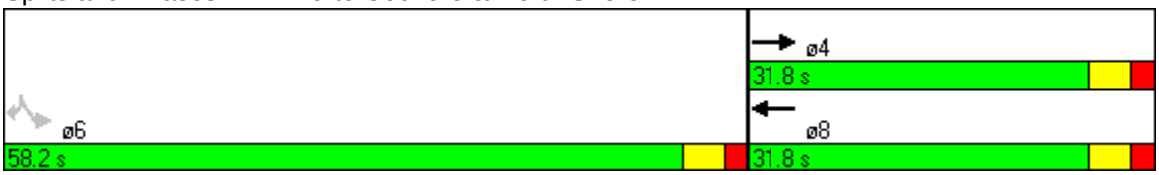
Splits and Phases: 6: Reedsdale & Lighthill



Lane Group	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	4.0
Leading Detector (ft)		49			49					49		49
Trailing Detector (ft)		0			0					0		0
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00
Frt												0.850
Flt Protected										0.950		
Satd. Flow (prot)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Flt Permitted										0.950		
Satd. Flow (perm)	0	3539	0	0	1863	0	0	0	0	4990	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												536
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		302			249			302			334	
Travel Time (s)		6.6			5.5			6.6			7.3	
Volume (vph)	0	104	0	0	120	0	0	0	0	854	0	493
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	113	0	0	130	0	0	0	0	928	0	536
Lane Group Flow (vph)	0	113	0	0	130	0	0	0	0	928	0	536
Turn Type										custom		custom
Protected Phases		4			8							
Permitted Phases										6		6
Detector Phases		4			8					6		6
Minimum Initial (s)		4.0			4.0					4.0		4.0
Minimum Split (s)		21.3			21.3					21.3		21.3
Total Split (s)	0.0	31.8	0.0	0.0	31.8	0.0	0.0	0.0	0.0	58.2	0.0	58.2
Total Split (%)	0.0%	35.3%	0.0%	0.0%	35.3%	0.0%	0.0%	0.0%	0.0%	64.7%	0.0%	64.7%
Maximum Green (s)		26.5			26.5					52.9		52.9
Yellow Time (s)		3.3			3.3					3.3		3.3
All-Red Time (s)		2.0			2.0					2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Recall Mode		None			None					C-Max		C-Max
Walk Time (s)		5.0			5.0					5.0		5.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		12.1			12.2					72.9		72.9
Actuated g/C Ratio		0.13			0.14					0.81		0.81
v/c Ratio		0.24			0.51					0.23		0.39
Control Delay		34.8			42.6					1.2		0.9
Queue Delay		0.0			0.0					0.2		0.5
Total Delay		34.8			42.6					1.4		1.4
LOS		C			D					A		A
Approach Delay		34.8			42.7							
Approach LOS		C			D							

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:SBL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 50.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Porte Cochere & North Shore



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	2	1	0			1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	49	49	49	49	49	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	16	9	16			9
Lane Util. Factor	0.97	0.91	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00				0.99	
Frt	0.994	0.850			0.964	
Flt Protected	0.954			0.991		
Satd. Flow (prot)	3422	1441	0	3507	3391	0
Flt Permitted	0.954			0.847		
Satd. Flow (perm)	3422	1441	0	2998	3391	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6	423			51	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	31			31	31	
Link Distance (ft)	599			211	330	
Travel Time (s)	13.2			4.6	7.3	
Volume (vph)	459	409	103	489	150	47
Confl. Peds. (#/hr)		4				2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	499	445	112	532	163	51
Lane Group Flow (vph)	521	423	0	644	214	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	1 4	1	6	2	
Permitted Phases			6			
Detector Phases	4	1 4	1	6	2	
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	10.7		10.3	15.3	15.3	
Total Split (s)	35.7	54.0	18.3	53.6	35.3	0.0
Total Split (%)	40.0%	60.5%	20.5%	60.0%	39.5%	0.0%
Maximum Green (s)	30.0		13.0	48.3	30.0	
Yellow Time (s)	3.7		3.3	3.3	3.3	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	15.4	26.7		22.8	11.5	
Actuated g/C Ratio	0.33	0.58		0.49	0.25	
v/c Ratio	0.46	0.42		0.41	0.24	
Control Delay	13.1	1.9		9.1	12.9	
Queue Delay	0.1	0.0		0.1	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	13.2	1.9		9.2	12.9	
LOS	B	A		A	B	
Approach Delay	8.1			9.2	12.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89.3			
Actuated Cycle Length: 46.3			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 52.6%		ICU Level of Service A	
Analysis Period (min) 15			

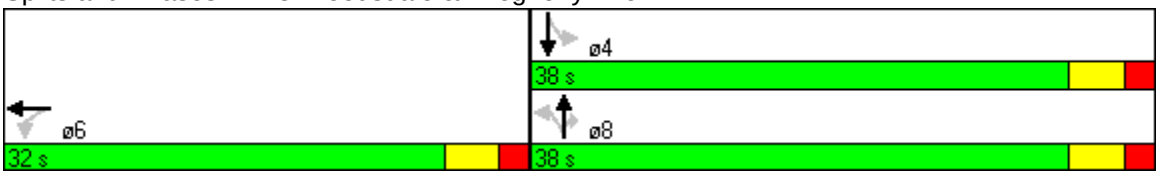
Splits and Phases: 8: North Shore & Allegheny Ave

Lane Group	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
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
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	4.0
Leading Detector (ft)				49	49		49	49	49	49	49	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Turning Speed (mph)	16		9	16		9	16		9	16		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987				0.850		0.976	
Flt Protected				0.950			0.950				0.998	
Satd. Flow (prot)	0	0	0	1770	3493	0	1770	1863	1583	0	1814	0
Flt Permitted				0.950			0.719				0.977	
Satd. Flow (perm)	0	0	0	1770	3493	0	1339	1863	1583	0	1776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					17				95		21	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		31			31			31			31	
Link Distance (ft)		605			357			330			429	
Travel Time (s)		13.3			7.9			7.3			9.4	
Volume (vph)	0	0	0	107	927	90	210	682	87	5	90	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	1008	98	228	741	95	5	98	22
Lane Group Flow (vph)	0	0	0	116	1106	0	228	741	95	0	125	0
Turn Type				Perm			Perm		Perm	Perm		
Protected Phases					6			8			4	
Permitted Phases				6			8		8	4		
Detector Phases				6	6		8	8	8	4	4	
Minimum Initial (s)				10.0	10.0		4.7	4.7	4.7	5.0	5.0	
Minimum Split (s)				15.3	15.3		10.3	10.3	10.3	10.3	10.3	
Total Split (s)	0.0	0.0	0.0	32.0	32.0	0.0	38.0	38.0	38.0	38.0	38.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	54.3%	54.3%	54.3%	54.3%	54.3%	0.0%
Maximum Green (s)				26.7	26.7		32.7	32.7	32.7	32.7	32.7	
Yellow Time (s)				3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)				2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		None	None	None	None	None	
Walk Time (s)				5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				28.2	28.2		30.5	30.5	30.5		30.5	
Actuated g/C Ratio				0.42	0.42		0.46	0.46	0.46		0.46	
v/c Ratio				0.16	0.75		0.37	0.87	0.12		0.15	
Control Delay				14.0	20.7		13.6	29.0	3.0		9.0	
Queue Delay				0.0	0.0		0.0	60.0	0.0		0.0	
Total Delay				14.0	20.7		13.6	89.0	3.0		9.0	
LOS				B	C		B	F	A		A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					20.1			65.2			9.0	
Approach LOS					C			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.7			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 39.4		Intersection LOS: D	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 13: Reedsdale & Allegheny Ave



