

University of Notre Dame

2016 Parking Committee Final Recommendations

Fall 2016

Executive Summary

In February of 2016, Notre Dame's Executive Vice President, John Affleck-Graves, convened an expanded Parking Committee comprised of faculty, non-exempt and exempt staff, and undergraduate and graduate students. This committee was charged with analyzing the following four aspects of parking: the on-campus shuttle service, surface lot parking, the feasibility of a parking garage and the reserved parking pilot program. The committee met twelve times from February through November of 2016, and submitted final recommendations at the end of November.

The committee respectfully submits the following recommendations, in the order of priority for the committee:

Shuttle

- 1) Combine the current shuttle route into one route with stops conducive to accessing the majority of campus. As part of this proposed route, the following aspects are critical:
 - a. Wait times at a shuttle stop during peak hours should be no more than 10 minutes.
 - b. Shuttles should go both directions on the route, allowing riders to travel to all destinations from any stop.
- 2) Increase the number of shuttle shelters on campus from four to nine.
- 3) Invest in shuttle technology enhancements including a mobile application or other mechanism to provide riders with real-time shuttle information.
- 4) Improve shuttle system visibility and safety enhancements through consistent branding of the shuttle system, making shuttles, stops, and routes easily identifiable, especially for visitors to campus.
- 5) Continue to provide shuttle service through an outside vendor, rather than University-owned and operated, that owns, maintains, and operates shuttles equipment.

Parking Garage

- 6) Construct a 1,000 to 1,200 car parking garage in the vicinity of Legends, with the following parameters:
 - Daily use of the garage is available to all faculty, staff, students, and visitors.
 - In order to offset the cost of constructing and maintaining the garage, all individuals will have to pay to park in the garage.
 - The garage should have hourly and daily parking rates, but not allow for overnight parking.
 - The University should explore the demand for selling annual permits to the parking garage. If annual passes are offered, these passes should not exceed 50 percent of the garage capacity and a sliding fee scale based on salary should be considered.
 - The University should explore selling football parking passes to help offset costs.

- The University should explore benefaction to help offset costs, especially if a restaurant or social space is included as part of the garage structure.
- 7) Plan for a second parking garage on the north side of campus when the northeast quadrant of campus becomes more populated.

Surface Lots

- 8) Create a new paved surface lot for faculty and staff in 2018 when the O’Hara-Grace apartments are demolished.
- 9) Create a new paved surface lot on the green space to the east of Innovation Park, currently utilized for football game parking.
- 10) Create safe pedestrian right of ways and aesthetically pleasing elements of the natural environment in all new surface and garage parking, in order to create shade and break up the space wherever possible.

Technology

- 11) Procure new parking lot technology that could combine easy parking lot access, with the ability to know whether a parking lot has vacancies.
- 12) Invest in the necessary technology to assess traffic patterns on a regular, ongoing basis.

Short-term Parking

- 13) Consider adding 90-minute faculty and staff spaces where possible.
- 14) Change all existing one hour spaces to 90-minute spaces for consistency.
- 15) Adjust current parking policy stating that faculty and staff with “B” decals “are authorized to park on the central campus for one hour in non-reserved spaces for purposes of conducting official business” to allow for 90-minutes, making all short-term parking time limits consistent.

The committee also determined that a bike-sharing program would be worthy of further exploration, although it was outside the purview of the committee’s charge. Sarah Misener, on behalf of Campus Services, and Mike Seamon on behalf of Campus Safety, agreed to sponsor and conduct an in-depth study of creating a bike-sharing system on campus.

Finally, campus feedback and committee discussion provided varied and strong opinions about the reserved parking pilot program. As a result, the committee determined that it must gather more input from faculty and staff to help to help inform recommendations and the Office of Strategic Planning and Institutional Research has agreed to create and administer a reserved parking survey. Due to other campus surveys being conducted this fall, the survey will be released in January 2017, at which point the committee will reconvene to review the responses and make recommendations regarding the reserved parking pilot program.

