NORTH CENTRAL COLLEGE
NAPERVILLE, ILLINOIS
Founded 1861

MASTER LAND USE PLAN
2010-2020

Adopted by City Council on July 20, 2010

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I. Background to the 2010-2020 Master Land Use Plan

The first Master Land Use Plan for North Central College, incorporated into the City of Naperville's Master Land Use Plan, was adopted by the City of Naperville in 1989 along with the College and University District Ordinance. The plan was in response to a desire by the College, neighbors, and the City to anticipate and publicly document the College's projected facility needs and land use changes. A subsequent 10-year plan was adopted in 2000, and amended as further opportunities presented themselves. The master land use planning process has proven to be a valuable tool to the College in documenting the expected physical evolution of the campus and soliciting ideas and input from a variety of constituencies.

This 2010-2020 Master Land Use Plan has been developed based on input from College faculty, staff and students; the City of Naperville planning staff; and the College's neighbors who were convened in three meetings to review the concepts contained in the plan and provide feedback. The College also had several meetings with the East Central Homeowners Organization (ECHO) Board to solicit their input as well. Early drafts were available for viewing on the College's website as is this document at http://northcentralcollege.edu/x50188.xml. The College hired U.S. Equities Realty to lead a consulting team consisting of Hitchcock Design, Metro Transportation, Cemcon (a consulting engineering firm) and Dommermuth, Brestal, Cobine and West, Ltd., attorneys at law to assist in creating the plan.

The Master Land Use Plan summarizes the College's anticipated facility needs and land use changes over the next 10 years. The appended documents contain parking and traffic studies, infrastructure and circulation suggestions, and a stormwater management and utility support summary, all used as references in the development of this plan.

The anticipated needs and recommendations contained in this plan represent the College's current thinking based on today's information and circumstances. In some cases alternatives are presented where more than one feasible option exists. As in the past, the College will comply with all applicable Naperville Municipal Code and, if the College desires to amend its master land use plan to accommodate an unforeseen issue, changing needs or new opportunities, it will do so through the customary public process.

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II. Strategic Plan Context

College Character

Founded in 1861, North Central College is an independent, comprehensive college of the liberal arts and sciences that offers more than 50 undergraduate majors and graduate programming in six areas. With more than 2,300 full-time undergraduates and nearly 500 part-time undergraduate and graduate students, the College is committed to academic excellence, a climate that emphasizes leadership, ethics, values and service, a curriculum that balances job-related knowledge with a liberal arts foundation and a caring environment with small classes.

The College is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools and has been in continuous operation since its founding.

Mission, Character and Commitment

Our Mission

- North Central College is a community of learners dedicated to preparing students to be informed, involved, principled and productive citizens and leaders over their lifetime.

Our Character

- North Central College is a comprehensive liberal arts college affiliated with the United Methodist Church.
- It is an undergraduate institution with a strong residential character that offers selected master's level programs.
- North Central College is a regional and national college in recruitment, programs and aspirations, which has a special relationship with Naperville and the wider community, and serves the community with its programs and facilities.

Our Commitment

- Excellence in teaching and learning.
- A strong liberal arts foundation, balanced curriculum, rich array of extracurricular experiences, and an emphasis on leadership, ethics, values and service.
- Witness by faculty, staff and students for values of free and open inquiry, integrity and civility.
- An education that is personal in character, with a mentoring, engaged faculty, small classes and a healthy student/faculty ratio.
- "One faculty, one degree" for all graduates, high academic standards and rigorous expectations of faculty as teachers and scholars.
- International learning.
- Recruitment and support of qualified students, faculty and staff from diverse ethnic, religious and economic backgrounds, consistent with the inclusive tradition of the United Methodist Church.

While these statements of mission, character and commitment help define North Central College as an institution of higher learning, they also provide a guide for the physical

appearance, organization, and development of the College campus as set forth in this Master Land Use Plan.

Enrollment

The table below summarizes North Central College's enrollment for the 2009-2010 academic year, as well as the upper enrollment objectives as set forth in the College's Strategic Plan for 2007-2012.

	2009-2010 Academic Year	2007-2012 Strategic Plan Objective
Full-Time Undergraduates	2,333	2,400
Part-Time Undergraduates	189	200
Graduate Students	276	500
Total Students	**2,798**	**3,100**

As the table indicates, the College hopes to continue incremental growth of the full-time undergraduate and graduate student populations, while sustaining the part-time undergraduate population slightly above current levels. The focus on full-time undergraduates underpins the comprehensive nature of the College's liberal arts curriculum. It also maintains the strong residential character of the campus, as nearly 60% of full-time undergraduates are residents of student housing. The growth of North Central's full-time residential student population has created a critical mass for liberal learning and on-campus programming, and has transformed the College's weekend culture.

It is very important to note that the College's 5-year strategic plan will be updated twice during the 10-year period covered by this master land use plan; as such, strategic enrollment objectives, among other things, may be revisited and change as a result of the 2012-2017 and 2017-2022 strategic plan efforts.

II. Strategic Plan Context

Physical Resources

The 2007-2012 Strategic Plan sets forth priorities for physical resources necessary to further the mission of the College, including the following:

- Add to the number of inviting spaces (formal and informal) on campus where community members, faculty, students and staff can meet, discuss, debate and learn from each other;

- Develop additional residential space on or off campus;

- Plan for, fund, and initiate construction of a 21st-century science facility to meet the needs of science instruction and research; and

- Review new construction, renovations, equipment upgrades, programs, and day-to-day operations as to environmental and fiscal sustainability.

Site Context

Map1

Scale: 1" = 500 feet

0 125' 250' 375' 500'

- Park Space
- North Central College Campus District
- Naperville Historic District
- Institutional Use
- Downtown Naperville

Ogden Avenue
U.S. Route 34
Eighth Avenue
Seventh Avenue
Sixth Avenue
Fifth Avenue
Fourth Avenue
North Avenue
School Street
Franklin Avenue
Benton Avenue
Van Buren Avenue
Jefferson Avenue
Chicago Avenue
Spring Avenue
Douglas Avenue
Jackson Avenue
Water Street
Aurora Avenue
Porter Avenue
Hillside Road
Prairie Avenue
Highland Avenue
Hillside Avenue
Parkside Avenue
Anne Road
Elizabeth Avenue
White Oak Drive
Mt Vernon Court
Waverly Court
Biltmore Court
Monticello Drive
Fairwinds Court
Lyndhurst Court
Morven Court
Bellingrath Court
Mattande Lane
Camarie Court
Bernette Court
Webster Street
Main Street
Center Street
Ellsworth Street
Brainard Street
Loomis Street
Sleight Street
Wright Street
Columbia Street
Julian Street
Huffman Street
Washington Street
Melody Lane
Willow Road
Sunset Road
Thornwood Drive
Wellner Road
Wehrli Drive
DuPage River
Kroelher Park
Columbia Estates Park
Burlington Northern Santa Fe
Kendall Park
Naperville Metra Station
Burlington Square Park
DuPage Children's Museum
Washington Junior High School
SS. Peter & Paul Catholic School
North Central College
Ellsworth Elementary School
Little Friends
Country Commons Park
Van Buren Parking Deck
Central Park
Naperville Historic District
Downtown Naperville
Central Parking Facility
Naperville Riverwalk
East Greens Park
Highlands Elementary School

III. Today's Campus

North Central College's physical campus continues to evolve and adapt to enrollment growth, shifting needs of students and faculty, and changing pedagogies and programs. The College's unique location in an historic district and adjacent to a dynamic central business district has also created opportunities for North Central to enhance the campus in ways that strengthen both the downtown and the surrounding neighborhood.

Today's campus is different in many important ways than the campus of ten years ago. The College continues to manage enrollment growth toward its strategic goals, and has gradually shifted toward a greater resident population among its full-time undergraduates. Since the late 1990s, North Central College has invested more than $110 million in the physical transformation of the campus. Much of this investment has moved the College away from traditional "academic", "residential", and "recreational" cores to a more dispersed pattern of uses throughout its geography. The College has also made use of properties both near campus and off-campus in ways that begin to shift the definition of the physical campus from rigid physical boundaries to a better inter-relationship and compatibility with the neighborhood and downtown.

Map 2 illustrates current campus conditions, including all existing building and parking facilities with parking space counts. Map 3 highlights important campus open spaces and potential opportunities for future open space locations.

Successful Trends from Recent Experience

The previous 10 years have been a very active time on campus for facility improvements, new facility development, and land use management changes. It is unlikely that the next 10 years will see the same volume of physical changes. Nevertheless, the College has achieved important successes from recent experience that will continue to guide future initiatives.

1. *Successfully integrating near-campus activities*: The number of activities that occur outside the contiguous boundaries of the College district has grown. These include the purchase and renovation of Meiley-Swallow Hall for arts and theater space, the acquisition of 999 E. Chicago Ave. for a maintenance facility and theater shop and the leasing of Naper Place in downtown Naperville for student residences. These initiatives have proven that campus activities located a few blocks from the traditional College district boundaries can successfully relate to the campus, provide a greater diversity of experiences for students, and improve the overall campus quality and neighborhood environment.

2. *Interspersing land uses*: The area of campus north of Benton has traditionally served as the core of classroom space for the College, while the South Campus (south of Chicago Avenue) was dedicated almost exclusively to athletic and recreation facilities. However, over the past 15 years the College has successfully created instructional space in more diverse locations throughout campus, including the former bleacher area that is now Benedetti-Wehrli Stadium, the new Wentz Concert Hall and Fine Arts center, and the adaptive reuse of Meiley-Swallow Hall. Additionally, the new Res/Rec Center has created a substantial

student residence population in the traditional athletic core south of Chicago Avenue. The interspersing of use types throughout campus is in keeping with a trend toward better live/learn environments on college campuses, and recognizes that the educational experience goes well beyond the classroom.