APPENDIX B

FUNCTIONAL DESIGN

	No.	Date	Revisions	By	Signed
	10				
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
Information	1				

Seal:

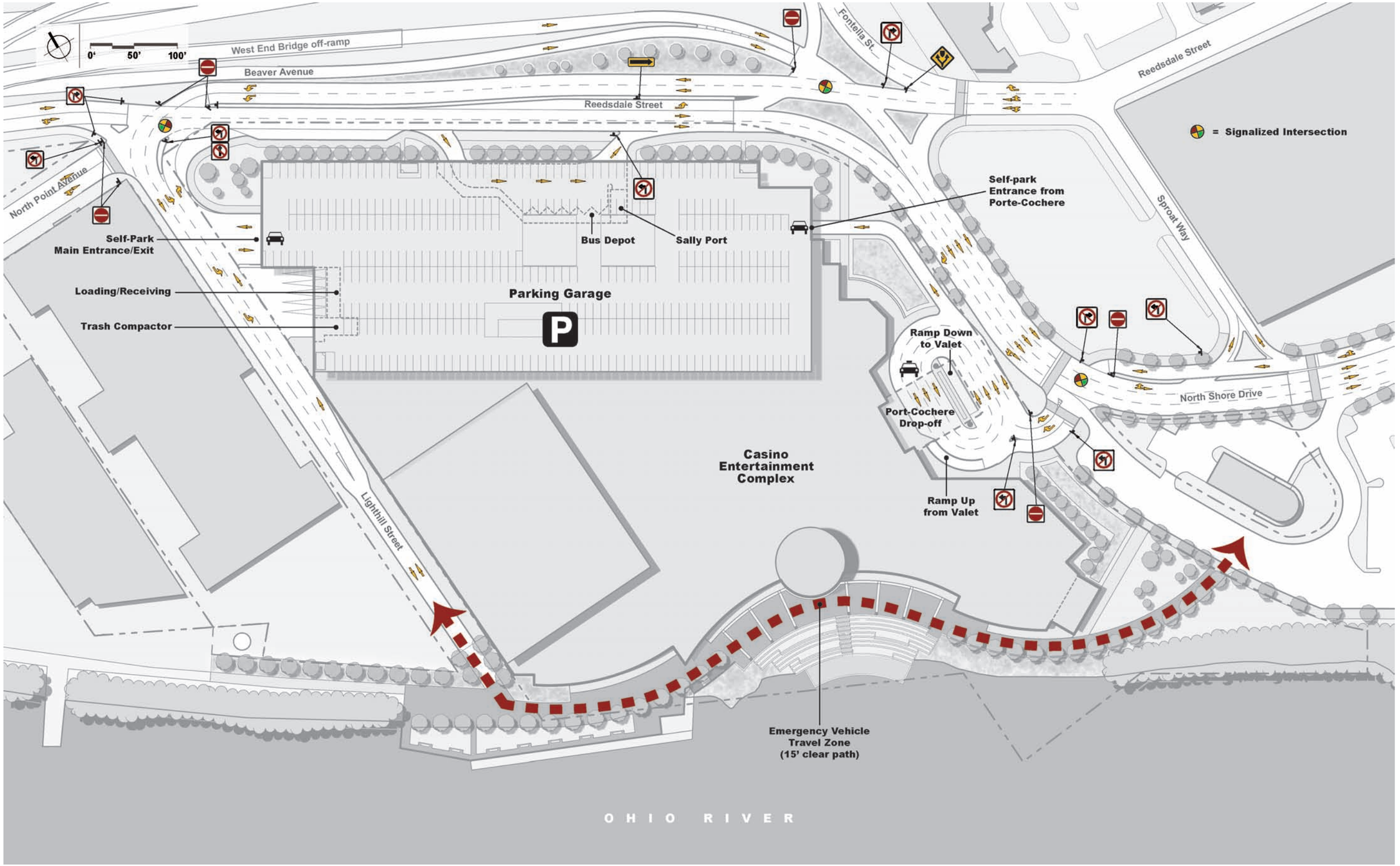
Seal:

IBI GROUP
230 Richmond Street West
5th Floor
Toronto, Ontario
Canada M5V 1V6
Tel (416)596-1930
FAX(416)596-0644