Full Report on Activities of the Parking Committee

Section I: Introduction

In February of 2016, Notre Dame's Executive Vice President, John Affleck-Graves, convened an expanded Parking Committee comprised of faculty, non-exempt and exempt staff, and undergraduate and graduate students. Affleck-Graves formed the committee in response to significant feedback on the challenges around parking, especially during a time of historic growth for campus.

Affleck-Graves welcomed input from the committee on all aspects of parking, and asked that the committee provide recommendations on the following components of parking in particular:

- Surface lot parking
- On-campus shuttle service
- Parking garages
- Reserved parking pilot program

The committee was also asked to balance the environmental, social, aesthetic and economic impact of its recommendations. While some additional expense is anticipated, Affleck-Graves asked for the recommendations to be as budget neutral as possible to allow the University to focus on other student and faculty priorities. Consistent with Affleck-Graves' charge, the committee sought guidance in its deliberations and recommendations from the University's mission, goals and values, in particular: Catholic character; stewardship of the University's human, physical, and financial resources; accountability; and teamwork.

Section II: Committee Members and Meetings

Starting in February of 2016, the following committee convened:

- *Mike Seamon, Vice President Campus Safety and Events - Chair*
- Amy Barrett, Faculty, Law School
- Peter Bauer, Faculty, College of Engineering
- Matthew Blazejewski, Senior Advisor, Office of the Executive Vice President
- Brian Coughlin, Associate Vice President Student Development
- Hal Culbertson, Faculty, School of Global Affairs
- Monique Frazier, Program Manager, Office of Institutional Equity
- John Gaski, Faculty, Mendoza College of Business, representing Faculty Senate
- Karly Harrod, Graduate Student
- Andrew Helmin, Student Government, Undergraduate Student
- Phil Johnson, Senior Director of Campus Safety and Emergency Management, Campus Safety

- Kyle Johnson, Director of Finance and Administration, Notre Dame Security Police
- Ray'Von Jones, 2015-16 Student Government, Diversity Council Representative (graduated Spring 2016)
- Robyn Karkiewicz, Acquisitions Coordinator, University Press, representing Staff Advisory Committee (SAC)
- Rob Kelly, Associate Athletic Director, Ticketing, Premium and Technology
- Greg Kucich, Faculty, College of Arts and Letters
- Brian Levey, Faculty, Mendoza College of Business
- Monica Markovich, Analyst, Office of the Executive Vice President
- Doug Marsh, University Architect and Associate Vice President, Facilities Design and Operations
- Sarah Misener, Associate Vice President Campus Services
- Susan Monroe, Manager of Department Administration, Biological Sciences
- Patrick Murday, 2015-16 Student Government, University Affairs Representative
- Les Niedbalski, Parking and Traffic Operations Manager, Notre Dame Security Police
- Marty Ogren, Associate Director Warehouse, Delivery & Transportation, Campus Services
- Drew Recker, 2016-17 Student Government, Athletics Representative
- Sayanty Roy, Graduate Student
- Keri Kei Shibata, Chief of Police, Notre Dame Security Police
- Sharon Struck, Department Admin Coordinator, Office of Information Technologies
- Rebecca Surman, Faculty, College of Science
- Sean Vilanova, Graduate Student Union, Graduate Student

Over the tenure of the committee, several members changed positions within the University or graduated. New members were invited to join the committee to ensure appropriate representation of all entities, while all original members remained on the committee to provide continuity. The committee met twelve times from February through November of 2016. The majority of the committee was able to attend each meeting, either in person or via phone. Minutes for each meeting are included in Appendix A.

Section III: Current State of Parking

Parameters for Increasing Campus Parking

Doug Marsh provided an overview of the current and near future state of parking and construction at the first committee meeting to help the committee understand the parameters of adding parking. He explained the tenets of the campus plan, which guide all construction, and the committee should keep in mind when making recommendations. The tenets influencing the work of the committee include stewardship of the natural environment; stewardship of the built environment and architectural forms, styles, and material; organizing the campus with axes, focal

points, quadrangles, and other exterior spaces; the ceremonial focus of Notre Dame Avenue; and separation of pedestrian and vehicular traffic.

