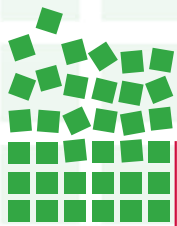


Villanova University  
*Villanova, PA*

- **Special Event  
Parking Management Plan  
for Future Conditions**

**September 2014**

14-275



**CHANCE**  
MANAGEMENT ADVISORS, INC.

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# I. INTRODUCTION AND METHODS

## Introduction

This **Special Event Parking Management Plan for Future Conditions (the Plan)** originated from a request by Villanova Facilities Management officials for consulting guidance on the University's future approach to managing inbound and outbound traffic and parking associated with special events on campus. Within the context of the Campus Master Plan and the proposed development of housing for upper-class students along Lancaster Avenue (referred to herein as Lancaster Avenue Housing, or LAH), *CHANCE Management Advisors, Inc. (CMA)* was asked to develop a parking management strategy to help optimize the use of the University's parking resources while facilitating traffic movement along the surrounding road network.

Of particular concern to the University is the effective management of "extra-peak" special events, such as student move-in, commencement, football (both weekend and weekday evening), and especially evening basketball games held during the academic semester when evening division classes are in session. The primary features of the parking management actions recommended herein include administrative, operational and technological enhancements in parking management activities, as well as increased use of vehicular wayfinding tactics.

## Methods

*CMA* conducted a review of available data, performed a site visit to campus for general observations and a meeting with the University's development project team, and held a number of conference calls and meetings with Villanova Facilities officials. The firm was familiar with the campus from previous work performed there. The data reviewed included the Master Plan, a traffic study of the affected area, campus parking availability studies, the site plan for the Lancaster Avenue Housing development, and an isometric for the proposed garage, indicating the location of vertical ramps, entry/exit locations and traffic circulation patterns.

## II. FINDINGS AND CONCLUSIONS

### **The Lancaster Avenue Housing Development and Its Effects on the Villanova Parking Supply**

#### **THE NEW RESIDENTIAL DEVELOPMENT**

The LAH development features the construction of a 1,135-bed student resident complex with certain student-oriented retail establishments and a physical fitness center, which are to be built on the present site of the Main Lot along Lancaster Avenue. A 400-seat Performing Arts Center and 1,293-space parking garage are proposed for the existing Pike Lot, at the southeast corner of Lancaster and Ithan Avenues.

A new West Lancaster Lot will be built on the south side of Lancaster Avenue west of Church Drive to combine existing parking with commuter parking. Seven driveway entrances on Lancaster Avenue for the offices' individual parking lots will be closed. Vehicles will access the West Lancaster Lot (WLL) from a dedicated right-in / right-out entrance from Lancaster Avenue lane at the Lot's west end, and from an expanded Church Drive at the Lot's east end.

#### **THE VILLANOVA PARKING SUPPLY: PRESENT AND FUTURE**

Villanova presently has 5,130 parking spaces, the vast majority of which are on the northern side of Lancaster Avenue. By the time construction has been completed on the Pike Garage, the West Lancaster Lot, and the additions to existing parking on Main Campus, the University anticipates this supply will be approximately the same.

The following tables highlight the effect of the future changes to the Villanova parking supply. The existing supply by major area of the campus is shown in **TABLE 1**, while **TABLE 2** indicates the number and type of parking spaces that will be added to or removed from the existing locations.

**TABLE 1: Existing Parking Supply**

Existing Parking Supply by Area and Type of Patron							
Area	Faculty / Staff	Resident Students	Visitors	Non-Residents / Commuters	Combined (All Types)	Total	% of Supply
West Campus	137	596	-	-	-	733	14%
Facilities	122	-	-	-	-	122	2%
Law Area							
Garey Hall	109	-	-	-	-	109	2%
Spring Mill Surface Lot	113	-	-	-	-	113	2%
Spring Mill Garage	-	-	-	607	-	607	12%
Main Campus	884	-	-	-	-	884	17%
Athletics	349	-	-	-	-	349	7%
Lancaster Avenue - Pike Lot	-	-	-	-	577	577	11%
Lancaster Avenue - Main Lot	-	-	-	-	1,126	1,126	22%
Lancaster Avenue - Visitor Lot	-	-	80	-	-	80	2%
West Lancaster Lots	79	-	-	-	-	79	2%
Technology Services Building and Stone Hall	70	-	-	-	-	70	1%
South Campus	-	281	-	-	-	281	5%
<b>TOTAL</b>	<b>1,863</b>	<b>877</b>	<b>80</b>	<b>607</b>	<b>1,703</b>	<b>5,130</b>	<b>100%</b>

Data Source: Villanova traffic study map and coordination with University Facilities Management officials.