Project Title

SITE ACCESS

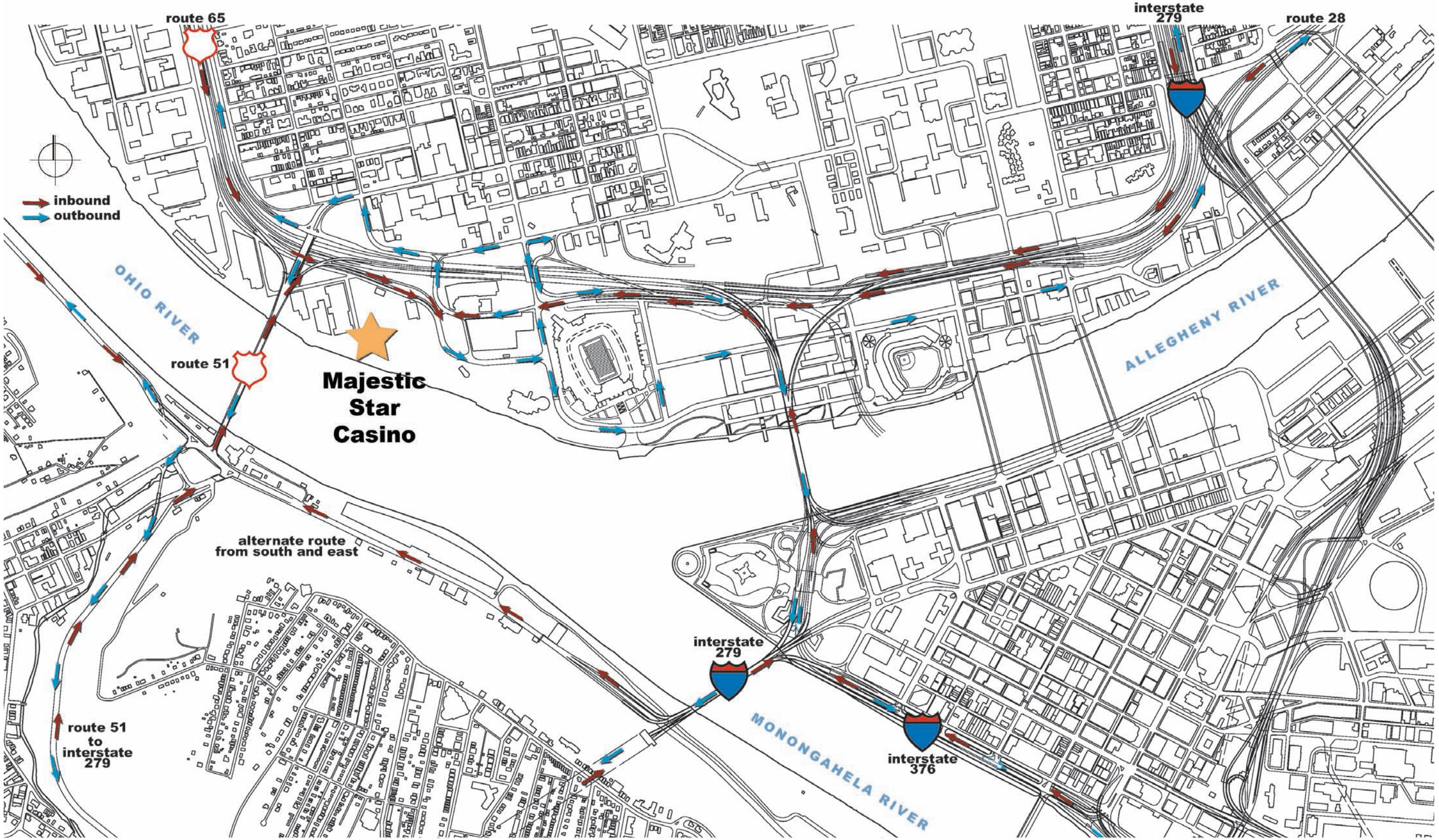
Design:	FS	Drawn:	FS	Checked:		2917
Scales:	N.T.S.			Date:	Drawing Number	Sheet Set No.
				NOV. 29, 2005		



Majestic Star CASINO

Vehicular Access

Pittsburgh, Pennsylvania
December 2005



Majestic Star CASINO

Site Location and Access

Pittsburgh, Pennsylvania
December 2005

LOCAL IMPACTS

The following presents an objective analysis of likely impacts generated by the Majestic Star Casino on the local host community of Pittsburgh.

I. City of Pittsburgh Revenue Impacts

As a result of the Majestic Star operations, the City of Pittsburgh can anticipate net new revenues of $24.3 million annually. This estimate is derived as follows:

After achieving stabilization with a total of 5,000 slot machines in its third year of operations, the Majestic Star Casino will generate annual revenue to the City of Pittsburgh of approximately $22.9 million. This figure represents the combined revenues generated by the City's wage tax, payroll tax, emergency municipal services tax, business privilege tax, property taxes (based on the casino's hard construction cost plus land value) and the 2 percent local city share of gross gaming revenues as allocated in the state gaming statutes. These anticipated revenue streams are as shown below.

TABLE 31-1 -- MAJESTIC STAR PROJECTED ANNUAL REVENUE IMPACTS ON CITY OF PITTSBURGH

	Calculation			Revenue
Wage tax	3%	of payroll	$44,315,240	$1,329,457
Payroll tax	0.55%	of payroll	$44,315,240	$243,734
Emergency Municipal Services	$52	per worker	1,496	$77,792
Business privilege	2%	of total revenue	$491,979,192	$9,839,584
Property Taxes [1]	1.08%	Fair Mkt value	$173,000,000	$1,868,400
Host City Share of Gross Gaming Revenues	2%	of GGR	$478,150,000	$9,563,000
Total				**$22,921,967**

[1] Based on replacement cost, which includes preliminary hard construction cost estimate plus land value.

Source: City of Pittsburgh Finance Dept.; Majestic Star Casino; ZHA, Inc.

In addition, it should also be noted that, among the indirect and induced employment generated by Majestic Star Casino, IMPLAN models predict that the City of Pittsburgh would capture 981 jobs, or 65 percent of the total, along with new wages amounting to $38.2 million. These additional jobs and wages would generate additional new business taxes for the City; as shown in Table 31-2, these would amount to approximately $1.4 million.

TABLE 31-2 – CITY OF PITTSBURGH'S SHARE OF INDIRECT AND INDUCED EMPLOYMENT GENERATED BY MAJESTIC STAR CASINO

	Indirect	Induced	Total
Pittsburgh Employment Impact	446	535	981
Share of PA employment impact	47%	93%	65%
Pittsburgh Wage Impact	$20,173,927	$18,012,896	$38,186,823
EMS Tax @ $52/worker	$23,171	$27,820	$50,991
Wage tax @ 3% payroll	$605,218	$540,387	$1,145,605
Payroll tax @ .55% payroll	$110,957	$99,071	$210,028
Subtotal	$739,346	$667,278	$1,406,623

Source: Minnesota IMPLAN Group; ZHA, Inc.

Overall, as a result of the Majestic Star operations, combining the revenue streams attributable to the Majestic Star and its indirect economic impacts the City of Pittsburgh can anticipate net new revenues of $24.3 million annually.

