Orth - Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS and PLANNERS

Final Report

Foxwoods-Philadelphia Proposed Slot Parlor/Casino Development

on

Columbus Boulevard between Reed and Tasker Streets

City of Philadelphia

May 15, 2006

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EXECUTIVE SUMMARY

Introduction

Foxwoods Casino - Philadelphia proposes to develop a slots parlor/casino on a site on the east side of Columbus Boulevard between Reed and Tasker Streets in the City of Philadelphia (Figure i). The development will occur in several phases. The initial development phase (i.e., Phase I) will accommodate 3,000 slot machines to be completed by 2008. It is anticipated that an additional 2,000 slots for a total of 5,000 slots would be added in Phase II. Some restaurant and retail/entertainment activities would also be included as part of the proposed development but are considered as ancillary uses to the slot machines. A third development phase (i.e., Phase III) could involve development of a 500 room hotel on the site and potential development of about 200 residential condominium units in the northern part of the site at Reed Street. The third development phase is not anticipated to generate substantial new traffic volumes and will be addressed later.

The purpose of this report is to present the results of an analysis of the potential traffic impact of the initial two phases of the proposed development. The report presents a review of present peak hour traffic volumes and intersection levels of service along the Columbus Boulevard 'corridor'; projects future peak hour traffic volumes and associated traffic conditions without the proposed slot parlor/casino; estimates peak hourly traffic volumes which will be generated by the proposed slots parlor/casino and superimposes that projected demand on the estimates of future volumes without the proposed development to provide estimates of future peak hour traffic with the slots parlor/casino in operation.

Finally, and most importantly, this report outlines a series of proposed improvements to meet the mandate established by Foxwoods Casino – Philadelphia which is to "MAKE TRAFFIC CONDITIONS ON COLUMBUS BOULEVARD BETTER THAN THEY ARE TODAY." This mandate and its associated high standards are directed at a major concern of several neighborhoods/communities along the Columbus Boulevard 'corridor' – i.e. traffic. Typically, a study of the traffic impact of a proposed

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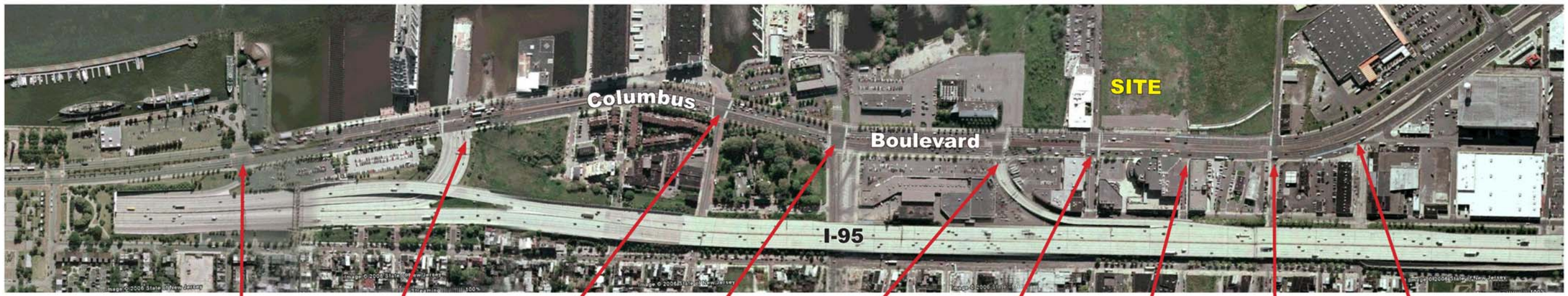
Figure i
Site Location and the Columbus Boulevard Corridor

FOXWOODS CASINO - PHILADELPHIA



I-95 NORTHBOUND ON-RAMP / LOMBARD CIRCLE	I-676 / I-95 RAMPS	CHRISTIAN STREET	WASHINGTON AVENUE	NB I-95 OFF-RAMP	REED STREET	DICKINSON STREET	TASKER AVENUE	MORRIS STREET / SOUTHBOUND I-95 ON-RAMP

new development is directed only at off-setting or mitigating the specific additional traffic impact generated by the proposed development. In this instance, Foxwoods Casino – Philadelphia proposes to accept 'ownership' of the existing traffic situation and the impact associated with 'other' development along the 'corridor' as well as additional traffic generated by the proposed Foxwoods Casino – Philadelphia development. As illustrated in Figure i, the study is directed at the following intersections along the Columbus Boulevard 'corridor':

- Lombard Circle/I-95 Northbound On Ramp
- I-676/I-95 On/Off Ramps
- Christian Street
- Washington Avenue
- I-95 Northbound Off-Ramp Reed Street
- Dickinson Street
- Tasker Street
- Morris Street

Existing Traffic Conditions

There is existing traffic congestion along Columbus Boulevard between the Lombard Circle/I-95 northbound ramp intersection and Tasker Street. While a majority of the intersections operate at Level of Service 'C' or better on Friday during peak traffic hours, the Washington Avenue intersection operates at Level of Service 'F'. In addition, a number of individual movements (traffic lanes) function at Level of Service 'E' or 'F' during the Friday peak traffic hour. These include:

- the northbound left-turn from Columbus Boulevard to the I-676 on-ramp
- the northbound left-turn to westbound Christian Street and the southbound left-turn into Pier 40
- the southbound approach movement on Columbus Boulevard at Washington Avenue -- primarily as a result of the number of motorists who utilize the right-lane because they intend to turn right onto Washington Avenue or turn right into retail centers and/or the movie theater complex further south leaving unused capacity in the remaining two southbound through lanes

- the eastbound left-turn from Washington Avenue onto northbound Columbus Boulevard and the northbound left-turn from Columbus Boulevard to westbound Washington Avenue

- the northbound left-turn from Columbus Boulevard onto Reed Street and the southbound left-turn at this intersection

All but two signalized intersections on Columbus Boulevard between Lombard Circle to the north and Tasker Street to the south function at an overall Level of Service 'C' or better during the Saturday early afternoon peak traffic hour. The exceptions are the intersection with Washington Avenue, which operates at Level of Service 'E', and the intersection with Reed Street which operates at Level of Service 'D'. There are also a number of individual movements (traffic lanes) which function at Level of Service 'E' or 'F' during the Saturday peak traffic hour including:

- the northbound left-turn from Columbus Boulevard to the I-676 on-ramp

- the northbound left-turn to westbound Christian Street and the southbound left-turn into Pier 40

- the eastbound left-turn from Washington Avenue onto Columbus Boulevard and the northbound left-turn from Columbus Boulevard to westbound Washington Avenue

- the southbound approach movement on Columbus Boulevard at Reed Street – primarily as a result of motorists who are making the right turn onto westbound Reed Street

- the northbound left-turn from Columbus Boulevard onto Reed Street and the southbound left-turn at this intersection

- the eastbound approach movement on Tasker Street at Columbus Boulevard

It should also be noted that some significant delay and congestion is experienced at other intersections during other times of the day/evening -- e.g., the exit movements from the southbound I-95/I-676 off-ramp.

Traffic Characteristics of the Slots Parlor/Casino

It is estimated that at Phase I, the proposed casino would attract 20,000 patrons per day on Fridays and 28,500 patrons per day on Saturdays, the two busiest days of the week. With Phase II, it is estimated that the facility would attract 26,000 and 39,900 patrons per day on Fridays and Saturdays, respectively. Estimates of traffic to be generated by the proposed slots parlor/casino include both patrons and employees. The estimates/assumptions provided by Foxwoods Casino – Philadelphia as summarized below were utilized to project traffic demand which would be generated by the proposed development:

Estimates And Assumptions Used To Develop Phase I & II Traffic Generation Projections

	Phase I		Phase II	
	Friday	Saturday	Friday	Saturday
Total Number of Patrons	20,000	28,500	26,000	39,900
Average Duration of Stay	4 hours	4 hours	4 hours	4 hours
Number of Bus Trips	50	35	55	40
Patrons Arriving via Bus	2,000	1,400	2,200	1,600
Number of Employees	950	950	1,250	1,250
Employees Using Public Transit	30%	30%	30%	30%
Average Auto Occupancy				
Patrons	2.0	2.0	2.0	2.0
Employees	1.0	1.0	1.0	1.0

The volume of automobile traffic which will be added to the street network will vary throughout the day (as does the volume of 'other' traffic using the street network). Since the purpose of this report is to analyze the 'worst case' situation, the peak hours analyzed should be those hours when the sum of the existing (i.e. 'other') traffic volume and the casino-generated traffic volumes are the greatest.

Review of the collected traffic count data and casino projections indicate that the highest traffic volumes along the Columbus Boulevard 'corridor' – both existing and casino-generated – will occur on Fridays and Saturdays. The hour of the highest casino-generated traffic activity on these two days is expected to occur at about 10:00 p.m. However, existing volumes on Columbus Boulevard and intersecting cross streets in the vicinity of the site during this time period are significantly lower than at other times of the day. In addition,

the casino is expected to have another peak traffic period on Friday afternoon just prior to the late afternoon commuter peak when existing volumes are only slightly less than commuter peak volumes. As a result, it is anticipated that the future peak traffic hour on Friday – with consideration of existing volumes and casino-generated demand – will occur between 3:00 p.m. and 4:00 p.m.

Review of existing and projected future casino-generated traffic volumes on Saturdays indicates that the peak traffic hour along the Columbus Boulevard 'corridor' will occur between 1:00 p.m. and 2:00 p.m. Traffic volumes estimated to be generated by the proposed slots parlor/casino during these periods in each of the two development phases is summarized below:

Fooxwoods Casino – Philadelphia Trip Generation

Time Period	Phase I			Phase II		
	Friday					
	In	Out	Total	In	Out	Total
Late Afternoon (around 3:00 P.M.)	440	210	650	572	273	845
	Saturday					
	In	Out	Total	In	Out	Total
Late Afternoon (around 1:00 P.M.)	690	425	1,115	690	425	1,115

Traffic generated by the new slots parlor/casino will approach and depart via different routes which will most likely vary by time of day and day of the week -- depending upon traffic conditions. Route of approach and departure can also be significantly affected by directional signage on the street/highway system and by marketing information/material provided to the public.

Review of available demographic data and consideration of the configuration of the regional highway network and varying traffic conditions along the Columbus Boulevard 'corridor' on different days of the week and at different times of the day suggest the following distribution of development generated traffic during peak hour traffic hours:

Fooxwoods Casino – Philadelphia Direction of Approach

Direction	Arrive From	Depart To
North on Columbus Boulevard (i.e., north of Lombard Circle)	15%	15%
North on I-95 and/or via I-676	40%	30%
South on I-95	20%	20%
South on Columbus Boulevard (including some traffic to/from the south on I-95 or via the Walt Whitman Bridge	15%	25%
West on Washington Avenue	6%	6%
West on Reed Street, Tasker Street, and other local streets	4%	4%

Future Traffic Conditions

Existing peak hour traffic volumes were increased by 4.2 % to reflect growth and other developments along the Columbus Boulevard 'corridor' between now and 2008 when Phase I of the slots parlor/casino will be open. Existing peak hour traffic was increased 7.4 % to reflect growth and development within the 'corridor' by 2010 when Phase II will be completed.

Addition of casino-generated traffic to projected future volumes without Foxwoods Casino – Philadelphia slots parlor/casino results in a total projected increase of about 15 % in Friday afternoon peak hour volumes and about 20 % in Saturday afternoon peak hour volumes (as compared with existing volumes) in 2008 with Phase I of the slots parlor/casino open. By 2010, with Phase II completed, Friday afternoon peak volumes are estimated to be about 20 % higher than existing levels while Saturday afternoon peak volumes are estimated to be about 30 % greater than existing demands.

Clearly, with projected peak hour traffic increases in the ranges noted, there will be some substantial increase in congestion/delay along the Columbus Boulevard 'corridor unless some improvements are implemented.

The Proposed Improvement Program

A series of improvements are proposed to satisfactorily serve projected peak hour volumes upon completion of Phase I in 2008 and also to satisfy the mandate to "make traffic conditions better than today". These improvements include the following:

- Re-establish the coordinated traffic signal system on Columbus Boulevard and then update it to incorporate the latest technology to eliminate the constant stopping and starting of traffic which is experienced today;

- Construct a northbound double left turn lane on Columbus Boulevard at the I-676 ramp to eliminate the back-ups onto the through lanes of northbound Columbus Boulevard;

- Construct a northbound double left turn lane at Washington Avenue; in addition, re-stripe the eastbound Washington Avenue approach to provide a double left turn lane and revise the signal operation to provide sufficient walk time for a pedestrian to cross Columbus Boulevard without having to walk through turning traffic. Lastly, provide a southbound right-turn only lane by removing one of the through lanes. This is the most congested intersection in Columbus Boulevard 'corridor' and these improvements will eliminate that congestion.

- Re-stripe the eastbound Reed Street approach for three lanes and allow left turns from the center and leftmost lane of the approach. Stripe two westbound lanes on this same block in order to provide space for westbound traffic to bypass movie theater traffic.

- Install a signal at Dickinson Street and re-stripe the southbound Columbus Boulevard approach for two through lanes and a double left turn lane. Stripe a double right turn lane for exit from the site and two eastbound lanes for entrance into the site. Prohibit left and U-turns on the northbound Columbus Boulevard approach.

- Widen Tasker Street to provide two eastbound approach lanes at Columbus Boulevard; and

- Install a new signalized intersection at Morris Street and Columbus Boulevard in order to provide direct access from northbound Columbus Boulevard to the I-95 southbound on-ramp; northbound Columbus Boulevard traffic currently U-turns at Dickinson Street to reach the I-95 southbound on-ramp.

The Phase I improvements listed above will provide sufficient capacity to improve conditions even with Phase II casino traffic, but one major additional improvement is recommended to meet the mandate to improve upon existing conditions – i.e., construct a new off-ramp from southbound I-95 to Dickinson Street connecting directly and only to Columbus Boulevard to provide direct access to the Foxwoods Casino – Philadelphia site. Proposed traffic improvements along the Columbus Boulevard 'corridor' are noted in Figure ii.

In addition, a series of complementary improvements are also recommended to further improve street traffic conditions in and around the Foxwoods Casino -Philadelphia site:

- install changeable message signage to route motorists to the least congested route to the site
- provide sufficient parking and additional on-site queuing areas to eliminate any chance of traffic spilling back onto Columbus Boulevard
- coordinate with SEPTA and tour bus operators for patron transit to the casino
- provide off-site parking with shuttles for employees
- arrange provision of water taxi service between Pier 60 at the casino and entertainment/activities on both sides of the Delaware River
- encourage other entertainment and retail sites along the Columbus Boulevard 'corridor' to develop and provide marketing information identifying alternate routes to be utilized in traveling to/from these locations

Meeting the Mandate

The results of implementation of the improvement program as outlined in terms of overall intersection delay experienced along the Columbus Boulevard 'corridor' from Lombard Circle to Morris Street are illustrated in Figure iii. As shown, compared to existing conditions, overall peak hour 'corridor' delay will be reduced by 32 % on Fri days and by 16 % on Saturdays in 2008 (with Phase I) and by 37 % on Fridays and by 5 % on Saturdays in 2010 with Phase II and the proposed new southbound I-95 off-ramp at Dickinson Street.

Figure ii
Proposed Traffic Improvements to the Columbus Boulevard Corridor

FOXWOODS CASINO - PHILADELPHIA

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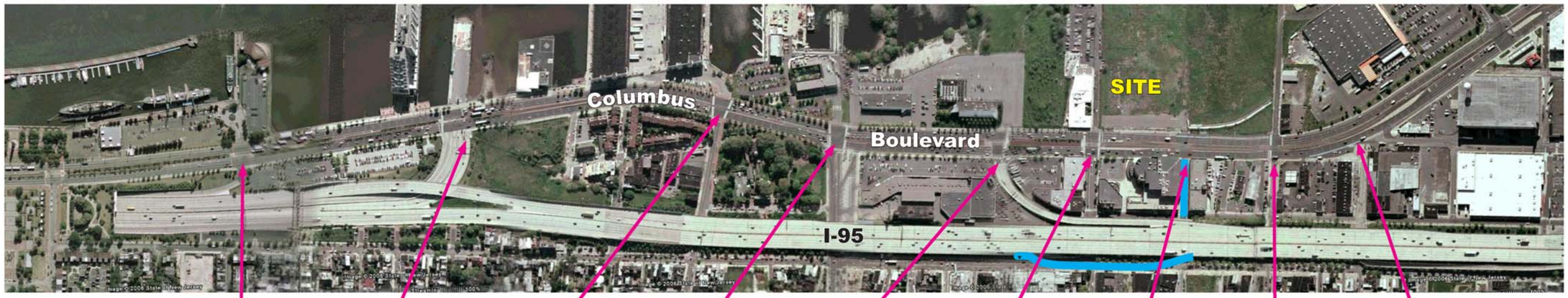


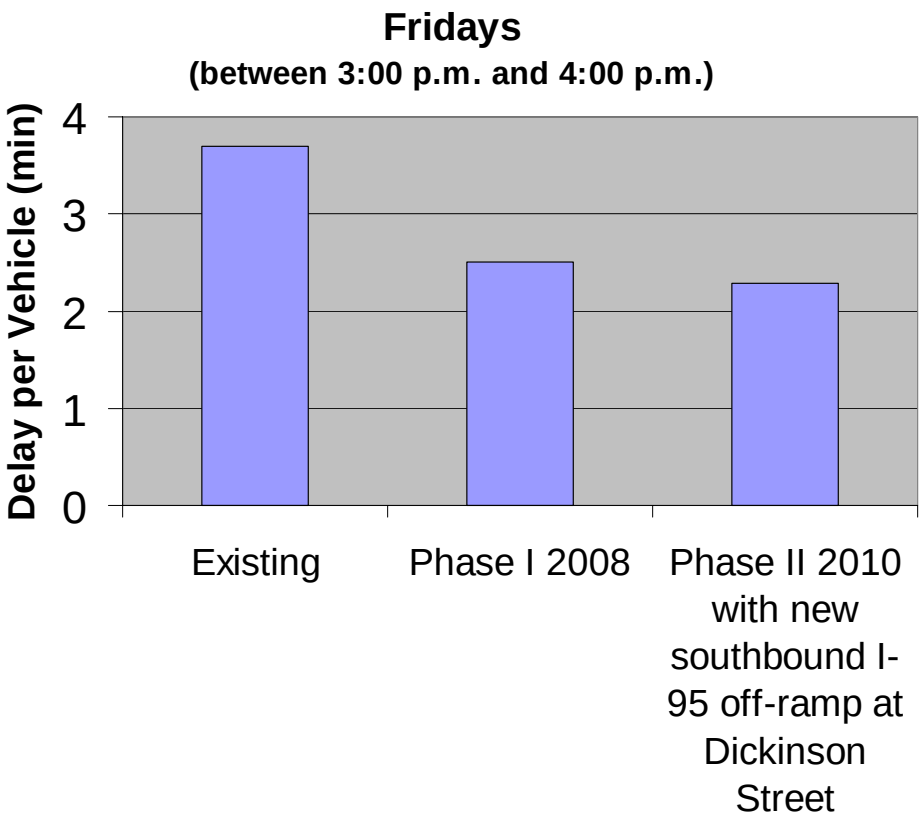
	I-95 NORTHBOUND ON-RAMP / LOMBARD CIRCLE	I-676 / I-95 RAMPS	CHRISTIAN STREET	WASHINGTON AVENUE	NB I-95 OFF-RAMP	REED STREET	DICKINSON STREET	TASKER AVENUE	MORRIS STREET / SOUTHBOUND I-95 ON-RAMP
PROPOSED IMPROVEMENTS	REVISE TRAFFIC SIGNAL TIMING.	CONSTRUCT NORTHBOUND DOUBLE LEFT-TURN LANE.	RESTRIPE EASTBOUND CHRISTIAN STREET TO PROVIDE A SEPARATE LEFT-TURN LANE AND A SHARED THROUGH AND RIGHT-TURN LANE.	RESTRIPE EASTBOUND WASHINGTON AVENUE APPROACH TO PROVIDE A SEPARATE LEFT-TURN LANE. CONSTRUCT A NORTH-BOUND DOUBLE LEFT TURN LANE. RESTRIPE THE SOUTHBOUND APPROACH TO PROVIDE TWO THROUGH LANES AND A SEPARATE RIGHT TURN LANE.	REVISE TRAFFIC SIGNAL TIMING.	RESTRIPE EASTBOUND REED STREET TO PROVIDE A SEPARATE LEFT-TURN LANE, A SHARED THROUGH AND LEFT-TURN LANE, AND A SEPARATE RIGHT-TURN LANE. RESTRIPE WESTBOUND REED STREET TO PROVIDE A SEPARATE LEFT-TURN LANE AND A SHARED RIGHT-TURN THROUGH AND LEFT-TURN LANE. REVISE TRAFFIC SIGNAL PHASING.	INSTALL NEW TRAFFIC SIGNAL. RESTRIPE SOUTHBOUND COLUMBUS BLVD. TO PROVIDE A DOUBLE LEFT-TURN AND TWO THROUGH LANES. CONSTRUCT A NEW SOUTHBOUND OFF-RAMP FROM I-95 TO PROVIDE DIRECT ACCESS TO THE SITE.	WIDEN THE EASTBOUND TASKER AVENUE APPROACH TO PROVIDE A SHARED LEFT-TURN AND THROUGH LANE AND A SHARED RIGHT-TURN AND THROUGH LANE. RESTRIPE SOUTHBOUND APPROACH TO PROVIDE TWO THROUGH LANES AND A SEPARATE LEFT-TURN LANE.	WIDEN THE NORTHBOUND APPROACH TO PROVIDE THREE NORTHBOUND THROUGH LANES AND A SEPARATE LEFT-TURN LANE. CONSTRUCT A SIGNALIZED INTERSECTION AND AN AT-GRADE CROSSING TO PROVIDE A DIRECT LEFT-TURN TO THE I-95 SOUTHBOUND ON-RAMP.

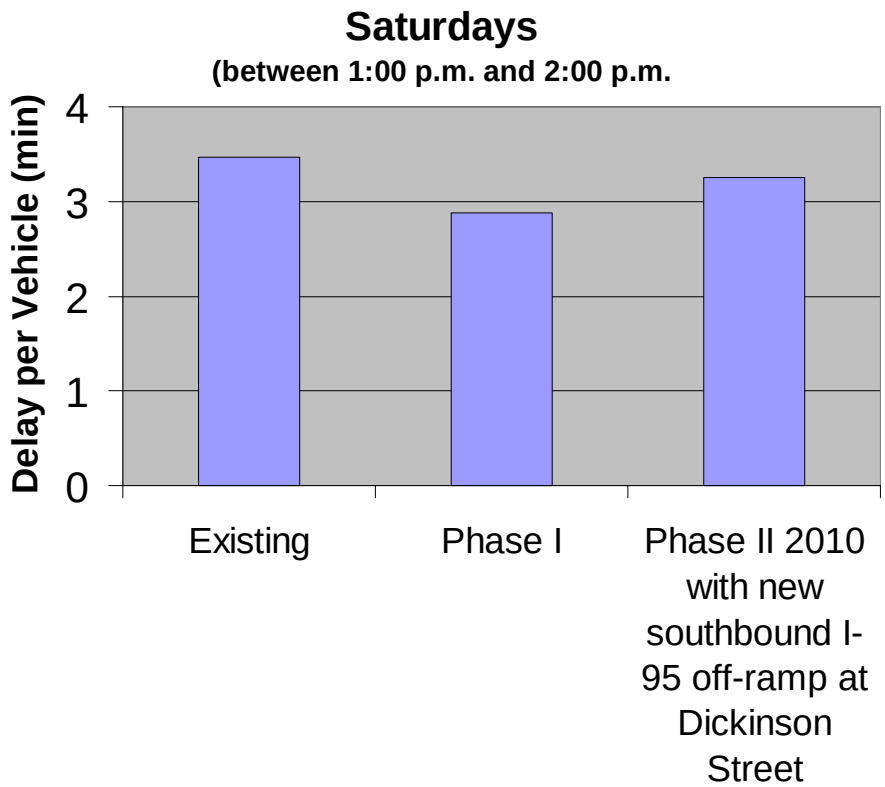
ALSO: COORDINATE/UPGRADE TRAFFIC SIGNAL SYSTEM ALONG COLUMBUS BOULEVARD CORRIDOR.

LEGEND:

PROPOSED SOUTHBOUND OFF-RAMP FROM I-95

Figure iii
Overall Intersection Peak Hour Delay
Columbus Boulevard Corridor
between Lombard Circle and Morris Street





This analysis has clearly shown that the mandate has been met and traffic conditions along the Columbus Boulevard 'corridor' will be better than they are today with implementation of the transportation program.