3. *Increasing community use of College facilities:* The dramatic expansion of College facilities in recent years has produced several new venues that serve Naperville and the wider community. Examples include the two-year residency of the Chicago Fire at Benedetti-Wehrli Stadium with successful management of parking and attendance by the College; the DuPage Symphony Orchestra making its home in the new Wentz Concert Hall and Fine Arts Center, along with performances by the Chicago Symphony Orchestra, Wynton Marsalis, Natalie McMaster, the Young Naperville Singers, Rachel Barton Pine, Anderson Bookstore book signings (Ted Turner and Gary Moore), Naperville Chorus, New Covenant Church Chorale, Naperville Men's Glee Club, Indian Prairie School District 204, and others; theater performances and art exhibitions in Meiley-Swallow Hall and the Madden Theater; and the renovations of Koten Chapel in Kiekhofer Hall and of the Rolland Center Boilerhouse Café for shared use with the community. More than 150 community events take place on campus every year. The College uses its location in a unique neighborhood and city as a prime recruiting advantage, but also recognizes that the College itself contributes to the character of its community as a cultural and educational amenity. The College will continue to look for opportunities to strengthen community and serve a wide variety of constituencies.

4. *Creating informal meeting spaces*: The College has made an effort in all of its recent building projects to incorporate informal meeting spaces where students can interact with one another and with faculty, including spaces such as Smith Hall in Old Main and a conference room in the stadium, the Rolland Center and Boilerhouse Café, Koten Chapel and other spaces in Kiekhofer Hall, and renovated space in Oesterle Library. Additional exterior spaces such as Championship Plaza, seating areas outside of the Rolland Center and White Activities Center, and the central plaza just north of Old Main have been created and enhanced as well. The College will continue to look for opportunities to create informal gathering spaces in future building projects.

5. *Incorporating multiple uses in buildings:* The new Res/Rec Center in the south campus was originally conceived exclusively as a recreation center. The College subsequently added new student residence space as an outer shell to the building, taking up little more land space than the footprint of the recreation center. The added use not only helped to satisfy a space need of the College in a cost-effective way, but also improved the exterior relationship of the building to the neighborhood by adding windows and articulation to the façade; the result is an exterior façade that has a residential feel. The ability to incorporate multiple uses in buildings allows the College to use space most efficiently and maximize the utility of its facilities. The College will continue to look for opportunities to combine uses where it makes sense.

6. *Relocating appropriate uses off-campus*: Moving campus maintenance and business operations to 999 E. Chicago, and requiring first-year resident students to park cars remotely at All Saints Catholic Academy on West Aurora Avenue have enhanced the campus and neighborhood environment by reducing parking demand and removing automobile and truck traffic from neighborhood streets. The College will continue to be alert to opportunities to relocate activities that are best housed in locations remote from the campus and neighborhood.

7. *Providing 4-hour on-street parking:* The establishment by the City of Naperville—over twenty years ago—of a 4-hour on-street parking restriction has proven to be critically successful both in meeting short-term College parking needs and in maximizing the availability of street parking for neighbors and their guests after hours. The continuation of 4-hour on-street parking throughout the area is critical to the College in mitigating the need for additional surface parking lots and preserving green space.

Implementation of the 2000 – 2010 Master Land Use Plan

Below is an overview of projects implemented since the initial adoption of the 2000-2010 Master Land Use Plan.

New Facility Development

- *Wentz Concert Hall and Fine Arts Center:* Development of a new 58,000 square-foot arts venue at the northeast corner of Chicago and Ellsworth consisting of an 84,000 cubic-foot/605-seat concert hall, a 2,400 square-foot black box theater, a 1,400 square foot art gallery, rehearsal spaces, practice venues, and offices.

- *Res/Rec Center:* Development of a new recreation center with a 200 meter indoor track, four multi-purpose courts and training facilities, combined with a 265-bed student residence facility (with room for 100+ additional students when the fourth floor is built out) all using little more land area than the Recreation Center alone would have used.

Facility Rehabilitation and Reuse

- *Kiekhofer Hall:* Building renovation and expansion for faculty offices, classroom space and informal gathering spaces, as well as updating of Koten Chapel, to create space more suitable for lectures, recitals, and concerts as well as worship space.

- *Oesterle Library:* Renovation of lower level and first floor of this building to improve functionality and safety and increase assignable square footage to library-related uses.

III. Today's Campus

- *Rolland Center and Boilerhouse Cafe:* Conversion of former maintenance department space and boilerhouse to a contemporary coffee shop, cyber café, and informal gathering space for students, staff, faculty and the neighboring community.

- *Kroehler Science Center and Goldspohn Hall:* HVAC equipment replacement.

- *A.A. Smith House:* Donation to the College of the historic and restored residence, once the home of the first president of North Central College.

- *Meiley-Swallow Hall:* Purchase of the 25,000 square-foot former church, renovation and adaptive reuse as a 230-seat thrust stage theater, graphic design lab, 2D and 3D art studios and art exhibition space.

- *48 E. Jefferson Street:* Building purchase and establishment of offices for Leadership, Ethics and Values (LEV) program, Community Education and Camps and Conferences.

- *Naper Place:* Lease of space in the downtown Naperville apartment building for use as a 144-bed student residence facility.

- *999 E. Chicago:* Initial lease and subsequent purchase of building for campus maintenance, theater scene shop, file storage and business operations offices.

- *Benedetti-Wehrli Stadium: Installation of* a rubber infill artificial turf system in 2001. The utility of the turf is equivalent to acquiring several additional acres of land for athletic activities. What once could only be used a couple of times per week—especially in the rainy seasons—can now be used several times each day.

The table on the page 11 is a complete list of the major physical campus upgrades undertaken by the College since 2000.

<u>Traffic and Parking Facilities and Management</u>

- *Four-Hour On-Street Parking:* Continuation of 4-hour on-street parking on neighborhood streets.

- *Parking permit fees:* Increases in annual fees that have contributed to a considerable drop in the number of vehicles brought to campus by resident students.

- *Remote Parking:* Establishment of remote parking for first-year resident students at All Saints Catholic Academy on West Aurora Avenue and expanded to include all students as a less expensive option to on-campus parking permits. 170 remote parking permits were sold in fall 2009.

III. Today's Campus

- *Zip Cars*: Introduction of the Zip Car car-share program aimed at reducing automobile ownership, parking demand, vehicle congestion, fuel consumption and emissions.

- *Red Bike Program*: Bike sharing program designed to enhance non-automobile circulation through campus and reduce parking demand, including installation of additional bike racks.

- *Campus Safety and Security*: Reorganized to include 24/7 patrols, parking monitoring and other services to the campus community.

III. Today's Campus

Major Physical Campus Upgrades: 2000 - 2009

Year	*Building*	*Cost*	*Main Use*
2000	Schneller Hall	$6,455,835	Townhome residence hall
2001	Benedetti-Wehrli Stadium - Installation of artificial turf	$688,602	Football, soccer, lacrosse
2002/2003	Oesterle Library	$770,786	Renovation Phase I
2004	Rolland Center Boilerhouse Café	$1,360,167	Cyber café
2005	48 E. Jefferson House	$1,358,114	LEV program, community education
2005	999 E. Chicago Ave.	$1,509,800	Maintenance facility
2005	Oesterle Library	$706,374	Renovation Phase II
2006	Kiekhofer Hall/Koten Chapel	$4,576,786	Faculty offices/chapel, ministry and service
2007	Meiley-Swallow Hall	$10,063,308	Art and theatre
2008	Kroehler Science Center and Goldspohn Hall	$1,550,168	HVAC replacement
2008	Harold and Eva White Activities Center	$1,704,812	Cage renovation, new elevator
2008	Wentz Concert Hall and Fine Arts Center	$30,839,471	Music, theatre and art
2008	A.A. Smith House	$3,534,269 (gift value)	Donated restored residence of early president
2009	Res/Rec Center	$24,000,000	Residence hall, indoor track, athletic training
TOTAL*		**$89,118,492**	

* Numbers do not include $172,285 for Old Main Plaza (2001), $306,199 for a Parking Deck (2001), and an annual $612,000 leasing fee for Naper Place (2007-2010); nor do they include $6,241,543 for the Old Main renovation (1998), $5,212,984 for construction of Ward Hall (1998), $8,989,483 for construction of Benedetti-Wehrli Stadium (1998-2000), and $843,441 for addition of Zimmerman Stadium (1999) bringing the total expenditure for campus improvements to more than $110 million since 1998.