II. Public Safety

The Majestic Star Casino is not likely to impose any increased burdens on local public safety departments. Three factors support this conclusion:

- While some types of development can impose new public safety burdens where such developments create new road-miles, new households, and new traffic trips, the Majestic Star Casino will occupy an urbanized site close to downtown Pittsburgh. Given this location, the project will not create new areas for surveillance or any new properties for concern. In fact, the development, by increasing investment and activity levels, thereby increases active occupancy and maintenance in this area.
- Spokespersons for police departments in North Kansas City, MO and Detroit, MI report no significant increases in call volumes, staff requirements, or training programs made necessary by the introduction of casino gaming facilities, which included a Harrah's Riverboat in North Kansas City and three casinos in the City of Detroit.
- To the extent that it could potentially generate public safety concerns, the Majestic Star Casino anticipates more than 100 full-time equivalent security personnel. This is consistent with staff levels required for minimization of local public safety intervention at the operator's other successful gaming operations.

III. Impacts on Tourism Economy

The Majestic Star Casino would exert positive impacts on Pittsburgh's existing tourism economy and its businesses. These benefits would be derived from:

- The casino's close proximity to existing attractions,
- The casino's year-round attendance, which would support tourism-related businesses during traditional off-season periods, and
- The casino's ability to enhance Pittsburgh's array of amenities for prospective business, convention and leisure visitors.

A. Downtown Visitor Spending

Among the region's primary visitor attractions, downtown Pittsburgh contains:

- Pittsburgh's primary shopping, dining and nightlife districts;
- The David L. Lawrence Convention Center;
- Cultural District – which includes venues for the Pittsburgh Symphony Orchestra, Pittsburgh Opera, Pittsburgh Public Theater, Pittsburgh Ballet Theater and Civic Light Opera;
- Professional sports venues hosting the Pittsburgh Pirates (MLB), Penguins (NHL) and the NFL Steelers, who play in Heinz Field, adjacent to the Majestic Star;
- Museums including the Carnegie Science Center, Children's Museum of Pittsburgh, Andy Warhol Museum, Fort Pitt Museum, and others; and
- Public parks containing seven fountains and an outdoor skating rink.

Visitors to the Majestic Star Casino will have easy access to these destinations. An analysis presented in Appendix 24 calculates that out-of-state tourist visitors will generate $154.8 million in spending at such attractions.

The magnitude of this potential impact is illustrated using restaurants as an illustrative example: The Pittsburgh Downtown Partnership reports that downtown contains 215 "eateries." Assuming that $100 million of visitors' non-casino spending is captured by businesses located within the Majestic Star complex (see Appendix 24 sec. II.A.2.c), this still leaves $52.7 million to be spent elsewhere. Majestic Star's easy accessibility to downtown would enable downtown businesses to capture the largest share of such spending. If one-half of the $52.7 million were spent on eating and drinking, this volume of nearly $26.35 million would be sufficient to contribute $122,600 in gross revenues to each of the 215 downtown restaurants. Alternatively, $26.35 million would be sufficient to provide $400 per square foot in gross sales – a reasonably healthy performance -- to 67,875square feet of space, the rough equivalent of 10-15 new restaurants.

B. Potential Downtown Hotel Impacts

While the Majestic Star will generate new overnight visitation, a forecast of the extent of such visitation -- and the further extent to which visitors will occupy hotels is speculative.

Notwithstanding, applying a figure of $56 in gaming losses per patron-visit-day (see Table 24-5) to projected gross gaming revenues of $478.15 million, total visit-days can be projected at 8,538,393. Then, applying our projection that 40 percent of casino patrons would come from more than 50 miles away (see Table 24-4), we estimate that the Majestic Star would attract 3.415 million visitor-days. Working with these assumptions, a reasonable– and possibly conservative – hotel impact scenario is shaped by the following assumptions:

- One-half of these visitor-days would involve an overnight stay, and
- One-third of these stays occurred in downtown Pittsburgh hotels, and
- Each overnight stay included two persons per room.

Given these assumptions, the Majestic Star would by itself generate an annual total 341,536 room-nights for downtown hotels.

TABLE 31-3 – POTENTIAL HOTEL IMPACT

Projected GGR	$478,150,000
GGR/visitor	$56
Visits	8,538,393
Percent from 50+ miles	40%
Out-of-State Tourist (50+ mi.) visitor-days	3,415,357
Potential visitor overnights@ 50%	1,707,679
Downtown hotel share @ 33%	683,071
Potential Room-nights @ 2 persons/party	341,536
Downtown Hotel Rooms	3,600
Annual Room-nights availale	1,314,000
Potential Occupancy Increase	26.0%

This hypothetical but reasonable estimate of hotel room-nights would exert a dramatic impact on Pittsburgh's hotel market. According to the Pittsburgh Downtown Partnership, downtown Pittsburgh's nine hotels contain an inventory of approximately 3,600 rooms, which can host 1,314,000 room-nights per year. Under the above scenario, the room-nights generated by Majestic Star alone (3,471,536) could account for 26 percent of these room-nights.

As an alternative approach for anticipating potential hotel impacts, it should be recognized that comparably situated (but smaller) casinos in major urban settings often support associated 200- to 600-room hotels. As shown below, facilities with considerably lesser numbers (1,400 to 3,300) of electronic gaming devices (EGDs) operate in conjunction with hotels containing an average of 343 rooms.

TABLE 31-3 -- COMPARABLE GAMING FACILITIES AND ASSOCIATED HOTEL ROOMS

Market	Facility	EGDs	Hotel Rms & Suites
Kansas City	Ameristar (Riverboat)	3,003	184
Kansas City	Harrah's (Riverboat)	1,701	392
St. Louis	Harrah's (Riverboat)	2,832	502
Detroit	Windsor Casino	3,300	389
E Chicago	Harrah's (Riverboat)	1,965	293
E Chicago	Trump Casino (Riverboat)	1,388	300
Totals		14,189	2,060

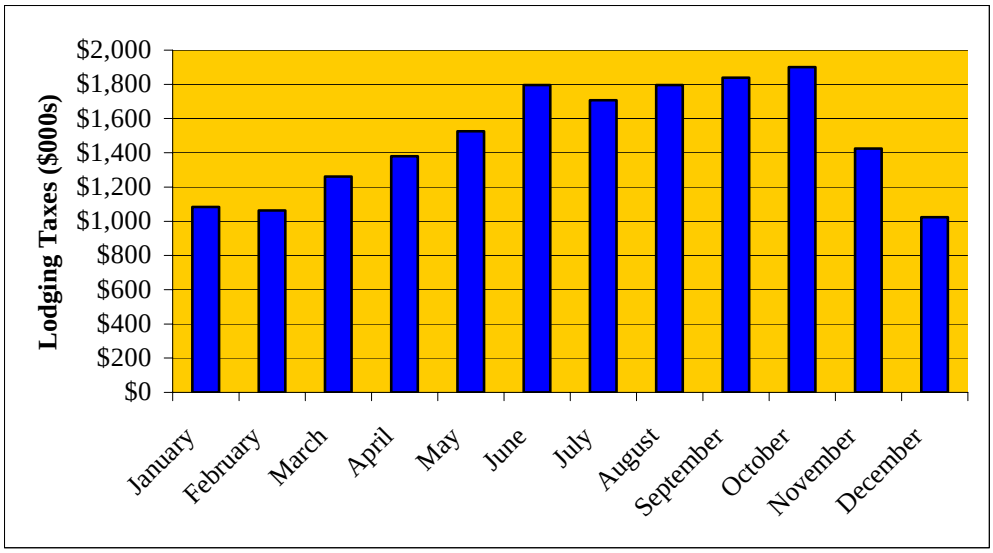
Source: 2006 American Casino Guide, Bourie; Indiana Gaming Commission; Missouri Gaming Commission; ZHA, Inc.