INTRODUCTION

Foxwoods Casino - Philadelphia proposes to develop a slots parlor/casino on a site on the east side of Columbus Boulevard between Reed and Tasker Streets in the City of Philadelphia (Figure 1). The development will occur in several phases. The initial development phase (i.e., Phase I) will provide 3,000 slot machines by 2008. Ultimately, it is anticipated that a total of 5,000 slots would be available (i.e., Phase II). Some restaurant and retail/entertainment activities would also be included as part of the proposed development but are considered as ancillary uses to the slot machines. A third development phase (i.e., Phase III) could involve development of a 500 room hotel on the site and potential development of about 200 residential condominium units in the northern part of the site (i.e., toward Reed Street). The third development phase is not anticipated to generate substantial new traffic volumes and will be addressed later.

The purpose of this report is to present the results of an analysis of the potential traffic impact of the proposed development. The focus of the report is directed at the first two phases. It is important to stress that this study is designed not only to provide recommendations to result in safe and efficient site access for the proposed development and to offset the impact of site-generated traffic. It goes further and recommends improvements, which will go a long way to mitigate existing traffic problems encountered by residents of the nearby neighborhoods.

The study includes:

- an examination of the existing transportation situation in the vicinity of the site including a field inventory of existing streets and intersections and observations of traffic conditions
- conduct of automatic traffic recorder (ATR) counts and manual intersection turning movement counts at key intersections along the Columbus Boulevard 'corridor' between Tasker Street and Lombard Circle

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FIGURE 1

Site Location Map

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

- determination of current peak hourly volumes along the 'corridor' and evaluation of current peak period traffic conditions

- estimation of peak hourly traffic to be generated by the proposed development

- an assessment of the impact of the proposed development on traffic conditions along the 'corridor' and the identification (for purposes of on-going evaluation) of possible actions to address existing traffic problems and to provide for safe and efficient site access.

The study has been directed at the following intersections:

- Morris Street and Columbus Boulevard
- Morris Street and Water Street
- Columbus Boulevard and Tasker Street
- Columbus Boulevard and Dickinson Street
- Columbus Boulevard and Reed Street
- Columbus Boulevard and I-95 northbound off-ramp
- Columbus Boulevard and Washington Avenue
- Columbus Boulevard and Christian Street
- Columbus Boulevard and I-676 on-ramp and I-676 and I-95 southbound off-ramp
- Columbus Boulevard and I-95 northbound on-ramp and Lombard Circle

The study has been directed at the peak traffic hours on a late Friday afternoon and early Saturday afternoon because data shows that it is during these two periods that the combination of existing traffic demand and that generated by the proposed casino development will be at a maximum -- i.e., the 'worst case'.

DEVELOPMENT-GENERATED TRAFFIC

This section addresses the questions of how much traffic will be generated by the proposed casino, which peak hours of the day and which days of the week represent the critical peak periods to analyze and from which direction traffic will arrive and depart the site.

Trip Generation

Estimates of traffic volume to be generated by the development include consideration of patrons and staff/employees. On the basis of information provided by the casino operator, the estimates/assumptions outlined in Table I were utilized to project traffic demand, which might be generated by initial phases development schedule to include 3,000 slot machines and some ancillary restaurant, and retail/entertainment uses. A second phase including an additional 2,000 slot machines and additional ancillary restaurant and retail/entertainment uses will follow.

Table I
Estimates/Assumptions Used to
Develop Phase I & II Traffic Generation Projections

Intersection	Phase I		Phase II	
	Friday	Saturday	Friday	Saturday
Total Number of Patrons	20,000	28,500	26,000	39,900
Average Duration of Stay	4 hours	4 hours	4 hours	4 hours
Number of Bus Trips	50	35	55	40
Patrons Arriving via Bus	2,000	1,400	2,200	1,600
Number of Employees	951	951	1,254	1,254
Employees Using Public Transit	30%	30%	30%	30%
Average Auto Occupancy				
Patrons	2.0	2.0	2.0	2.0
Employees	1.0	1.0	1.0	1.0

Application of these estimates/assumptions to an estimated hourly patron arrival pattern also developed in cooperation with the casino operator results in the following projections of peak hourly vehicular traffic associated with initial phase development of the site as summarized in Table II.

Table II
Phase I Peak Hourly Vehicular Traffic

Intersection	Friday		
	In	Out	Total
Late Afternoon (around 3:00 P.M.)	440	210	650
Late Evening (around 10:00 P.M.)	875	760	1,635
	Saturday		
	In	Out	Total
Late Afternoon (around 1:00 P.M.)	690	425	1,115
Late Evening (around 10:00 P.M.)	1,000	960	1,960

With the addition of 2,000 more slot machines, site generated traffic is expected to increase by 30 percent on Friday and 40 % on Saturday. Applying these increases, results in the following projections of site generated traffic during the peak hours as seen in Table III.

Table III
Phase II Peak Hourly Vehicular Traffic

Intersection	Friday		
	In	Out	Total
Late Afternoon (around 3:00 P.M.)	572	273	845
Late Evening (around 10:00 P.M.)	1,138	988	2,126
	Saturday		
	In	Out	Total
Late Afternoon (around 1:00 P.M.)	966	595	1,561
Late Evening (around 10:00 P.M.)	1,400	1,344	2,744

Selection of Critical Peak Hours

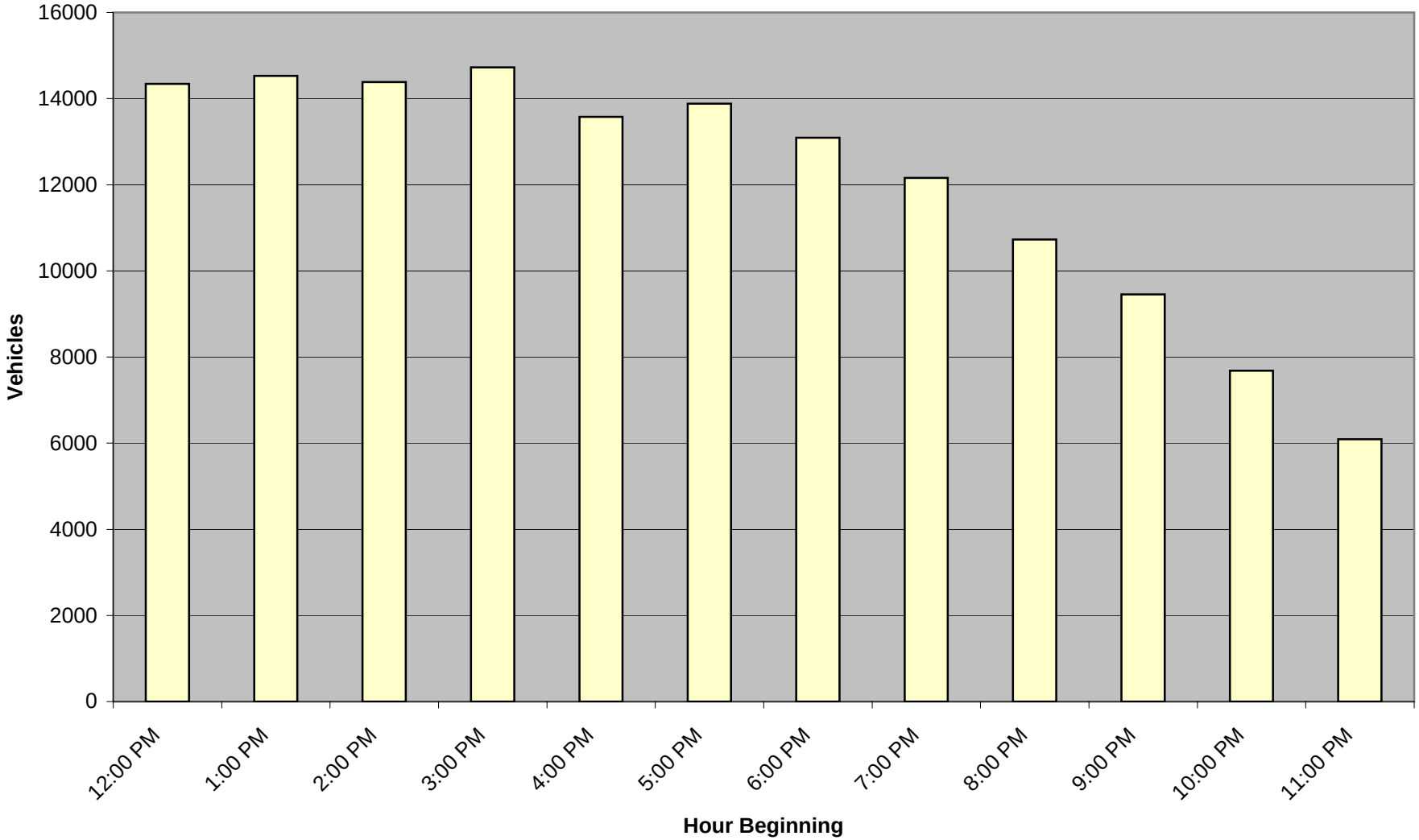
The process of selecting the critical peak analysis hours was based on a review of daily street traffic volume data collected with automated traffic counters, manual turning movement count data and estimated traffic generated by the casino on an hourly basis. Figures 2 and 3 illustrate the existing total combined intersection traffic volume along the Columbus Boulevard 'corridor' on a Friday and Saturday, respectively. As indicated, the period with the four highest consecutive 15 minute periods of combined intersection traffic volume occur from 3:00 p.m. to 4:00 p.m. on Friday and 1:00 p.m. to 2:00 p.m. on Saturday. However, for analysis purposes, it is important to capture the highest peak hour after the proposed casino is opened. This represents the highest traffic period and the worst case for analysis. In short, the transportation improvement program required for the proposed slots parlor/casino must address the unacceptable traffic conditions during these hours, regardless of the hour of the day the existing street peak represents.

The estimated hourly traffic generated by the slots parlor/casino including patron vehicles, buses and employees was added to the daily traffic as shown in Figures 4 and 5 for Friday and Saturday, respectively. The results show that the existing peak hours for Friday and Saturday would not change once casino traffic is added to the Columbus Boulevard 'corridor'. Upon further review of manual turning movement counts, some minor adjustments were made. As a result, the peak traffic hours established for this analysis are 3:15 p.m. to 4:15 p.m. and 1:15 p.m. to 2:15 p.m. on Friday and Saturday, respectively.

Traffic Distribution

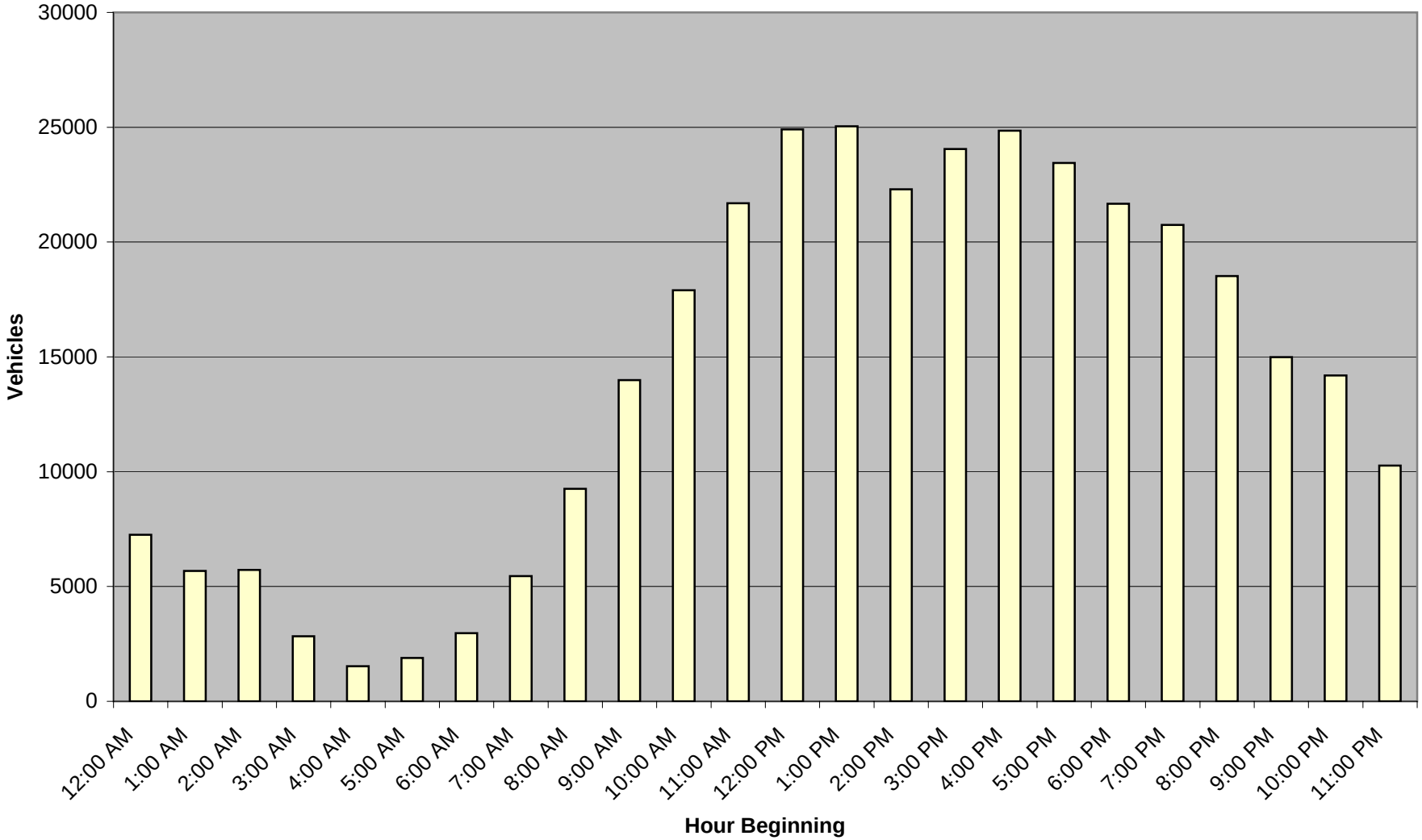
Traffic generated by the new slots parlor/casino will approach and depart via different routes which will most likely vary by time of day and day of the week -- depending upon traffic conditions. Route of approach and departure can also be significantly affected by directional signage on the street/highway system and by marketing information/material provided to the public.

Figure 2
Friday Hourly Distribution of Total Intersection Traffic Volume
COLUMBUS BOULEVARD CORRIDOR



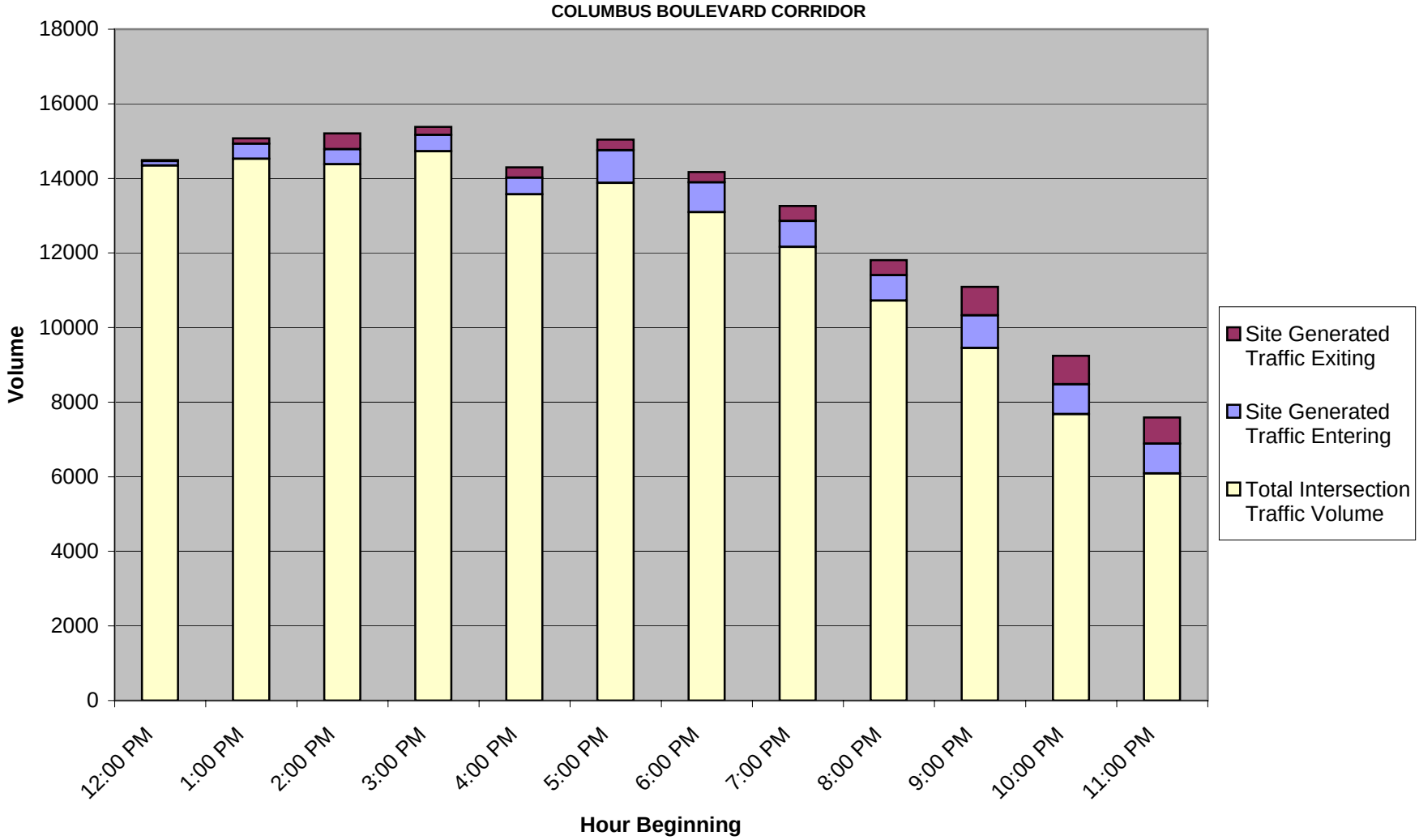
NOTE: VOLUME REPRESENT SUM OF TOTAL INTERSECTION TRAFFIC FOR ALL INTERSECTIONS BETWEEN LOMBARD STREET AND MORRIS STREET

Figure 3
Saturday Hourly Distribution of Total Intersection Traffic Volume
COLUMBUS BOULEVARD CORRIDOR



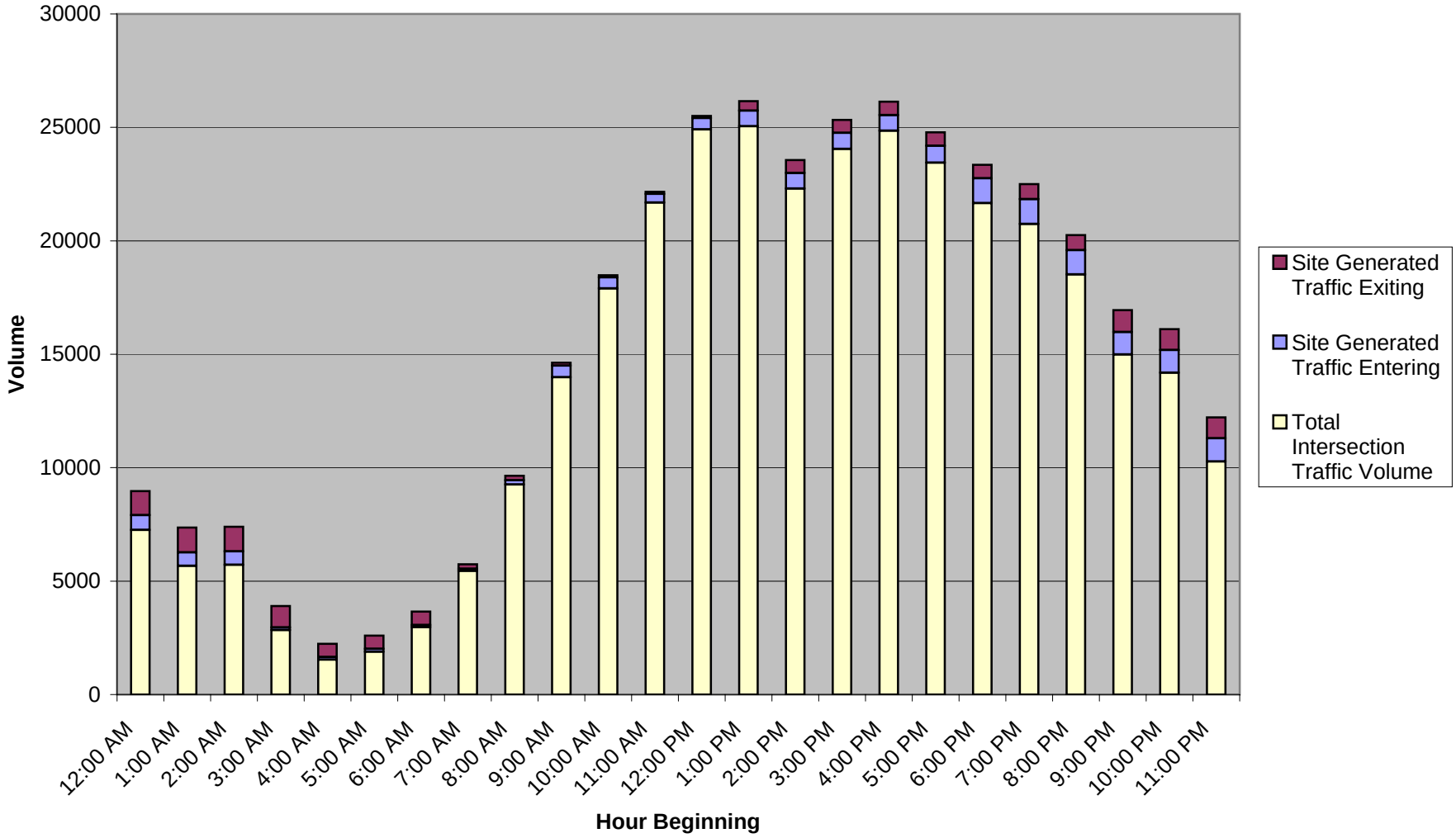
NOTE: VOLUME REPRESENT SUM OF TOTAL INTERSECTION TRAFFIC FOR ALL INTERSECTIONS BETWEEN LOMBARD STREET AND MORRIS STREET

Figure 4
Friday Hourly Distribution of Total Intersection Traffic Volume and Phase I Site Generated Traffic



NOTE: VOLUME REPRESENT SUM OF TOTAL INTERSECTION TRAFFIC FOR ALL INTERSECTIONS BETWEEN LOMBARD STREET AND MORRIS STREET

Figure 5
Saturday Hourly Distribution of Total Intersection Traffic Volume and Phase I Site Generated Traffic
COLUMBUS BOULEVARD CORRIDOR



NOTE: VOLUME REPRESENT SUM OF TOTAL INTERSECTION TRAFFIC FOR ALL INTERSECTIONS BETWEEN LOMBARD STREET AND MORRIS STREET

Review of available demographic data and consideration of the configuration of the regional highway network and varying traffic conditions along the Columbus Boulevard 'corridor' on different days of the week and at different times of the day suggest the following distribution of development generated traffic as summarized in Table IV, which is also shown in Figure 6.