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**TABLE 2: Parking Displacement / Replacement versus Existing Supply**

Parking Displacement / Replacement (Shown in Italics)								
Area	Faculty / Staff	Resident Students	Visitors	Non-Residents / Commuters	Combined (All Types)	Total	Net Change	% of Supply
West Campus	137	596	-	-	-	733		
<i>None</i>	-	-	-	-	-	-	-	14%
Facilities	122	-	-	-	-	122		
<i>None</i>	-	-	-	-	-	-	-	2%
Law Area (Combined)	222	-	-	607	-	829		
<i>None</i>	-	-	-	-	-	-	-	16%
Main Campus	884	-	-	-	-	884		
<i>Add parking level to SAC garage</i>	133	-	-	-	-	133		
<i>Add parking level to HSB garage</i>	63	-	-	-	-	63	196	21%
Athletics Area	349	-	-	-	-	349		
<i>None</i>	-	-	-	-	-	-	-	7%
Lancaster Avenue - Pike Lot	-	-	-	-	577	577		
<i>Remove Pike Lot</i>	-	-	-	-	(577)	(577)		
<i>Build Pike Garage</i>	-	-	-	-	1,293	1,293	716	25%
Lancaster Avenue - Main Lot	-	-	-	-	1,126	1,126		
<i>Remove Main Lot</i>	-	-	-	-	(1,126)	(1,126)		
<i>Add Visitor Parking</i>	-	-	62	-	-	62	(1,064)	1%
Lancaster Avenue - Visitor Lot	-	-	80	-	-	80		
<i>Redesign Visitor Lot</i>	-	-	(39)	-	-	(39)	(39)	1%
West Lancaster Lots	79	-	-	-	-	79		
<i>Add to West Lancaster Lots</i>	191	-	-	-	-	191	191	5%
Tech. Services Bldg. and Stone Hall	70	-	-	-	-	70		
<i>None</i>	-	-	-	-	-	-	-	1%
South Campus	-	281	-	-	-	281		
<i>None</i>	-	-	-	-	-	-	-	5%
<b>TOTAL</b>	<b>2,250</b>	<b>877</b>	<b>103</b>	<b>607</b>	<b>1,293</b>	<b>5,130</b>	<b>-</b>	<b>100%</b>
Difference versus Existing Supply	387	-	23	-	(410)	-	-	N/A

Data Source: Villanova traffic study map, LAH development site plan, and coordination with University Facilities Management officials.

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As shown in **TABLE 2**, to replace the Main Lot’s parking supply displaced by the LAH development, the Pike Garage will be built to more than double the spaces from 577 spaces to 1,293 spaces. Further, 191 spaces will be added to the West Lancaster Lots, and an additional 196 parking spaces will be provided on Central Campus from additions to the St. Augustine Center and Health Services Building garages.

The total parking supply will not change, thus an issue for both the University and the Township is the effective management of special event parking demand given the displacement of parking from the Main Lot, and the increase in parking demand from the development’s resident students. These issues are addressed in the following sections.

**PROJECTING FUTURE PARKING DEMAND**

LAH Resident Student Parking Demand

The proposed student residences along Lancaster Avenue will be composed of juniors and seniors, who will represent new overnight parking demand for the campus. A number of these new residents would have been included in daytime commuter parking demand in the Main and Pike Lots, a portion of which also would have been expected to be present during evening special events, such as basketball games. But considering the fact that their vehicles will be present both during evening and weekend special events, an estimation of the evening demand represented by this group is warranted.

The projection of future parking demand for LAH residents is shown in **TABLE 3**. Beginning with the number of beds in the development, and an overall anticipated bed occupancy rate of 97 percent (based on the University’s current experience), along with recent data showing junior and senior residential driving ratios, an estimated parking demand for 606 vehicles has been calculated.

**TABLE 3: Future Resident Student Parking Demand**

<b>Calculation</b>	<b>Note</b>	<b>Count</b>
LAH Bed Count		1,135
<i>times</i> the Projected Bed Occupancy Rate	[1]	97%
Projected Number of All Student Residents		1,101
<i>times</i> the Projected Student Driving Ratio	[2]	55%
<b>Estimated Parking Demand (vehicles)</b>	[3]	<b>606</b>
<b>NOTES:</b>		
[1] Based on Villanova experience.		
[2] Data provided by Villanova indicate 44% and 55% driving ratios for junior and senior residents, respectively. CMA has elected to use the higher ratio to estimate the higher number of spaces that may be required.		
[3] In the case of resident students, there is no oversell of spaces as there is for commuters, considering the fact that residents' vehicles will typically be present the vast majority of the time.		

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Weekday Evening Special Event Parking Demand

An estimation of future parking availability under extra-peak special event conditions can begin with an understanding of historical demand levels under similar circumstances. For example, parking availability counts were conducted by the University during what amounted to an extra-peak (higher than typical peak) weekday evening special event on Wednesday, 16 January 2013. That evening included an evening basketball game at the Pavilion with 6,300 people in attendance compared to the facility's 6,500 seating capacity, which coincided with the first week of the Spring 2013 undergraduate academic semester, on a weeknight when evening division classes also were in session.