Existing Uses and Structures

Map 2

Scale: 1" = 300 feet

0 100' 200' 300'

	Facility Name		
1	225 N. Loomis House	25	Seager Hall
2	Kimmel Hall	26	Rall Hall
3	Larrance Academic Center	27	Kaufman Dining Hall
4	Kiekhofer Hall and Koten Chapel	28	Geiger Hall
5	Seybert Hall	29	100 E. Jefferson Ave.
6	Oesterle Library	30	48 E. Jefferson House
7	Goldspohn Hall	31	Wentz Concert Hall
8	Kroehler Science Center	32	Patterson Hall
9	Rolland Center Boilerhouse Café	33	Ward Hall
10	Old Main	34	Blue House
11	Peter & Paul Hall	35	Oliver Hall (WONC)
12	Carnegie Hall	36	President's House
13	White Activities Center	37	Res/Rec Center
14	Meiley-Swallow Hall	38	Merner Field House
15	Pfeiffer Hall	39	Benedetti-Wehrli Stadium
16	A.A. Smith House	40	Zimmerman Stadium
17	116 S. Brainard House	41	Shanower Family Field
18	322 E. Van Buren House	42	Business Operations & Maintenance
19	330 E. Van Buren House	43	Naper Place
20	109 S. Loomis House	44	Zipcar
21	119 S. Loomis House	45	Shuttle
22	125 S. Loomis House	46	Remote Parking Lot
23	Student Village	47	142 N. Washington Street
24	Schneller Hall	48	140 N. Washington Street

Naperville Metra Station

Fifth Avenue

Loomis Street

Burlington Northern Santa Fe

Fourth Avenue

North Avenue

School Street

Center Street

Franklin Avenue

Benton Avenue

College and University District

Main Street

Central Park Road

Court Place

Ellsworth Street

Brainard Street

Loomis Street

Sleight Street

Wright Street

Van Buren Avenue

Jefferson Avenue

Washington Street

Chicago Avenue

Jackson Avenue

Water Street

DuPage River

Highland Avenue

Aurora Avenue

Porter Avenue

Prairie Avenue

Campus Open Space

Map 3

Scale: 1" = 300 feet

0 100' 200' 300'

N

- Existing Open Space
- Potential Future Open Space
- Major Pedestrian Route

Naperville Metra Station
Fifth Avenue
Loomis Street
Burlington Northern Santa Fe
Fourth Avenue
North Avenue
School Street
Center Street
Franklin Avenue
Benton Avenue
Main Street
Washington Street
Central Park Road
Court Place
Ellsworth Street
Brainard Street
Loomis Street
Sleight Street
Wright Street
Van Buren Avenue
Jefferson Avenue
Jackson Avenue
Water Street
DuPage River
Aurora Avenue
Porter Avenue
Chicago Avenue
Highland Avenue
Loomis Street
Prairie Avenue

IV. New Facilities

Within the next ten years, North Central College intends to build a new Science Center on campus to replace the aging Kroehler Hall. In addition, the College anticipates that additional student housing and a new general classroom building may be built, and that a new natatorium is possible in the event that a highly motivated donor steps forward. The following section describes each of these potential new facilities in greater detail.

The College recognizes that the design of any new building will need to account for building context, massing and its compatibility with surrounding properties. The College will work with the City of Naperville and seek neighborhood input in compliance with the requirements as set forth in Title 6 (Zoning Regulations), Chapter 7G (College and University District), Section 10:2.5 and 2.6 and Chapter 11 (Historic Preservation) of the Naperville Municipal Code.

Science Center

North Central College has identified a new science center as its top priority for new facility development within the 10-year horizon of this plan. The College's existing facility, Kroehler Science Center, was built in 1969 to house the physical science programs of physics, chemistry, and biology. The 40-year-old building no longer supports today's methods of teaching the sciences, nor does it accommodate the full range of disciplines considered to be part of a comprehensive liberal arts college science program. Additionally, the building has physical and mechanical deficiencies making it inadequate to properly support many curricular needs.

In 2003, the College participated in a National Science Foundation project entitled Project Kaleidoscope (PKAL), one of the leading advocates in the United States for what works in building and sustaining strong undergraduate programs in the fields of science, technology, engineering and mathematics (STEM). PKAL is an informal alliance taking responsibility for shaping undergraduate STEM learning environments and the College intends to adopt that philosophy as it plans for a new science center. Offering a quality and comprehensive education in the sciences is critical to the competitiveness of a liberal arts college such as North Central, as well as the competitiveness of the United States in relation to the rest of the world. More than many other areas of study, the physical facilities in which the sciences are taught must support the rapidly changing teaching methods, or pedagogy, of science education.

A new science center would likely house the physics, chemistry, biology, mathematics, psychology, and computer science departments. This would result in space being freed-up in existing academic buildings such as Goldspohn Hall, Carnegie Hall, and—depending on the location of the new science building—Kroehler Science Center itself. This vacated space in turn creates opportunities to satisfy other classroom and office space needs.

The size and configuration of the science building will be identified as detailed programming and design for the building takes place. In recent years, most science centers built on campuses like North Central College have ranged from 60,000 to 120,000 gross square feet.

IV. New Facilities

The specific location of the new science center will be determined by detailed building programming and fundraising efforts. A number of factors will need to be considered in identifying the optimal location of the new facility, including overall building size and configuration requirements, scale, relationship to other academic departments, outdoor teaching potential, and fundraising opportunities and constraints.

In an effort to set forth potential sites for the new science building, the College has identified possible locations on campus that can accommodate such a structure, where a large, new building can be made compatible with surrounding uses, and can have a desired relationship with other campus activities. These potential locations, which are illustrated on Map 4, are as follows:

A. *North Campus Gateway*: Two sites at the north gateway to campus on Loomis Street have been identified. To the west of Kiekhofer Hall a new science building could be built on the site of Larrance Academic Center and adjacent surface parking lot, in which case the displaced parking would need to be addressed through parking replacement, parking demand management, or both. East of Loomis a new building could be built on the site of the existing Kimmel and Seybert residence halls, both of which are in need of significant renovation or replacement. Both locations can accommodate the possible realignment of Loomis Street south of North Avenue to match the north side of the intersection, if the City seeks to undertake the realignment.

B. *Mid-Campus*: A site adjacent to the existing Kroehler Science Center is identified as a possible addition to Kroehler, or as a phased enlargement and subsequent replacement of the existing building. The site north of Kroehler represents a currently underutilized space in the traditional academic core of the campus.

C. *South Campus*: A site at the extreme south end of campus, which currently functions as a dry pond site for water detention, has been identified due to its unique attributes. The location of the site in an open part of campus near the river offers the potential for extensive outdoor science teaching opportunities. Located in the floodway, the water detention function of the dry pond would need to be maintained in the design of the site, and safe and adequate access to the building would need to be addressed.

North Central College
Science Center Site Options

Map 4

Scale: 1" = 300 feet

0 100' 200' 300'

N

Naperville Metra Station

Fifth Avenue

Loomis Street

Burlington Northern Santa Fe

Fourth Avenue

Site A

North Avenue

School Street

Center Street

Site B

Franklin Avenue

College and
University District

Benton Avenue

Main Street

Washington Street

Central Park Road

Court Place

Ellsworth Street

Brainard Street

Loomis Street

Sleight Street

Wright Street

Van Buren Avenue

Jefferson Avenue

Chicago Avenue

Jackson Avenue

Water Street

DuPage River

Highland Avenue

Loomis Street

Aurora Avenue

Site C

Porter Avenue

Prairie Avenue

IV. New Facilities

Academic and Faculty Office Space

Classroom space at North Central continues to be concentrated in the traditional academic core, primarily in Goldspohn Hall, Carnegie Hall, Old Main, Larrance Academic Center, and the existing Kroehler Science Center, despite a recent trend toward establishing instructional space in other campus locations such as Benedetti-Wehrli Stadium, Fine Arts Center and Meiley-Swallow Hall. Much of the space that remains in the historic core of the campus is located in older buildings with interior layouts that lack the flexibility required of today's collaborative learning and group interaction. In particular, creating more flexible classrooms and spaces that can accommodate up to 40 people or more is and has been a priority for the College.

In addition, some faculty office space remains separated from the teaching environments and in locations that limit effective faculty-student interaction. The most striking example is the College-owned houses on the west side of Loomis St. and east side of Brainard St. south of Van Buren, and at the corner of Loomis and North Ave. These houses, which have been adapted by the College for office use, currently house the departments of business, economics and accounting, political science, anthropology, and human thought and behavior. The structures—which are not of architectural or historical significance—are poorly suited to College use; they offer significant challenges for ADA accessibility, provide inefficient and inflexible space, are energy inefficient, and poorly utilize land in the historic core of campus. For these reasons, these college-owned houses are likely to be replaced with purpose-built buildings or campus amenities, such as open space, during the next ten years.

The development of a new science center will result in a significant amount of space being vacated in traditional classroom buildings. The six disciplines contemplated for inclusion in a new science center – physics, chemistry, biology, psychology, mathematics, and computer science – currently occupy roughly 25,000 assignable square feet in the Kroehler Science Center, Goldspohn and Carnegie Halls. Vacating some or all of this space will create opportunities in the existing academic buildings to reconfigure classrooms, relocate faculty offices, and expand the total amount of non-science classroom and faculty office space if needed.

Nevertheless, a new academic and faculty office building and additional residential facility may be needed at some point in the next ten years to accommodate changing space needs and overall enrollment growth. Map 5 includes the following potential locations for a new classroom/faculty office building:

1. In the block immediately south of Van Buren, in which case any displaced surface parking would be accommodated through additional parking facilities and/or parking management that reduces overall parking demand;

2. At the southwest corner of Chicago and Brainard, requiring replacement facilities for WONC radio station and the removal of the Blue House.

IV. New Facilities

Student Housing

Existing Facilities and Capacity

North Central College has recently completed the construction of the new Res/Rec Center on the south campus, with a total potential capacity of 369 resident beds. This number includes the potential for 104 beds in space that has not yet been built-out on the fourth floor of the building. In addition to on-campus facilities, the College leases apartments in Naper Place, located in downtown Naperville, with an additional 144 beds of resident capacity. With the Res/Rec facility now completed, and including Naper Place, the current student housing capacity in facilities controlled by the College is as follows:

Total beds available = **1,361**
Total capacity (with 4th Floor of Res/Rec) = **1,465**

Current Occupancy and Projected Demand

A total of 1,328 beds were committed for occupancy at the beginning of the 2009-10 academic year, which represents just under 57% of the total full-time undergraduate enrollment of 2,333 students.

The College's 2007-2012 Strategic Plan calls for a total full-time undergraduate enrollment goal of 2,300 to 2,400 students by 2012, an increase of roughly 70 full-time undergraduates at the upper-end of the range. Assuming 60%-70% of those students will be campus residents, an additional demand of 40 to 50 beds will be generated by this enrollment growth. This demand from growth alone can easily be accommodated within the capacity of existing facilities, e.g., building out the 4th floor of the Res/Rec Center.

New Student Housing Facility Needs

Several other factors may impact campus housing demand and the need for new student housing facilities over the next 10 years, including the following:

- The percentage of full-time undergraduates living in student housing has been increasing slightly over the years. This has generally been viewed as a positive trend in strengthening the residential character of the campus and reducing automobile traffic, and likely to be encouraged by the College.