Table IV
Projected Direction of Approach/Departure of Casino Traffic

Direction	Arrive From	Depart To
North on Columbus Boulevard (i.e., north of Lombard Circle)	15%	15%
North on I-95 and/or via I-676	40%	30%
South on I-95	20%	20%
South on Columbus Boulevard (including some traffic to/from the south on I-95 or via the Walt Whitman Bridge	15%	25%
West on Washington Avenue	6%	6%
West on Reed Street, Tasker Street, and other local streets	4%	4%

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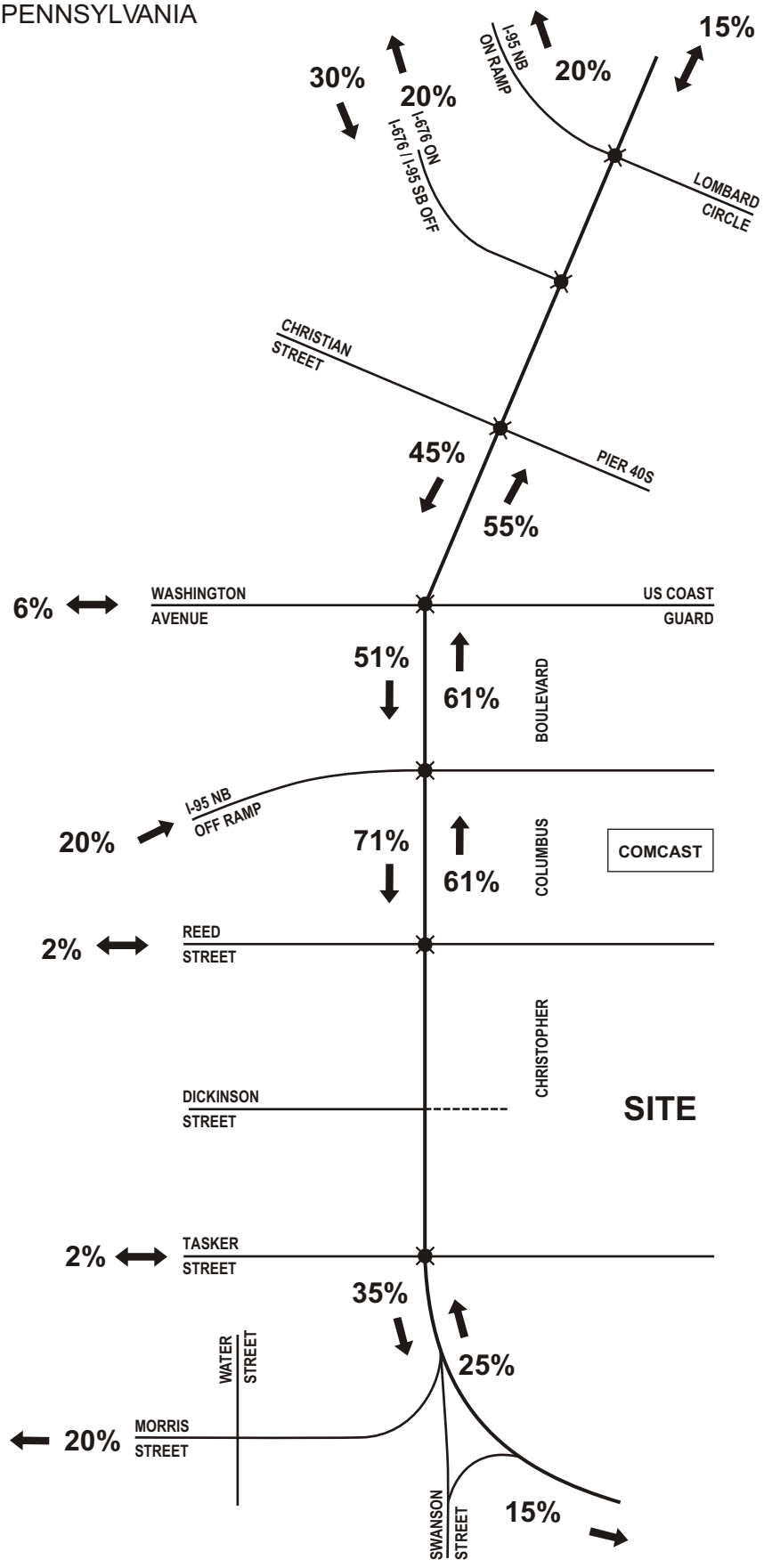
FIGURE 6

Estimated Trip Distribution

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA



EXISTING CONDITIONS

Formerly known as Delaware Avenue, the Columbus Boulevard study 'corridor' was historically an industrial highway, serving the waterfront and its numerous piers. In recent years, as the shipping uses have declined, the land and some piers have been redeveloped into retail, restaurant, and residential land uses. There are three through travel lanes and a bike lane in both directions, with left turn lanes at the most of the signalized intersections. There is a rail line in the median south of the Benjamin Franklin Bridge. Between Washington Avenue and Swanson Street there is a second track which is used as a siding when needed.

In the mid-1990's, the Pennsylvania Department of Transportation completed an upgrade to the roadway north of Reed Street, with a reconstructed cartway, sidewalks, and curbs, and new traffic signal equipment. The signals were interconnected to provide a coordinated signal system although the coordination was not functioning during the data collection portion of the current study.

There are sidewalks along both sides of Columbus Boulevard in the vicinity of the site. The posted speed limit is 30 mph.

Key intersections along the Columbus Boulevard 'corridor' include:

- ***Morris Street and Water Street:*** This intersection is unsignalized. Morris Street is one-way westbound and leads directly to an access ramp to I-95 southbound. Water Street is one-way westbound which leads to parking behind the movie theater and other retail uses along Columbus Boulevard.

- ***Columbus Boulevard (southbound) and Morris Street/Swanson Street:*** This intersection is unsignalized and is accessed only from the southbound direction. Morris Street is one-way westbound and leads directly to the I-95 southbound on-ramp. Swanson Street is one-way northeast bound and only a right turn on Columbus Boulevard is permitted.

- ***Columbus Boulevard and Tasker Street:*** Tasker Street provides one lane in each direction, with no turn lanes. No left turns are permitted from Columbus Boulevard. The Wal-Mart and Home Depot in the Pier 70 complex back up against Tasker Street and there is an access road from Pier 70 park-

ing lot to Tasker Street. Four SEPTA bus routes use this access road and Tasker Street to access Columbus Boulevard.

- ***Columbus Boulevard and Dickinson Street:*** Dickinson Street is one-way westbound, away from Columbus Boulevard to Water Street. Dickinson Street is two-way between Water and Front Streets and one-way eastbound west of Front Street. There is a southbound left turn lane on Columbus Boulevard, which is used for U-turns, as there is currently no roadway or driveway across from this turn lane. Northbound traffic also makes U-turns in the median break. This intersection is unsignalized.

- ***Columbus Boulevard and Reed Street:*** The east leg of this intersection is a private road and provides access to the Comcast maintenance and customer service facility on the northeast corner and to the proposed casino property on the southeast corner. One lane is provided in each direction. The west leg of the intersection is a public road and provides one travel lane in each direction, an eastbound left turn lane, and parking on both sides. At the I-95 underpass, the roadway narrows to one lane in each direction. There are northbound and southbound left turn lanes on Columbus Boulevard.

- ***Columbus Boulevard and I-95 northbound off-ramp:*** This two-lane ramp provides access from northbound I-95 to Columbus Boulevard. The right turn from the ramp operates under yield control. There is a driveway on the east side of Columbus Boulevard, with all movements permitted to enter the driveway, but only right turns out under yield conditions are permitted from the driveway.

- ***Columbus Boulevard and Washington Avenue:*** Washington Avenue is a major east-west arterial in south Philadelphia and is the west leg of the intersection. There is a large island separating the eastbound right turn lane from the eastbound through lane; this right turn movement operates under yield control. There is also a separate eastbound left turn lane. While only the left lane is marked for left turns, motorists use the through lane as a through-left turn lane. The east leg of the intersection is the access to the Coast Guard and provides a single westbound lane for all movements. There are northbound and southbound left turn lanes with protected left-turn signal arrows.

- ***Columbus Boulevard and Christian Street:*** The west leg of this intersection (i.e., Christian Street) provides two traffic lanes -- one approach lane and one departure lane -- and parking is permitted on the south side. The intersection is signalized with separate left-turn lanes and protected left-turn phases provided for both the northbound and southbound movements on Columbus Boulevard. The east leg of this intersection is Pier 40.

- ***Columbus Boulevard and southbound I-95/I-676 on-ramp:*** This ramp provides access from southbound I-95. The on ramp is signed for access to I-676 and I-76 and can be used to access northbound I-95. (There is a second ramp approximately 1,000 feet to the north, which is signed for I-95

northbound.) Two left-turn lanes and two right-turn lanes are provided on the ramp. Northbound and southbound left turn lanes are provided on Columbus Boulevard.

- ***Columbus Boulevard and I-95 northbound on-ramp/Lombard Circle.*** This two-lane ramp provides access from Columbus Boulevard to northbound I-95. The east leg of this intersection is Lombard Circle, which houses restaurants and retail buildings with one eastbound lane and two westbound or approach lanes. Separate left-turn lanes are provided for both the northbound and southbound movements on Columbus Boulevard.

Railroad

There is a rail line in the Columbus Boulevard median south of the Benjamin Franklin Bridge. Between Washington Avenue and Swanson Street there is a second track, which is used as a siding when needed. These tracks are located where a turn lane would be desirable for left turns into the casino site at Tasker Street. There is a narrow southbound left turn / u-turn lane at Dickinson Street; widening and lengthening this lane would require track work.

The ownership and operation of these tracks is a complex issue that relates back to the Pennsylvania and Reading Railroads (which became part of Conrail in 1976), the B&O Railroad (which became CSX), and the dissolution of Conrail by CSX and Norfolk Southern in the 1990's.

Currently, PennDOT owns the right of way on which the tracks are laid. Conrail, Inc., a wholly owned subsidiary of CSX and Norfolk Southern, has the rights to operate on the tracks, but has never taken ownership.

There are locations along Columbus Boulevard where hard rubberized railroad grade crossing material has been placed longitudinally along the roadway, including adjacent to left turn lanes, to allow crossing by vehicular traffic. Any request to provide additional accommodation for vehicles would need to be reviewed by Conrail, Inc., out of their Mt. Laurel, NJ office. It is likely that a Public Utility Commission order would also be required.

There are currently trains operating on these tracks as far north as Pier 38. They are required to use flaggers when the train crosses or travels along the road. Train speed is 10 mph.

Public Transit Service

There are currently four SEPTA bus routes in the immediate vicinity of the site. These buses enter via Pier 70 Boulevard and exit onto Tasker Street. There is a bus stop with a shelter for all four routes on the auxiliary access road, as well as a bus stop on Tasker Street at Columbus Boulevard. Three of the routes (7, 25 and 64) travel in front of the site, while the remaining route (29) uses Tasker Street west of Columbus Boulevard. The routes and approximate headways are shown in Table V.

Table V
Bus Routes Convenient to the Casino Site

Route	Direction	Approx. Headway (min.)	
		Weekday	Weekends
7	Strawberry Mansion to Pier 70, Via 29th, 22nd and 23rd Streets	12-20	30
25	Columbus Crossing to Frankford Transportation Center, via Port Richmond, Northern Liberties and Bridesburg	30	30
29	South Philadelphia Cross-town, via Tasker-Morris	25	30
64	Parkside to Pier 70, via Washington Avenue	20	30

EXISTING TRAFFIC VOLUMES AND PATTERNS

Automatic traffic recorder (ATR) counts were conducted in late January and early February 2006 on Columbus Boulevard. Significant information from these hourly counts includes:

- Afternoon traffic volumes are fairly steady throughout the week, including Saturday and Sunday, and do not show a significantly higher volume during the standard weekday commuting peak periods – i.e. 7:00 A.M. to 9:00 A.M. and 4:00 P.M. to 6:00 P.M.
- Daily volumes ranged from 37,000 vehicles on Sunday to 47,000 vehicles on Saturday, with the weekday volumes around 35,000 and Friday volumes as high as 42,000 vehicles.

Manual turning movement counts were conducted on Friday, from 3:00 P.M. to 6:00 P.M. and 7:00 P.M. to 10:00 P.M., and on Saturday, from 11:00 A.M. to 3:00 P.M. and 7:00 P.M. to 10:00 P.M. at eight key intersections along the 'corridor' in late January and early February, 2006. Previous counts conducted in November 2005 were also utilized.

Peak hourly volumes during the Friday count periods typically occurred between 3:30 P.M. and 4:30 P.M. and these volumes are summarized and illustrated in Figure 7. Saturday peak hour volumes typically were noted earlier in the afternoon (i.e., 1:00 P.M.) and can be seen in Figure 8. In general, Friday late afternoon peak hour volumes along Columbus Boulevard are at least 10% greater than the early Saturday afternoon peak volumes.

Intersection volumes along the corridor on Friday and Saturday average 3,495 vehicles and 3,336 vehicles, respectively, as shown in Table VI. The two intersections with the highest volumes are Washington Street and Christian Street on both Friday and Saturday.

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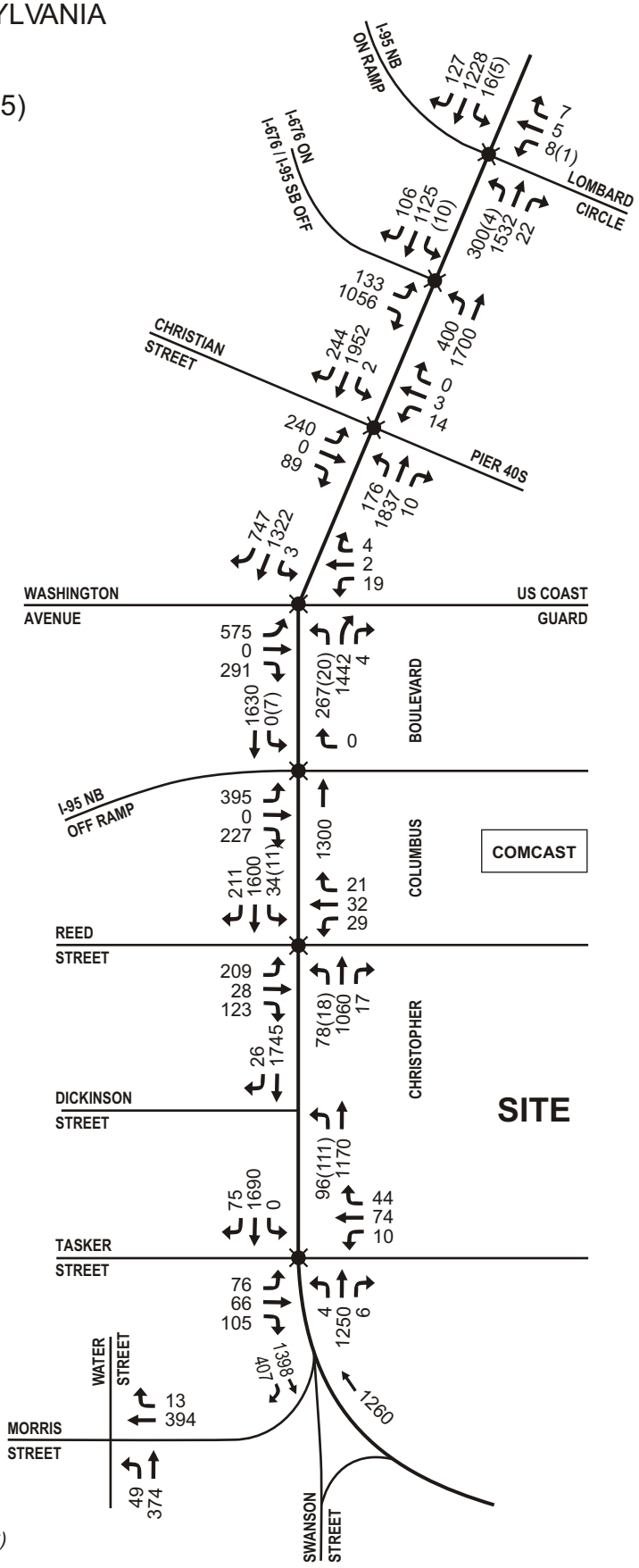
FIGURE 7

Existing Late Friday Afternoon Peak Hour Traffic Volumes

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

January / February 2006
Late Afternoon (3:15 - 4:15)



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

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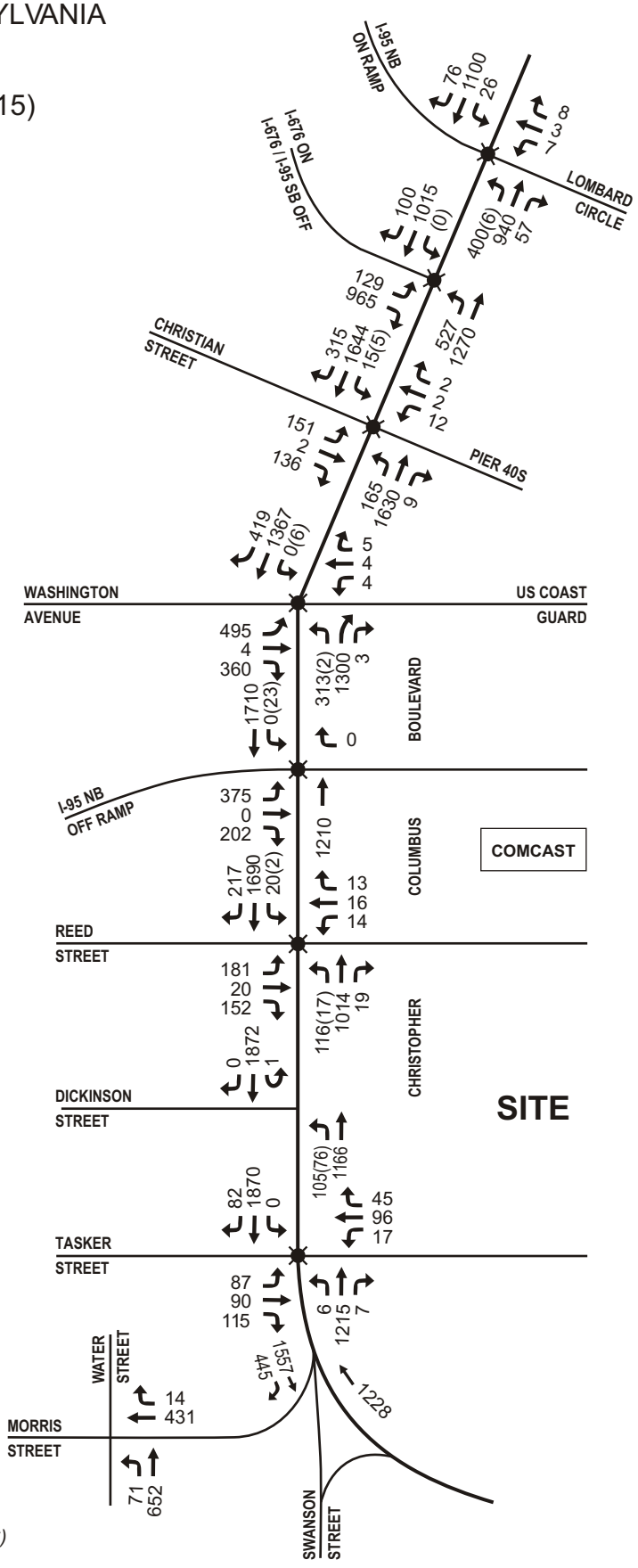
FIGURE 8

Existing Early Saturday Afternoon Peak Hour Traffic Volumes

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

January / February 2006
Early Afternoon (1:15 - 2:15)



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

Table VI
Peak Hour Total Intersection Volume
along Columbus Boulevard

Intersection	Existing Total Intersection Volume	
	Friday	Saturday
Lombard Circle/I-95 NB On-Ramp	3,255	2,623
I-676 On & I-676/95 SB Off Ramp	4,530	4,006
Christian Street	4,567	4,088
Washington Avenue	4,696	4,282
I-95 Off Ramp	3,559	3,520
Reed Street	3,471	3,491
Dickinson Street	3,148	3,220
Tasker Street	3,400	3,630
Morris/Water Streets	830	1,168
Corridor Averages	**3,495**	**3,336**

Further review of the peak hour counts and available ATR data indicates that traffic volumes on Columbus Boulevard north of Washington Avenue are substantially higher than volumes south of that intersection -- i.e., about 4,100 vehicles (total, both directions) vs. 3,000 to 3,300 vehicles and less. In addition, the count data suggest a significant traffic movement between the northern part of the 'corridor' and various retail and entertainment activities to the south including the United Artists Riverview Plaza movie theater complex at Reed Street, the Wal-Mart/Home Depot shopping center on Pier 70 immediately south of the proposed site, the new (August, 2004) IKEA store and other retail stores at the Columbus Commons Shopping Center on Columbus Avenue south of Snyder Avenue, and the new Target store and other retail stores in the Snyder Plaza retail centers west of Columbus Boulevard on Snyder Avenue.

Particularly significant movements include:

- the right-turn from the southbound I-95 (and I-676) off-ramp to southbound Columbus Boulevard
- the right-turn movement from southbound Columbus Boulevard to westbound Washington Avenue
- turning movements between Christian Street and Columbus Boulevard (both northbound and southbound)

- the left-turn from northbound Columbus Boulevard to I-676
- the left-turn from northbound Columbus Boulevard to the I-95 northbound on-ramp opposite Lombard Circle
- turning movements at the Reed Street intersection with Columbus Avenue

Volume/Capacity Analysis of Existing Conditions

While traffic volumes provide an important measure of activity on the area street system, evaluating how well that system accommodates those volumes is also important -- i.e., a comparison of peak traffic volumes with available roadway capacity. By definition, capacity represents the maximum number of vehicles which can be accommodated, given the constraints of roadway geometry, environment, traffic characteristics, and controls.

Intersections generally control capacity in road networks because most conflicts exist at these points between through, crossing and turning vehicles. Because of these conflicts, congestion is most likely to occur at intersections. Therefore, intersections are studied most often when determining the quality of traffic flow on a street network.

Factors that affect the various approach capacities at signalized intersections (Table VII) include width of approach, number of lanes, signal 'green time', turning percentages, truck volumes, etc. However, operation at capacity can be less than satisfactory since substantial delays or reduced operating speeds are likely. Delays cannot be related to capacity in a simple one-to-one fashion. It is possible to have delays in the Level of Service "F" range without exceeding capacity if one or more of the following conditions exist:

- long signal cycle lengths,
- a particular traffic movement experiences a long red time, or,
- progressive movement for a particular lane group is poor.

TABLE VII
LEVEL OF SERVICE
FOR SIGNALIZED INTERSECTIONS[1)]

LEVEL OF SERVICE	EXPECTED TRAFFIC DELAY	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS/VEHICLE)
A	Very low delay, good progression; most vehicles do not stop at intersection.	≤ 10.0
B	Generally good signal progression and/or short cycle length; more vehicles stop at intersection than level of service A.	10.1 to 20.0
C	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection.	20.1 to 35.0
D	Congestion becomes noticeable; individual cycle failures; longer delays from unfavorable progression, long cycle length, or high volume/ capacity ratios; most vehicles stop at intersection.	35.1 to 55.0
E	Usually considered limit of acceptable delay indicative of poor progression, long cycle length, or high volume/capacity ratio; frequent individual cycle failures.	55.1 to 80.0
F	Could be considered excessive delay in some areas, frequently an indication of oversaturation (i.e., arrival flow exceeds capacity), or very long cycle lengths with minimal side street green time. Capacity is not necessarily exceeded under this level of service	> 80.0

1) *Highway Capacity Manual, published by the Transportation Research Board, Washington, D.C., 2000*

An unsignalized intersection on a through route is seldom critical from an overall capacity standpoint. However, it may be of great significance to the capacity of the minor cross route and it may influence the level of service on both. In analyzing intersections, it is assumed that the through movement on the major street and the right turns from the major street are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other movements through the intersection cross, merge with, or are affected by other flows. A descriptive mechanism (Level of Service) has been developed for unsignalized intersections which indicates average delay at the intersection on a scale from "a", indicating an average delay of less than 10 seconds, to "f", indicating an average delay greater than 50 seconds (Table VIII).