Using the University's parking survey and availability counts from that evening, an analysis has been prepared to illustrate the location of the parking demand and availability. Two surveys were made of parking spaces most convenient to the Pavilion, and the survey showing the least space availability is illustrated below. As shown in **TABLE 4**, 746 parking spaces were available according to the 7:30 p.m. survey observations during this extra-peak event. Specifically, 436 spaces were available in the Law area, 201 spaces were available on Main Campus, and 109 spaces were available in the three primary Lancaster Avenue parking lots. *Note: the parking demand (occupancy) figures are shown as negative numbers as they offset parking availability.*

**TABLE 4: Villanova University Parking Availability During Weekday Evening Extra-Peak Special Event**

Observed Parking Availability, Extra-Peak Special Event Wednesday, 16 January 2013, 7:30 p.m. surveys)											
Area	Total Spaces	Faculty / Staff	Resident Students	Visitors	Non-Residents / Commuters	Combined (All Types)	Spaces Not Surveyed	Spaces Surveyed	Existing Demand	Spaces Available	Area Space Availability
West Campus	733	137	596				733	-			
Facilities	122	122					122	-			
<b>Law Area</b>											
Garey Hall	109	109	-	-	-	-	-	109	(77)	32	436
Spring Mill Surface Lot	113	113	-	-	-	-	-	113	(75)	38	
Spring Mill Garage	607	-	-	-	607	-	-	607	(241)	366	
<b>Main Campus</b>											
St. Augustine Center Garage	271	271					-	271	(157)	114	201
St. Augustine Center Roadway	58	58					-	58	(58)	-	
Health Services Building	173	173					-	173	(164)	9	
Mendel	109	109					-	109	(31)	78	
Other Areas of Main Campus	273	273					273	-	-	-	
Athletics	349	349	-	-	-	-	349	-	-	-	
Lancaster Avenue - Pike Lot	577	-	-	-	-	577	-	577	(554)	23	109
Lancaster Avenue - Main Lot	1,126	-	-	-	-	1,126	-	1,126	(1,050)	76	
Lancaster Avenue - Visitor Lot	80	-	-	80	-	-	-	80	(70)	10	
West Lancaster Lots	79	79	-	-	-	-	79	-	-	-	
<b>TOTAL</b>	<b>5,130</b>	<b>1,863</b>	<b>877</b>	<b>80</b>	<b>607</b>	<b>1,703</b>	<b>1,907</b>	<b>3,223</b>	<b>(2,477)</b>	<b>746</b>	<b>746</b>

Data Sources: Villanova traffic study map, Villanova parking availability survey data, 1/16/13, and coordination with University Facilities Management officials.

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**TABLES 5** projects future parking availability during extra-peak special events in light of resident student parking demand from the Lancaster Avenue Housing development. The observed surplus of 746 spaces during an extra-peak event will be reduced by LAH parking demand, but by distributing a portion of the student demand to the South Campus, the number of visitor spaces will be optimized. Specifically, of the 606 residents anticipated to bring vehicles to the LAH development, 520 will be assigned parking in the Pike Garage; the remaining 86 students will be assigned to the South Campus parking area. This will result in projected parking availability of 226 spaces during extra-peak special events.

**TABLE 5: Future Parking Availability, Weekday Evening Extra-Peak Event**

<b>Calculation of Future Parking Availability</b>	<b>Spaces</b>
Existing Parking Availability, Extra-Peak Event	746
New Parking Demand in Pike Garage, LAH Student Residents	(520)
<b>Future Parking Availability</b>	<b>226</b>

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**TABLE 6** provides the details of parking space changes with respect to the areas surveyed during extra-peak event on the evening of 16 January 2013. *Note that parking demand is shown as a negative number, and that shaded cells correspond to the surveyed parking areas in TABLE 5.* The parking space additions and removals net to zero. Displaced parking spaces will be accommodated through the reassignment of evening faculty, staff and student permit holders and other management approaches as described in the next Section.

**TABLE 6: Projected Parking Availability Details**

<b>Projected Parking Availability, Extra-Peak Special Event</b>						
<b>Area</b>	<b>Existing Spaces (Surveyed)</b>	<b>Planned Parking Space Increase or (Decrease)</b>	<b>Future Spaces</b>	<b>Existing Demand per VU Survey</b>	<b>New Demand, Resident Students</b>	<b>Future Space Availability</b>
<b>Law Area</b>						
Garey Hall	109	-	109	(77)	-	32
Spring Mill Surface Lot	113	-	113	(75)	-	38
Spring Mill Garage	607	-	607	(241)	-	366
<b>Main Campus</b>						
St. Augustine Center Garage	271	133	404	(157)	-	247
St. Augustine Center Roadway	58	-	58	(58)	-	-
Health Services Building	173	63	236	(164)	-	72
Mendel	109	-	109	(31)	-	78
<b>Lancaster Avenue</b>						
Lancaster Avenue - Pike Lot	577	716	1,293	(554)	(520)	219
Lancaster Avenue - Main Lot	1,126	(1,064)	62	(1,050)	-	(988)
Lancaster Avenue - Visitor Lot	80	(39)	41	(70)	-	(29)
West Lancaster Lots		191	191	-	-	191
<b>TOTAL</b>	<b>3,223</b>	<b>-</b>	<b>3,223</b>	<b>(2,477)</b>	<b>(520)</b>	<b>226</b>
Data Sources: Villanova traffic study map, Villanova parking availability survey data, 1/16/13, and coordination with University Facilities Management officials.						