- Unlike many peer colleges, North Central College has not enforced a residency requirement for first and second year students. However, North Central may choose to enforce or re-examine this policy (extending it to juniors and seniors) when housing space is available.

- The College's strategic plan will be renewed twice during the 10-year life of this plan; each renewal may set incrementally higher undergraduate enrollment goals for the subsequent 5-year period.

The demand for new student housing facilities may also be driven by the need to replace or renovate aging and antiquated facilities currently on-campus. Student residences that may need replacement or major upgrades over the next 10 years include the following:

- Kimmel Hall (118 beds)
- Seybert Hall (56 beds)
- Student Village (58 beds)
- Geiger Hall (78 beds)

Potential locations for new on-campus student housing include the site of the current Student Village and/or immediately to the north on Loomis Street south of Van Buren, and the southwest corner of Chicago and Brainard. Both are illustrated on map #5.

Off-Campus College Housing

As mentioned above, the College currently leases space for 144 beds in 49 apartments at Naper Place, located on Main Street in downtown Naperville. The experience of housing students in Naper Place has been a positive one for both the College and the students. Arguably, it is also positive for downtown Naperville to have student residents who can help support businesses and add to the energy of the central business district. In addition, from 1998 through 2008, the College housed 40 female students in the Sts. Peter and Paul convent located at Benton and Brainard, directly across from the campus. The construction of the Res/Rec Center eliminated that need in fall 2009. Subsequently, the College and the church have discussed the possibility of re-engineering the convent in some form of partnership.

The College's ability to provide diverse housing options to its students is important. Maintaining off-campus housing options will likely be a continuing objective of the College. The College recognizes that any college-owned off-campus student housing may require City approval. Providing transitional housing for seniors and graduate students – possibly in partnership with private housing developers – may also be an area that the College explores in the coming years as a way in which to expand the diversity of student housing options

IV. New Facilities

Natatorium

North Central College's existing pool, housed in cramped space at the east end of the Merner Fieldhouse, consists of only four 25-yard lanes. The number of lanes makes the facility unsuitable for Division III competition. The College's South Campus Master Plan, completed in 1996, identified the opportunity to rotate the pool 90 degrees by constructing an addition to the east end of the fieldhouse. This would create space for a competitive natatorium consisting of eight 25-meter lanes.

The location of the recently completed Res/Rec facility anticipated the potential for the new natatorium, which would now effectively connect the Merner Fieldhouse with the Res/Rec building to the east. The current pool is not usable for intercollegiate meets. A new natatorium could be used for NCAA national competition, recreation and community use, and could possibly house support facilities such as locker rooms, storage, academic space and a dedicated entrance lobby, with the potential for a food service venue.

The construction of a new natatorium is a low probability and is dependent upon a highly motivated donor coming forward.

North Central College
Other Potential New Facility Options

Map 5

Scale: 1" = 300 feet

0 100' 200' 300'

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Site A	Classroom / Faculty Office
Site B	Student Housing
Site C	Classroom / Faculty Office and/or Student Housing
Site D	Natatorium

Fifth Avenue
Loomis Street
Burlington Northern Santa Fe
Fourth Avenue
North Avenue
School Street
Center Street
Franklin Avenue
Benton Avenue
Main Street
Washington Street
Central Park Road
Court Place
Ellsworth Street
Brainard Street
Loomis Street
Sleight Street
Wright Street
Van Buren Avenue
Jefferson Avenue
Jackson Avenue
Water Street
DuPage River
Aurora Avenue
Porter Avenue
Chicago Avenue
Highland Avenue
Prairie Avenue
Pedestrian Spine
Site A
Site B
Site C
Site D

V. Anticipated Building Rehabs, Additions, and Re-Purposing

North Central College will continue to invest in its existing facilities to respond to changing space needs and address building maintenance and upgrade requirements. Listed below are potential building rehabs, additions, and use changes that may occur over the next ten years.

Likely to Occur

The following building improvements are priorities for the College and likely to occur over the next ten years:

1. *Larrance Academic Center:* If not replaced by the new science center, evaluation of the economic feasibility of updates to the HVAC systems and remodel for academic and faculty office space.

2. *Oesterle Library:* Phase 3 of the building renovation, including completion of first and second floor rehabilitation, new elevator and additional exiting on east and west elevations.

3. *Merner Fieldhouse:* Creation of seating arena for competitive basketball and volleyball; re-purposing of existing balcony space as academic space.

4. *Res/Rec Center:* Build-out of 4th floor for student residence space; build-out of 3rd and 4th floor multi-purpose rooms for formal and informal gathering or office space.

5. *Pfeiffer Hall:* Update and remodel of interior for bathrooms and accessibility; improvements to provide accessible parking adjacent to the accessible door on the west side of the building, and to provide off-street loading -- to address neighborhood concerns about current street loading -- through a new off-street drop-off on the west side of the building.

Contingent Upon Resources

The following building improvements constitute additional priorities for the College, but are highly contingent upon the availability of resources:

6. *Kimmel Hall*: If not replaced by a new science center, evaluation of rehabilitation or replacement for continued student residence use.

7. *Seybert Hall*: If not replaced by a new science center, evaluation of rehabilitation or replacement for continued student residence, academic or administrative use.
8. *Kroehler Science Center:* If not expanded or replaced on site by a new science center, evaluation of rehabilitation for academic space, faculty offices, information technology facilities, and/or student activities space.

9. *White Activities Center:* Evaluation of rehabilitation and/or expansion for student activities space, faculty offices, and/or bookstore use.

10. *Geiger Hall:* Expansion for additional student housing and/or dining facilities.

11. *Kaufmann Hall:* Rehabilitation and/or addition for expanded food service and dining venue capacity.

Minor Interior Improvements

The College additionally anticipates the following minor interior improvements and use changes to existing buildings:

12. *100 E. Jefferson:* Rehabilitation for bookstore, Student Success Center, classrooms and/or TV studio.

13. *Goldspohn Hall:* Rehabilitation for more effective classroom and faculty office utilization.

14. *Carnegie Hall:* Rehabilitation for additional information technology offices and facilities.

15. *48 E. Jefferson:* Reassignment as potential International Center, Alumni House, LEV, and/or College Scholars.

16. *Blue House:* Evaluation of renovation for offices.

Anticipated Building Rehabilitation, Additions and Re-purposing

Map 6

Scale: 1" = 300 feet

0 100' 200' 300'

N

Priorities Likely to Occur

3	Larrance Academic Center
4	Oesterle Library
9	Pfieffer Hall
14	Merner Field House
15	Residence Hall / Recreation Center

May Occur: Contingent Upon Resources

1	Kimmel Hall
2	Seybert Hall
6	Kroehler Science Center
8	White Activities Center
10	Kaufman Dining Hall
11	Geiger Hall

Possible Minor Interior Improvements / Re-purposing

5	Goldspohn Hall
7	Carnegie Hall
12	100 East Jefferson Avenue
13	Blue House

Fifth Avenue
Loomis Street
Burlington Northern Santa Fe
Naperville Metra Station
Fourth Avenue
North Avenue
School Street
Douglas Avenue
Center Street
Franklin Avenue
Benton Avenue
College and University District
Off-street loading and drop off
Main Street
Washington Street
Central Park Road
Court Place
Ellsworth Street
Brainard Street
Loomis Street
Sleight Street
Wright Street
Van Buren Avenue
Jefferson Avenue
Chicago Avenue
Jackson Avenue
Water Street
DuPage River
Highland Avenue
Aurora Avenue
Loomis Street
Prairie Avenue
Porter Avenue

VI. Future Campus Growth Options

North Central College will continue focusing on satisfying its space needs within the current campus boundaries. Nevertheless, opportunities may arise for the College to prudently control and use property outside existing boundaries in ways that enhance the campus, neighborhood, and central business district. The College's ability to take advantage of these opportunities will help to preserve important open space on the campus and may allow the massing of any necessary new buildings to continue to be compatible with the neighborhood.

This section sets forth the College's intent with regard to the potential use of property outside today's campus boundaries.

Parcels Interior to Campus Blocks

The following four properties are privately-owned parcels within contiguous blocks that are part of the main campus. The College may acquire any or all of these properties only if they become available. These potential acquisitions have been a part of the College's public plan since the 1980s.

1. 326 East Benton Avenue
2. 15 South Loomis Street
3. 30 South Brainard Street
4. 122 South Brainard Street

Campus Boundary Expansion

The College will evaluate opportunities to expand its boundaries where the expansion is in the direction of the central business district and/or where expansion results in better access to and visibility for the campus and/or where the expansion is necessary to preserve the character of the campus environment and its important open spaces. Any expansion will need to consider the appropriateness of a College use in the context of the surrounding properties and public input will be sought.

In addition, the College places a high value on being a part of the Naperville Historic District, a district that derives its character from the inter-relationship of historic residences and a college campus. The future success of the College depends in large part upon maintaining and enhancing the historic district environment in which it is located.

The College will not actively seek to acquire properties within the historic district. However, where there are properties in the district that are at-risk, incompatible with the district, or facing uncertainty, the College may be in a unique position to control and create a future for such properties that both strengthens the district and provides benefit to the College. Recent examples of College use of historic district properties and historic buildings include the donation to the College and preservation of the A.A. Smith House, the adaptive reuse of Meiley-Swallow Hall, and renovations to the Boilerhouse and Kiekhofer Hall.

VI. Future Campus Growth Options

One such future opportunity may be the Little Friends site (at one time owned by the College) on the east side of Wright Street between Franklin and School Streets. In the event that Little Friends chooses to relocate to facilities that are better suited to its mission, the College may be in a position to help facilitate such a move by purchasing the current Little Friends site for a College use that is compatible with the adjacent properties (for example, a science center or new student housing). This may offer a neighborhood-friendly solution to some of the College's new facility needs, as has been indicated in various conversations with ECHO (East Central Homeowners Association) members As a long-term stakeholder in this unique neighborhood, the College will continue to play an active role in maintaining and enhancing the character of the historic district.