Marsh also explained the work that had already been done to identify opportunities for additional surface lot and structured parking, as well as the general costs of each, by dividing the campus into quadrants. A map of the parking lots and shuttle routes as they stand in November 2016 is provided on page 7. In the northeast quadrant of campus, the O’Hara Grace apartments are scheduled for demolition in the summer of 2018. An additional 500 car surface lot could be created in that location. A parking garage with a capacity for 750-1000 cars could be put in the current B16 due east of Hammes Mowbray Hall. The northwest quadrant of campus does not have a significant need for additional parking, and there is less availability to add more than small lots. The D6 lots on the west side of campus cannot be expanded, but currently have capacity during normal business days. Similar to the northwest quadrant, there is also not high demand for parking in the southwest quadrant of campus. However, there is the potential for the BK1 lot, southwest of the Hammes Bookstore to be expanded further. The southeast quadrant of campus currently has the highest demand for parking which will further increase as current construction projects are completed and faculty and staff occupy them starting in summer 2017. A parking garage with capacity for 750 to 1,000 cars could be built in the vicinity of Legends.

Costs of Creating New Parking

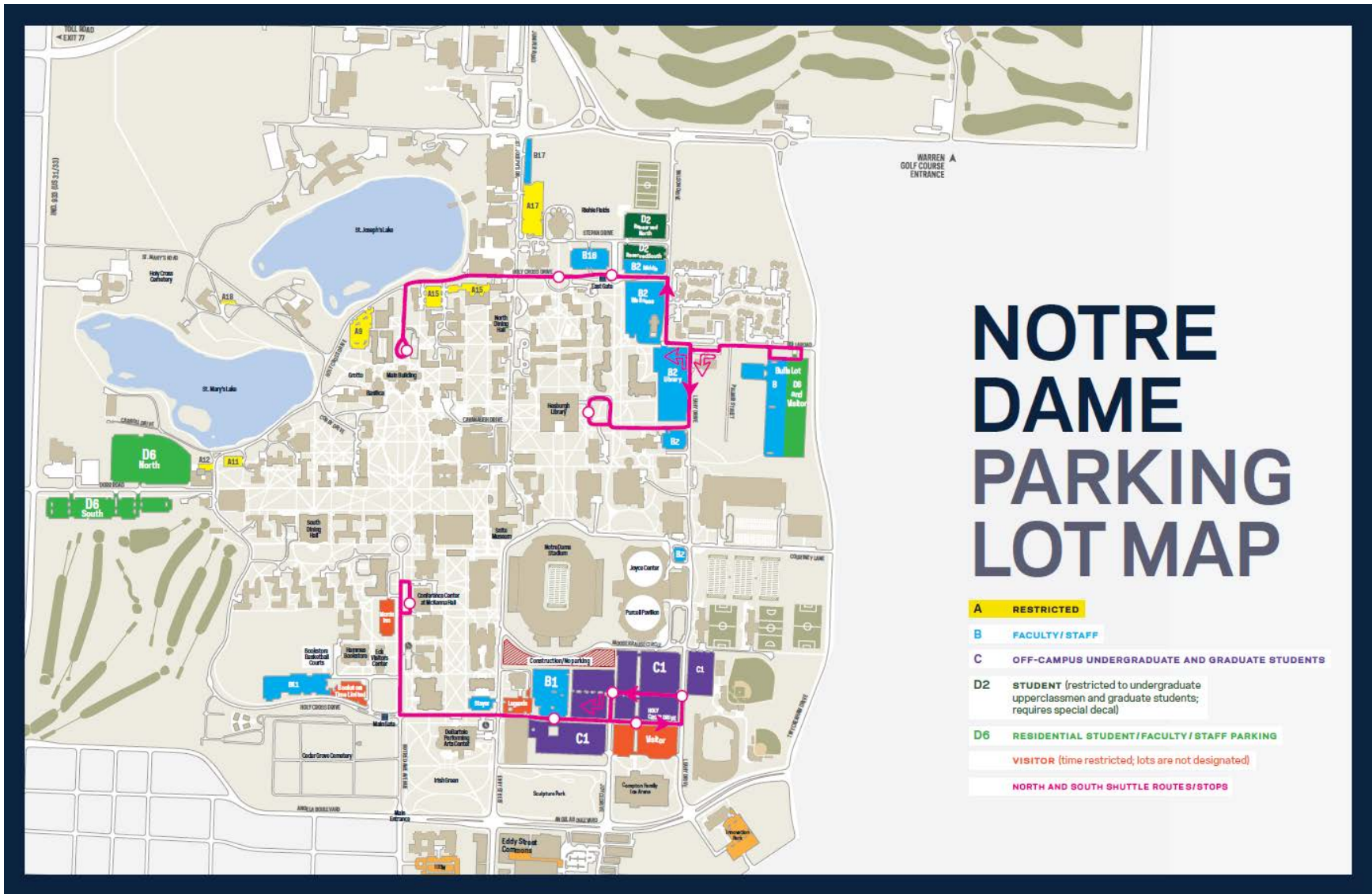
The committee learned there are several factors influencing the cost of constructing new parking, and that the cost difference between building a surface lot and a parking garage is significant.