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## Managing Future Special Event Parking Demand

Proposed changes in the University's approach to parking management and assignment of students and employees to parking locations will ensure optimum use of the available spaces in the future. This will also result in the effective dispersal of special event traffic to mitigate congestion along Lancaster Avenue. Proposed strategies and actions are presented in a Special Event Parking Management Strategy provided as **EXHIBIT 1**.

The Strategy intends to optimize the use of the University's parking resources during weekend and special events by judicious reassignment of faculty, staff and students to parking locations on the Main and South campuses.

The proper assignment of Lancaster Avenue Housing (LAH) resident student parking and effective management of visitor parking will be critical to the efficient use of the Pike Garage. In addition, the distribution of special event parking demand among the West Lancaster Lot, Spring Mill Garage and surface lot, and the SAC and HSB garages, will help ensure the Pike Garage is used to its potential and to mitigate traffic congestion along Lancaster Avenue.

### PIKE GARAGE PARKING MANAGEMENT APPROACH

Requiring Lancaster Avenue Housing resident students to park on the upper two floors of the garage will help ensure that visitors have easier and faster access to parking on the lower levels. With approximately 260 spaces per level (1,293 spaces / five levels), 520 of the estimated 606 resident student vehicles could be stored on the Garage's two upper levels. The balance of the estimated resident parking demand could be assigned to available parking spaces on South Campus. This would leave three full levels (over 750 parking spaces) available for visitor parking.

To maintain the integrity of the student parking area, access could be controlled by an internal barrier gate and standard access control technology (referred to as a "nested area" within the garage). When a large number of LAH resident students would not be on campus (the summer and winter breaks, for example), the gates could be raised and the upper levels made available for visitor parking for large special events, such as commencement.

Pike Garage special event patrons arriving from the east along Lancaster Avenue will have the option of entering the Garage at the Performance Arts Center (PAC) entrance, which places them directly onto the Garage's second level. Alternately, a portion of those visitors may turn left at Ithan Avenue and enter the Garage at its southwestern entrance.

Special event patrons using the Pike Garage who are arriving from the west along Lancaster Avenue will have two access options prior to Ithan Avenue: a right-turn lane into the western access lane for the West Lancaster Lot (WLL), and a second right-turn lane at Church Drive. At the base of either the WLL access lane or Church Drive, vehicles would turn left (eastward) along the housing development access road, cross Ithan Avenue and enter the Garage on the first parking level. Wayfinding signs will provide drivers with sufficient advance notice to enter either of the two right-turn lanes from Lancaster Avenue.

University officials have indicated their preference to not charge for special event parking in the Pike Garage. However, for the Garage to serve University students and visitors during the day, a parking access and revenue control system (PARCS) should be installed at the Pike Garage entrances to deter SEPTA commuter parking or other parking not associated with the University. This could be accomplished by establishing a rate schedule and gate operating hours designed to deter commuter parking, and to limit use to students and bona fide visitors to campus.

Additional details on garage access controls and special event operations are contained in the Parking Management Strategy.

## **PARKING MANAGEMENT APPROACH FOR ADDITIONAL LOCATIONS AND EVENTS**

To expedite parking throughput and reduce the potential for traffic congestion along and near Lancaster Avenue that may be anticipated for extra-peak weekday evening periods, as well as peak weekend special events, it will be imperative to provide the Villanova community with an efficient entry and exit plan for all parking areas on campus. To support this, effectively placed wayfinding messages to parking locations and an active event staff adept at managing vehicle circulation will be key features of an enhanced parking management approach.

The West Lancaster Lot and the access lane behind the LAH provide opportunities for staging vehicles for various events (for example, freshman move-in day on South Campus), and the Pike Garage would have sufficient capacity for parking vehicles following unloading activities on South Campus.

Villanova's intent to use Main Campus parking assets for all faculty and staff, and for all evening division faculty, staff and students, will help ensure sufficient visitor parking will be available in the Pike Garage, within the visitor parking area of the LAH (62 spaces), and in the Visitor Lot (39 spaces).

Advance communication of parking conditions and directions, as well as wayfinding technologies and operational approaches (such as a "gates up" operation for special events), will help speed vehicle throughput into and out of the Pike Garage as well as the West Lancaster Lot. An enhanced parking experience for patrons of Villanova's events and other visitors will be the result of these tactics.