Given the considerably greater inventory of 5,000 slot machines at the Majestic Star Casino, it would be reasonable to anticipate that a facility of this size could support a hotel property with more than 700 rooms. Given that many casino hotel room-nights are complimentary to casino patrons, we recognize that this number of supportable rooms would be considerably lower if operated by entities independent of the casino. Overall, however, if the casino alone could support roughly 350 rooms in an independently operated hotel property, this would augment demand for the 3600 rooms in existing downtown properties by a factor of nearly 10 percent (3600 / 350).

Overall, while the precise extent of its support for downtown hotels is uncertain, it is clear that the Majestic Star would substantially increase profitability in Pittsburgh's hotels, drive additional hotel development prospects, and in turn enhance the City's attractiveness for conventions and additional visitors.

Seasonality: In addition to the volume of potential support for local hotels, it should also be noted that the Majestic Star Casino would help stabilize seasonal fluctuations for businesses catering to visitors. Under current conditions, such businesses fluctuate widely, with peaks during the summer and early autumn, and low points in the winter months. As shown below, during the most recent 12-month span, Allegheny County monthly lodging tax collections fluctuated from roughly $1 million during the winter months to more than $1.8 million (an increase of 80 percent) during the summer and fall months.

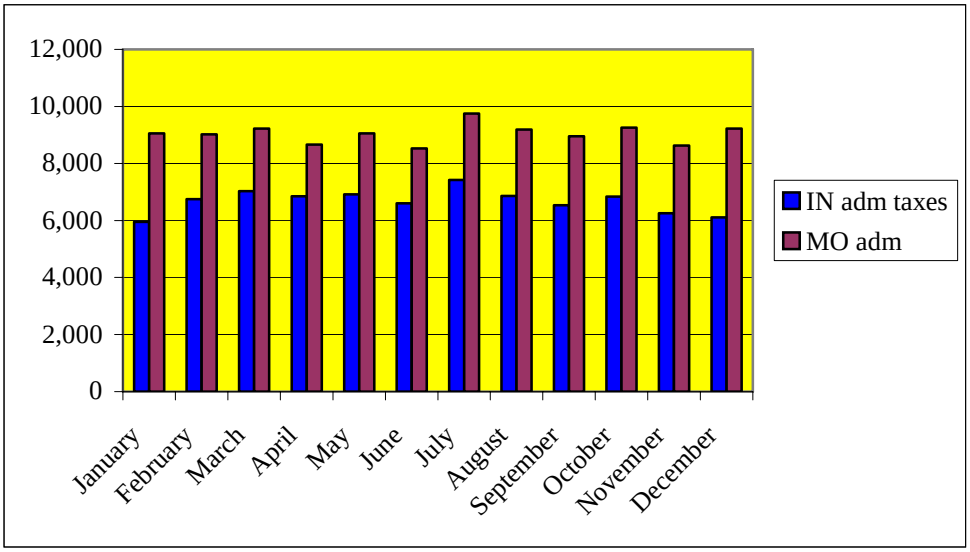
CHART 31-1 -- ALLEGHENY COUNTY HOTEL LODGING TAX COLLECTIONS BY MONTH : 2005*



* November and December figures from 2004.
Source: Allegheny County Treasurer's Office.

In contrast, as shown below, gaming admissions indices in other northern states (as measured by admissions taxes in Indiana and admissions in Missouri) maintain more stable volumes, fluctuating within relatively narrow ranges of roughly 15 to 20 percent throughout the year, with high points occurring in the winter as well as summer seasons.

CHART 31-2 -- CASINO SEASONALITY INDICATORS FROM MISSOURI AND INDIANA



Given these precedents, the Majestic Star is likely to bring visitors to Pittsburgh throughout the year. Thus, in addition to increased annual revenues, the Majestic Star will (1) help stabilize seasonal tourism fluctuations, (2) reduce dependence on high season business and (3) reduce seasonal hiring patterns, thus benefiting the local hotel and tourism industry.

Pennoni

PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

1101 Greenfield Avenue
Pittsburgh, PA 15217
Tel: 412•521•3000
Fax: 412•521•1206

STDA 0503

December 19, 2005

Mr. Michael A. Stern, ASLA
Principal
Strada
The Ewart Building
925 Liberty Avenue
Pittsburgh, PA 15222

RE: Final Report
Site Utility Feasibility Study
Majestic Star Casino Site
Pittsburgh, Pennsylvania

Dear Mr. Stern:

Pennoni has been working very diligently to determine the existing utilities within and surrounding the proposed development site. This approximate 18.0 acre site is bordered by Reedsdale Street to the north, North Shore Drive to the east, Belmont Street to the west and the Ohio River to the south.

Pennoni's approach was to first, place a Pennsylvania (PA) One-Call to obtain a list of utilities that have existing facilities within and adjacent to the project site. Once obtaining that list, we developed a Utility Contact List (See Attachment A), which states the contact information for each utility listed in the One-Call. After contact with the utilities and determining which companies have facilities (affected) within or adjacent to the project site, Pennoni developed a utility conflict table (See Attachment B) that briefly describes the existing facility that may potentially be impacted by the proposed project. We have also been coordinating with the various utility companies that responded to the PA One-Call of November 18, 2005 to determine infrastructure capacities. The following is a summary of our findings as of December 19, 2005:

1. **Equitable Gas**: Equitable provided plans of their existing underground facilities surrounding the project site. Gas mains exist within the project site, along Reedsdale Street, North Shore Drive, Lighthill Street and Belmont Street. Pennoni sent the gas demands, outlined in the letter of December 5, 2005 from JBA Consulting Engineers, to Dustin Hagg, of the Equitable Gas Engineering Department. Mr. Hagg indicated that these mains have sufficient capacity for the proposed demand.