TABLE VIII
LEVEL OF SERVICE AND EXPECTED DELAY
FOR UNSIGNALIZED INTERSECTIONS[1)]

LEVEL OF SERVICE	EXPECTED TRAFFIC DELAY	AVERAGE CONTROL DELAY (SECONDS/VEHICLE)
a	Little or no delay	≤ 10.0
b	Short traffic delays	10.1 to 15.0
c	Average traffic delays	15.1 to 25.0
d	Long traffic delays	25.1 to 35.0
e	Long traffic delays	35.1 to 50.0
f	Very long traffic delays	> 50.0

1) *Highway Capacity Manual, published by the Transportation Research Board, Washington, D.C., 2000.*

As illustrated in Figure 9, all but one signalized intersection on Columbus Boulevard between Lombard Circle to the north and Tasker Street to the south functions at an overall Level of Service 'C' or better during the Friday late afternoon peak traffic hour. The exception is the intersection with Washington Avenue which operates at Level of Service 'F'. There are also a number of individual movements (traffic lanes) which function at Level of Service 'E' or 'F' during the Friday peak traffic hour including:

- the northbound left-turn from Columbus Boulevard to the I-676 on-ramp
- the northbound left-turn to westbound Christian Street and the southbound left-turn into Pier 40
- the southbound approach movement on Columbus Boulevard at Washington Avenue -- primarily as a result of the number of motorists who utilize the right-lane because they intend to turn right onto Washington Avenue or turn right into retail centers and/or the movie theater complex further south leaving unused capacity in the remaining two southbound through lanes
- the eastbound left-turn from Washington Avenue onto northbound Columbus Boulevard and the northbound left-turn from Columbus Boulevard to westbound Washington Avenue
- the northbound left-turn from Columbus Boulevard onto Reed Street and the southbound left-turn at this intersection

As illustrated in Figure 10, all but two signalized intersections on Columbus Boulevard between Lombard Circle to the north and Tasker Street to the south function at an overall Level of Service 'C' or better during the Saturday early afternoon peak traffic hour. The exceptions are the intersection with Washington Avenue which operates at Level of Service 'E' and the intersection with Reed Street which operates at Level of Service 'D'. There are also a number of individual movements (traffic lanes) which function at Level of Service 'E' or 'F' during the Saturday peak traffic hour including:

- the northbound left-turn from Columbus Boulevard to the I-676 on-ramp
- the northbound left-turn to westbound Christian Street and the southbound left-turn into Pier 40

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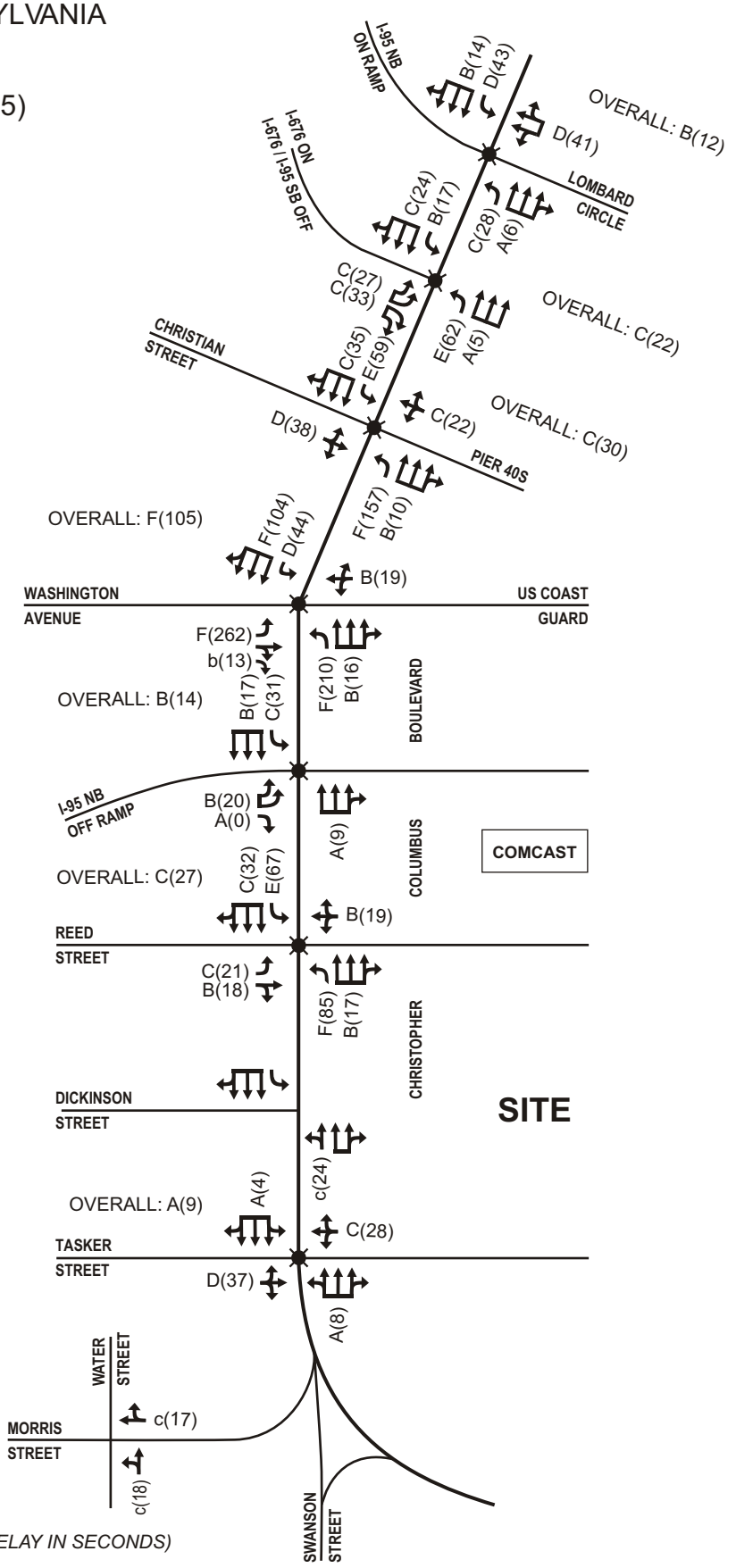
FIGURE 9

Existing Late Friday Afternoon Peak Hour Level of Service

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

January / February 2006
Late Afternoon (3:15 - 4:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

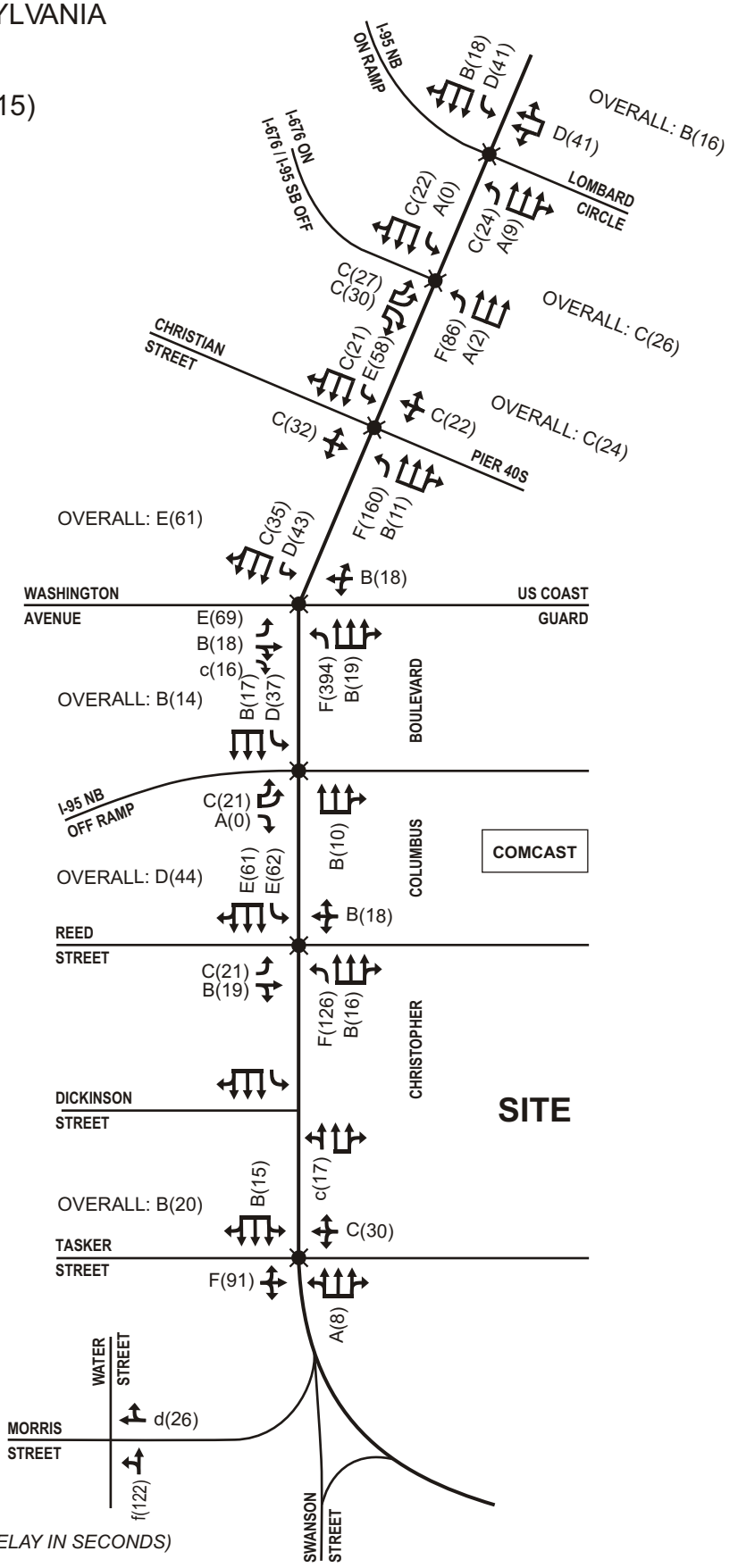
a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Existing Early Saturday Afternoon Peak Hour Level of Service

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

January / February 2006
Early Afternoon (1:15 - 2:15)



LEGEND

- *EXISTING TRAFFIC SIGNAL*

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

- the eastbound left-turn from Washington Avenue onto Columbus Boulevard and the northbound left-turn from Columbus Boulevard to westbound Washington Avenue

- the southbound approach movement on Columbus Boulevard at Reed Street – primarily as a result of motorists who are making the right turn onto westbound Reed Street

- the northbound left-turn from Columbus Boulevard onto Reed Street and the southbound left-turn at this intersection

- the eastbound approach movement on Tasker Street at Columbus Boulevard

It should also be noted that some significant delay and congestion is experienced at other intersections during other times of the day/evening -- e.g., the exit movements from the southbound I-95/I-676 off-ramp.

RECOMMENDED TRANSPORTATION IMPROVEMENT PROGRAM

By any measure, the proposed casino is a major traffic generator. It is also clear that Columbus Boulevard has existing traffic deficiencies. This chapter will outline an improvement program that is designed to not only to offset the traffic generated by the proposed casino but also to address the existing deficiencies and the deficiencies caused by the development projects that are ongoing elsewhere along the corridor.

The Traffic Improvement Program is divided into two phases with each phase assumed to be implemented in advance of the opening of the appropriate development phase – i.e., Phase 1 with 3,000 slot machines and Phase 2 with an additional 2,000 slot machines for a total of 5,000 slot machines.

Before describing the program of improvements for each phase, the basis of the improvements is established so that the level of mitigation may be quantified.

Year 2008 Analysis

The Year 2008 Analysis coincides with the opening of Phase I of the proposed casino project. As previously noted, this phase is planned to consist of 3,000 slots as well as associated restaurants and entertainment venues.

Projected 2008 Traffic Volumes and Levels of Service without the Proposed Development

Figures 11 and 12 illustrate the Friday and Saturday peak hour traffic volumes for the 'No-Build' Condition. The 'no-build' condition assumes some traffic growth between the present and 2008 as a result of "other" development but not the proposed

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FIGURE 11

2008 No Build Late Friday Afternoon Peak Hour Traffic Volumes

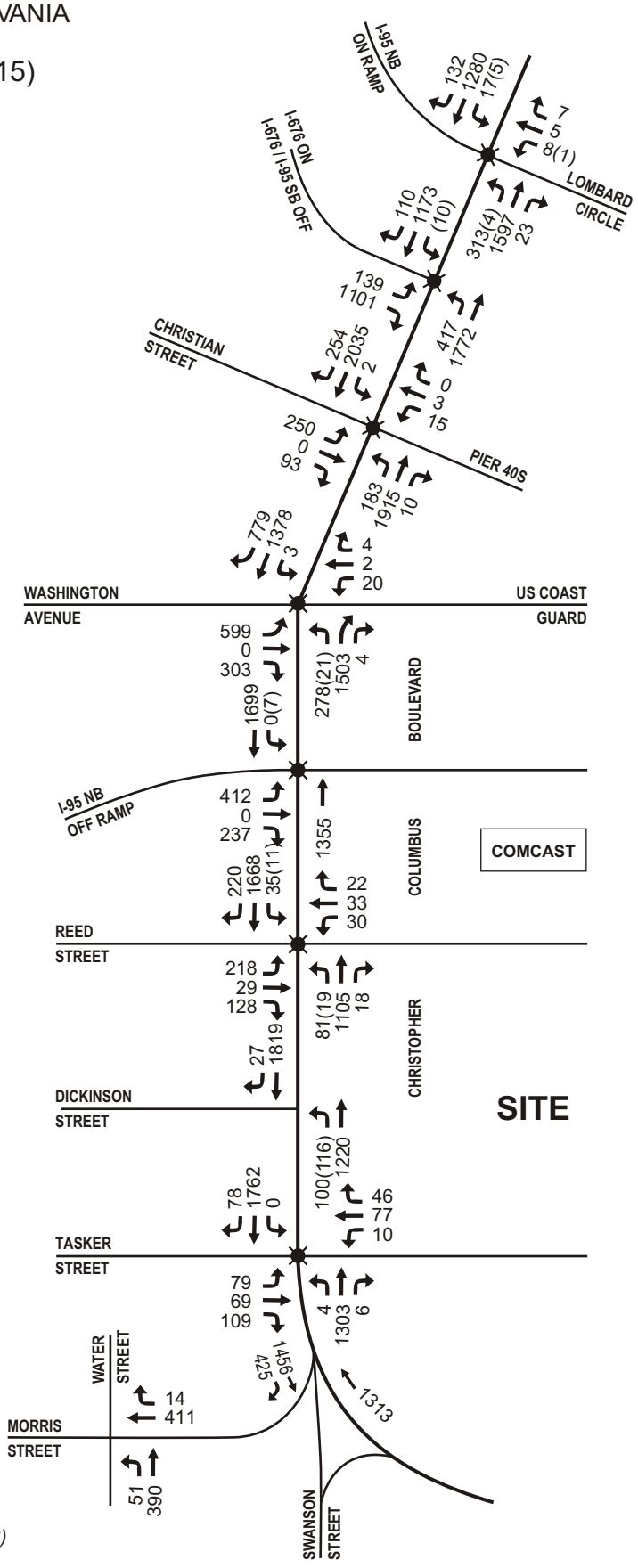
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)

NOTE

INCLUDES 4.2% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

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FIGURE 12

2008 No Build Early Saturday Afternoon Peak Hour Traffic Volumes

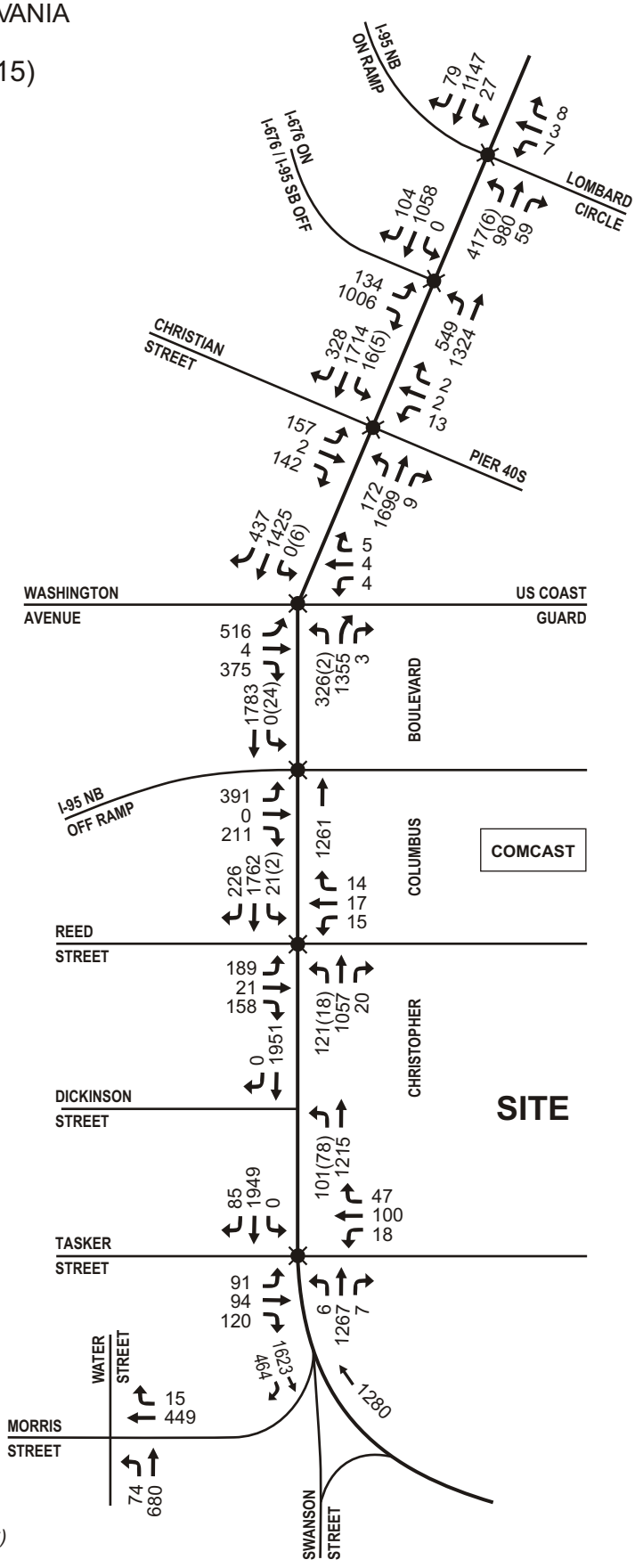
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)

NOTE

INCLUDES 4.2% BACKGROUND GROWTH



LEGEND

- EXISTING TRAFFIC SIGNAL
- #(#) MOVEMENT VOLUMES(U-TURNS)

casino. The projected year 2008 'no-build' peak hour traffic volumes were established by increasing the existing traffic volumes by an assumed two-year background growth of 4.2%. Table IX illustrates the projected increase in total intersection traffic volume for each peak hour.

Table IX
Comparison of Existing and No-Build Peak Hour Total Intersection Peak Hour Traffic Volumes along Columbus Boulevard

	Existing Total Intersection Volume		2008 No-Build Total Intersection Volume	
Intersection	**Friday**	**Saturday**	**Friday**	**Saturday**
Lombard Circle/I-95 NB On-Ramp	3,255	2,623	3,393	2,734
I-676 On and I-676/95 SB Off-Ramps	4,530	4,006	4,722	4,176
Christian Street	4,567	4,088	4,671	4,261
Washington Avenue	4,696	4,282	4,895	4,464
I-95 Off Ramp	3,559	3,520	3,710	3,669
Reed Street	3,471	3,491	3,618	3,639
Dickinson Street	3,148	3,220	3,281	3,357
Tasker Street	3,400	3,630	3,544	3,784
Morris/Water Street	830	1,168	865	1,218
Corridor Averages	**3,495**	**3,336**	**3,643**	**3,478**

Peak Hour Levels of Service – No-Build Condition

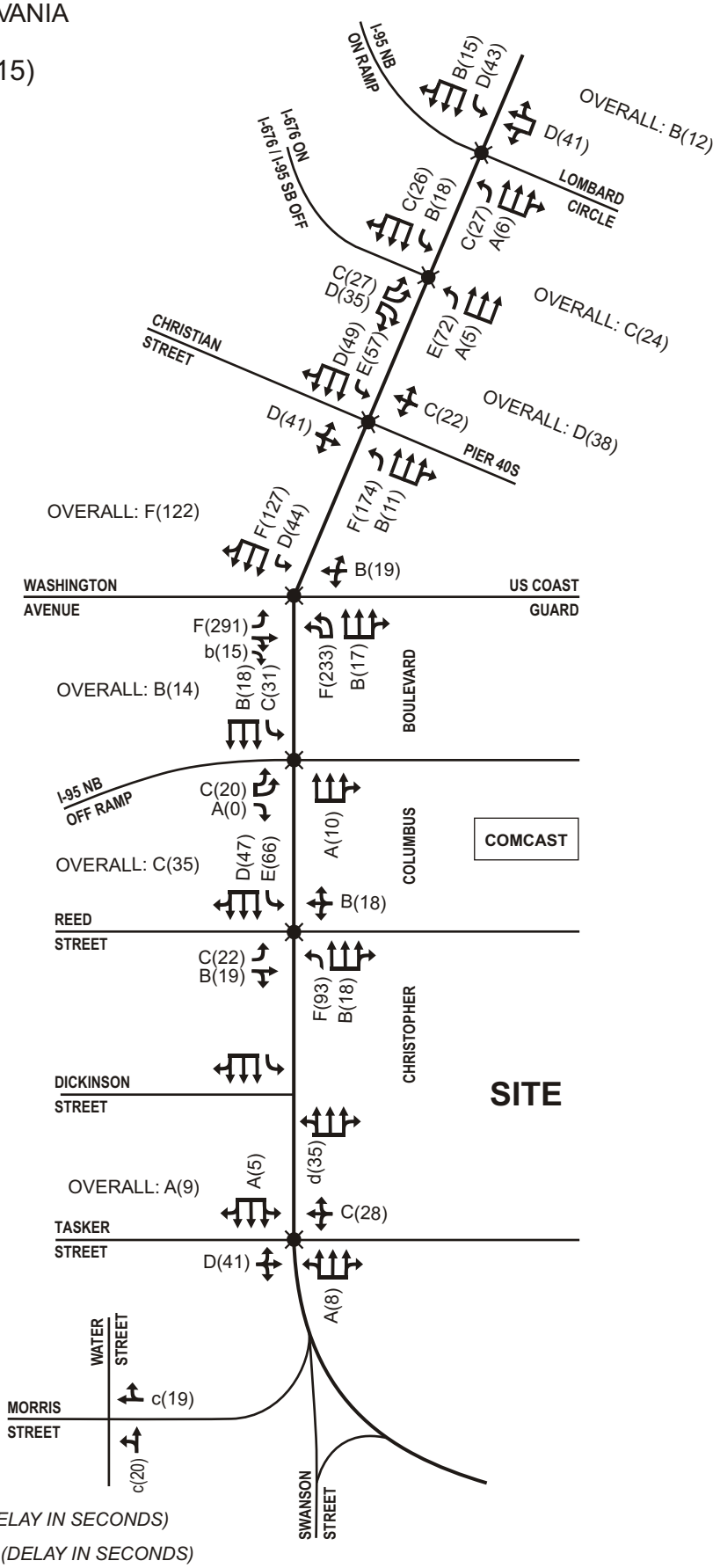
Figures 13 and 14 illustrate the 2008 'No-Build' levels of service for the Friday and Saturday peak hours, respectively. Table X summarizes the level of service comparisons between the existing and no-build conditions.

2008 No Build Late Friday Afternoon Peak Hour Levels of Service

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

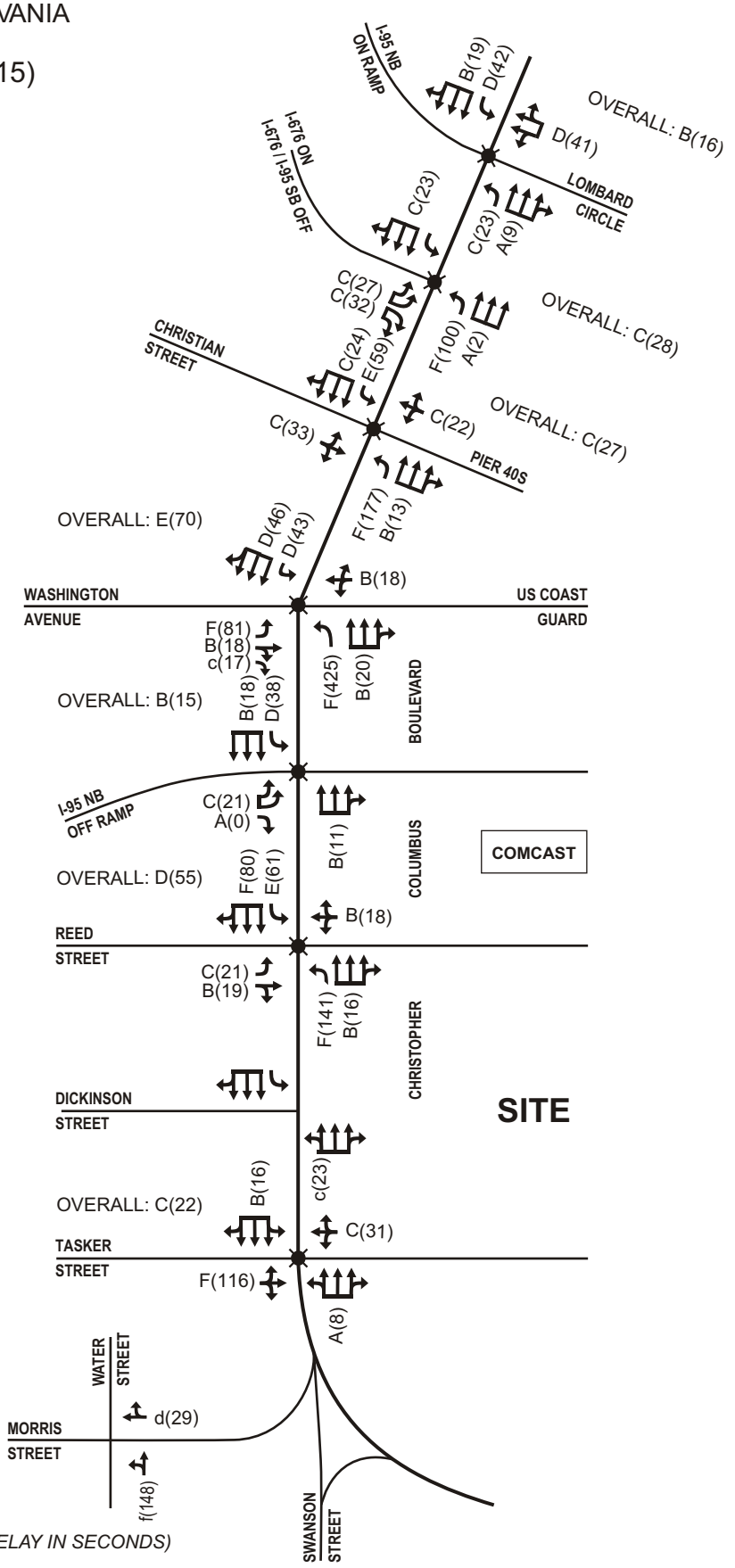
a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

2008 No Build Early Saturday Afternoon Peak Hour Levels of Service

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Table X
Comparison of Existing and No-Build Intersection Levels of Service along Columbus Boulevard

Intersection	Existing Total		2008 No-Build	
	Friday	Saturday	Friday	Saturday
Lombard Circle/I-95 NB On-Ramp	B (12)	B (16)	B (12)	B (16)
I-676 On and I-676/95 SB Off-Ramps	C (22)	C (26)	C (24)	C (28)
Christian Street	C (30)	C (24)	D (38)	C (27)
Washington Avenue	F (105)	E (61)	F (122)	E (70)
I-95 Ramp NB Off Ramp	B (14)	B (14)	B (14)	B (14)
Reed Street	C (27)	D (44)	C (35)	D (55)
Dickinson Street	N/A	N/A	A (3)	A (3)
Tasker Street	A (9)	B (20)	A (9)	C (22)
Morris Street	N/A	N/A	A (3)	A (3)
Sum Total Intersection Delay	**219**	**205**	**257**	**235**

As seen in Table X, of the nine Columbus Boulevard 'corridor' intersections, delay is expected to increase at five of them in the Friday peak, and Christian Street degrades from Level of Service 'C' to Level of Service 'D'. It should be noted that delays increase by 17 seconds per vehicle at Washington Avenue during the Friday peak over the two-year period of this study. In all, on Friday, delays will increase from 219 seconds per vehicle to 257 seconds per vehicle, an increase of 17%

The Saturday comparison shows that none of the intersections degrade a full level of service grade but delays are calculated to increase up to 10 seconds per vehicle at Reed Street. Considering the corridor as a whole, on Saturday, delays per vehicle will increase from 205 seconds per vehicle to 235 seconds per vehicle, a 15% increase.