Likewise, efficiently directing patrons to alternate parking at the Spring Mill, St. Augustine Center and Health Services Building garages on the central portion of the Main Campus will help disperse parking demand and traffic both during normal daytime periods, as well as during evening and weekend special events.

### III. RECOMMENDATIONS

Parking management strategies and action items, to include administrative policy decisions on parking access, will help ensure the smooth operation of all campus parking assets both during and after implementation of the new student residence development and Performing Arts Center. Improved parking management, wayfinding and vehicle throughput also will help reduce traffic congestion and noise in the surrounding road network.

The objectives above are addressed in more detail in the Parking Management Strategy document provided as **EXHIBIT 1**, where major recommendation categories include:

- effectively distributing special event parking demand;
- optimizing parking access and traffic circulation within the Pike Garage;
- ensuring effective solutions to service vehicle access for the new student housing development;
- developing and locating appropriate vehicular wayfinding messages; and
- developing effective public information strategies and technologies.

Villanova University  
 PARKING MANAGEMENT PLAN FOR FUTURE CONDITIONS

EXHIBIT 1: Special Event Parking Management Strategy and Action Plan

Parking Management Strategy	Action Plan
<p><b>1. Effectively Distribute Special Event Parking Demand</b></p> <p><b>Considerations:</b></p> <ul style="list-style-type: none"> <li>■ Projection of parking availability</li> <li>■ Distribution of parking among key facilities for an extra-peak special event</li> </ul>	<p><b>A.</b> Over 750 spaces will be available in the Pike Garage for special event parking during evening peak periods, and on weekends during the academic semester, by restricting the top two floors of the garage to the development’s resident students while assigning the balance of resident student vehicles to South Campus parking</p> <p><b>B.</b> Parking spaces in the new West Lancaster Lot behind the University administration offices will be made available for extra-peak weekday evening events, but otherwise will be restricted to Villanova use during weekday evenings, but will be made available for weekend special events, and for events scheduled outside of the academic semester</p> <p><b>C.</b> Addressed in more detail in Strategy # 5, ensuring the efficient use of the Pike Garage is anticipated to be facilitated through technological options for reserving spaces, real-time information on spaces, or the appropriate technology that may be available as the garage nears completion</p> <p><b>D.</b> Additional parking assignments and strategies for selected special events are addressed below</p> <p>1. <u>Freshman Move-In, South Campus</u></p> <ul style="list-style-type: none"> <li>a. Except for Public Safety employees, all employee assigned parking in the West Lancaster Lot (WLL) will be directed to use Main Campus parking assets</li> <li>b. Time windows for vehicle arrivals will be communicated via move-in instruction packets; arrival times will be apportioned as done presently, or distributed throughout the hours of the move-in</li> <li>c. The new development access road will serve as the active vehicle queuing lane for South Campus, and the new West Lancaster Lot will serve as the vehicle queue’s overflow staging area</li> <li>d. Written instructions and temporary (electronic / dynamic) wayfinding signs will direct move-in vehicles to enter the vehicle queue or overflow staging area in the West Lancaster Lot from the WLL access lane (if arriving from the west), as well as through Church Drive if arriving from either east or west along Lancaster Avenue</li> <li>e. Student volunteers and/or Public Safety employees will be stationed at key positions at the WLL access lane as well as at Church Drive to verify the patron’s arrival time per the instruction packet, and will direct incoming vehicles either to the queue (should space permit), or to available spaces in the WLL</li> <li>f. The move-in instruction packet will direct early arrivals to stage in the Spring Mill Garage; on-time arrivals will be directed by volunteers and electronic wayfinding to proceed through the West Lancaster Lot’s western access lane (from Lancaster Avenue) as well as from the Church Drive access lane</li> </ul>