2. **Duquesne Light**: Duquesne Light provided plans of their existing underground facilities surrounding the project site. An extensive infrastructure of electrical duct banks exists along most of the adjacent streets. According to Christine Navadakaus of Duquesne Light, sufficient infrastructure exists to meet the electrical demands, as outlined in the letter of December 5, 2005 from JBA Consulting Engineers. However, some expansion of the facilities may be required, including new pad-mounted transformers and sub-transmission lines. The next step would be to provide Ms. Navadakaus with electrical plans and set up a meeting to further discuss the specifics of the electrical demands.

3. **Verizon**: Verizon provided plans of their existing underground facilities surrounding the project site. Pennoni spoke with Chuck Browning of Verizon regarding existing utility location and capacity. Sufficient infrastructure is located within close proximity to the site. However, if the demand is greater than one hundred lines, additional infrastructure may be required. Mr. Browning indicated that this would not likely be a problem, as additional ducts are available in the area.

4. **Pittsburgh Water & Sewer**: Pittsburgh Water & Sewer provided plans depicting the locations of their existing underground infrastructure. Pennoni provided them with the estimated water and sewer demands, as outlined in the letter of December 5, 2005 from JBA Consulting Engineers. However, Pennoni did not receive any cooperation from their Engineering Department with regard to obtaining capacity information. We were told by Pittsburgh Water & Sewer that it was the client's responsibility to perform hydrant tests in the area to determine water capacity. For the sanitary sewers, we were told that we had to calculate capacities based on the pipe sizes and submit a Planning Module to obtain approval to tap into the treatment plant. This was based on conversations with Michelle Carney of the Water Department and Don Waldorff of the Sewer Department. Just recently, we obtained contact information for the Director of Engineering and Construction, Mike Lichte, and the On-site Project Engineer, Dennis Graham. The next step would be to follow up with the aforementioned individuals.

5. **Allegheny County Sanitary Authority**: The PA One-Call information showed that ALCOSAN was clear of any existing facilities within the project site. However, Pennoni continued to follow-up with them knowing that they may have a line that runs underneath the project site. Based on conversations with Ken Babin of ALCOSAN, a sewage conveyance line traverses the project site, parallel to the Ohio River. The conveyance line is cored into the bedrock – rather than piped – and is approximately six feet in diameter, located 90' below the ground. Pennoni has not yet received any information regarding an existing Right-of-Way agreement, although we have requested additional information from Mr. Babin.

6. **Pittsburgh City Department of Public Works**: The Department of Public Works did not respond to the PA One-Call of November 18, 2005. We called Public Works to verify that the area was clear of any existing facilities. Based on conversations with Steve Simmons, Public Works does not own any utilities in this area. They may own some electrical services; however, these are managed by Duquesne Light and would have shown up on the Duquesne Light One-Call response. It was also our understanding, based on conversations with Public Works, that they do not maintain the existing drainage facilities in the project area.

7. **Fiber Technologies, LLC**: Fiber Technologies responded to the PA One-Call with an "All Clear". However, we researched the company online and determined that they had a fiber optic network cable in close proximity to the site, near Belmont Street. We contacted James Highsmith at Fiber Technologies and he confirmed that they have a network cable which runs across the West End Bridge, located within a Comcast conduit, and that this cable does run near to the proposed development site. He indicated, however, that we would have to contact Comcast for additional information about the exact location of this conduit and provided contact information for Gary Muisus, in case we would like to inquire more about fiber optic services and capacities. The next step would be to follow up with Mr. Muisus.

8. **Comcast**: Comcast responded to the PA One-Call with an "All Clear". However, based on recent conversations with Jim Highsmith of Fiber Technologies, Comcast should be contacted to discuss the location of their conduit which crosses the West End Bridge and comes within close proximity to the proposed development site.

9. **Pittsburgh City Planning**: Pennoni contacted Daniel Sentz at Pittsburgh City Planning to inquire about the storm water and drainage facilities within and around the project area. Pennoni left a voicemail with Mr. Sentz, but we have not yet received a response from him.

As stated in our proposal of November 17, 2005, obtaining capacity information and existing utility information is dependant upon the utilities themselves. The above referenced information for each utility is the latest information we have as of December 19, 2005. Please accept this utility information as a final report. If we receive any additional information, we will forward it to your office. Pennoni will finish updating the existing utility sketch plans with the latest information as of December 19, 2005 and will forward to your office by the end of the week. If you have any questions or require any additional information please contact my office at (412) 521-3000.

Sincerely,

PENNONI ASSOCIATES INC.

Shane M. Vorce

Shane M. Vorce, P.E.
Project Manager

SMV/mdw

cc: File

ATTACHMENT A

UTILITY CONTACT LIST

Majestic Star Casino Site
Utility Contact List
(As per PA One-Call System - Updated 12/19/05)

Prepared By: MDW

Checked By: SMV

Utility Company Name	Type	Contact Person	Phone (P)/Fax (F)	E-Mail / Website	Mailing Address
Allegheny County Sanitary Authority (ALCOSAN)	Sanitary	Florine Graham, Engineering Department	(412) 766-4810	Not Determined	3300 Preble Avenue, Pittsburgh, PA 15233-1092
		Ken Babin, Surveying	(412) 766-4810	Not Determined	
** Pittsburgh City Planning	Storm	Daniel Sentz	(P) (412) 255-2233 (F) (412) 255-2838	Not Determined	200 Ross St., Fourth Floor, Pittsburgh, PA 15219
Verizon	Telephone	Chuck Browning	(412) 633-5005	charles.r.browning@verizon.com	201 Stanwix Street, 10th Floor, Pittsburgh, PA 15222
Pittsburgh Water & Sewer	Water & Sanitary	Michelle Carney	(412) 255-0841	mcarney@pgh20.com	441 Smithfield Street, Pittsburgh, PA 15222
		Don Waldorff	(412) 255-8682	Not Determined	
		Mike Lichte, Director of Engineering and Construction	(412) 255-8987	mlichte@pgh2o.com	
		Dennis Graham, Project Engineer	(412) 255-2657	dgraham@pgh2o.com	
Pittsburgh City Department of Public Works	Traffic	City of Pittsburgh	(412) 255-2790	Not Determined	611 Second Avenue, Pittsburgh, PA 15219
		Steve Simmons (Traffic)	(412) 255-2874	Not Determined	
Duquesne Light	Electric	Richard Lang; Stan Kulig (One-Call)	(412) 393-1771	Not Determined	2601 Preble Avenue, Pittsburgh, PA 15233
		Charlie Ray (Capacity)	(412) 393-8283	Not Determined	
		Bob Wolfe (Capacity)	(412) 393-8567	Not Determined	
		Christine Navadakaus	(412) 393-5080	Not Determined	
Comcast	Cable	Not Determined	1-888-COMCAST	Not Determined	300 Corliss Street, Pittsburgh, Pennsylvania 15220
Equitable Gas	Gas	Surveying	(412) 442-3091	Not Determined	225 North Shore Drive Pittsburgh, PA 15212-5861
		Wes Soyster, Engineering Department	(412) 395-3000 (General)	Not Determined	
		Dustin Hagg	(412) 395-2545	dhagg@eqt.com	
Fiber Technologies	Fiber Optic	Jim Highsmith	(585) 697-5145	http://www.fibertech.com	140 Allens Creek Road, Rochester, NY, 14618
		Gary Muisus	(585) 697-5137	Not Determined	