Projected 2008 Traffic Volumes with the Proposed Development

Figures 15 and 16 illustrate the Year 2008 Peak Hour Traffic Volumes for the 'Build' Condition. These volumes were established by surcharging the Year 2008 'No-Build' peak hour traffic volumes with the site generated traffic volumes described earlier. Table XI summarizes the peak hour traffic volume increases as compared to today's traffic volumes.

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FIGURE 15

2008 Build Late Friday Afternoon Peak Hour Traffic Volumes w/ Improvements

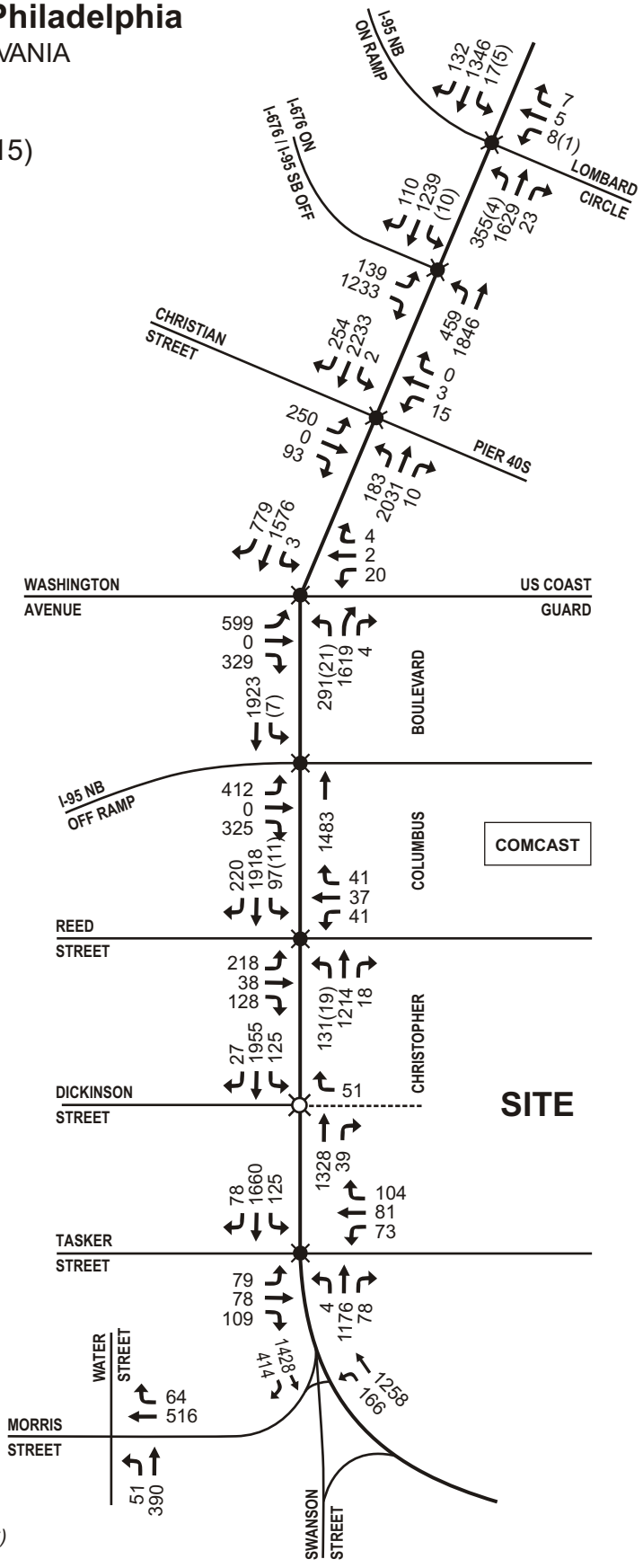
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)

NOTE

INCLUDES 4.2% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

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FIGURE 16

2008 Build Early Saturday Afternoon Peak Hour Traffic Volumes w/ Improvements

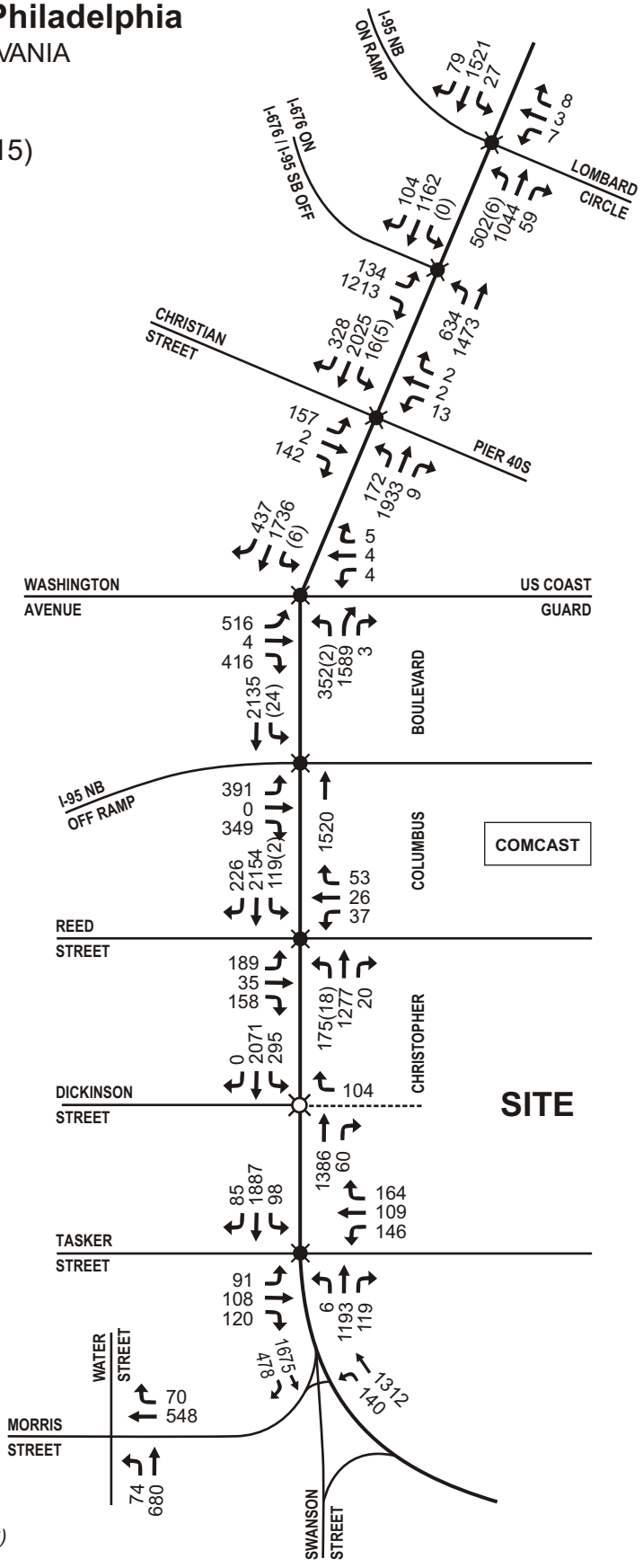
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)

NOTE

INCLUDES 4.2% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

Table XI
Comparison of Existing and Phase I Total Intersection
Peak Hour Traffic Volumes along Columbus Boulevard

Intersection	Existing Total Intersection Volume		Phase I Total Intersection Volume			
	Friday	Saturday	Friday	% Change	Saturday	% Change
Lombard Circle/I-95 NB On-Ramp	3,255	2,623	3,532	8.5%	3,256	21.0%
I-676 On & I-676/95 SB Off Ramp	4,530	4,006	5,036	11.0%	4,720	18.0%
Christian Street	4,567	4,088	5,074	11.0%	4,806	17.5%
Washington Avenue	4,696	4,282	5.247	11.5%	5,074	18.5%
I-95 Off Ramp	3,559	3,520	4,150	16.5%	4,419	25.5%
Reed Street	3,471	3,491	4,131	19.0%	4,489	28.5%
Dickinson Street	3,148	3,220	3,525	12.0%	3,916	21.5%
Tasker Street	3,400	3,630	3,645	7.0%	4,126	13,5%
Morris/Water Streets	830	1,168	1,021	23.0%	1,372	17.5%
Corridor Averages	**3,495**	**3,336**	**3,929**	**13.5%**	**4,020**	**20.5%**

As indicated, traffic is projected to increase by more than 13% corridor-wide in the Friday peak and by more than 20% in the Saturday peak. The largest increase in traffic is projected at the I-95 off-ramp and the Reed Street intersections. This is reasonable since more than 70% of all incoming and over 60% of all outgoing site traffic is projected to use this segment of Columbus Boulevard.

Recommended Year 2008 Improvement Program

Normally when analyzing the impact of development traffic, it is the developer's responsibility to offset or mitigate the impact of their traffic on projected conditions at the time of opening to conditions at that time if the proposed development were not built. This is the case for all developments constructed in the City of Philadelphia and has been so for some time. However, recognizing the importance of traffic flow on Columbus Boulevard to the success of the proposed development and the impact of those problems on the neighborhoods that rely on Columbus Boulevard for circulation, Foxwoods Casino-Philadelphia mandated that not only the impact of the casino traffic be mitigated. It also mandated that

the transportation improvement program also mitigate the impact of traffic from other developments as well as the existing traffic problems.

Accordingly, an iterative analysis was conducted to develop a program of transportation improvements that meet the mandate. The following transportation improvements were identified as a result of the analysis:

- Re-establish the coordinated traffic signal system on Columbus Boulevard and then update it to incorporate the latest technology to eliminate the constant stopping and starting of traffic which is experienced today;

- Construct a northbound double left turn lane at the I-676 and I-95 ramps to eliminate the back-ups onto the through lanes of northbound Columbus Boulevard;

- Construct a northbound double turn lane at Washington Avenue, re-striping the eastbound Washington Avenue approach to provide a double left turn lane and provide sufficient walk time for a pedestrian to cross Columbus Boulevard without having to walk through turning traffic. Lastly, provide southbound right-turn only lane by removing one of the through lanes. This is the most congested intersection in along the corridor and these improvements will eliminate that congestion.

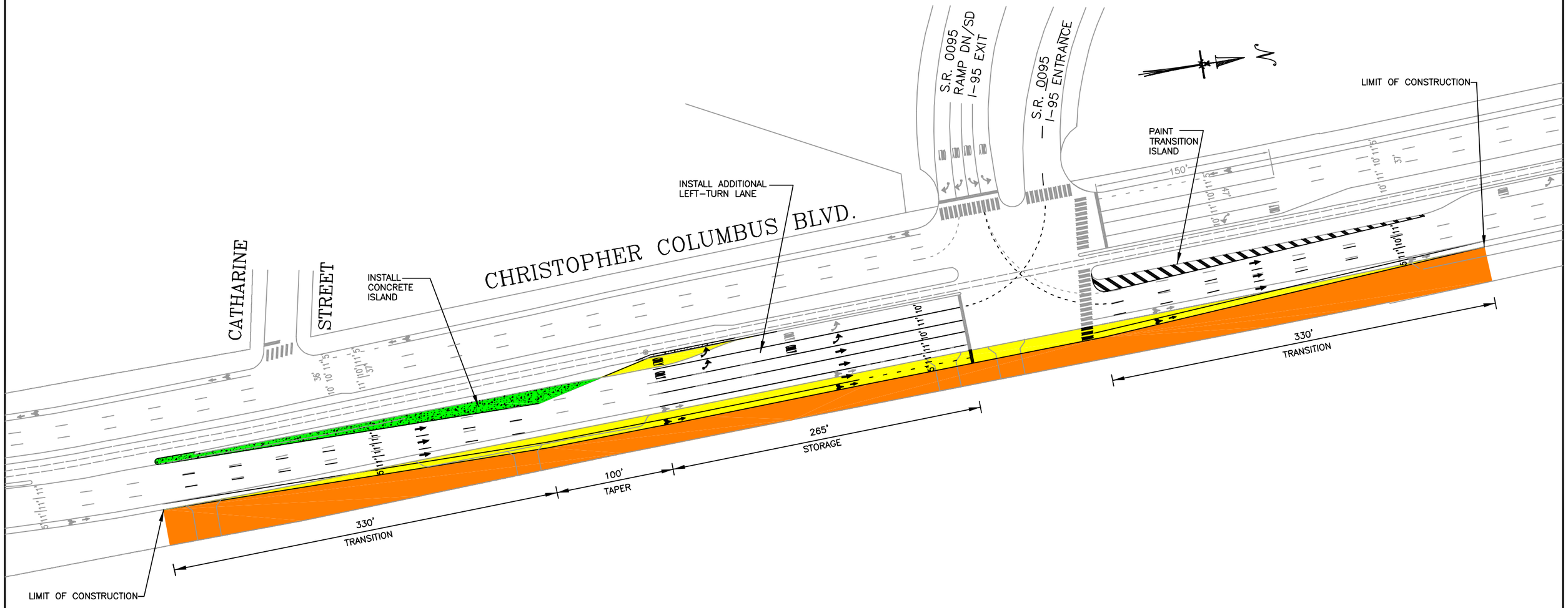
- Re-stripe the eastbound Reed Street approach for three lanes and allow left turns from the center and leftmost lane of the approach and re-stripe the west approach to provide space for westbound traffic to bypass movie theater traffic and three eastbound lanes to reduce the current back-ups affecting all approaches of the intersection;

- Install a signal at Dickinson Street and re-stripe the southbound Columbus Boulevard approach for two through lanes and a double left turn lane. Stripe a double right turn lane for exit from the site and two eastbound lanes for entrance into the site. Prohibit left and U-turns from the northbound Columbus Boulevard approach;

- Widen westbound Tasker Street to provide two approach lanes at Columbus Boulevard; and

- Install a new signalized intersection at the Morris Street I-95 on ramp to intercept northbound Columbus Boulevard traffic that U-turns at Dickinson Street and direct them onto the existing I-95 southbound on-ramp.

Concept drawings of the proposed improvements are presented in Figures 17 to 20 that follow.



LEGEND

- ROAD WIDENING
- SIDEWALK
- CONCRETE ISLAND

FIGURE 17

CONCEPT PLAN

Orth - Rodgers & Associates, Inc.

TRANSPORTATION ENGINEERS and PLANNERS

280 South Broad Street • Philadelphia, PA 19102 • (215) 735-1932

COLUMBUS BOULEVARD CASINO

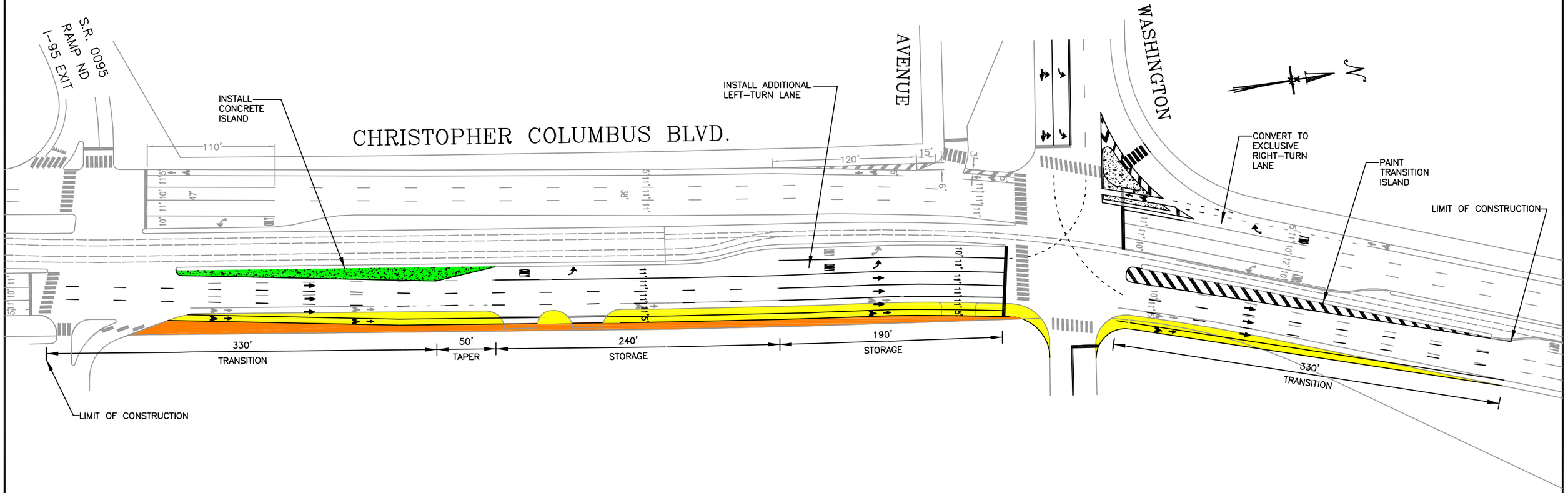
COLUMBUS BLVD & I-95 ON/OFF RAMPS

PHILADELPHIA, PA

40' 0' 40'
SCALE

DATE 3/31/06

SHEET 1 OF 1



LEGEND

- ROAD WIDENING
- SIDEWALK
- CONCRETE ISLAND

FIGURE 18

CONCEPT PLAN

OR&A

Orth - Rodgers & Associates, Inc.

TRANSPORTATION ENGINEERS and PLANNERS

250 South Broad Street • Philadelphia, PA 19102 • (215) 735-1932

COLUMBUS BOULEVARD CASINO

COLUMBUS BLVD & WASHINGTON AVE

PHILADELPHIA, PA

SCALE	DATE	SHEET
40' 0' 40'	3/31/06	1 OF 1

INSTALL LEFT–TURN LANE & SHARED THRU/RIGHT LANE

TASKER STREET

RELOCATE PED XING & STOP BAR

CHRISTOPHER

INSTALL LEFT–TURN LANE

DICKINSON STREET

INSTALL ADDITIONAL LEFT–TURN LANE

COLUMBUS

INSTALL LEFT–TURN LANE, SHARED LEFT/THROUGH LANE AND RIGHT–TURN LANE WITH (2) RECEIVING LANES

RELOCATE PED XING

LEFT LANE MUST TURN LEFT

REED STREET

BOULEVARD

150'

100'

RELOCATE PED XING

RELOCATE BIKE LANE

FOXWOODS CASINO ENTRANCE

INSTALL (2) RIGHT–TURN LANES WITH (2) RECEIVING LANES

MOVE BACK STOP BAR

INSTALL SHARED LEFT/THROUGH LANE AND (2) RIGHT–TURN LANES WITH (3) RECEIVING LANES

TASKER STREET

INSTALL LEFT–TURN LANE AND SHARED LEFT/THROUGH/RIGHT LANE WITH (2) RECEIVING LANES

REED STREET

VANDALIA

STREET

LEGEND

ROAD WIDENING

CONCRETE ISLAND

FIGURE 19

CONCEPT PLAN

OR&A

Orth - Rodgers & Associates, Inc.

TRANSPORTATION ENGINEERS and PLANNERS

230 South Broad Street • Philadelphia, PA 19102 • (215) 735-1932

COLUMBUS BOULEVARD CASINO

TASKER/DICKINSON/REED STREETS

PHILADELPHIA, PA

SCALE 40' 0' 40'

DATE 4/11/06

SHEET 1 OF 1

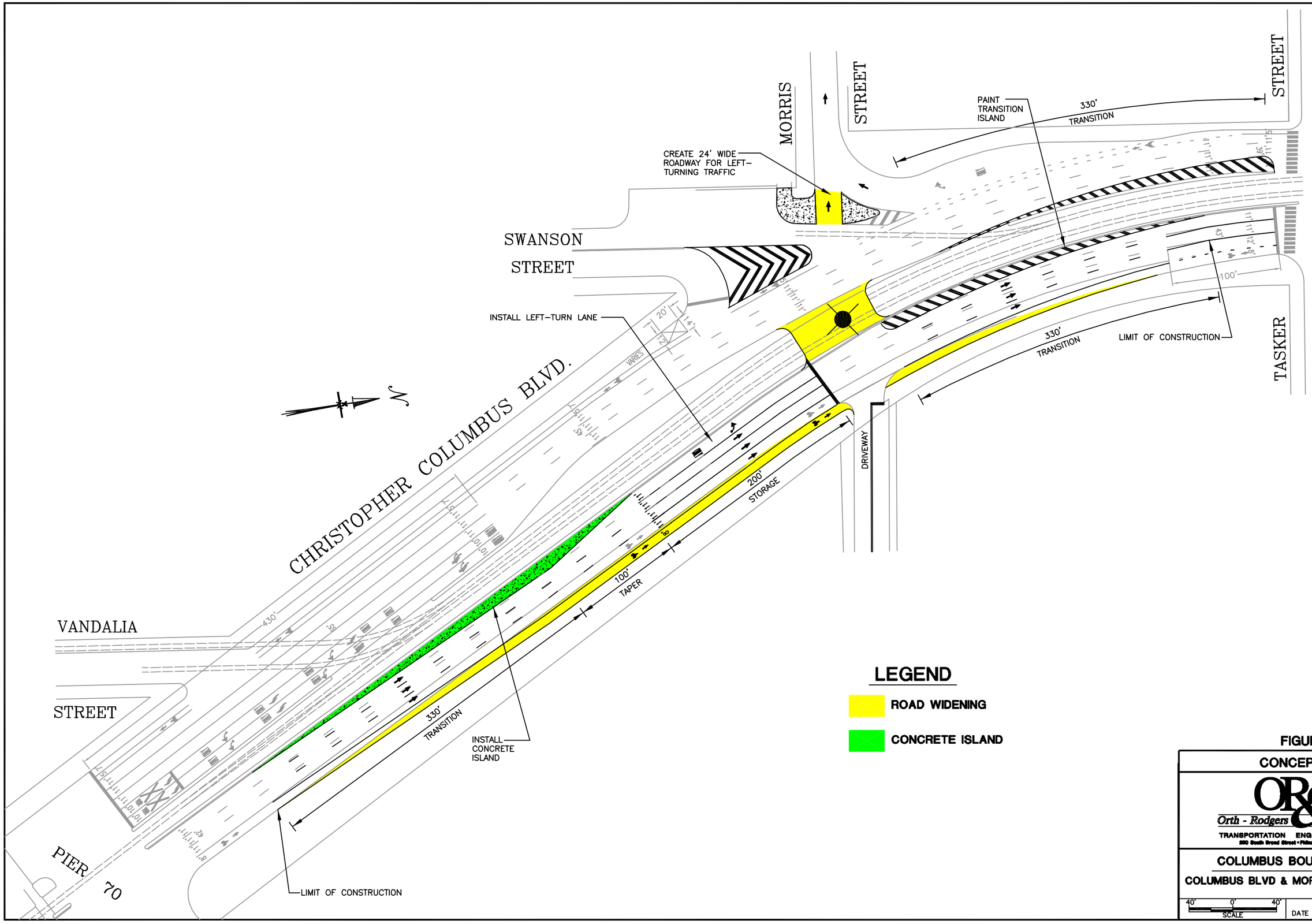


FIGURE 20

CONCEPT PLAN

OR&A

Orth - Rodgers & Associates, Inc.

TRANSPORTATION ENGINEERS and PLANNERS

220 South Broad Street • Philadelphia, PA 19102 • (215) 735-1932

COLUMBUS BOULEVARD CASINO

COLUMBUS BLVD & MORRIS/SWANSON STREET

PHILADELPHIA, PA

SCALE 40' 0' 40'

DATE 3/31/06

SHEET 1 OF 1

Performance of the Year 2008 Transportation Improvement Program

Figures 21 and 22 illustrate the levels of service during the Friday and Saturday peak hours, respectively – assuming projected 2008 'Build' peak hour volumes and implementation of the improvement program as described. Table XII compares the levels of service for the 2008 build traffic volumes with the proposed traffic improvements in place to the existing traffic volumes.