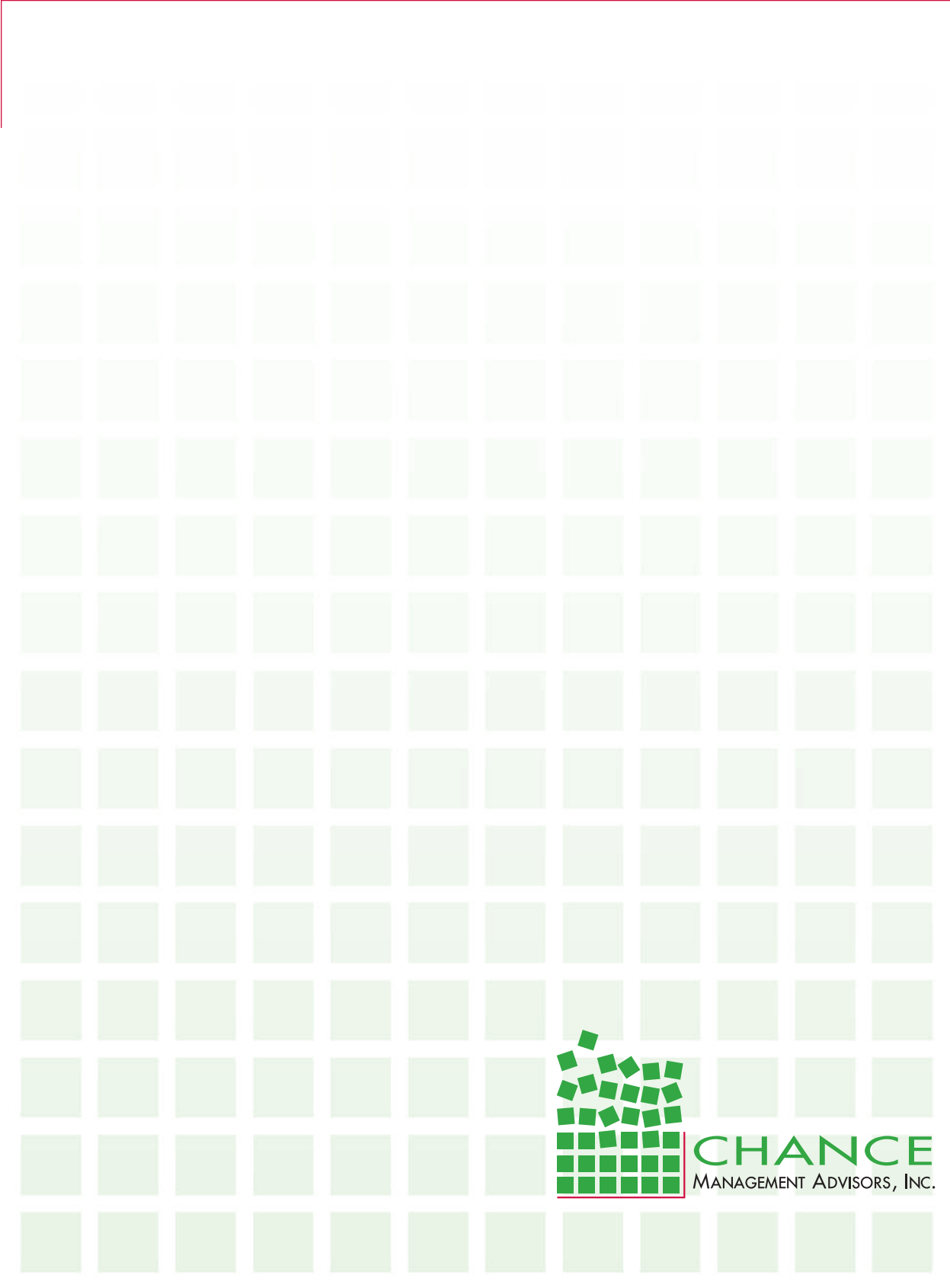
Parking Management Strategy	Action Plan
	<ul style="list-style-type: none"> <li>g. The process of checking arrival time credentials and radio coordination with staff monitoring conditions in the South Campus parking area will help ensure the efficient flow of traffic; if necessary, visitors arriving too far ahead of their arrival window will be directed to return to Lancaster Avenue and the Spring Mill Garage via Church Drive</li> <li>h. RTPD police will direct traffic at the intersection of the development’s access lane and Ithan Avenue, and at the entrance to South Campus housing</li> <li>i. Upon exiting South Campus, move-in visitors wishing to remain on campus will be directed to parking in the Pike Garage, where their vehicles will remain for the duration of the welcoming festivities</li> <li>j. Public Safety and/or student volunteer staff will be stationed at key locations within the garage to assist motorists in finding available parking spaces and pedestrian exits</li> <li>k. It is anticipated that virtually the entire 1,293-space Pike Garage will accommodate move-in / visitors’ vehicles for the Freshman class; in the event the Garage reaches 98% capacity towards the end of the move-in period, visitors will be directed to overflow parking either within the West Lancaster Lot (via Lancaster Avenue and Church Drive) or on Main Campus</li> <li>l. At the conclusion of move-in, the development’s access lane will be closed to eastbound traffic, allowing westbound vehicles to depart Pike Garage through the access lane and Church Drive to Lancaster Avenue</li> </ul> <p>2. <u>Weekday Evening Basketball Games</u></p> <ul style="list-style-type: none"> <li>a. As a matter of campus policy, evening students, faculty and staff will be assigned to Main Campus parking facilities; with the potential to assign Lancaster Area Housing resident students to South Campus parking, over 750 spaces will be available in the Pike Garage for event parking</li> <li>b. Patron parking for most evening (non-peak event) basketball games will be accommodated in the Pike Garage; when necessary, dynamic messaging signs will indicate available parking in the West Lancaster Lot and appropriate staff will support traffic control and parking assistance</li> <li>c. For peak events, dynamic messaging signs, supported with advance media and additional technology appropriate at the time the development is complete, will be used as part of the overall strategy to disperse parking demand to the Health Services Building, St. Augustine Center, and Spring Mill garages when needed. Access to the St. Augustine Garage will via Spring Mill Road and the Mendel Gate. Roadways will be access into the garage only pre-game, and exit from the garage only post-game to Spring Mill Road</li> </ul>