North Central College recognizes that any properties acquired and used by the College will be utilized in accordance with the College and University Zoning District, and that major modifications, visible from the street, to properties within the Naperville Historic District will be addressed consistent with applicable regulations.

Off-Campus Properties

The College will continue to evaluate the use of properties off-campus where such off-campus use improves the quality of the campus environment. Previous examples of this include the relocation of Business Operations to 999 E. Chicago, and the resulting removal of a volume of truck traffic and deliveries from the campus. Another example is the use of the All Saints Catholic Academy parking lot on West Aurora Avenue for first-year student parking, the impact of which has been to reduce traffic and parking demand on campus.

Collaborative Property Use and Ventures

The College will be open to collaboration with other owners in the use of property near campus where such collaboration presents opportunities for creative or shared use of facilities. Such future opportunities may include the following:

- Shared use of near-campus parking facilities with churches immediately west of the campus, in the existing or new Central Parking Facility developed by the City of Naperville where College use complements downtown demand and adds little or no additional burden to the facility, or in collaboration with future bidders for the redevelopment of the City's Public Works site on the 5th Avenue if the City of Naperville chooses to sell the property in the future;

- Retail-type College uses, such as the College bookstore, café, or educational-related retail operations such as the College's Students in Free Enterprise Chapter, in more highly visible locations near the central business district; and

- Student housing in facilities not owned by the College. A successful example of such housing is the Naper Place Apartments in the central business district. As discussed previously in the Student Housing section, Naper Place has been well-received and beneficial in providing expanded housing choices to students and

supporting the energy of downtown Naperville. Future expanded housing choices may include student housing in privately developed and owned facilities in partnership with St. Peter and Paul Church.

VII. Campus Circulation Summary

The North Central College Campus is accessed by a variety of transportation modes, including automobile, commuter train via the Metra and Amtrak station two blocks north of campus, bicycle and foot traffic through the pedestrian-friendly neighborhood in which the College is located. However, private automobiles remain the dominant form of transportation to and from campus. The traffic, circulation and parking studies performed by Metro Transportation from which the College took the following suggestions are appended to this Plan. That report contains a detailed summary of transportation characteristics and issues, including automobile, bicycle and pedestrian counts, facilities, and recommendations, are included as Attachments A and B to this plan.

Vehicular Circulation

Most streets and intersections on campus are characterized by a low-speed pedestrian scale, and serve not only the College but also the surrounding neighborhood. However, due to its function as a primary route to and from downtown Naperville, Chicago Avenue experiences congestion during peak hours and represents the location where potential conflicts between auto, pedestrian, and bike traffic are greatest.

Recommendations to reduce conflicts and enhance safety at Chicago Avenue intersections are as follow:

1. Work with the City of Naperville to construct curb extensions at the northeast and southeast corners of the Chicago/Brainard intersection to improve pedestrian visibility and effectively shorten the crosswalk length. Such curb extensions already exist on the west side of the intersection;

2. Install “Do Not Block Intersection” signs at the Chicago/Ellsworth intersection to enhance awareness and visibility of crossing pedestrians. Traffic stopping in the middle of the intersection, as well as recent changes to permit left turns from Ellsworth to Chicago, increases the potential for pedestrian-vehicular conflicts;

3. Initiate a safety campaign geared toward students to reinforce traffic-control regulations for pedestrians.

The College actively discourages intra-campus use of automobiles through a variety of efforts, including the following:

- The remote parking requirement for first-year resident students makes every-day use of cars for short trips through campus impractical;

- The Cardinal Red Bike program provides convenient access to bicycles for students as an alternative to cars and for those needing a more rapid commute than walking through campus;

- On-campus parking facilities, while adequate, are not over-supplied, discouraging multiple daily vehicle trips internal to the campus;

- The College continues to focus on providing safe and friendly pedestrian routes to enhance the walkable nature of the campus;

- While not intended specifically to reduce traffic, the College's gradual trend toward an increasing proportion of resident students in its overall population has the effect of reducing the number of cars commuting to and from campus on a daily basis.

In spring 2008, North Central College introduced Zipcar, a car share program that provides a flexible and cost-effective alternative to car ownership. Cars are available 24 hours per day, 7 days per week to members who pay an annual fee. The Zipcar program effectively reduces car usage and associated traffic congestion, parking demand, emissions and fuel consumption. The College maintains two Zipcars (one parked in the Highland Ave. parking lot, the other in the lot north of Keikhoffer Hall) and will continue to promote the availability of car sharing to students and the surrounding neighborhood.

Bicycle Circulation

The neighborhood setting of the College provides an atmosphere conducive to the use of bikes for intra-campus travel and to and from downtown Naperville. As noted above, the College has instituted the Cardinal Red Bike program, a shared bicycle program, to encourage convenient bicycle use as an alternative to automobiles. The College has responded to issues common to many bike share programs, such as damage and theft, by offering the bicycles for use on a term-by-term basis. For a deposit of $30, students receive a cruiser-style bike, a cable lock, and free maintenance. The deposit is refunded when the bike is returned in good condition at the end of the term.

Peak bicycle use periods generally correlate to peak pedestrian and automobile times, though bicycle volumes do not significantly impact traffic volumes in and around campus. The College remains committed to promoting bicycle use by adding bicycle racks in key locations around campus and continuing to monitor and improve the effectiveness of the Cardinal Red Bike Program.

Pedestrian-Friendly Streets: Mid-Block Crosswalks

The design intent of pedestrian-friendly streets is to slow traffic, create specific areas for pedestrian crossings, parking and drop-offs, shorten crosswalk distances and enhance aesthetics. North Central College is concerned about the conflicts between vehicles and pedestrians on campus. These conflict areas affect not only the College, but the surrounding neighborhood as well. To address the issue, the College plans to develop a series of pedestrian-friendly mid-block crosswalks on three east-west right-of-ways that bisect the campus: School Street, Benton Avenue, and Van Buren Street. These pedestrian crossing principals may also be applicable to existing crosswalks at Chicago Avenue as well.

The elements of these streets will consist of 11-foot wide drive lanes, 8-foot wide parallel parking and drop-off spaces, 22-foot to 36-foot long mid-block crosswalks to coordinate with the pedestrian spine planned for the campus, pedestrian bump-outs at street corners, and landscape areas planted with shade trees and low groundcover. The mid-block crosswalk should be made of specialty paving in contrast to the asphalt street, denoting it as a special pedestrian corridor and visually linking the crosswalk to the intersecting north-south pedestrian spine.

Walkways on pedestrian-friendly streets should be a minimum width of 5 feet, and 8 feet wide in areas directly adjacent to on-street parking and drop-off areas. The alignment of the walks will be in the same general location as the existing 5-foot walks throughout the neighborhood, with the area between the walk and the adjacent parking spaces paved to facilitate the high turnover of cars in these areas, and the ability for pedestrians to move away from adjacent opening car doors. On streets where the right-of-way is less than 54 feet, appropriate easements will be sought to accommodate the 54-foot width required for drive lanes, parking stalls and sidewalks. The College recognizes that the City may have concerns with regard to the maintenance and plowing of the reconfigured rights-of-way and mid-block crossings, and that maintenance agreements mutually acceptable to the City and College will need to be developed.

The Pedestrian Spine

The construction of an internal campus pedestrian spine has been the desire of the College for over two decades. The existing 5-foot wide public walks present throughout the neighborhood and on the edges of campus simply cannot handle the pedestrian traffic generated by hourly class changes and special events held on campus. The creation of a pedestrian spine will encourage students to take an internal path when travelling north and south through much of campus, relieving the congestion on perimeter public walks. Additionally, the spine will be the impetus to bury the overhead utilities currently running through the alleys between Jefferson and Benton Avenues. Access to the garages of private residents along the spine as well as for emergency and service vehicles will need to be accommodated.

In order for this pedestrian spine to accomplish its goals, it will need to be a fully-appointed pedestrian way with a powerful enough draw to change student, faculty and staff behavior. This appeal can be accomplished through thoughtful design and engineering. The pedestrian spine is also an excellent opportunity to utilize sustainable design though the use of permeable paving and stormwater best management practices, energy efficient lighting and sustainable plantings. It will also need the hospitality provided by a full compliment of site furnishings and shade trees in order to become the preferred route to traverse the northern two-thirds section of the campus.

New and existing campus facilities should make a strong effort to address and connect this spine with main or secondary entrances, plazas and appropriate façade treatments, with careful location of utilities and service areas so as not to undermine the pedestrian spine goals described above. The exception to this would be any parking areas which currently

exist directly on or exit onto the existing alley. College parking spaces and parking access drives should be eliminated from the pedestrian spine, with the access drive for the parking lot at the corner of Van Buren Avenue and Brainard Street moved to Brainard Street.

As an alternative or a supplement to the pedestrian spine, the College may consider ways in which to enliven existing streets and sidewalks, particularly the heavily-used Brainard sidewalk, as major pedestrian links through campus. The College may work with the City to explore enhancements such as widening the walkways, improving landscaping, and using alternative landscape and hardscape materials to create a unique and unified look for the portions of the sidewalk within the College district. Focusing on existing sidewalks bordering the campus may have particular relevance if opportunities arise for the College to create interior green space – or quads – in lieu of portions of the pedestrian spine.

VIII. Parking Summary

Current Parking Conditions

With a campus of more than 2,700 residential and commuter students and over 500 faculty and staff, successfully managing the parking needs of all users can be challenging, given limited real estate. As with most college campuses, providing adequate parking to serve campus needs is a continuous process. North Central College's parking strategy combines the following elements in managing overall campus parking supply and demand:

1. **Off-Street Campus Parking:** The College currently maintains over 1000 off-street parking spaces, plus additional remote parking spaces added in the fall and winter of 2009. Figure G in the appended parking study illustrates off-street parking facilities, their capacities and user designations.