The cost of a surface lot is approximately \$4,000 per parking space. An aesthetically pleasing above-ground parking garage can range from \$20,000 to \$30,000 per parking space, based on building construction and site costs. The cost for a below ground parking garage can range from \$50,000 to \$80,000 per parking space. The significantly higher cost is influenced by the soil and ground conditions, the more complicated construction, water proofing, and requirements for constant ventilation. Table 1 demonstrates the cost variance using costs appropriate for construction at the University.

Table 1: Costs of Construction of Parking Lots and Garages

Number of Parking Spaces	Surface Lot (\$4000/space)	Above Ground Garage (\$30,000/space)	Below Ground Garage (\$80,000/space)
500	\$2,000,000	\$15,000,000	\$40,000,000
750	\$3,000,000	\$22,500,000	\$60,000,000
1000	\$4,000,000	\$30,000,000	\$80,000,000

In addition to this information, the committee reviewed a variety of data provided by the Parking Office to gain an understanding of the current state of parking on campus. All of the data is included in Appendix B.



Daily Parking

The committee reviewed data for all major exterior parking lots where the majority of faculty, staff, and students park. The Parking Office conducted occupancy surveys of the most utilized parking lots in February/March 2016, at 2 p.m. Monday through Thursday each day. The time and dates were chosen specifically because parking lots have the highest occupancy rates in winter mid-afternoons. Table 2 shows the occupancy rates for lots surveyed.

Table 2: Parking Lot Occupancy

Parking Lot	Total Spaces	ADA	Other Reserved Spaces*	Available for General Parking	Spaces Occupied**	Spaces Vacant	% Vacant
Bulla Lot	881	20	0	861	816	65	8%
B2s*** and B16 Lots	975	35	164	776	857	118	15%
D2 Lots	444	26	0	418	408	36	9%
Stadium/Joyce	2250	83		2167	1952	298	14%
BK1	242	7	48	187	184	58	31%
D6 Lots	1270	26	0	1244	974	296	24%
*includes Reserved Parking program, maintenance, etc.							
**Average Monday - Thursday at 2pm from 2/29/16-3/03/16							
***Includes ROTC, McCourtney, Wellness, and B2 North							

After reviewing this data, the committee concluded that there are a sufficient number of spaces on campus, 8am – 5pm, to accommodate the demand for parking spaces. However, the available parking is not always convenient, nor easily located, especially after 8am.

Event Parking

The supply and demand of available parking spaces changes significantly during large campus events. For example, during the winter, there are occasions on which campus hosts two or more large events such as a basketball game, a hockey game, and a performance at the DeBartolo Performing Arts Center (DPAC) in the same evening. Parking lots on the south part of campus often become quite congested with automobile and pedestrian traffic and can result in a frustrating experience for guests attending these events, as well as faculty, staff, and students trying to enter or leave campus.

Purcell Pavilion (Purcell) and Compton Family Ice Arena (Compton) are used for many large campus or community events throughout the year so this scenario is manifested on multiple occasions. In addition, the opening of the Duncan Student Center, Corbett Family Hall, and the Music and Sacred Music Buildings is anticipated to exacerbate this issue, which could ultimately deter visitors if not adequately addressed.