Parking Management Strategy	Action Plan
	<p>3. <u>Saturday and Weekday Evening Football</u></p> <ul style="list-style-type: none"> <li>a. The online purchase of football tickets may be linked with a parking reservation option or other technology for the Pike Garage and the surface lot tailgating area near the Spring Mill Garage, with advance purchasers of season tickets having the first option (by a cutoff date), followed by advance purchase of single-game tickets (by a second cutoff date), followed by season tickets bought after the advance purchase period, and lastly by single-game ticket purchases online, to the functional limit of visitor parking spaces in the Pike Garage and tailgating spaces in the Spring Mill surface lot</li> <li>b. Additional online parking (non-tailgating only) for Saturday football games will receive a parking credential or guidance to the West Lancaster Lot</li> <li>c. All other parking customers for Saturday and weekday evening football will be directed through electronic and static wayfinding signs to the Spring Mill Garage</li> <li>d. Electronic wayfinding signs will be positioned along Lancaster Avenue, east of Route 476 and west of the SEPTA rail overpass, to direct drivers to the appropriate parking facilities on campus based on their occupancy conditions or parking passes (reservations); additional wayfinding signs along both Lancaster Avenue and Spring Mill Road will provide drivers with sufficient notice for lane selections and turning points</li> </ul>
<p>2. <b>Optimize Parking Access and Traffic Circulation within the Pike Garage, and Ensure Effective Access Alternatives for Special Events</b></p> <p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>■ Use projected demand data, assignment and circulation plans to assess garage design, control garage loading (filling) patterns, and identify potential problems at peak periods</li> <li>■ Employ parking access and revenue control technologies and strategies appropriate for the new garage</li> <li>■ Identify information solutions to ensure optimum vehicle throughput and minimal traffic congestion, including but not limited to:</li> </ul>	<ul style="list-style-type: none"> <li>A. It is anticipated that resident students from the new development will be assigned parking on the two upper levels of the Pike Garage (approximately 520 spaces) with the remainder assigned to South Campus if needed</li> <li>B. During normal operation, both the Ithan Avenue and PAC entry/exit locations will be used for filling/emptying the Pike Garage; both locations will be gated for access control</li> <li>C. During normal periods (non-event weekdays, weekday evenings and weekends), the spaces on the first three levels will be available for the University's visitors; the upper two levels will remain reserved for resident student parking</li> <li>D. For special event operations, the Ithan Avenue entrance will be used to fill the first level of the Pike Garage, and the PAC entrance will be used to fill the second level and above; circulation will always be possible among the first three levels</li> <li>E. During special events, the Pike Garage entry gates will be raised to facilitate quick entry into the garage</li> <li>F. For exiting the Pike Garage following special events, the exit gates will be raised to facilitate vehicle throughput</li> <li>G. The PAC exit will allow only eastbound-Lancaster Avenue traffic at all times; left turns onto Lancaster Avenue westbound will be prohibited</li> <li>H. Following special events, the Ithan Avenue exit of the Pike Garage also will be used to empty the parking facility; vehicles will be permitted exit by a right turn onto Ithan Avenue, northbound, and directly across Ithan Avenue to the access lane behind the new development, for a right-turn onto Church Drive and subsequent east or west turning options onto Lancaster Avenue, or a left-turn on Ithan Avenue for other destinations</li> <li>I. Barrier gates and access control technologies will be located at the Pike Garage entrance/exit areas on both Ithan Avenue and the PAC driveway, although the gates will not be used during special event entry/exit</li> </ul>