Table XII
Comparison of Existing and Phase I Intersection Levels of Service along Columbus Boulevard

Intersection	Existing		Phase I	
	Friday	Saturday	Friday	Saturday
Lombard Circle/I-95 NB On-Ramp	B (12)	B (16)	B (13)	B (20)
I-676 On & I-676/95 SB Off Ramp	C (22)	C (26)	B (16)	B (16)
Christian Street	C (30)	C (24)	C (21)	B (19)
Washington Avenue	F (105)	E (61)	D (44)	C (27)
I-95 Ramp NB Off Ramp	B (14)	B (14)	A (9)	A (7)
Reed Street	C (27)	D (44)	C (20)	C (31)
Dickinson Street	N/A	N/A	A (3)	A (6)
Tasker Street	A (9)	B (20)	C (21)	D (44)
Morris Street	N/A	N/A	A (3)	A (3)
Sum Total Intersection Delay	**219**	**205**	**150**	**173**

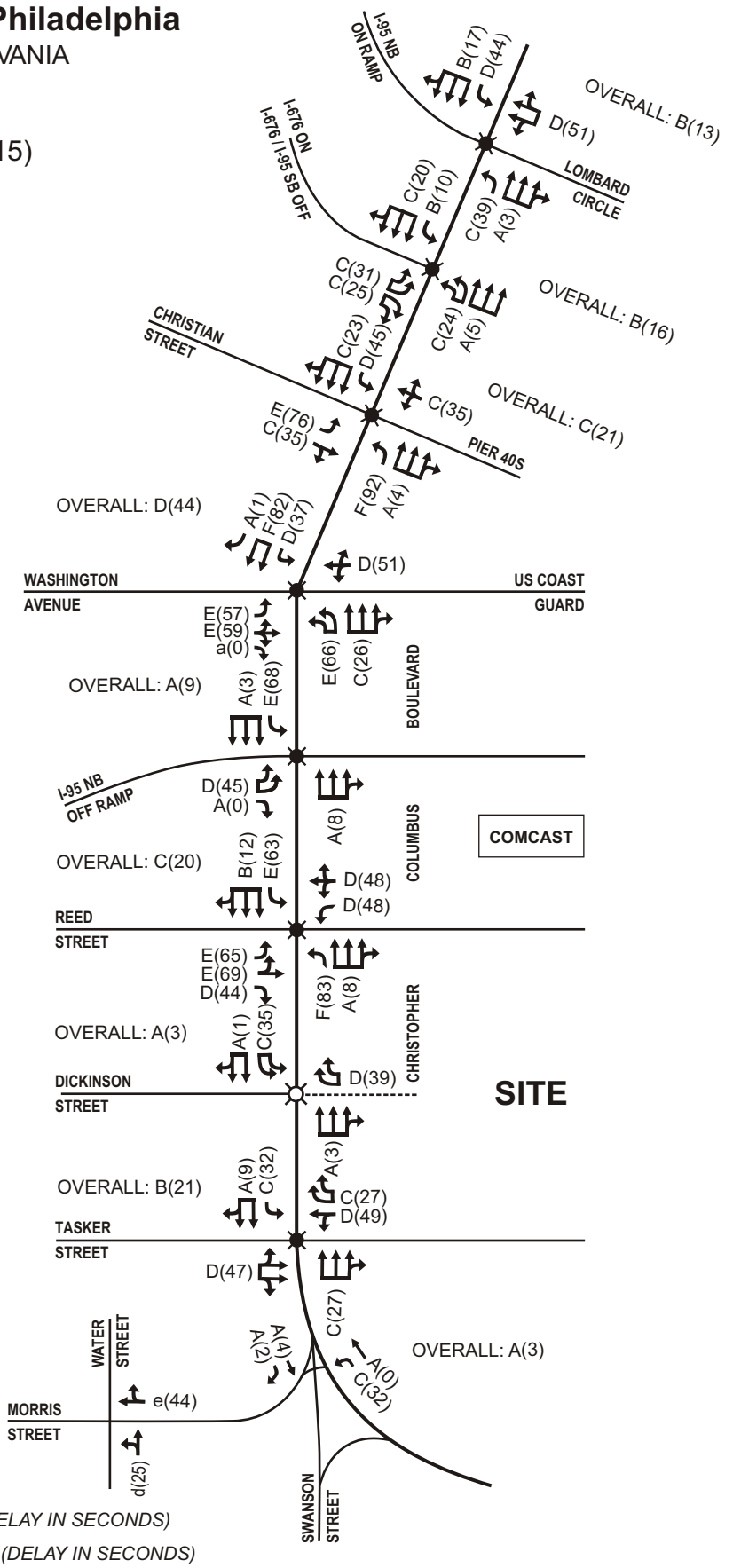
As indicated, there is a dramatic improvement at Washington Avenue. At that intersection, existing levels of service improve from unacceptable levels to acceptable levels of service with intersection delays reduced from 105 seconds per vehicle on Friday to 44 seconds per vehicle and from 61 seconds per vehicle to 27 seconds per vehicle on Saturday. Notably, the Tasker Street intersection shows an increase in delay but the levels of service remain acceptable. Overall, when comparing total intersection delays, it is noted that on Friday, delays decrease from 219 seconds per vehicle to 150 seconds per vehicle, a 32% improvement and on Saturday, total intersection delay is reduced from 205 seconds per vehicle to 173 seconds per vehicle, a 16% improvement as compared with existing conditions.

2008 Build Late Friday Afternoon Peak Hour Levels of Service w/ Improvements

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Orth - Rodgers & Associates, Inc.

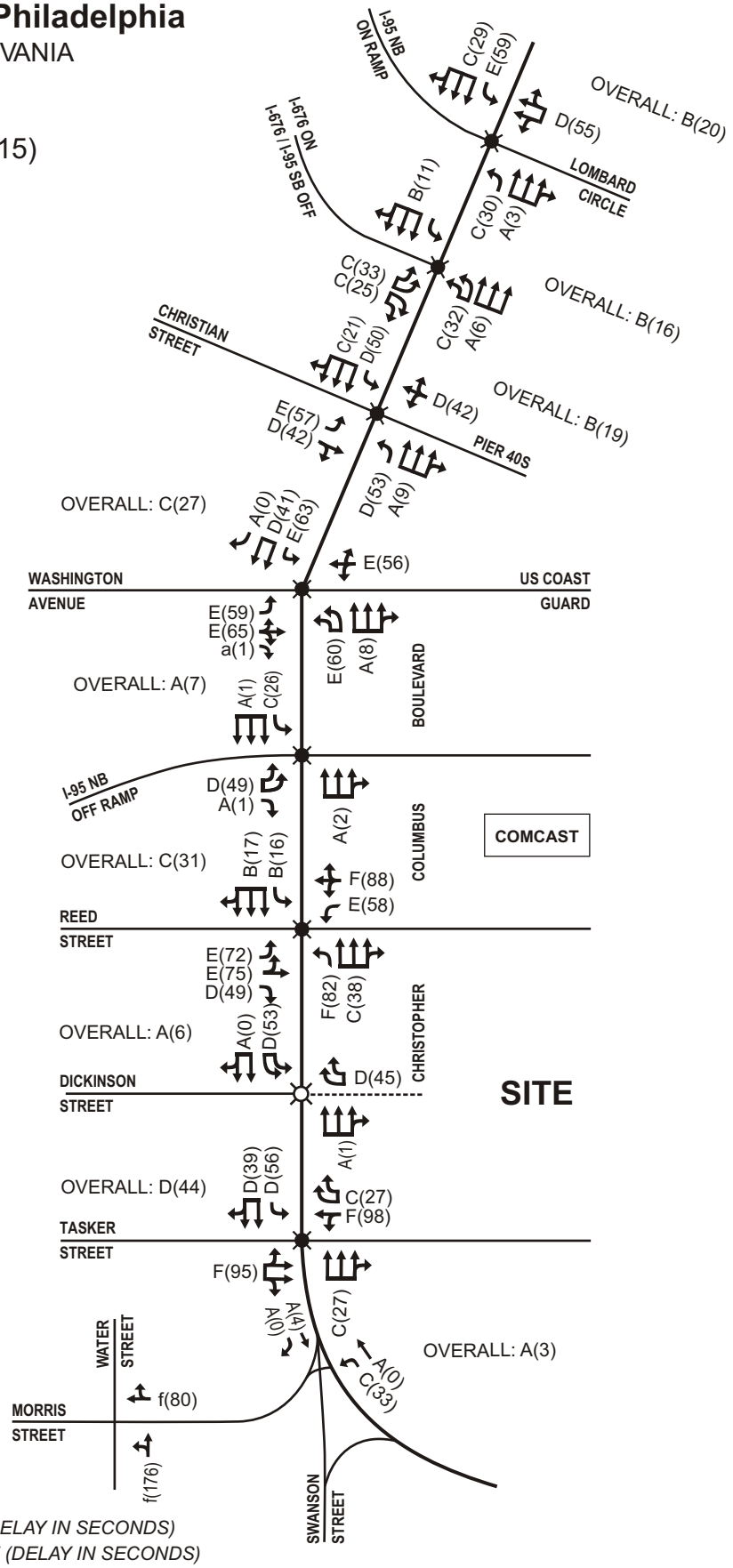
FIGURE 22

2008 Build Early Saturday Afternoon Peak Hour Levels of Service w/ Improvements

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Year 2010 Analysis

By the Year 2010, it is anticipated that the operating casino will expand to include an additional 2,000 slot machines for a total of 5,000 machines. There will also be additional restaurants and entertainment venues.

For the purposes of the Year 2010 Analysis, it is assumed that the first phase of the development is in place and operating. It is also assumed that the Transportation Improvement Program established in the preceding section is in place and functioning as designed. Accordingly, in the years after the 2008 opening, there will be additional growth in traffic that must be accommodated along with additional Phase II casino generated traffic. In order to achieve the mandate, additional improvements must be added to the Transportation Improvement Program.

Year 2010 Traffic Volumes and Levels of Service Assuming the Phase I Transportation Improvements are in Place

In the case of the Phase I analysis, the key comparison is projected future Phase II conditions versus the existing situation. Figures 23 and 24 illustrate the Friday and Saturday peak hour traffic volumes assuming Phase II of the casino development is in place. Table XIII summarizes the peak hour traffic volume increases as compared to today's traffic volumes.

Orth - Rodgers & Associates, Inc.

FIGURE 23

2010 Build Late Friday Afternoon Peak Hour Traffic Volumes w/ Improvements w/o Dickinson Street Ramp

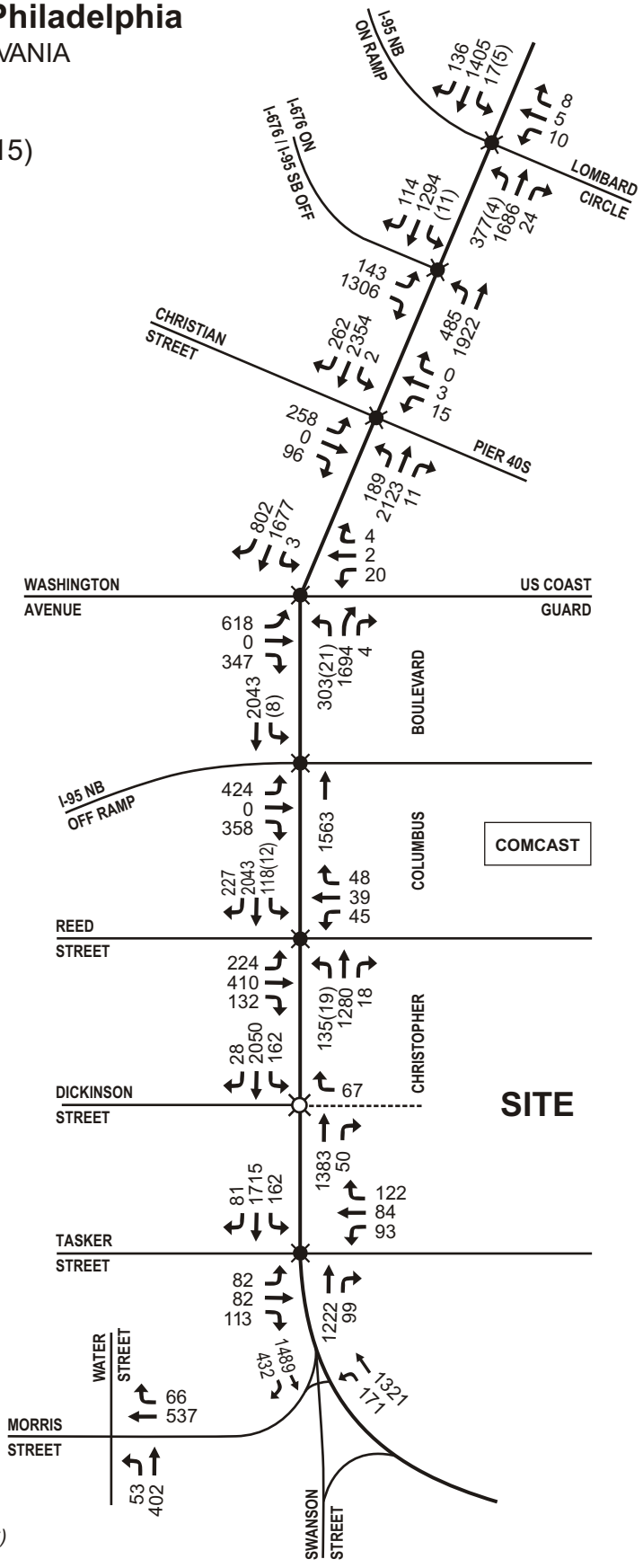
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)

NOTE

INCLUDES 7.4% BACKGROUND GROWTH



LEGEND

- EXISTING TRAFFIC SIGNAL
- #(#) MOVEMENT VOLUMES(U-TURNS)

Orth - Rodgers & Associates, Inc.

FIGURE 24

2010 Build Early Saturday Afternoon Peak Hour Traffic Volumes w/ Improvements w/o Dickinson Street Ramp

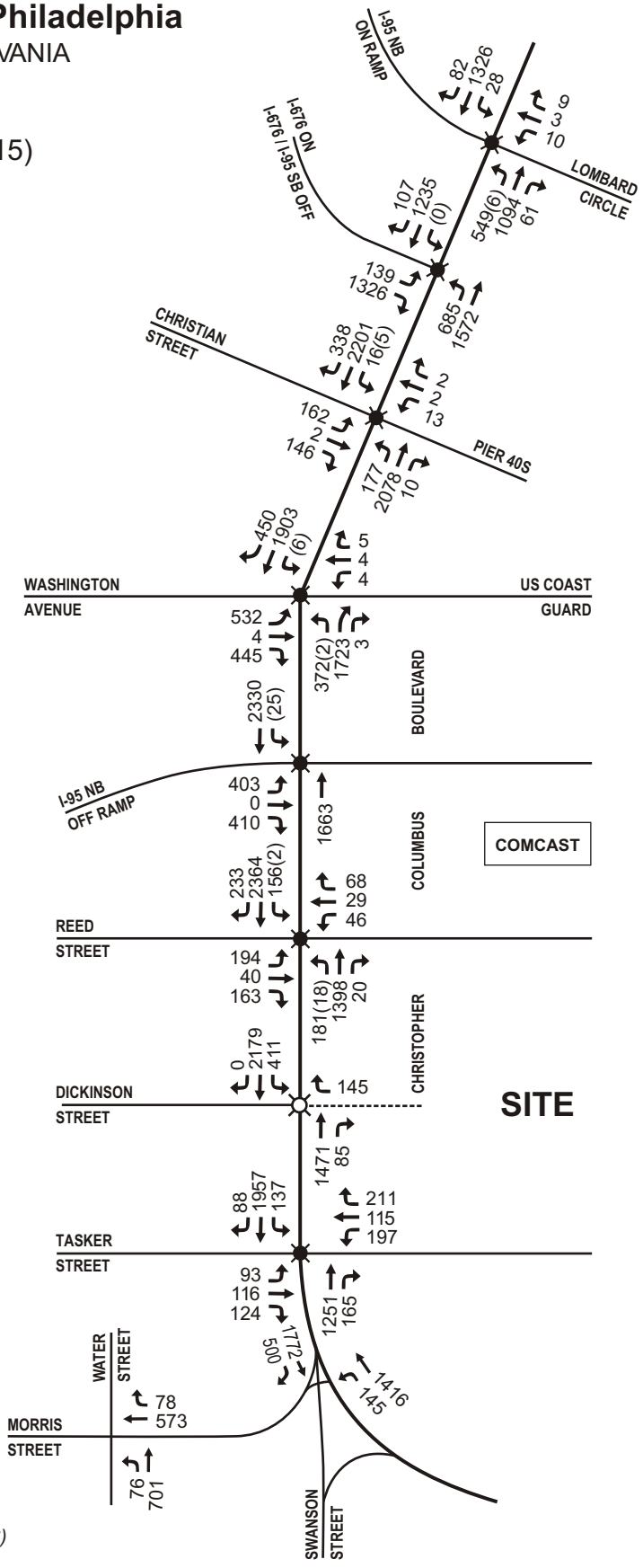
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)

NOTE

INCLUDES 7.4% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

Table XIII
Comparison of Existing and Phase II Total Intersection
Peak Hour Traffic Volumes along Columbus Boulevard

Intersection	Existing Total Intersection Volume		Phase II Total Intersection Volume			
	Friday	Saturday	Friday	% Change	Saturday	% Change
Lombard Circle/I-95 NB On-Ramp	3,255	2,623	3,677	13.0%	3,162	20.5%
I-676 On & I-676/95 SB Off Ramp	4,530	4,006	5,275	16.5%	5,064	26.5%
Christian Street	4,567	4,088	5,313	16.5%	5,152	26.0%
Washington Avenue	4,696	4,282	5,495	17.0%	5,453	27.5%
I-95 Off Ramp	3,559	3,520	4,396	23.5%	4,831	37.0%
Reed Street	3,471	3,491	4,750	37.0%	4,912	40.5%
Dickinson Street	3,148	3,220	3,740	19.0%	4,291	33.5%
Tasker Street	3,400	3,630	3,855	13.5%	4,454	22.5%
Morris/Water Streets	830	1,168	1,058	27.5%	1,428	22.5%
Corridor Averages	**3,495**	**3,336**	**4,173**	**20.5%**	**4,305**	**28.5%**

As with the Phase I traffic volume comparisons, the largest traffic increases are projected to occur at the Reed Street intersection and at the I-95 northbound off-ramp. Overall, on Friday, corridor-wide traffic volumes are projected to increase by more than 20% and on Saturday by almost 29% versus existing traffic volumes.

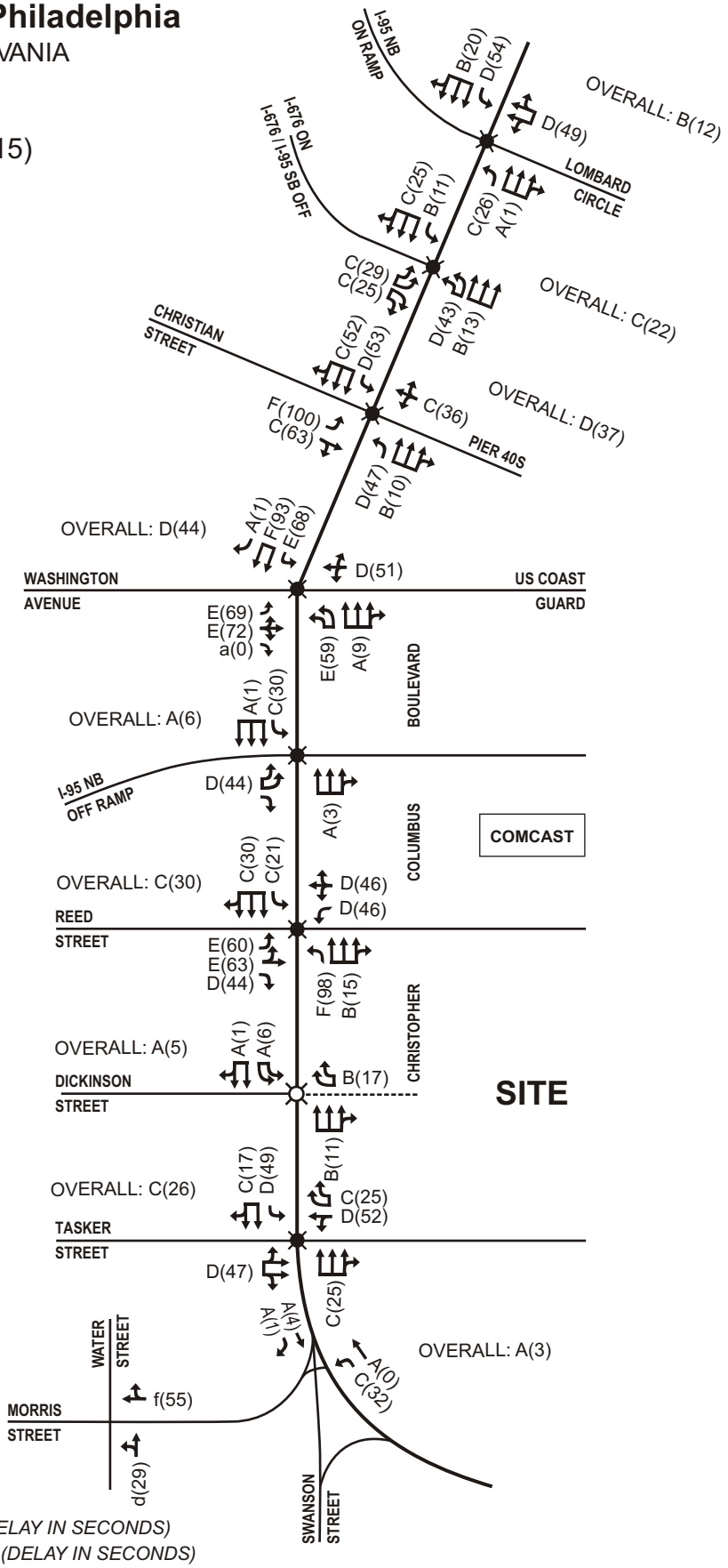
Figures 25 and 26 illustrate the calculated 2010 levels of service assuming the Phase I improvements are in place. Table XIV summarizes the results of the level of service analysis.