Shuttle

The on-campus shuttle was expanded in the Summer of 2014 to include north and south routes. During the summer of 2015 the north route was split to include dedicated routes to Main

Building and Hesburgh Library during peak hours. Table 3 shows average daily ridership for the south and north routes from June 2015 through February 2016.

Table 3: Average Daily Shuttle Ridership

Month	Main Bldg Shuttle	Library Shuttle	Combined North Shuttles	South Shuttle
June 2015	30	20	50	6
July 2015	52	25	77	8
August 2015	145	53	198	23
September 2015	194	208	402	18
October 2015	201	218	419	23
November 2015	246	236	482	46
December 2015	242	270	512	25
January 2016	288	318	606	81
February 2016	279	286	565	91

While ridership varies significantly based on time of year and weather, the north shuttles are utilized much more consistently throughout the year, despite the Stadium/Joyce parking lots being the most utilized lots. Periodic (every 2-3 years) reviews of ridership could result in adjusting shuttle routes and stops.

Reserved Parking

The expanded reserved parking pilot program was started in the Spring of 2015. Reserved parking was available in the B16, B2 Wellness, B2 ROTC, Stayer, and BK1 lots to any full-time faculty or staff. The number of requests for reserved parking exceeded the amount of spaces available. For lots where the number of requests exceed available spaces, a lottery was conducted. Faculty and staff at all levels agreed to purchase the reserved spaces offered to them.

Handicapped (ADA) Parking

The University currently has 430 accessible spaces across parking lots throughout campus. The federal government requires a minimum number of accessible spaces based on the total number of spaces in a parking lot. The University aims to exceed this requirement whenever possible, and currently exceeds the overall required number of spaces by 39 percent. A full breakdown of the accessible spaces on campus by lot is available in Appendix C.

AECOM Consultants

The committee engaged AECOM consultants, which has experience in assessing the transportation and parking needs for large organizations in the Midwest and nationwide. AECOM consultants, Jeromie Winsor and Eric Dryer, conducted an assessment of the current parking and shuttle systems, and provided the committee with recommendations on ways to address the parking demands and improve the campus shuttle system. Their analysis showed that daily parking demand has grown by 1-2% annually, but the parking supply has been disrupted by construction and moved further away from the campus core. In addition, they suggested several

opportunities to improve the shuttle system including: visually enhancing the shuttle buses and stops through consistent branding; combining shuttle routes to provide connectivity between the north and south of campus; and integrating technology to provide riders real-time information on shuttle locations.

Section IV: Feedback from the Campus Community

After the initial committee meeting, the committee launched a multi-faceted communications plan to receive feedback from campus. The communication plan included the development of a parking committee website (<http://ndsp.nd.edu/parking-and-traffic/2016-parking-committee/>), which provided information about the committee, its members, and the work with which the committee was charged. Articles about the work of the committee ran in both the student newspaper, The Observer, as well as in the staff newspaper, NDWorks.

On March 22, 2016, Affleck-Graves sent emails to the entire campus community to solicit feedback. The emails provided multiple ways to provide feedback including: emailing a committee member directly; emailing a central inbox at parkingfeedback@nd.edu; utilizing a feedback form, anonymously if desired, found on the parking committee website; or calling the Director of Finance and Administration for Notre Dame Security Police.

Parking committee members received feedback from colleagues and associates individually. The committee was also provided with the data and feedback offered through the 2015 ImproveND survey, as well as Bright Ideas submissions.

The committee reviewed the feedback collected through the central email and survey at the April 18, 2016 meeting. There were 464 responses to the survey and 77 emails to the central inbox over the course of the Spring 2016 semester. All of the feedback collected centrally is included in Appendix D.

As part of the survey, respondents indicated information on their primary role at the University as well as their primary building. The breakdown of respondents by primary role is included in Table 4 below.

Table 4: Parking Survey Responders Primary Role on Campus

	Faculty	Staff	Graduate Student	Student	Undisclosed	Total
Survey Recipients	1400	4000	3800	8500		17,700
Survey Responses	88	225	90	45	12	460
Response Rate	6%	6%	2%	.5%		2.6%

In addition, over 80 different buildings were represented, which is nearly half of the buildings on campus. Several respondents indicated that they are frequently in multiple buildings (e.g. office building and lab or teaching building), or that they anticipate moving to a new building within a year.