2. **On-Street Parking:** The availability of on-street parking on neighborhood streets in and around campus is a critical part of the College's overall parking management strategy. There are approximately 400 spaces within a block of the campus boundaries and approximately 800 spaces within two blocks. Long-term on-street parking is discouraged by a 4-hour time limit, which has proven to be highly successful in balancing College commuter parking demand and the after-hour needs of neighborhood residents, while eliminating all-day train commuter parking. Figure H in the appended parking study illustrates current on-street parking areas and their capacities.

3. **Remote Parking:** The College leases remote parking capacity from All Saints Catholic Academy on West Aurora Avenue, and requires that all first-year resident students with cars utilize the remote lot and allows upper class students to use that lot at a significantly reduced price over the on-campus cost. In the fall of 2009, 42 upper class students chose that option. The College provides a free shuttle service between the remote lot, campus, and the shopping areas on Route 59.

4. **Parking Demand Management:** In addition to the remote parking requirement for first-year students, the College manages the overall demand for campus parking in a variety of ways. Tiered parking permit prices for students have been increased between 3- and 5-fold over the past seven years, which has resulted in the ratio of parking permits per residential student to decrease from 0.57 to 0.41 between 2003 and fall of 2009. Additionally, as noted previously, the College has established a Zipcar car-sharing service, and offers a free shuttle service between the campus and key shopping destinations. This, in addition to a focus on enhancing pedestrian and bicycle facilities, is intended to reduce the number of cars brought to campus and the resulting demand for on-campus parking. Parking counts taken over the past few years have demonstrated that the College's parking management programs have successfully reduced on-campus parking numbers.

VIII. Parking Summary

Parking Issues and Policies Going Forward

North Central College exists in a competitive environment in which prospective students have many choices. A significant consideration for students, on a campus where more than three-quarters of students' homes are within a 1 ½ hour drive and where a majority of students work off-campus, is the availability of convenient transportation and parking. Set in this context is the College's desire to maximize scarce available land for academic functions, student residences and related uses, and recreational, athletic and open space. As the College expects to continue incremental growth in its student population, the following key principles will guide campus parking management:

- No net additional off-street land footprint for parking on campus;
- Parking capacity that is displaced by new construction will be replaced either on campus or with remote or shared parking arrangements, and/or through parking demand management;
- Retention of 4-hour on-street parking to serve daytime demand and balance neighborhood needs;
- Evaluation of opportunities for multi-use or shared parking facilities;
- Relocation of any displaced parking to the campus periphery to distribute demand and reduce conflicts with pedestrian and bicycle activity in the campus core.

This plan identifies the potential for new buildings to be developed over the next ten years, including a science center, possible new student housing and additional classroom/faculty office facility. These potential new facilities are a response to the need for more modern teaching environments and expected incremental growth in enrollment and resident student populations. Aside from these general campus growth factors, the new buildings in and of themselves will not create material additional parking demand. However, depending upon where they are sited, new building construction may displace existing surface parking, which the College would seek to replace elsewhere on or off campus and/or by demonstrated demand reduction through parking management.

Location options for replacing displaced parking on-campus include the following:

1. *Site of existing Kimmel and Seybert Halls*: These two residence Halls will likely need to be replaced at some point in the near future. The site, at the northeast periphery of campus, may be appropriate to accommodate displaced parking;
2. *Expansion of Highland Parking Deck*: The Highland Deck was designed to accommodate the construction of two additional bays of parking underneath the

surface lot. This facility has the potential to accommodate displaced parking and/or add net parking capacity to campus without expanding the total parking land footprint.

3. *Merner Lot*: The topography around the lot in front of the Merner Fieldhouse provides an opportunity to add a level of parking without significant visual impact from the street;

4. *Tennis Courts at Prairie Avenue*: At the south periphery of campus and in a location with significant grade changes, the tennis courts site could accommodate a surface parking facility or two levels of parking with limited visual impact to surrounding properties.

Additionally, the College will explore options to manage parking demand in near-campus and remote facilities, including the following:

- Expansion of remote parking agreement with All Saints Catholic Academy or other landowner, coupled with expanded remote parking requirements for students;

- Multi-use parking arrangements with local churches, where peak periods of parking demand complement the College's needs;

- Shared parking arrangement with the City of Naperville in an existing or new downtown Central Parking Facility where the College secures parking rights that are specific to its needs and are complementary to downtown parking demand such that College use adds little or no overall burden to the facility (College parking demand during day-time vs. downtown demand in the evening). The daytime peak parking characteristics of downtown and the College would be noted and addressed if a cooperative parking arrangement is explored in the future;

- Shared or multi-use parking arrangement with the successful bidder for the redevelopment of the City's Public Works facility on 5th Avenue, if the City chooses to sell the property.

IX. Campus Identity and Appearance

Landscape and Gateway Plans

The campus landscape will continue to evolve as areas of the campus are renovated and redeveloped. At a minimum, all landscape plans will be compliant with the City of Naperville Municipal Code and the College and University District zoning requirements. Specific areas of emphasis, such as building entrances and major roadway intersections, along with courtyards, class memorials and themed garden areas will receive a higher level of planting and maintenance due their importance and visibility.

The creation of outdoor spaces that foster interaction among students and between students and faculty should be encouraged throughout campus. The current pedagogy describes the entire campus, and the world, as the real classroom. Outdoor spaces should accommodate large groups as well as one or two people for conversation and counseling. The heavy use of Old Main Plaza, the Boilerhouse Café patio and the patio at the north of White Activity Center illustrate how popular these spaces are. The use of WiFi technology has made these spaces as data accessible as their adjacent indoor classrooms and offices. North Central College will continue to incorporate these types and scale of outdoor community-building spaces for students, faculty and staff in all classroom, office and housing facilities.

The College will continue, and increase when possible, its efforts regarding biodiversity -- the use of native species -- and best management practices regarding use of water, fertilizers and pesticides on campus. The College is in an older area of town, and as such, will need to develop a replacement strategy for mature plantings as they exceed their useful life. Additionally, the death of Green, White and European Ash trees from Emerald Ash Borer will become common in this ten-year timeframe, and suitable replacements species and locations will need to be developed.

North Central College is keenly aware of the value of its adjacency to the West Branch of the DuPage River and the Naperville Riverwalk. A Southwest Campus Gateway will be constructed adjacent to Fredenhagen Park in order to establish a formal connection to both of these community resources. This gateway will also allow the campus greater access to downtown Naperville and areas south via the existing pedestrian bridge across the river.

Similarly, improvements at North Avenue and Loomis Street would create an enhanced setting for a new North Campus Gateway. At this location one or two of the North Central College columns and associated plantings may replace the current column and landscape and may also feature light poles with banners and parkway trees.

The College intends to install additional North Central College masonry columns as minor gateways at entry points into the College. The columns are useful in defining the campus boundaries, and are appropriate for use in the Historic District and the east edge of downtown Naperville as well as the south campus.

IX. Campus Identity and Appearance

Signage and Way-finding

The College has added many new facilities to campus, and needs to update its way-finding signage with those facilities. Some of the earliest signs installed throughout campus are showing their age, both from the elements and the outdated campus logo, and will likely be replaced.

The existing signage on campus has been successful in providing way-finding, regulatory and building identification information on campus. The family of signage has been designed to be modest in color and form so as to easily coordinate with diverse architectural styles and the multiple situations and surroundings where signage is installed. Moving forward, the College may desire to more strongly express a collegiate atmosphere, by finding ways to incorporate the school colors (Cardinal red and white) into the signage. These signage revisions may be developed at a later time, and reviewed by the City as a revision to the College's campus-wide Signage Permit Agreement already in place.

The use of banners on light poles is a very effective way of communicating that one has arrived on campus, and will be expanded to include more areas internal to the campus, including the future pedestrian spine and the southern extension of Brainard Street as it crosses Highland Avenue.

Site Furnishings

The College currently has a family of site furnishings in use throughout campus. An exterior-use, single or multi-use recyclable waste container will be added to the family of furnishings to further promote the recycling program on campus.

Lighting has undergone incredible advances in technology recently, and the College will evaluate its current choices for pole, area, bollard and specialty lighting to take advantage of LED, low-voltage, cut-off and high-output fixtures, in addition to photocells and other control systems that dim or switch off lights when not in use. It would not be feasible for a wholesale change of lighting throughout campus, but rather as lighting is replaced or new facilities added. The conservation of energy, the reduction in glare and light spillage, and maintenance and energy costs will help offset installation costs in the life cycle of these new fixtures and control.

Campus Gateways

Map 7

Scale: 1" = 300 feet

0' 100' 200' 300'

N

Existing Gateway Column

Proposed Gateway Column

Naperville Metra Station

Fifth Avenue

Loomis Street

Burlington Northern Santa Fe

Fourth Avenue

North Avenue

School Street

Franklin Avenue

Center Street

Benton Avenue

Main Street

Washington Street

Central Park Road

Court Place

Ellsworth Street

Brainard Street

Loomis Street

Sleight Street

Wright Street

Van Buren Avenue

Jefferson Avenue

Jackson Avenue

Water Street

DuPage River

Aurora Avenue

Porter Avenue

Chicago Avenue

Highland Avenue

Prairie Avenue

NORTH GATEWAY

CHICAGO AVE. GATEWAY

SOUTHWEST GATEWAY

X. Sustainability

North Central College places a high value in creating an environmentally sustainable campus for its faculty, staff, and students, and for the future of the institution. Sustainability is not only good practice from physical and financial perspectives, but also offers opportunities for the campus environment to support learning and attract prospective students and faculty who share in the College's values. In 2007 North Central College created an interdisciplinary minor in environmental studies. In 2008 the College established a Sustainability Committee consisting of faculty, staff and students charged with engaging the institution on sustainability issues. In 2009 the College established a full-time position of sustainability coordinator, charged with helping the College reduce its carbon footprint through, among other things, improving its recycling program, reducing energy consumption and developing alternative energy sources such as wind and solar power on campus.