** Not Part of the Pennsylvania One-Call

ATTACHMENT B

UTILITY CONFLICT LIST

Majestic Star Casino Site
Utility Conflict List
(As per PA One-Call System - Updated 12/19/05)

Prepared By: MDW
Checked By: SMV

Utility Company Name	Type	Contact Person	One-Call Response	Description of Potential Utility Impact	Actions
Allegheny County Sanitary Authority (ALCOSAN)	Sanitary	Florine Graham, Engineering Department	Clear - No underground facilities based on PA One-Call response.	A sewer conveyance line - 6' diameter and 90' deep - is located onsite. The sewer line runs parallel to the river, approximately 100-150' from the shore. Additional ALCOSAN sewer mains may exist along Belmont Street and Reedsdale Street; however, the plans contained conflicting information with respect to ownership of these utilities. It is unclear if these are ALCOSAN or Pittsburgh W&S owned utilities.	Noticed on tax parcel plan that an Alcosan Right-of-Way exists towards the south end of the site. Left a voicemail message to confirm that the site is clear (12/6/05). Left a second voicemail message to confirm that the site is clear. (12/9/05)
		Ken Babin, Surveying			Spoke with Ken Babin regarding this site. He indicated that a conveyance line may be located on this site, and that he would send us plans. According to Mr. Babin, the conveyance line is about 6' diameter, 90' deep and is cored through the bedrock, rather than piped. (12/15/05)
** Pittsburgh City Planning	Storm	Daniel Sentz	No one-call information	It is known that inlets exist along Reedsdale Street and several other streets, adjacent to this site.	Left voicemail with Daniel Sentz, requesting information about drainage structures, floodplains, etc. in this area (12/15/05)
Verizon	Telephone	Chuck Browning	Verizon left voice message on PA One-Call system requesting plans.	Verizon infrastructure is located within the Right-of-Way of Reedsdale Street, Ridge Avenue, North Shore Drive and Lighthill Street.	Verizon left voice message on PA One-Call system requesting plans. Emailed plans to C. Browning (11/29/05). Sent follow-up email to request status (12/8/05). Followed-up with voicemail (12/9/05). Received plans from C. Browning and called Mr. Browning to confirm capacity. Mr. Browning indicated that he had ample capacity in his infrastructure to support most new construction. However, if the proposed facility is very large (greater than 100 lines), then they may have to upgrade the facilities. This would not be too much problem, however, since extra ducts are available in the area. (12/15/05) No additional action required.
Pittsburgh Water & Sewer	Water & Sanitary	Michelle Carney	City of Pittsburgh W&S left voice message on PA One-Call system stating insufficient information - requested plans sent.	Extensive water and sewer infrastructure exists within the Right-of-Way of all streets bounding and inside the project site area, including Reedsdale Street, Belmont Street, Lighthill Street and North Shore Drive.	Left a voicemail with M. Carney to coordinate markup of plans (12/6/05). Left a second voicemail with M. Carney to coordinate markup of plans (12/9/05). Received call from M. Carney. Ms. Carney indicated that she had sent out a bunch of plans today and that our One-Call utility information was likely in the mail. She requested that we email to her a site plan / aerial photo of the site and a request for W&S Availability. She also indicated that they would not be able to give us verification of water capacity. Typically, this is done by hydrant flow tests, at the clients expense and coordination. However, it is too cold right now to do these tests. She instructed us to contact Dan Waldorff regarding sewage capacity. Sent a follow-up email to M. Carney requesting verification that plans had been sent and additional direction with regard to determining capacity. (12/9/05) Received additional contacts from M. Carney. (12/15/05)
		Don Waldorff			Spoke with Don Waldorff regarding sewer capacity. Mr. Waldorff indicated to me that it was the customer's responsibility to verify pipe capacities, during design. He also was unwilling to comment on sewer treatment plant capacity and indicated that treatment plant capacity is typically addressed during Planning Module submission. (12/9/05)

** Not Part of the Pennsylvania One-Call

Majestic Star Casino Site
Utility Conflict List
(As per PA One-Call System - Updated 12/19/05)