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<ul style="list-style-type: none"> <li>□ parking inventory / driver information systems; and</li> <li>□ improved approaches to vehicle queuing and wayfinding messages and locations.</li> </ul>	<p><b>J.</b> Access will be controlled into the resident student parking area within the Pike Garage with a second set of barrier gates and use of a credential</p> <p><b>K.</b> The Pike Garage may be equipped with a parking inventory system or other technology to indicate space availability and to convey this information to dynamic wayfinding signs; available technology at the time of garage completion will be reviewed so that the most appropriate systems for wayfinding and garage access may be incorporated</p> <p><b>L.</b> Event patrons wishing to use the Pike Garage traveling westbound on Lancaster Avenue will have two entry options: 1) using the PAC entrance on the northeast corner of the garage via a new left-turn lane to the east of the PAC, or 2) using the dedicated left-turn lane for Ithan Avenue on Lancaster Avenue</p> <p><b>M.</b> RTPD police officer(s) will be requested to control vehicle movements along Lancaster Avenue, at Ithan Avenue and/or the PAC left-turn lane, depending upon the event</p> <p><b>N.</b> Eastbound special event traffic approaching the University from points west of campus and using the Pike Garage will be directed through wayfinding signs to turn right onto the West Lancaster Lot access Lane, as well as Church Drive, and left onto the access road behind the new development; these patrons will cross Ithan Avenue to enter the garage</p> <p><b>O.</b> CMA recommends that the intersection of Ithan Avenue and the development access road be controlled by four-way stop signs to facilitate traffic in non-event periods, which will offer protection to pedestrians walking to the new residential development, the PAC, the Main Campus and to South Campus; this four-way stop also would create openings or gaps in traffic to facilitate entry to the garage and minimize traffic back-ups along Ithan Avenue</p> <p><b>P.</b> Before and after special events, an RTPD officer will be requested to control traffic at the intersection of the development access road and Ithan Avenue to facilitate vehicle throughput</p>
<p><b>3. Ensure Effective Solutions to Service Vehicle Access for the New Student Housing Development</b></p> <p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>■ Review physical plans</li> <li>■ Establish general guidelines for service vehicles</li> </ul>	<p><b>A.</b> Loading areas within the student residence development and the PAC will be signed for “Commercial Vehicle Loading Only” (or similar intent via Township ordinance); passenger vehicles will be prohibited from using the loading zones, and the University’s Public Safety office will strictly enforce this prohibition; the 62 spaces behind the residential area will be zoned for visitor parking</p> <p><b>B.</b> The turning radii for access to the PAC and residence area loading docks, whether via the intersection of Lancaster and Ithan Avenues, or Lancaster Avenue and the PAC / Pike Garage access drive, will support tractor-trailers not exceeding 55 feet in overall length, and the University will instruct its vendors regarding vehicle size</p> <p><b>C.</b> Loading vehicles’ exit from the residence loading dock will be through the development’s access road westbound, to Church Drive</p> <p><b>D.</b> It is understood that the PAC loading dock area will be serviced by box trucks only</p>



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<p><b>4. Develop and Locate Appropriate Vehicular Wayfinding Messages</b></p> <p>Considerations:</p> <ul style="list-style-type: none"> <li>■ Identify the placement of key wayfinding information points</li> <li>■ Develop messages and delivery methods for each information point</li> </ul>	<p><b>A.</b> Internal vehicular wayfinding in the Pike Garage will indicate that the PAC (northeast) exit is for eastbound-Lancaster Avenue traffic only</p> <p><b>B.</b> “No Left Turn” signs, pavement markings, and directional arrows will be placed along the garage access drive leading to Lancaster Avenue</p> <p><b>C.</b> Internal pedestrian wayfinding will direct pedestrians to the elevators and pedestrian exits at the northwest corner of the garage to minimize pedestrian-vehicular conflicts and improve vehicle throughput</p> <p><b>D.</b> Internal wayfinding for vehicular circulation will consist of overhead signs, wall signs and lane markings indicating the direction to interior parking and garage exits</p>
<p><b>5. Develop Effective Public Information Strategies and Technologies</b></p> <p>Considerations</p> <ul style="list-style-type: none"> <li>■ Identify actions and approaches the University could take to ensure effective communication of parking and wayfinding to special event patrons</li> </ul>	<p><b>A.</b> The Villanova University home webpage, along with the primary and secondary webpages for Athletics (football and basketball), the PAC, and other special events, such as Homecoming, Special Olympics, Freshman move-in, etc., will contain highly visible links to specialized parking instructions for the particular event</p> <p><b>B.</b> It is recommended that advertisements and informative articles be submitted in a concerted manner initially, and thereafter periodically, to The Villanovan as well as all local township newspapers and other print media resources describing the new parking assets, policies and motorist wayfinding resources available on campus</p> <p><b>C.</b> Radio ads for Villanova athletic events will include reference to parking locations, avoiding delays, etc.</p> <p><b>D.</b> The University’s online athletic and special event ticket purchase sites will be augmented to include parking information and motorist guidance</p> <p><b>E.</b> Mobile parking application providers (e.g., ParkMe, Parkopedia, etc.) will be contacted to possibly include the University’s parking assets in their online / mobile directories</p> <p><b>F.</b> To the extent practicable, the University will work with the mobile parking application providers to consider linking real-time parking availability information to their mobile platforms; technology available at the time of garage completion will be reviewed to determine the most appropriate platforms for information</p> <p><b>G.</b> Campus athletic and other special event venues, as well as the Pike Garage, Admissions office, and other key locations, will have brochures and/or posters containing QR Codes for the University’s parking website, and/or mobile parking and ticket purchase applications</p> <p><b>H.</b> Systems presently exist to reserve parking for special events through printed credentials that may be included with a mailed ticket package, or be available for downloading to a smart phone; these systems and the potential to reserve parking for specific facilities should be explored in the future and decisions made about the most appropriate technology to be used to facilitate Villanova’s parking and traffic</p>



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