In every campus project, the College looks for opportunities to incorporate green technologies and sustainable management practices. The College will work with the City of Naperville to help ensure that building design guidelines do not preclude good sustainability practices and green technology in future projects such as the new Science Center. Most parking and campus circulation initiatives are aimed at reducing the need for students to bring automobiles to campus and enhancing pedestrian and bicycle circulation through campus. Below are highlights of the College's recent initiatives to create a more sustainable campus:

- *Res/Rec Center*: Completed in fall of 2009, the new Res/Rec Center in the south campus is designed to achieve the silver standard for Leadership in Energy and Environmental Design (LEED). The building was originally conceived as a recreation center, but the College subsequently decided to wrap the recreation facility with needed student residences, thus reducing the combined land and carbon footprint of the two uses. The building is designed to use 17.5% less energy than traditional construction through the use of geothermal heating and cooling and energy-efficient lighting and windows. Construction materials included low volatile organic chemical (VOC)-emitting materials, precast walls with 40% recycled material, and at least 20% recycled material in steel, concrete and floor coverings. Water use is reduced by water efficient fixtures and use of the campus pond for exterior irrigation.

- *LEED for Existing Schools:* LEED has recently instituted a provision whereby application may be made to have existing facilities recommissioned for LEED certification. The College intends to pursue these opportunities where applicable.

- *Campus Circulation*: North Central College recently created the Cardinal Red Bike sharing program, designed to discourage the use of automobiles to-and-from destinations within campus. In addition, the College's focus on providing safe pedestrian routes and street crossings, and establishing the pedestrian spine, is intended to facilitate non-vehicular circulation through campus.

X. Sustainability

- *Automobile Ownership*: The College has implemented programs to discourage automobile ownership among resident students. Since 2003, parking permit rates have been increased significantly, resulting in the ratio of parking permits per residential student to decrease from 57% in 2003-2004 academic year to 43% in the 2008-2009 academic year and 41% in 20092010. In 2008 the College established a shuttle service, free to all students, to destinations within campus as well as to Target Store and the Fox Valley Mall on Route 59, while all students enjoy walking proximity to downtown Naperville shopping. The College has also established a Zipcar car-sharing service. The ability to use Zipcar for occasional and essential automobile use provides an alternative to bringing a car to campus for faculty, students and staff.

- *Remote Parking*: North Central College established a remote parking lot in 2008, located at All Saints Catholic Academy on West Aurora Avenue, and required all first-year students with cars to park remotely. In addition, the College offers reduced parking permit fees to all students who choose the remote lot as an alternative to on-campus parking. The remote lot is served by the campus shuttle, and has a current capacity of 170 cars. The impact of remote parking is to discourage casual and non-essential use of automobiles by car-owning students. The College also has access to a total of 50 parking spots at Naper Place and the Van Buren parking deck for Naper Place resident students.

- *Landscaping*: North Central College has significantly increased its investment in landscaping, trees, and flowers over the past decade, and places a heightened focus on preserving quality open spaces as central features of the campus character. In the past decade, the College added a position for a full-time gardener and created additional part-time student positions to assist. Additionally, the College will continue to expand outdoor teaching opportunities. These may include natural landscaping areas or other vegetated spaces that could serve as outdoor extensions of science curricula. Depending on its location, a new Science Center site may include such outdoor teaching space on-site, or may relate academically to such space more appropriately sited in another part of campus.

Attachment A: Traffic and Circulation Issues and Infrastructure

Current Campus Transportation Characteristics

The following section presents and documents key facilities, programs, levels of activity, and issues associated with the transportation characteristics of the North Central College campus area. An extensive data collection effort to gather current information relating to campus area transportation conditions was undertaken. This includes conducting intersection auto, bicycle, and pedestrian traffic counts, bicycle rack utilization surveys, field observations, and review of various transportation programs and policies at the College.

Vehicular Traffic

While the campus and surrounding neighborhood is easily walkable, bikable and served by a Metra and Amtrak rail station, the primary mode of transportation to/from campus and the neighborhood is the private auto. Details of current traffic counts, intersection traffic operations, accident history, and traffic issues facing the area are presented below.

Traffic Counts

An extensive data collection effort to gather current information relating to the study area traffic conditions was undertaken. This includes recording daily and peak hour traffic volumes at several key intersections and roadway segments within the study area. This data was compiled, summarized, and used as a basis for the traffic analysis.

In order to gather current traffic volume data, manual intersection traffic counts were conducted in May 2009 at the following intersections:

- North Avenue / Brainard Street
- North Avenue / Loomis Street
- School Street / Brainard Street
- School Street / Loomis Street
- Benton Avenue / Brainard Street
- Benton Avenue / Loomis Street
- Jefferson Street / Ellsworth Street
- Chicago Avenue / Ellsworth Street
- Chicago Avenue / Brainard Street
- Chicago Avenue / Loomis Street
- Highland Avenue / Brainard Street
- Porter Street / Loomis Street

These counts at each intersection were conducted on a weekday for the 11-hour period from 7:00 AM to 6:00 PM. The time periods were chosen per the request of the City of Naperville and to identify the various traffic activity levels throughout the day coinciding with typical morning and evening peak periods as well as midday characteristics.

Attachment A: Traffic and Circulation Issues and Infrastructure

Although different intersections throughout the study area experience varying periods of peak activity due to their function, relationship to the campus and neighborhood, and proximity to various land use types and traffic generators, the peak hours of existing traffic in the study area generally occurred from 7:30 AM to 8:30 AM and from 5:00 PM to 6:00 PM. In general, traffic volumes increase slightly midday around the typical lunch hour, but traffic counts are considerably lower than those in the morning and evening peak periods. The existing peak hour traffic volumes are illustrated on **Figure A**.

Intersection Capacity and Operations

Most of the intersections in the campus area primarily serve campus and neighborhood traffic generated by the College and the surrounding residential community. The grid network of streets in the campus area maintains a low-speed pedestrian-scale character that is easily walkable and offers flexibility in circulating throughout the neighborhood. Observations of traffic conditions throughout the day indicate that most intersections maintain excess capacity and easily accommodate peak hour traffic volumes with little to no congestion.

However, due to its function as a primary route to/from downtown Naperville and its two-lane cross-section plus on-street parking, Chicago Avenue typically experiences peak hour congestion approaching the Chicago Avenue/Brainard Street intersection. Although congested during the evening rush period, this four-way stop-controlled intersection effectively manages the conflicts between auto and pedestrian traffic as students, faculty, and staff often cross Chicago Avenue at this location while walking between the North and South Campuses.

Capacity analysis is a method of evaluating the overall operational conditions of an intersection. Levels of Service range from LOS "A" (conditions with minimal vehicle delay) to LOS "F" (oversaturated conditions). LOS "E" represents at-capacity conditions. The minimum intersection LOS that is generally accepted by reviewing jurisdictions in Northeastern Illinois is LOS "D". **Table 1** summarizes the level of service for the Chicago Avenue/Brainard Street intersection based on the existing lane configuration and four-way stop-control.

Table 1. Level of Service - Chicago Avenue/Brainard Street (All-Way Stop)

Intersection	AM Peak Hour			PM Peak Hour		
Chicago Avenue / Brainard Street	NB Approach	-	B	NB Approach	-	B
	SB Approach	-	B	SB Approach	-	B
	EB Approach	-	C	EB Approach	-	D
	WB Approach	-	C	WB Approach	-	F
	Overall	-	C	Overall	-	E

As shown in the table above, the westbound approach is over capacity during the evening peak hour, consistent with actual observations along Chicago Avenue. While addressing congested traffic conditions typically involves increasing capacity by providing additional travel lanes, such an improvement at the Chicago Avenue/Brainard Street intersection

would result in a negative tradeoff by compromising the pedestrian experience and potentially impacting the neighborhood and campus character.

At this time, traffic and pedestrian volumes at the Chicago Avenue/Brainard Street intersection fall short, but are near the thresholds of satisfying warrants for installation of a traffic signal. If traffic volumes passing through the intersection increase over time, regardless of whether they are generated by North Central College, development in the surrounding community, or from population and employment growth in larger context, justification could be made towards installation of a traffic signal. **Table 2** presents the level of service at the Chicago Avenue/Brainard Street intersection, using current traffic volumes and lane configurations, if it were a signalized intersection.

Table 2. Level of Service - Chicago Avenue/Brainard Street (Traffic Signal)

Intersection	AM Peak Hour			PM Peak Hour		
Chicago Avenue / Brainard Street	NB Approach	-	C	NB Approach	-	C
	SB Approach	-	C	SB Approach	-	C
	EB Approach	-	A	EB Approach	-	A
	WB Approach	-	A	WB Approach	-	A
	Overall	-	A	Overall	-	A

If installed, a traffic signal at the Chicago Avenue/Brainard Street intersection would improve the overall level of service at the intersection, though further study of intersections to the west and east would need to be undertaken to balance benefits against potential effects of a traffic signal on vehicular speeds, traffic volumes, impacts on the pedestrian atmosphere, and impacts on traffic conditions at adjacent intersections along Chicago Avenue.

Accident Analysis

The roadway system in the campus area generally consists of low speed, neighborhood-oriented, pedestrian-scale streets. The City of Naperville provided accident history for the past three years at campus area intersections with respect to frequency and types of accidents. **Table 3** summarizes the recent accident frequency at campus area intersections.