2010 Build Late Friday Afternoon Peak Hour Levels of Service w/ Improvements w/o Dickinson Street Ramp

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

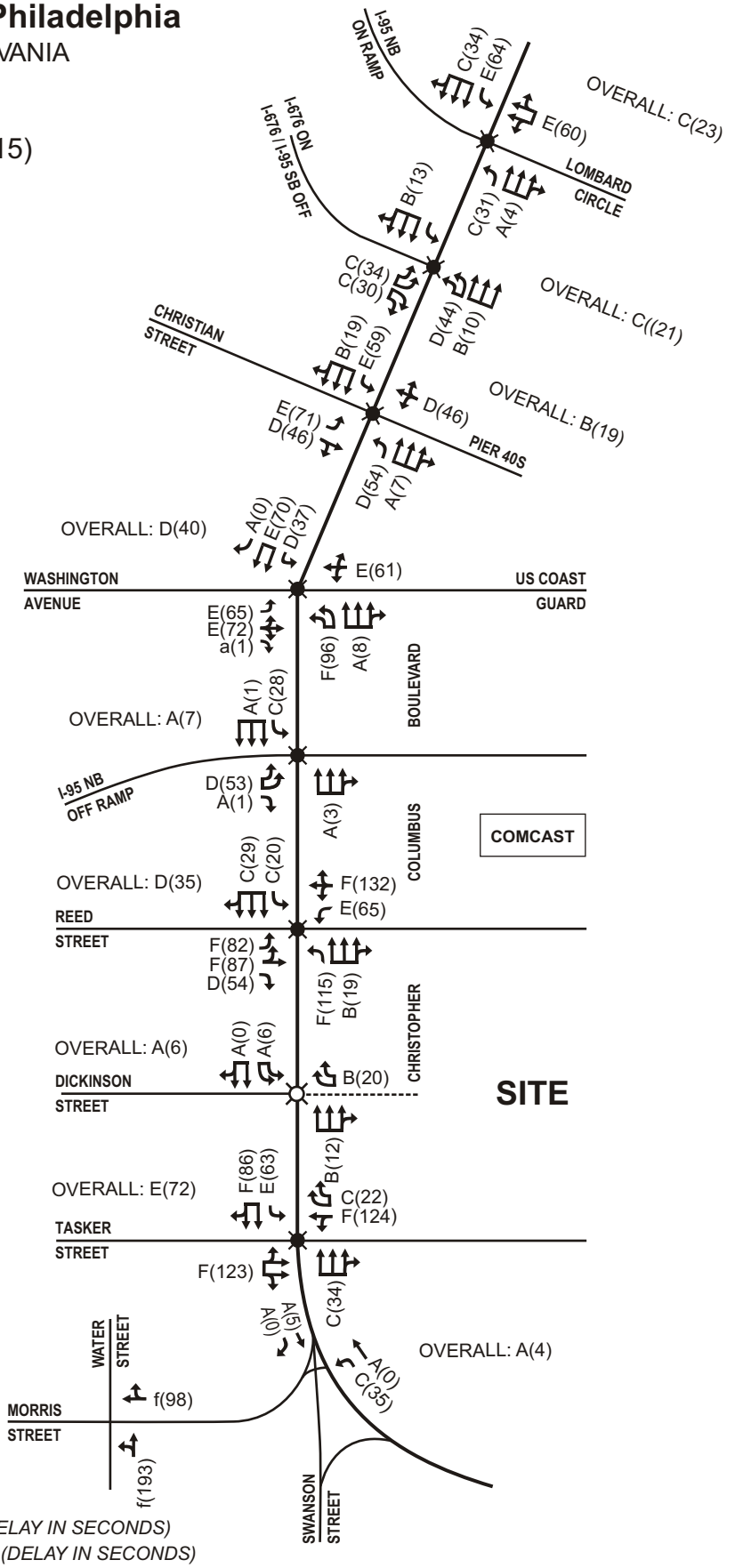
a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

2010 Build Early Saturday Afternoon Peak Hour Levels of Service w/ Improvements w/o Dickinson Street Ramp

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)



LEGEND

- *EXISTING TRAFFIC SIGNAL*

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Table XIV
Comparison of Existing and Phase II Intersection
Levels of Service along Columbus Boulevard

Intersection	Existing		2008 Build	
	Friday	Saturday	Friday	Saturday
Lombard Circle/I-95 NB On-Ramp	B (12)	B (16)	B (12)	C (23)
I-676 On & I-676/95 SB Off Ramp	C (22)	C (26)	C (22)	C (21)
Christian Street	C (30)	C (24)	D (37)	B (19)
Washington Avenue	F (105)	E (61)	D (44)	D (40)
I-95 Ramp NB Off Ramp	B (14)	B (14)	A (6)	A (7)
Reed Street	C (27)	D (44)	C (30)	D (35)
Dickinson Street	N/A	N/A	A (5)	A (5)
Tasker Street	A (9)	B (20)	C (26)	E (72)
Morris Street	N/A	N/A	A (3)	A (4)
Sum Total Intersection Delay	**219**	**205**	**185**	**227**

Examination of the table reveals that the Friday peak hour levels of service still show an improvement when compared against the existing Friday levels of service. In fact, on Friday, it is projected that none of the intersections will operate unacceptably -- i.e. Level of Service 'E' or worse. However, on Saturday, delays are projected to increase by 11% over existing conditions. However, only Tasker Street is projected to operate unacceptably during the Saturday peak. The key Washington Avenue intersection will still operate acceptably at Level of Service 'D'.

Recommended Year 2010 Transportation Improvement Program

Nevertheless, to address the mandate established by Foxwoods Casino-Philadelphia, an additional improvement is proposed to address the increase in delay projected during the Saturday peak. Examination of traffic patterns on Columbus Boulevard indicate that a significant number of vehicles exit southbound I-95 and eastbound I-676 at the "Double Slide-Under Ramp" that intersects with Columbus Boulevard just south of the Lombard Circle-I-95 northbound on-ramp intersection. During the Friday and Saturday peak hours, the right turning volume from the ramp exceeds 1,300 vehicles.

Providing a new ramp connection from southbound I-95 to Columbus Boulevard in the vicinity of the proposed casino would further relieve traffic congestion at the Columbus Boulevard intersections serving the neighborhoods on both sides of Washington Avenue. In fact, it is estimated that as much as 30% of the non-site traffic, and all casino oriented traffic volumes – i.e. more than 500 vehicles in the Friday peak hour and more than 600 vehicles during the Saturday peak hour, -- will divert to a new ramp.

Figure 27 is a concept plan view of a proposed southbound I-95 off-ramp that connects to Dickinson Street in such a manner to direct traffic to Columbus Boulevard and not to the neighborhood streets. Figure 28 shows the profile of the proposed ramp. The design, though preliminary in nature, meets all federal and PennDOT standards for an off-ramp from an interstate highway. Approval for such a proposal will be required from PennDOT and the Federal Highway Administration, the agencies responsible for the maintenance and improvement of I-95. It should be noted that, as with any other major improvement to the transportation system, involvement of Philadelphia city government and the local community is a major consideration in the approval process.

Performance of the 2010 Transportation Improvement Program

Figures 29 and 30 illustrate the peak hour traffic volumes for the Friday and Saturday peak hours, respectively. Table XV compares the year 2010 peak hour traffic volumes versus the existing traffic volumes.

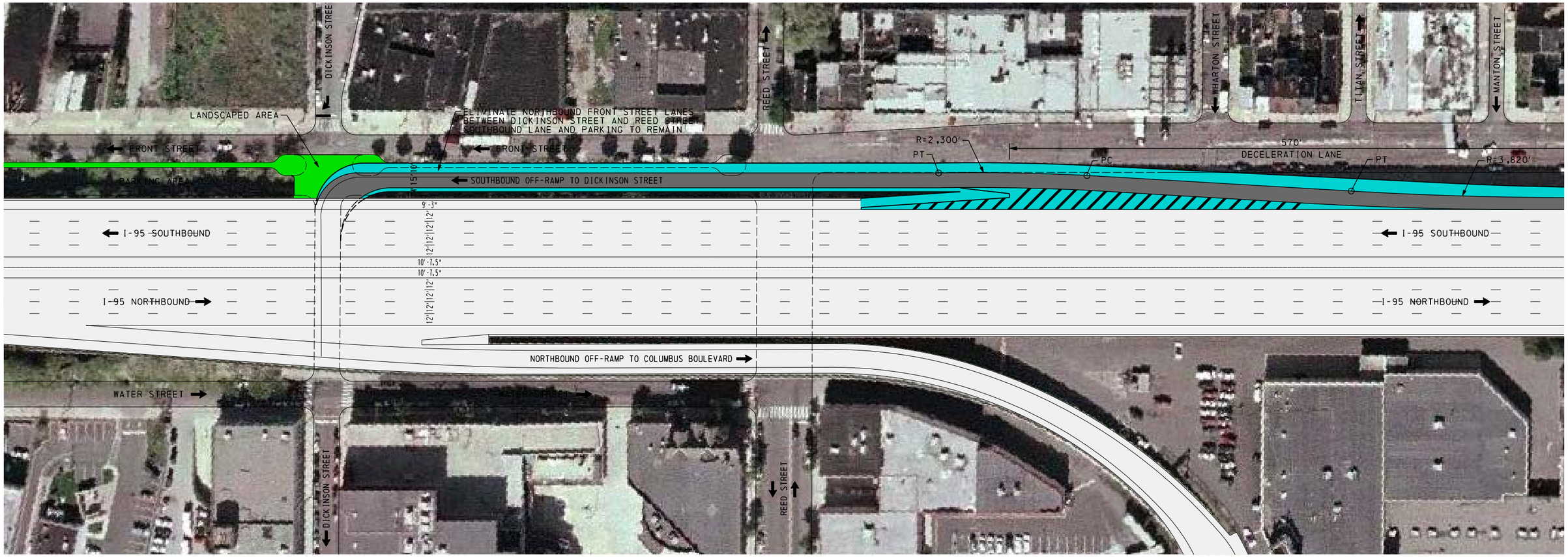


FIGURE 27

CONCEPT PLAN

ORTH-RODGERS & ASSOCIATES, INC.
TRANSPORTATION ENGINEERS and PLANNERS
301 Lindenwood Drive, Suite 130 ◦ Malvern, PA 19355 ◦ (610) 407-9700
LAS VEGAS MECHANICSBURG NEWTOWN SQUARE PHILADELPHIA TAMPA WEST TRENTON

I-95 SB OFF-RAMP TO DICKINSON ST

FOXWOODS CASINO — CITY OF PHILADELPHIA

50 0 50
SCALE IN FEET

DATE: APRIL 21, 2006

PROJECT NUMBER: 2006077

SHEET NUMBER
1 OF 1

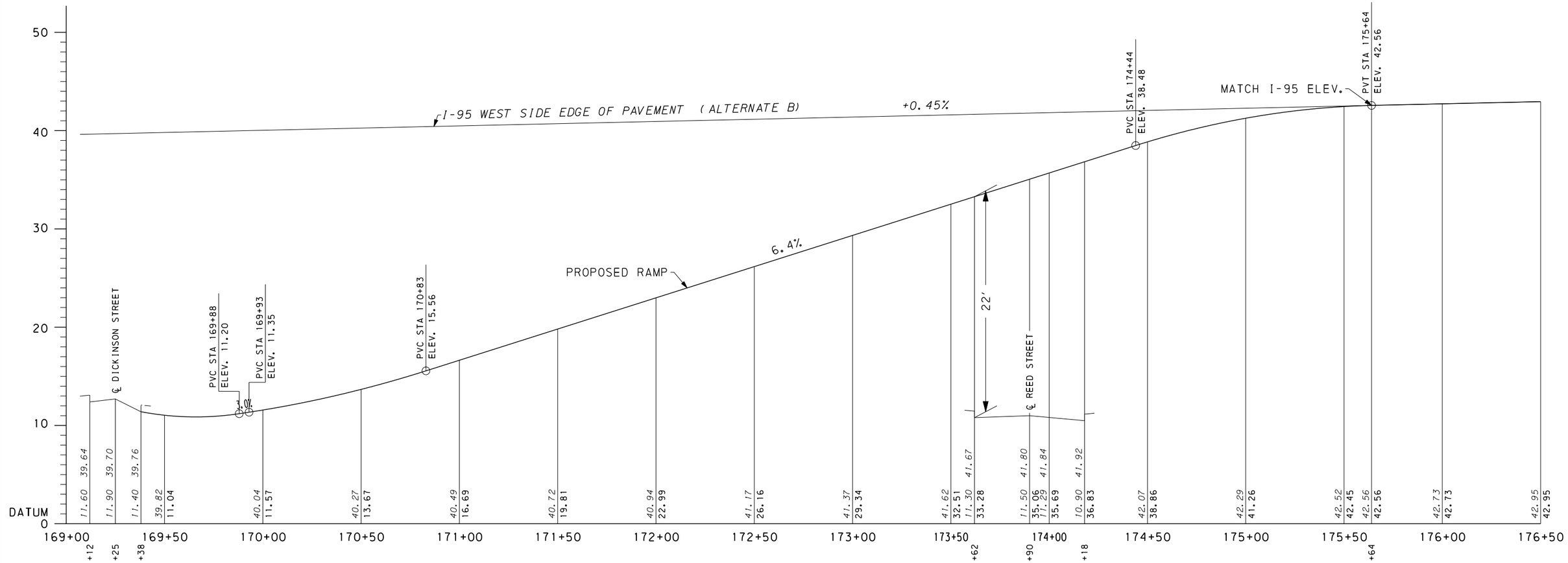


FIGURE 28

RAMP PROFILE

ORTH–RODGERS & ASSOCIATES, INC.
TRANSPORTATION ENGINEERS and PLANNERS
301 Lindenwood Drive, Suite 130 ▫ Malvern, PA 19355 ▫ (610) 407-9700
LAS VEGAS MECHANICSBURG NEWTOWN SQUARE PHILADELPHIA TAMPA WEST TRENTON

I–95 SB OFF–RAMP TO DICKINSON ST

FOXWOODS CASINO — CITY OF PHILADELPHIA

HORIZONTAL SCALE: 1"=50' VERTICAL SCALE: 1"=10'	DATE: APRIL 21, 2006 PROJECT NUMBER: 2006077	SHEET NUMBER 1 OF 1

Orth - Rodgers & Associates, Inc.

FIGURE 29

2010 Build Late Friday Afternoon Peak Hour Traffic Volumes w/ Improvements w/ Dickinson Street Ramp

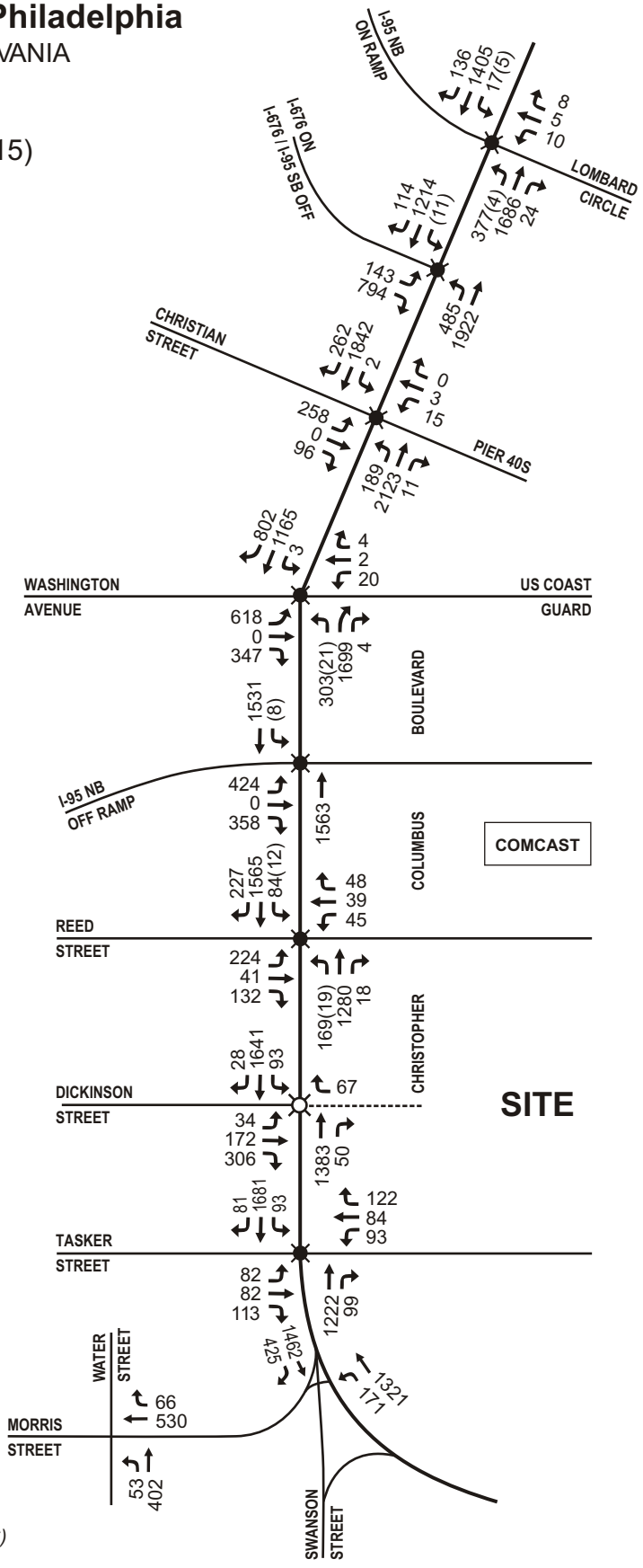
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)

NOTE

INCLUDES 7.4% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

Orth - Rodgers & Associates, Inc.

FIGURE 30

2010 Build Early Saturday Afternoon Peak Hour Traffic Volumes w/ Improvements w/ Dickinson Street Ramp

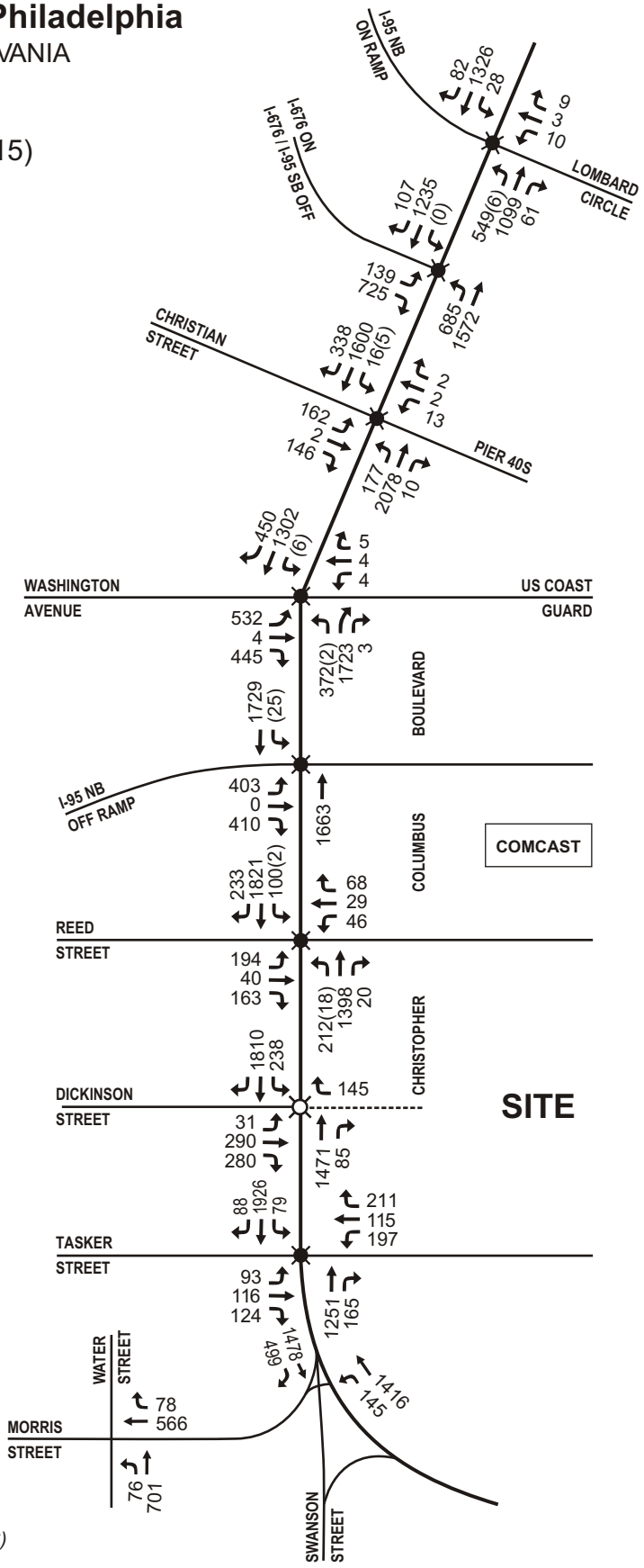
Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)

NOTE

INCLUDES 7.4% BACKGROUND GROWTH



LEGEND

- *EXISTING TRAFFIC SIGNAL*
- *#(#) MOVEMENT VOLUMES(U-TURNS)*

Table XV
Comparison of Existing and Phase II Total Intersection Peak Hour Traffic Volumes along Columbus Boulevard Assuming a new Dickinson Street Off-Ramp

Intersection	Existing Total Intersection Volume		Phase II Total Intersection Volume			
	Friday	Saturday	Friday	% Change	Saturday	% Change
Lombard Circle/I-95 NB On-Ramp	3,255	2,623	3,677	13.0%	3,173	21.0%
I-676 On & I-676/95 SB Off Ramp	4,530	4,006	4,683	3.5%	4,463	11.5%
Christian Street	4,567	4,088	4,801	5.0%	4,551	11.5%
Washington Avenue	4,696	4,282	4,988	6.0%	5,190	21.0%
I-95 Off Ramp	3,559	3,520	3,884	9.0%	4,230	20.0%
Reed Street	3,471	3,491	3,903	12.5%	4,344	24.5%
Dickinson Street	3,148	3,220	3,774	20.0%	4,350	35.0%
Tasker Street	3,400	3,630	3,752	10.5%	4,365	20.0%
Morris/Water Streets	830	1,168	1,051	26.5%	1,421	21.5%
Corridor Averages	**3,495**	**3,336**	**3,835**	**12.0%**	**4,010**	**20.5%**

As indicated, average intersection volumes are projected to increase by 12% during the Friday peak and 20.5% during the Saturday peak. This contrasts with 20.5% and 28.5% for the Friday and Saturday peaks without the ramp as noted earlier. Without the proposed ramp, volumes at the critical intersection of Washington Avenue and Columbus Boulevard were projected to increase 17% and 27.5% for the Friday and Saturday peaks but with the ramps, the increases are 6.0% in the Friday peak and 21.0% for the Saturday peak.

Reed Street, a location of current congestion, will also receive a significant benefit from the proposed ramp to Dickinson Street. Without the ramp, intersection volumes are projected to increase by about 40.0% during both the Friday and Saturday peaks. However, with the ramps, the projected increases fall to 12.5% and 24.5% for the Friday and Saturday peaks, respectively.

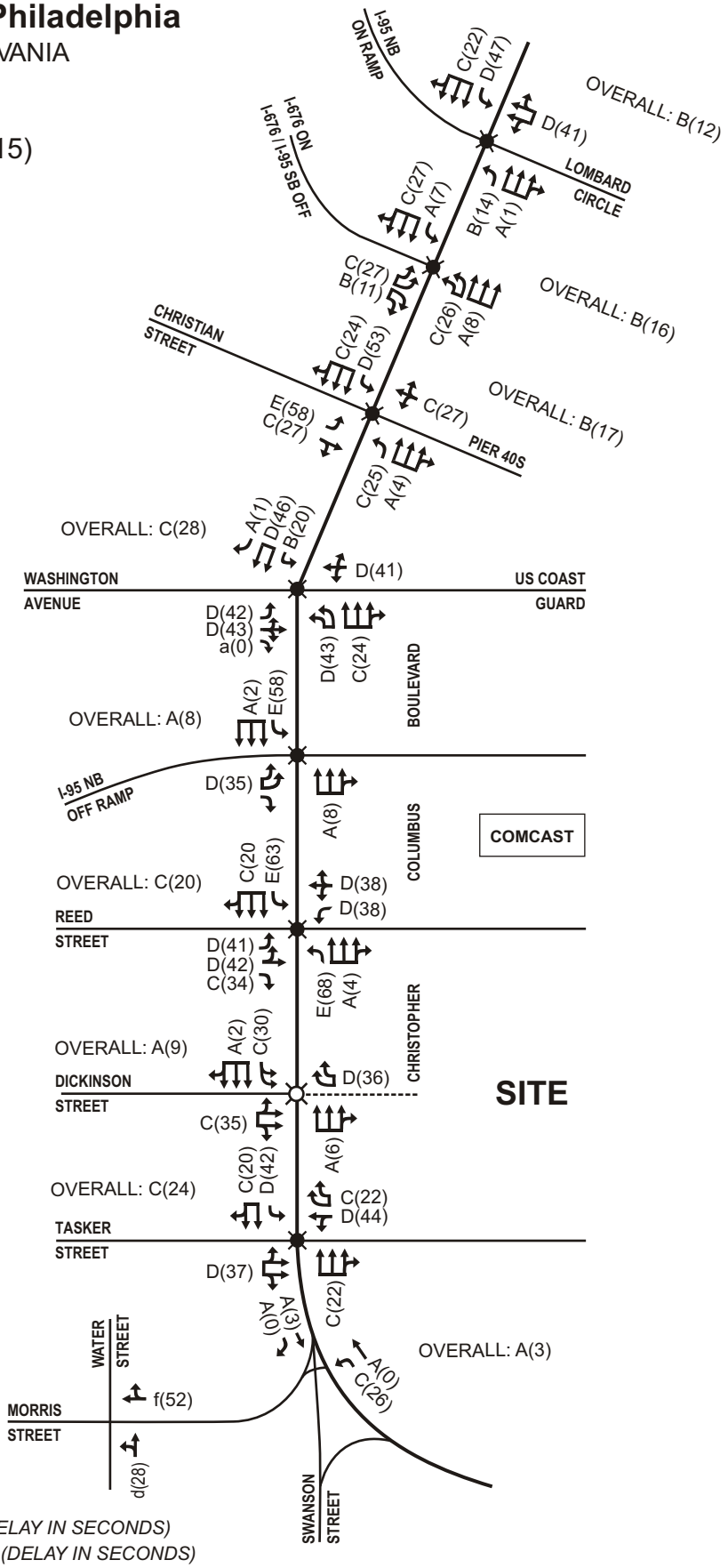
Figures 31 and 32 illustrate the 2010 levels of service assuming the Phase I Improvements are in place and the Dickinson Street off-ramp is built. Table XVI summarizes the results of the level of service analysis.

2010 Build Late Friday Afternoon Peak Hour Levels of Service w/ Improvements w/ Dickinson Street Ramp

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (3:15 - 4:15)



LEGEND

- *EXISTING TRAFFIC SIGNAL*

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Orth - Rodgers & Associates, Inc.