While feedback was specifically requested on the topics with which the committee was charged, respondents provided comments on a multitude of additional types of parking, including: short-term, accessible (ADA), motorcycle, carpool, expectant/nursing mother, and Low Emission Vehicle (LEV) parking. Other comments included incentivizing faculty, staff and students to utilize public or bike transportation. The committee chose to make recommendations on a bike sharing program, short-term parking, and technology enhancements, in addition to its initial charges.

Section V: Committee Recommendations

1. Shuttle Service Enhancements

The shuttle ridership data clearly demonstrates that the south route of the shuttle system is underutilized, as compared to the north route. Furthermore, feedback from the campus community expressed displeasure with long and varied wait times, cold and wet conditions at shuttle stops, and inconvenient routes, especially for individuals who want to travel from the north to the south end of campus or vice versa. Since walking/commute time from the vehicle to various buildings, particularly those in the middle of campus, was a significant concern raised by faculty and staff, and parking spaces are increasingly on the outer edge of campus, an effective shuttle system is critical to addressing parking concerns on campus.

With input from the committee, and a review by AECOM consultants, the following changes and enhancements are recommended:

Recommendation 1: Connect the current north, south, and Bulla shuttle routes into one route. Appendix E shows diagrams of one option for a new route. Wait times should be the same or less than the current waits, which would necessitate the addition of shuttle buses.

Recommendation 2: Increase the number of shuttle shelters from four to nine so that there is a shelter at each stop as noted on the diagram in Appendix E. This includes creation of a bus pull-off/turn-around area near Snite Museum, and a pull-off at the Bulla Parking lot ensuring safe loading/unloading of passengers.

Recommendation 3: Develop and install real-time transit technology on buses, accessible through a mobile application, allowing riders to track the location and expected arrival for the next-arriving bus at their desired stop.

Recommendation 4: Improve shuttle system visibility and safety enhancements through consistent branding of the shuttle system, making shuttles, stops, and routes easily identifiable, especially for visitors to campus.

Recommendation 5: Continue to provide shuttle service through an outside vendor, rather than University-owned and operated, that owns, maintains, and operates shuttles equipment.

Costs associated with the above five recommendations are included in Table 5 below:

Table 5: **Costs of Proposed Shuttle Enhancements**

Recommendation	Current FY Expense: July 2016 – Jan 2017	Current FY Expense: Feb 2017 – July 2017	FY 18 Expense: July 2018 – June 2019
Connect north, south, Bulla routes; add 4 th bus (Spring Semester 2017)	\$345,000	\$430,610	\$738,000
Real-time transit technology in buses and mobile app	\$0	\$25,000	\$25,000
Additional shelters and pull-offs	\$0	\$85,000 (one-time)	\$125,000 (one-time)
Branding buses and shelters; schedules, signage	\$0	\$5,000 (one-time)	\$0
TOTAL	\$345,000	\$545,610	\$888,000

2. Parking Garages

As previously noted, data shows there is currently sufficient parking on campus to meet the needs of the campus community. However, as the current construction completes and campus continues to grow, it is anticipated that demand will exceed supply of parking spaces. By 2018, it is expected that nearly 400 faculty and staff will move to the south part of campus, occupying Jenkins and Nanovic Halls, Duncan Student Center, Corbett Family Hall, Music and Sacred Music Building, and Walsh Family Hall of Architecture. This will significantly increase the demand for parking spaces and exceed the current lot capacity, resulting in more people parking in the least desirable spaces furthest from campus. In addition, the many events held on the south end of campus at the Debartolo Performing Arts Center, the new event spaces at Campus

Crossroads, the Morris Inn Conference Center, and the athletic facilities further increase the demand on parking.