Prepared By: MDW
Checked By: SMV

Utility Company Name	Type	Contact Person	One-Call Response	Description of Potential Utility Impact	Actions
Pittsburgh City Department of Public Works	Traffic	City of Pittsburgh	No response from PA One-Call system.	No utilities located within or adjacent to the project site.	Called Public Works Dept. and left voicemail to verify absense of utilities (12/6/05). Received call from City of Pittsburgh. The City actually does not handle its own One-Call. Duquesne Light handles One-Call for electrical. Steve Simmons at the Traffic Dept. handles traffic signal One-Call markouts (12/9/05).
		Steve Simmons (Traffic)			Called Traffic Dept. to verify that the site was clear, and described the site location. According to the Traffic Department, no traffic-related utilities are located in the vicinity of this site. All Clear (12/9/05). No additional action needed.
Duquesne Light	Electric	Richard Lang; Stan Kulig (One-Call)	Plans received on 11/28/05; however, plans did not include the full extents of the site.	Extensive electrical infrastructure exists within the Right-of-Way of all streets bounding and inside the project site area, including Reedsdale Street, Belmont Street, Lighthill Street and North Shore Drive.	Called and requested additional plans from R. Lang (12/6/05) Received additional plans and incorporated them into our drawings (12/8/05). No additional action needed to locate utilities.
		Charlie Ray (Capacity)			Left voicemail for Charlie Ray regarding coordination of electrical loading / demand and evaluation of utility capacity (12/9/05)
		Bob Wolfe (Capacity)			Bob Wolfe called to follow-up on earlier voicemail to Charlie Ray. Based on the information we gave him, he thought that the utilities would be underground and referred us to Christine Navadakaus - Major Accounts Representative for the North Shore region. (12/9/05)
		Christine Navadakaus			Left voicemail for Christine Navadakaus. (12/9/05) Received callback from C. Navadakaus and briefly discussed the project. Sent her an aerial photo of the site and the estimates for electrical demand, compiled by the client. Ms. Navadakaus called back to inform us that capacity would not be a problem, although additional infrastructure may be required (sub-transmission lines, pad mounted transformers, etc.). She indicated that the next steps would be to provide electrical plans, or set up a meeting to discuss the electrical needs in more depth. (12/9/05).
Comcast	Cable	Not Determined	Clear - No underground facilities based on PA One-Call response	No utilities located within the project site. However, it appears that a Comcast conduit crosses the nearby West End Bridge, and may run close to Belmont Street. We were not provided with enough information, however, to accurately locate this conduit.	No additional action required
Equitable Gas	Gas	Surveying	Plans received on 11/28/05. Utilities exist within the project area.	A 20" gas main is located along Reedsdale Avenue and a 3" gas line is located along Lighthill Street, in the Right-of-Way.	Directed to Wes Soyster (12/9/05)
		Wes Soyster, Engineering Department			Left voicemail with Wes Soyster regarding coordination of gas demand and evaluation of utility capacity (12/9/05)
		Dustin Hagg			Received a callback from Dustin Hagg and sent an email to him with an aerial photo of the site and the natural gas demand estimates, based on the Dec. 5th 2005 letter from the client. Requested evaluation of the existing natural gas infrastructure to handle the anticipated demand (12/9/05). Received an email response to our evaluation request. According to Dustin Hagg, Equitable Gas has capacity to natural gas demands. No additional action required.
Fiber Technologies	Fiber Optic	Jim Highsmith	Clear - No underground facilities based on PA One-Call response	No utilities located within the project site. However, a fiber optic cable is located within a nearby Comcast conduit. This conduit crosses the West End Bridge, and may run close to Belmont Street. We were not provided with enough information, however, to accurately locate this conduit.	Obtained utility mapping from the fibertech.com website, which suggested that the site was not entirely clear. A network fiber optic line appears to be located along Belmont Street, within the site limits. Left a voicemail message with Jim Highsmith, requesting verification of All-clear status. Mr. Highsmith later returned the phonecall and indicated that Fiber Tech lines share the Comcast conduit, over the West End Bridge, but that we would have to contact Comcast to get the actual location. Jim continued to explain the services they provide and referred us to Gary Muisus (585) 697-5137, if we wanted more information about capacities. Jim explained their services to us. They carry "dark fiber" services, where they maintain the network and let the client maintain equipment, and "lit services", where they provide the network and content. The next step would be to follow-up with the client regarding the specifics of the anticipated fiber optics demand... (12/15/05)

** Not Part of the Pennsylvania One-Call

DENNIS M. DAVIN
Director

County of Allegheny

DEPARTMENT OF ECONOMIC DEVELOPMENT

December 21, 2005

PITG Gaming, LLC

To Whom It May Concern:

I am, hereby, acknowledging receipt of the *Local Impact Report*, prepared for The Majestic Star Casino and dated December 21, 2005.

Sincerely,

Dennis M. Davin
Director

mac

RECEIPT FOR IMPACT REPORT
as it relates to
PITG GAMING, LLC
and the
PITTSBURGH CITY SCHOOL DISTRICT
OF
PENNSYLVANIA

The undersigned acknowledges receipt of the statutorily required (Act 2004-71) "Impact Report" for the Pittsburgh City School District, as it relates to the Category 2 gaming license application for PITG Gaming, LLC. The undersigned also acknowledges that the information included in the "Impact Report" has been received in its complete form and will not be altered, in any manner, without expressed written consent from Barden Development, Inc.

CONFIDENTIALITY

The Pittsburgh City School District agrees that, as a condition to the receipt of Confidential Information hereunder, Pittsburgh City School District shall: (i) not disclose, directly or indirectly, to any third party any portion of the Confidential Information without the prior written consent of Barden Development, Inc.; (ii) not use or exploit the Confidential Information except for the Purpose; (iii) promptly return or destroy, at Barden Development, Inc.'s request, all materials and documentation regarding the Confidential Information received hereunder; (iv) take all reasonably necessary precautions to protect the confidentiality of the Confidential Information received hereunder and exercise at least the same degree of care in safeguarding the Confidential Information as Pittsburgh City School District would with its own confidential information; and (v) promptly advise Barden Development, Inc. in writing upon learning of any unauthorized use or disclosure of the Confidential Information.

Barden Development, Inc. and Pittsburgh City School District shall take all reasonably necessary steps to ensure that their employees and agents comply with the foregoing confidentiality restrictions and obligations.

REMEDIES

The Pittsburgh City School District acknowledges that the Confidential Information is of critical importance to Barden Development, Inc. and its subsidiaries and it is specifically understood and agreed that any breach of this Agreement is likely to result in irreparable injury to Barden Development, Inc., that the remedy at law alone will be an inadequate remedy for such breach, and that in addition to any other remedy it may have, Barden Development, Inc. shall be entitled to seek the specific performance of this Agreement by Pittsburgh City School District and to seek both temporary and permanent injunctive relief (to the extent permitted by law) without the necessity of proving actual damages.

MISCELLANEOUS

This Agreement imposes no obligation on either party to purchase, license, or otherwise transfer any products, services or technology. This Agreement shall survive the termination of any agreement between Barden Development, Inc. and Pittsburgh City School District. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision hereof. No provision of this Agreement may be amended or waived without a written agreement signed by Barden Development, Inc. and Pittsburgh City School District. This Agreement supersedes all other confidentiality or nondisclosure agreements between the parties. This Agreement shall be governed by the laws of the Commonwealth of Pennsylvania, exclusive of its conflicts of law rules. All claims, controversies and disputes arising out of or relating to this Agreement shall be brought exclusively in the courts, state and Federal, located in Harrisburg, Pennsylvania.

Dated: December 21, 20 05

Signature of Authorized Pittsburgh School District Official

Christopher Berchik, Assistant Secretary

Name (Print)

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as it relates to
PITG GAMING, LLC
and the
CITY OF PITTSBURGH, PENNSYLVANIA

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received but not reviewed

Dated: Dec. 21, 2005

Susan Golomb
Signature of Authorized City Official

Susan Golomb
Name (Print)