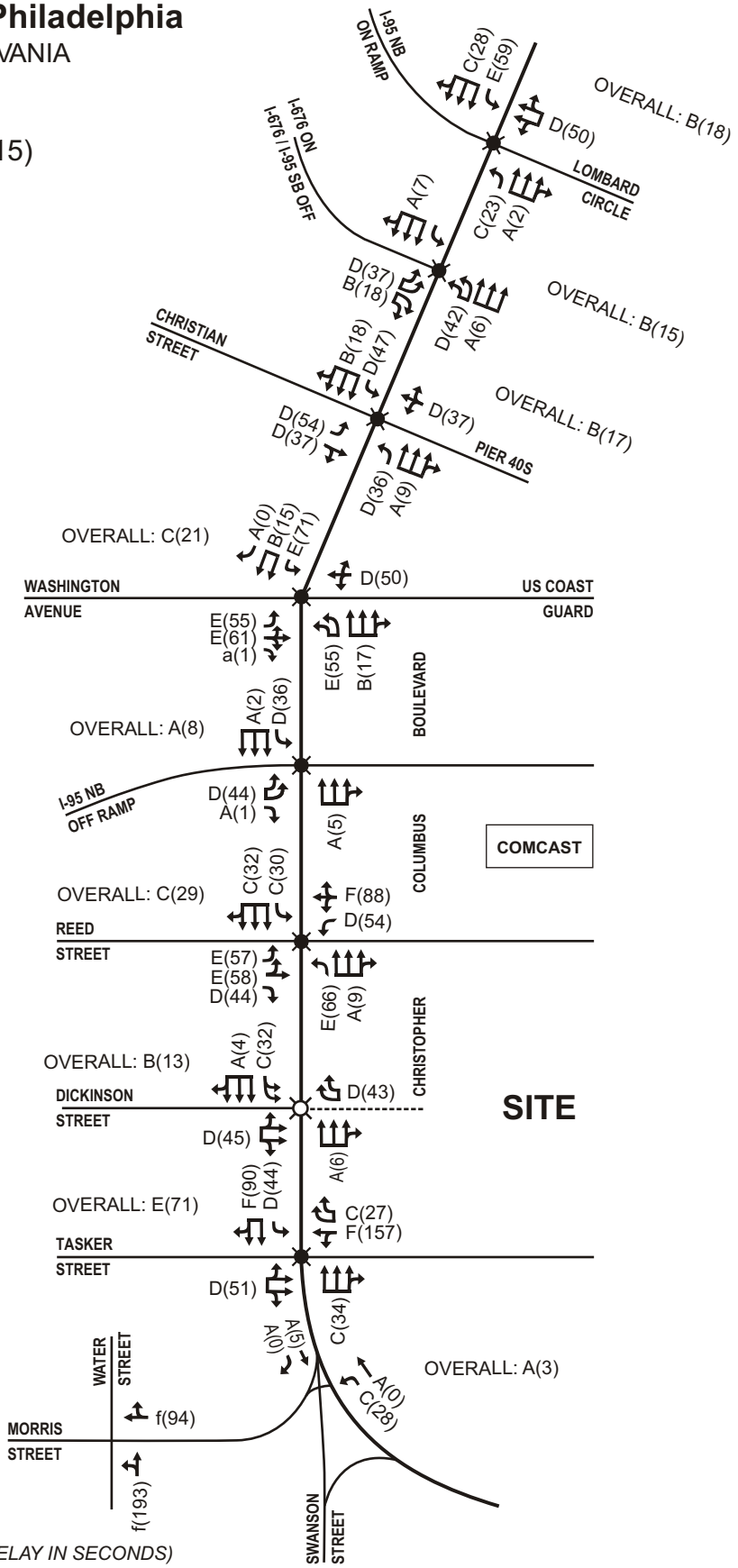
FIGURE 32

2010 Build Early Saturday Afternoon Peak Hour Levels of Service w/ Improvements w/ Dickinson Street Ramp

Foxwoods Casino - Philadelphia

PHILADELPHIA, PENNSYLVANIA

Early Afternoon (1:15 - 2:15)



LEGEND

- EXISTING TRAFFIC SIGNAL

A(#) - SIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

a(#) - UNSIGNALIZED LEVEL OF SERVICE (DELAY IN SECONDS)

Table XVI
Comparison of Existing and Phase II Peak Hour
Intersection Levels of Service along Columbus Boulevard
Assuming the Dickinson Street Off-Ramp

	Existing		Phase II	
Intersection	**Friday**	**Saturday**	**Friday**	**Saturday**
Lombard Circle/I-95 NB On-Ramp	B (12)	B (16)	B (12)	B (18)
I-676 On & I-676/95 SB Off Ramp	C (22)	C (26)	B (16)	B (15)
Christian Street	C (30)	C (24)	B (17)	B (17)
Washington Avenue	F (105)	E (61)	C (28)	C (21)
I-95 Ramp NB Off Ramp	B (14)	B (14)	A (8)	A (8)
Reed Street	C (27)	D (44)	C (20)	C (29)
Dickinson Street	N/A	N/A	A (9)	B (13)
Tasker Street	A (9)	B (20)	C (24)	E (71)
Morris Street	N/A	N/A	A (3)	A (4)
Sum Total Intersection Delay	**219**	**205**	**137**	**195**

As shown in the table, the total intersection delay is projected to decrease from 219 seconds per vehicle to 137 seconds per vehicle, (37%), during the Friday peak hour and from 205 seconds per vehicle to 195 seconds per vehicle, (5%), during the Saturday peak hour. At the critical intersection of Washington Avenue and Columbus Boulevard the Level of Service is calculated to improve to 'C' during both peak hours. This meets the mandate of improving conditions so that even with construction of the proposed casino, traffic conditions will be better that existing conditions.

Complementary Transportation Improvements

While the level of improvement associated with the previously described actions can be quantified, other equally significant mitigation measures are integral to the Transportation Improvement Program. These complementary improvements are described below:

Implement Changeable Message Signage To Route Motorists To The Least Congested Route To The Site

Travel to/from the casino site is very convenient via the regional highway networks. I-676 and I-95 have on/off ramps within ½ mile of the site. The Benjamin Franklin Bridge (I-676, 1.8 mile north of the site) and the Walt Whitman Bridge (I-76, 1.5 mile south of the site) from New Jersey both have direct connections to I-95. Figure 33 illustrates the routes of approach from the interstate highways.

Traffic from the north on I-95, from the west on I-676, and from the Ben Franklin Bridge would approach on I-95 South. This traffic would exit at Exit 20 (Penn's Landing, Washington Avenue) and turn right on Columbus Boulevard and travel south to the site.

Traffic from the south on I-95 and from the Walt Whitman Bridge will approach on I-95 North, exit at Exit 20 (Washington Avenue, Penn's Landing), turn right and travel south to the site.

The return route to the interstate highways is illustrated on Figure 34. An on-ramp to I-676 / I-76 (which also provides route to the Ben Franklin Bridge) is located on Columbus Boulevard north of Washington Avenue. Two blocks north of that ramp is the on-ramp to I-95 North. The on-ramp to I-95 South is south of the site. Exiting traffic destined to I-95 South or the Walt Whitman Bridge would turn left out of the site, travel south on Columbus Boulevard a short distance to Morris Street, and turn right. The I-95 South on-ramp connects with Morris Street and provides a direct connection to the Walt Whitman Bridge.

The great majority, but not all, traffic will approach the site via the interstate highways. Some traffic from Center City as well as some neighborhood traffic will travel east to Columbus Boulevard on city streets such as Spring Garden Street, Race Street or Washington Avenue.

The interstate highway exit ramps in closest proximity to the casino site are located north of the site. A high percentage of arriving auto traffic is therefore expected to approach from the north and turn left into the site. Since this section of Columbus Boulevard is already heavily traveled and subject to some peak hour congestion, some motorists might choose to use another route if the alternate route information is avail-

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FIGURE 33

Routes of Approach to the Casino Site

Foxwoods Casino - Philadelphia

PHILADELPHIA, PA

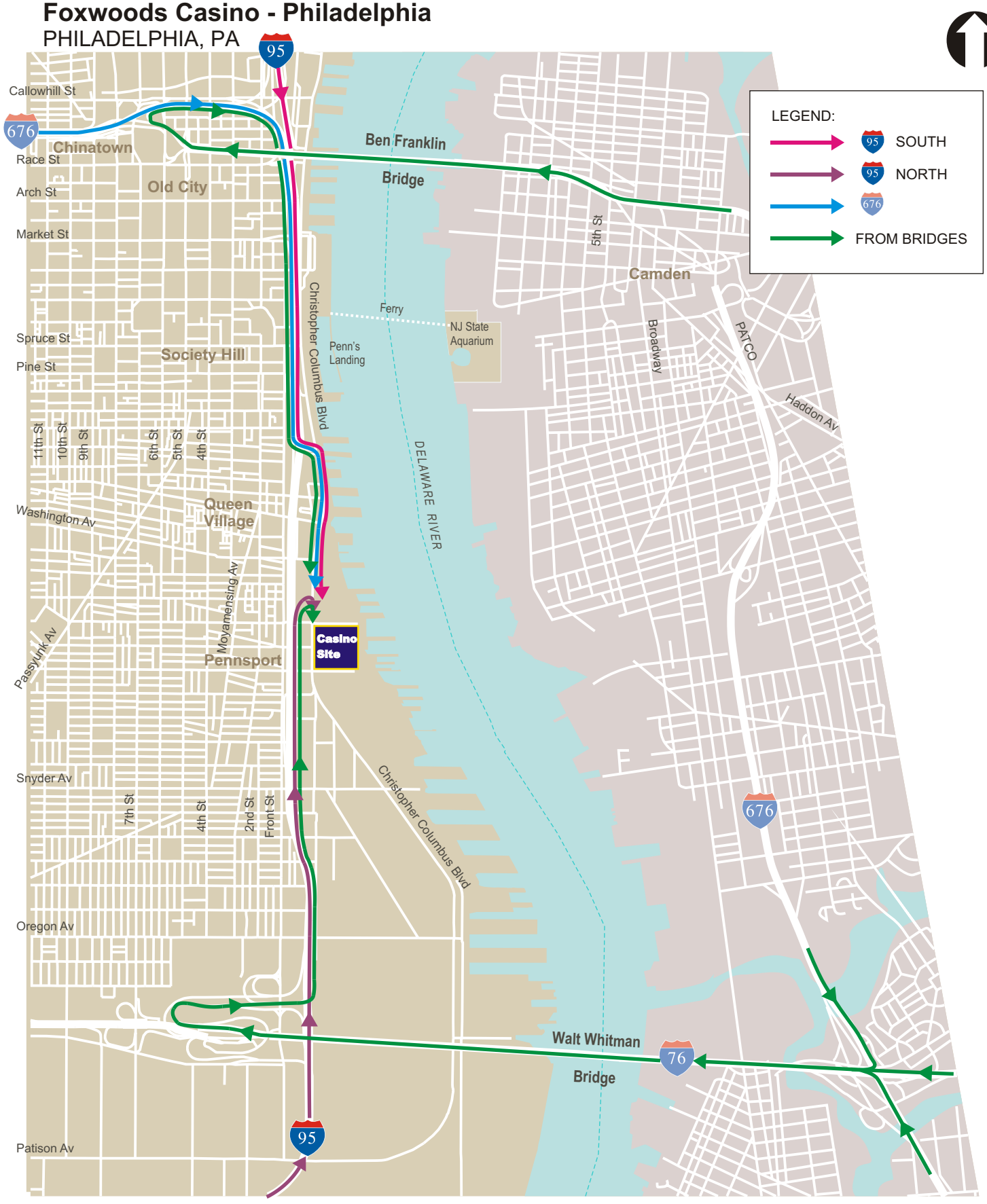

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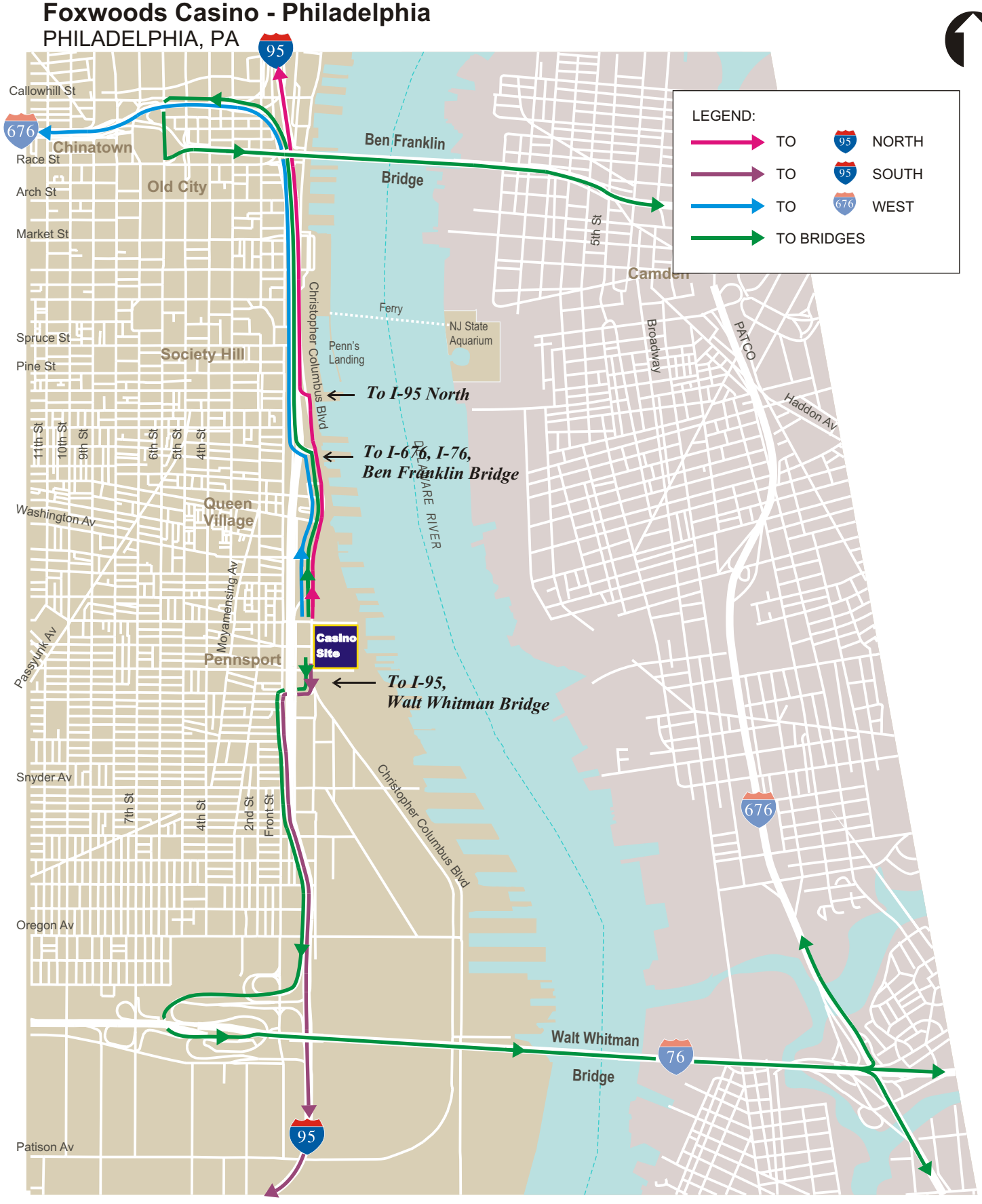
FIGURE 34

Routes of Departure from the Casino Site

Foxwoods Casino - Philadelphia

PHILADELPHIA, PA



able and if the travel time is similar. To the extent that traffic can be encouraged to approach the Casino site from the south on Columbus Boulevard rather than from the north, overall traffic operations can be significantly improved.

Alternative routes from I-676, I-95 and the bridges are illustrated on Figure 35. Traffic from the north (I-676, I-95 South, Ben Franklin Bridge) could continue on I-95 South past Exit 20 to the next exit, Exit 19. Traffic would follow the ramp leading to Front Street. Traffic which arrives at Front Street would turn left, travel to Oregon Avenue, turn right and travel to Columbus Boulevard, turn left and travel north to the site. Compared with using Exit 20, the difference in distance is 3 miles. The difference in travel time is approximately five minutes.

Traffic from the Walt Whitman Bridge can also exit to Front Street rather than I-95 North. This traffic would turn left on Front Street and follow the same path to the site described above. Compared with using Exit 20, the difference in distance from the Walt Whitman Bridge is 0.2 miles and the difference in travel time is approximately two minutes.

For traffic approaching from the south on I-95, the closest off-ramp south of the casino site leads to Packer Avenue. The alternate route would utilize Packer Avenue to 7th Street, north on 7th Street to Oregon Avenue, a right turn on Oregon Avenue to travel to Columbus Boulevard, and a left on Columbus Boulevard to travel north to the site. This alternate route is somewhat longer; the differential in distance compared with remaining on I-95 North to Exit 20 is 1.4 miles; the differential in travel time is approximately six minutes.

The difference in travel time between using the closest exit ramp and using the alternate route assumes an average overall travel speed of 25 mph on the city streets (including delays at traffic signals). Any congestion on Columbus Boulevard north of the site would reduce the travel time differential and make the alternate route more attractive.

The key is to make the information available to casino patrons, and to the extent possible, encourage use of Exit 19 rather than Exit 20.

Traffic from New Jersey, regardless of location of origin, can choose to use either the Ben Franklin or the Walt Whitman Bridge to travel to the site. Interstate

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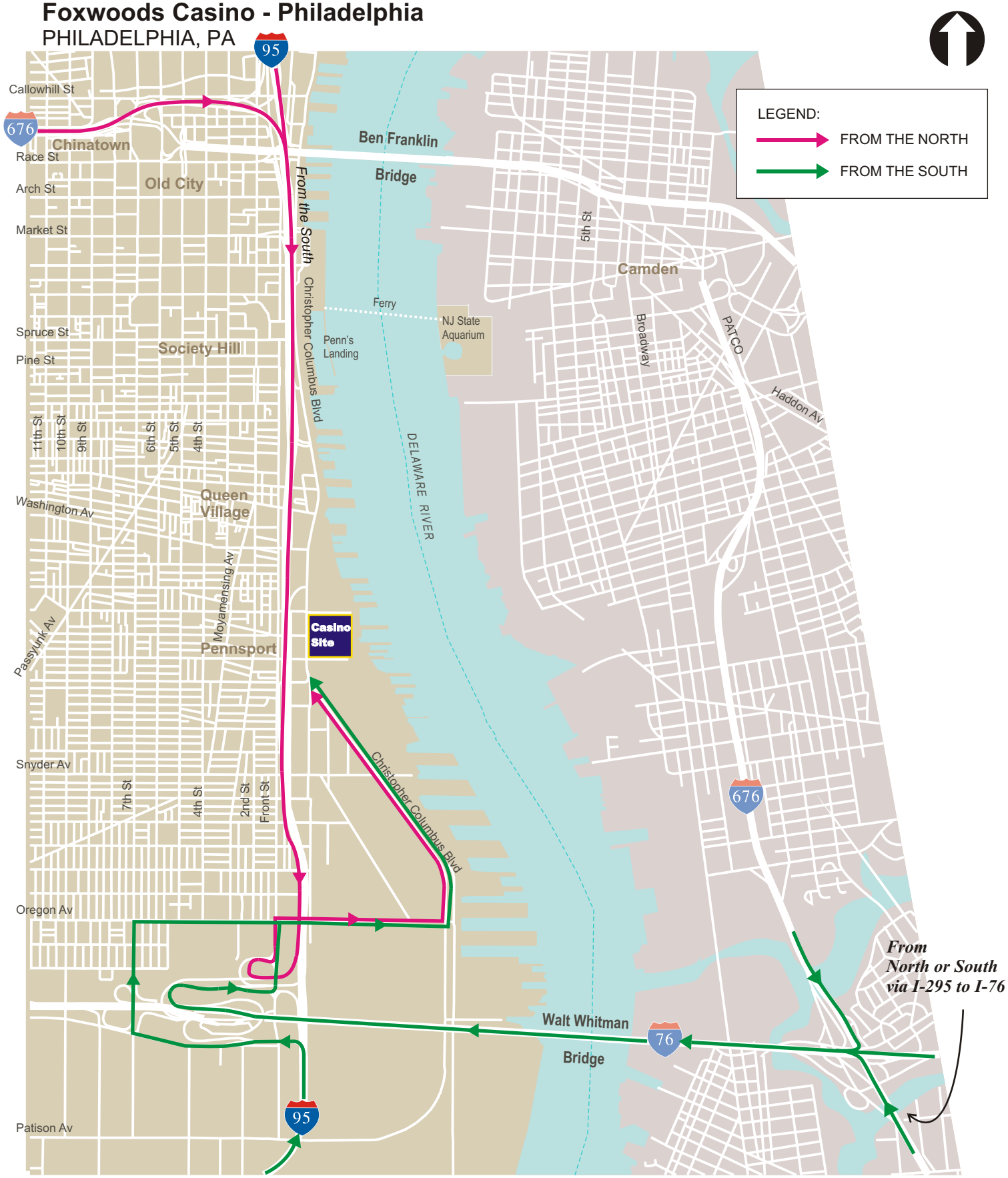
FIGURE 35

Alternate Routes of Approach to the Casino Site

Foxwoods Casino - Philadelphia

PHILADELPHIA, PA



routes I-676 and I-295 in New Jersey run north south and provide interchanges with highways to both bridges.

It is noted that the shopping destinations further south on Columbus Boulevard (Wal-Mart, Home Depot, IKEA, Lowe's) all provide directions on their websites via I-95 using the ramps to the north of the casino site. These stores are located further to the south. While the website route is the shortest in terms of distance, the differential in travel distance and time between the website route and the alternate route is even less for these destinations than it is for the casino. Diverting some portion of shopping traffic to routes that approach the stores from the south would further serve to improve existing conditions on Columbus Boulevard north of the casino site.

Provide Extra Queuing Areas On Site To Eliminate Any Chance Of Traffic Spilling Back Onto Columbus Boulevard

It is currently anticipated that direct access to the site will be provided via three points on Columbus Boulevard:

- At Reed Street
- Opposite Dickinson Street
- At Tasker Street

Site access via Reed Street will most likely utilize two eastbound lanes, with the right lane directed to the porte-cochere and the left lane serving the Comcast Facility and, in the future, the proposed hotel and condominiums. Once into the site, the first decision point is some 400 feet from Columbus Boulevard and the first time a vehicle will need to stop is another 100 feet at the porte-cochere area.

At the Dickinson Street access, two lanes of traffic enter the site with both lanes destined either to the parking garage or to the porte-cochere. The parking garage is more than 200 feet into the site and the porte-cochere some 160 feet. The porte-cochere provides a total of seven lanes and is of sufficient width to accommodate the demand for valet parking.

Tasker Street will be widened to serve both site access and egress as well as bus traffic while also providing for service traffic at the site and at the adjacent retail center.

Buses will enter and exit the site via Tasker Street and will have a separate parking area to the rear of the site as will service traffic. Traffic to the parking facility will enter the facility about 200 feet from Columbus Boulevard.

On-site parking will provide 4,500 spaces for Phase I and ultimately 6,000 spaces by completion of Phase II with the majority of patrons expected to enter and exit the parking garage via the Dickinson and Tasker access points. On-site circulation will permit movement between the casino porte-cochere, valet parking, the hotel lobby and the parking garage without using public streets.

Water Taxi to the Camden side of the Delaware River

Water taxis would provide an attractive alternate mode of transportation between Pier 60 at the casino site and entertainment activities/locations on both sides of the Delaware River. In addition, it will allow patrons/visitors to park and use the water taxi to travel between different venues – thus reducing vehicular traffic.

Coordination with SEPTA and Tour Bus Operators

As noted earlier, there is some existing SEPTA bus service along Columbus Boulevard. The possibility of increasing the frequency of existing service, providing new bus routes, and/or providing some amenities for transit riders will be evaluated as planning continues. In addition, some layover provisions could be needed at the site and will be provided as required. This will also be discussed with SEPTA as site planning continues.

The railroad right of way along Columbus Boulevard also provides a longer-range future possibility for trolley, light rail or monorail service to link the various retail activities and entertainment venues along the Columbus Boulevard 'corridor'.

Finally, Foxwoods Casino - Philadelphia proposed to operate a tour bus program. A tour bus facility will be provided at the rear of the Tasker Street access. It is intended that buses would drop off customers, exit the site to layover at some off-site location, then return to pick up patrons.

Off-Site Parking and Shuttle Bus Service for Employees

It is possible that some parking -- particularly for employees -- could be provided off-site with shuttle bus service providing connection with the site. Potential locations for off-site parking will be evaluated as the planning effort proceeds.

Meeting the Mandate

The results of implementation of the improvement program as outlined in terms of overall intersection delay experienced along the Columbus Boulevard 'corridor' from Lombard Circle to Morris Street are illustrated in Figure 36. As shown, compared to existing conditions, overall peak hour 'corridor' delay will be reduced by 32 % on Fri days and by 16 % on Saturdays in 2008 (with Phase I) and by 37 % on Fridays and by 5 % on Saturdays in 2010 with Phase II and the proposed new southbound I-95 off-ramp at Dickinson Street.

This analysis has clearly shown that the mandate has been met and traffic conditions along the Columbus Boulevard 'corridor' will be better than they are today with implementation of the transportation program.

Figure 36
Overall Intersection Peak Hour Delay
Columbus Boulevard Corridor
between Lombard Circle and Morris Street