Recommendation 6: Construct a 1,000 to 1,200 space parking garage in the vicinity of Legends. This location is within a reasonable distance of much of DeBartolo quad, and the eastern portion of South quad. In addition, the parking garage would be conveniently located for event parking. The committee has identified the following parameters for the parking garage:

- Daily use of the garage is available to all faculty, staff, students, and visitors.
- In order to offset the cost of constructing and maintaining the garage, all individuals will have to pay to park in the garage.
- The garage should have hourly and daily parking rates, but not allow for overnight parking.
- The University should explore the demand for selling annual permits to the parking garage. If annual passes are offered, these passes should not exceed 50 percent of the garage capacity and a sliding fee scale based on salary should be considered.
- The University should explore selling football parking passes to help offset costs.
- The University should explore benefaction to help offset costs, especially if a restaurant or social space is included as part of the garage structure.

With these parameters as a guide, the Parking Committee worked with the Office of Budget & Planning on the financial analysis of a parking garage. Key findings include:

- The estimated construction cost for a 1,000 to 1,200 space garage (390,000 sq. ft.) is \$24.6 to \$25.3 million, not including Legends.
- Construction would be funded entirely through new debt issuance.
- Daily drive up rates would depend on duration of stay and will be priced to cover operating expenses of the parking garage.
- Net parking garage revenue will offset garage expenses (operating costs, repair and maintenance, and debt service)
- Initial annual parking garage revenue and expense are both anticipated to be \$2.1 to \$2.3 million.

Recommendation 7: Consider, at the appropriate time, construction of a second parking garage on the north side of campus when the northeast quadrant becomes more populated. The University Master Plan calls for additional research buildings that would eliminate existing parking. The parking garage should be built at the same time or just before these buildings are constructed to offset the removal of parking and in anticipation of the additional faculty and staff in the future buildings.

3. Additional Surface Lot Parking

The data and feedback demonstrates the need for additional parking in certain areas of campus, especially during events. While campus continues to expand, and new buildings are constructed in current parking lots, it is becoming increasingly difficult for all constituents to find parking easily or conveniently. The shifting of individuals to the new buildings will intensify this issue.

Surface Parking in the Northeast

The committee recognizes and is sensitive to the increased demand for parking in the northeast quadrant of campus and therefore identified the need for additional parking spaces.

Recommendation 8: Create a new paved surface lot for faculty and staff in 2018 when the O'Hara-Grace apartments are demolished. This could be a 500 space lot, costing approximately \$2,000,000. (Note: The committee understands that the long-term campus master plan includes the consideration of this site for a future academic research facility. This would result in any parking constructed on the site in the next 2-3 years to be converted to such an academic research facility at a later future date).

Surface Parking in the Southeast

In 2014, the parking lots south of the Joyce Center had 3,300 spaces. During the peak of construction activity, the number of available spaces in those lots decreased to 2,800. In addition, the lot south of the Hesburgh Center was lost to construction of Jenkins and Nanovic Halls, resulting in a loss of 183 spaces.

It was recently announced that the University Marching Band would permanently practice on Ricci Fields, which are north of Stepan Center. This move will provide the band with a permanent practice home and also make available the nearly 500 parking spaces in the Joyce C lots typically reserved for band practices throughout the fall semester. In addition, by the winter of 2018, the administrative trailers used to support the construction of the Campus Crossroads buildings will no longer be necessary, and that area can be repaved. These two changes will bring the Joyce lots to 3,232 spaces, which returns it to its approximate 2014 capacity. However, this will not be sufficient for event parking when multiple events are occurring simultaneously, especially when the new event spaces in Campus Crossroads are opened.

Recommendation 9: Create a new paved surface lot on the green space to the east of Innovation Park, currently utilized for football game parking. The committee learned that this location is currently utilized for parking of 300 cars during football games. This space could be paved and perhaps expanded, to create an additional 500 spaces, at a cost of \$2,000,000. In addition to alleviating event parking congestion, football parking passes could be sold at a cost of \$100 per game and net \$160,000 per year, which could help offset the cost of the creation of the parking lot.

Recommendation 10: Create safe pedestrian right of ways and aesthetically pleasing parking lots, including elements of the natural environment to create shade and break up the space wherever possible. As new parking lots are created or old are improved, it is critical to consider both of these elements in the design.

4. Technology Enhancements

Feedback provided from the campus community expressed frustration with accessing gated parking lots. Frustrations ranged from gates or card readers not working properly resulting in traffic backups, to the inconvenience of using the cards to access the lots. On occasion, lot gates remain open, which can result in unauthorized access to lots. In addition, the proxy card technology is quickly becoming obsolete. The committee asked that the Parking Office explore integrating technology with the upcoming Irish1 Card, but concluded that it would not solve some of the existing challenges, and could exacerbate others.

These challenges are compounded when individuals cannot readily find available parking spaces. As described in Section 2 above, the number of parking spaces is sufficient. However, during peak hours it can be difficult to find available spaces quickly and easily, which can add significant time to commutes.

Recommendation 11: Procure new parking lot technology that could combine easy parking lot access, with the ability to know whether a parking lot has vacancies (such as a signal at the entrance of a gated lot). Ideally, this technology might be integrated with a mobile application so that users can better plan their commutes. The committee recommends that the University conduct an RFP to identify vendors for technology enhancements.

Recommendation 12: Invest in the necessary technology to assess traffic patterns on a regular, ongoing basis. The committee learned from both Police Chief Keri Kei Shibata, as well as University Architect Doug Marsh, about the challenges around predicting and planning for campus traffic patterns. A regular, ongoing assessment of campus traffic patterns would allow for better future planning, as well as the ability to make adjustments in a more timely manner, as necessary.

Both of these recommendations will assist the University in providing a better daily parking experience, and alleviate some of the frustrations individuals experience when trying to park.

5. Creation of Additional 90 Minute Spaces for Faculty and Staff

The committee received consistent feedback that there is a need for more short-term parking to allow faculty and staff to attend meetings more easily. In response, the committee recommended that 90 minute parking spaces be created in several locations, as described in Table 6.

Table 6: Locations for 90 Minute Spaces

Location	New 90 Minute Spaces
Between O’Shaughnessy/Decio	5
Galvin	5
Information Technology Center (ITC)	10
Grace/Dunne Hall	4

While the committee agreed that these additions are an improvement, the new spaces are all on the east side of campus. There is still need for more in other areas of campus, especially the central, south, and west sides of campus.

Recommendation 13: Consider adding 90-minute spaces in strategic locations throughout campus as advised by the University Architect and Campus Safety.

Recommendation 14: Change all existing one hour spaces to 90-minute spaces for consistency.

Recommendation 15: Adjust current parking policy stating that faculty and staff with “B” decals “are authorized to park on the central campus for one hour in non-reserved spaces for purposes of conducting official business” to allow for 90-minutes, making all short-term parking time limits consistent.

The committee believes that implementing these recommendations should alleviate the demand for short-term parking in the most populous areas of campus.

6. Bike-sharing program

The committee heard recommendations to increase biking on campus and in particular to consider creating a bike-sharing program for faculty, staff, and graduate students. Two models were suggested for consideration. The first model is departmentally owned bikes for use on campus. There are already some examples of this, such as in the Keough School of Global Affairs, and they are well received. The second model is bike stations at popular parking lots and areas of campus, where users can check out a bike for a pre-set time and cost and return it to the same, or another, station. These systems are especially popular at Universities in temperate climates, but some schools with more diverse weather, such as Purdue University, also utilize them. There are vendors that create an entire system from start to finish, or the University could choose to create its own. The committee agreed that a bike-sharing program should be explored more fully, but determined it was out of the purview of the work of the committee. Sarah Misener, on behalf of Campus Services, and Mike Seamon on behalf of Campus Safety agreed to sponsor and conduct a more in-depth study of creating a bike-sharing system on campus.

7. Reserved Parking

Finally, campus feedback and committee discussion provided varied and strong opinions about the reserved parking pilot program. As a result, the committee determined that it must gather more input from faculty and staff to help to help inform recommendations and the Office of Strategic Planning and Institutional Research has agreed to create and administer a reserved parking survey. Due to other campus surveys being conducted this fall, the survey will be released in January 2017, at which point the committee will reconvene to review the responses and make recommendations regarding the reserved parking pilot program.