Table 3. Accident History

Intersection	Accident Frequency		
	2006	2007	2008
North Avenue / Brainard Street	1	2	1
North Avenue / Loomis Street	3	1	0
School Street / Brainard Street	3	1	2
School Street / Loomis Street	3	2	1
Benton Avenue / Brainard Street	4	4	3
Benton Avenue / Loomis Street	0	1	2
Jefferson Street / Ellsworth Street	4	4	2

Chicago Avenue / Ellsworth Street	5	0	3
Chicago Avenue / Brainard Street	6	12	9
Chicago Avenue / Loomis Street	5	2	3
Highland Avenue / Brainard Street	1	4	0
Porter Street / Loomis Street	0	0	0
Total	29	30	23

N/A - Not Available

Review of the accident data indicates that the intersection with the greatest number of accidents is the Chicago Avenue/Brainard Street intersection. This is expected as this intersection experiences the highest traffic volumes in the campus area. Although the number of accidents is highest at this intersection, the frequency in context of the higher traffic volumes does not classify the intersection as a high accident location. Based on evaluation of the types of accidents in the campus area, the accidents were typically minor with few personal injuries. Several accidents involved parked vehicles. No clear patterns or consistent accident types, suggesting prevalent design issue, were apparent.

Only one reported accident in the campus area over the past three years involved a pedestrian. In September 2006, a westbound vehicle struck a pedestrian crossing the west leg of Benton Avenue at Brainard Street during the evening. Thus, vision and lack of light likely contributed to the accident. No personal injury was reported at that time.

Car-Share Service (Zipcar)

In spring 2008, North Central College introduced Zipcar, a car share service, for students, faculty, staff, and the surrounding community.

A car-share program provides a flexible and cost-effective alternative to car ownership. Members join the car-share service and pay an annual fee and small hourly rates that includes gas, insurance, reserved parking, 24-hour assistance, and maintenance costs. When a member wants to use the vehicle, they simply place a reservation via phone or internet, pick-up the car in its designated and reserved parking space, drive where they need to go, and return the car to the designated parking space. Vehicles are available 24 hours-a-day, 7 days-a-week and can be used by the hour or by the day. Benefits of a car-share service include:

- *Reduced campus parking demand*
  Car-share programs reduce parking demand on campus, reportedly by 20 vehicles per shared vehicle

- *Reduced auto ownership*
  Many members that would have otherwise purchased vehicles often do not

- *Reduced traffic congestion*
  Car usage is reported to decrease by as much as 50 percent

- *Sustainable transportation option*
  Environmentally friendly with reduced emissions and fuel consumption

- *Lower user costs*
  User costs are reduced compared to auto ownership as Zipcar membership includes gas, maintenance, and insurance

Zipcar operates in many metropolitan areas, including Chicago, and serves dozens of college campuses throughout North America. Colleges and universities served by car-share programs exhibit a wide range of locations and enrollments.

When the program initially began at North Central College in spring 2008, one Zipcar was parked at the Highland Lot in the southern portion of campus. By fall 2008, a second Zipcar was added at the same location. To improve access to the vehicles, one of the designated spaces was relocated to the northern end of campus in the Kiekhofer Lot.

Table 4 summarizes the car-share program characteristics since the service began in spring 2008.

Table 4. Car-Share Program Summary

Description	Term		
	Spring 2008	Fall 2008	Spring 2009
Annual Fee			
Faculty / Staff / Students	$35	$35	$35
Community	$50	$50	$50
Registrants			
Faculty / Staff / Students	N/A	28	35
Community	N/A	N/A	N/A
Rate	$7 per hour $60 per day 180 miles per day	$7 per hour $60 per day 180 miles per day	$7 per hour $60 per day 180 miles per day
Subsidies / Incentives	NCC allocates $35 fee toward first month driving time	NCC allocates $35 fee toward first month driving time	NCC allocates $35 fee toward first month driving time
No. of Vehicles	1	2	2

N/A - Not Available

To date, the service has been underutilized. However, those who are members use the vehicles regularly and are loyal to the program. In general, the Zipcars have been available approximately 90 percent of the time. As shown in the table above, membership has increased over time since the service was made available. From fall 2008 to spring 2009, membership increased 25 percent. North Central College should attempt to increase

membership, promote and market the service to faculty, staff, students, as well as the surrounding community, and utilize various opportunities to reduce traffic and parking demand on campus.

Review of Vehicular Traffic Issues

Based on review of data collected, observations, and stakeholder input, the following summarizes key vehicular traffic issues.

- *North Avenue / Loomis Street Alignment*
  The City of Naperville recently completed the Fifth Avenue Study, a neighborhood planning study focused on the train station and surrounding neighborhood. As part of that study, several concerns were raised by the community regarding the offset alignment of Loomis Street at North Avenue as it presents issues for pedestrians crossing the intersection. Shifting the alignment of Loomis Street on the south side of North Avenue was not included in the Fifth Avenue Study final plan

- *Chicago Avenue Congestion*
  During the evening peak hour, Chicago Avenue experiences congestion and extended vehicle queues from the Chicago Avenue/Brainard Street intersection. Improving capacity by providing an additional travel lane in each direction along Chicago Avenue will negatively impact the campus and neighborhood character as well as pedestrian comfort crossing Chicago Avenue between the North Campus and South Campus.

Bicycle Circulation and Facilities

College campuses often maintain a concentration of multimodal transportation options, including bicycles. North Central College is no different, as opportunities are available to conveniently and safely navigate the campus by bicycle, travel to nearby restaurants and shops in downtown Naperville, and find available locations to park a personal or shared bicycle. Data collection, bicycle travel characteristics, bicycle parking utilization, and related programs concerning North Central College's bicycle characteristics are summarized below.

Bicycle Counts

As part of the intersection traffic counts conducted in May 2009 and outlined in the earlier "Vehicular Traffic - Traffic Counts" section, bicycle movements through each intersection were also recorded. In general, bicycle traffic counts at campus area intersections are relatively low, and peak periods of bicycle traffic are consistent with auto traffic and pedestrian count peaks. While students do utilize bicycles to travel between their residence hall, class, campus dining at Kaufman Hall, or the athletic and recreational facilities using the campus area streets, sidewalks, and paths, the bicycle volumes do not significantly impact current traffic conditions in the area.

The existing peak hour bicycle traffic volumes are illustrated on **Figure B**.

Bicycle Rack Utilization Survey

Many of the bicycle racks throughout campus are well utilized, while others typically maintain plenty of available spaces to park a bicycle. Factors contributing to utilization rates typically include visibility of the racks, proximity to building entrances, and uses of adjacent buildings. Due to either fully utilized or an absence of bicycle racks at some locations on campus, there are instances where bicycles are locked to objects such as stair railings, lamp posts, signs, trees. A lack of secure bike parking options may also discourage potential bicyclists from riding.

In effort to quantify current bicycle rack utilization, a survey of existing campus bicycle parking facilities was undertaken to determine the capacity and number of parked bicycles at each bicycle rack. The bicycle rack utilization survey was performed in early June 4, 2009, prior to the end of the spring term, from 7:00 AM to 6:00 PM to document rack occupancy characteristics throughout the typical weekday. **Figure C** illustrates the existing campus bicycle parking rack locations and capacity. **Table 5** summarizes the hourly utilization of each rack throughout a typical weekday.

Based on the bicycle rack utilization survey, the campus currently maintains a storage capacity of 92 bicycles. Subsequent to the survey data, the College added 66 bike rack spaces to the Res/Rec Center. As presented in Table 5, some racks are underutilized while other racks are clearly utilized beyond their capacity.
Figure D illustrates recommendations for increased bicycle storage capacity and opportunities to improve utilization at other locations.

Table 5. Campus Bicycle Rack Utilization

Location	Capacity	Occupied Spaces												Peak Occupancy
		7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A	12	0	1	1	2	0	1	0	2	2	1	1	1	17%
B	6	0	0	0	1	0	0	0	0	0	1	1	1	17%
C	8	4	7	7	7	6	5	5	6	5	5	4	4	88%
D	8	1	1	1	1	1	2	3	3	4	4	2	3	50%
E	4	0	0	0	0	0	0	1	1	0	0	0	0	25%
F	8	9	9	6	8	8	8	8	8	8	8	8	8	113%
G	6	6	6	6	7	6	6	7	8	7	8	8	9	150%
H	6	1	3	2	2	1	2	8	8	8	8	6	4	133%
I	12	9	9	6	6	7	7	6	6	6	6	7	8	75%
J	10	1	1	1	1	2	2	2	1	1	1	2	2	20%
K	6	12	9	9	7	7	7	7	8	8	7	8	8	200%
L	6	2	3	2	2	2	3	2	2	3	4	4	3	67%
Total	92	45	49	41	44	40	43	49	53	52	53	51	51	
% Utilization		49%	53%	45%	48%	44%	47%	53%	58%	57%	58%	55%	55%	

Attachment A: Traffic and Circulation Issues and Infrastructure

Cardinal Red Bike Program

In an effort to reduce auto travel and reduce parking demand within the campus area and encourage healthier lifestyles, North Central College recently implemented the Cardinal Red Bike Program, a campus shared bicycle program. Many communities and college campuses currently operate or have operated various forms of shared bicycle programs to achieve objectives such as:

- Increase mobility and accessibility within and around campus
- Offer a cost-effective transportation alternative to driving and parking on campus
- Supplement shuttle service between campus and remote parking
- Promote increased fitness, health, and wellness for program participants
- Promote environmentally responsible and sustainable forms of transportation

Over the years, various generations of shared bicycle programs have been developed and operated. Each generation of shared bicycle programs has presented new opportunities, challenges, and constraints. Initial forms of shared bicycle programs located in the Netherlands and Italy included numerous bicycles made available to the community to use for free. Similar to other campuses when initiating a shared bicycle program, this is the model followed by North Central College in spring 2008 when the Cardinal Red Bike Program started.

Initially, North Central College distributed 60 red single-speed cruiser-style bicycles around campus for students, faculty, and staff to use, as available. Riders could take a bicycle to their campus destination and park it outside, making it available for another rider. The following summarizes some of the general experiences from the first 1 ½ years of the program:

- *Maintenance*
  General maintenance of the bicycle fleet has been trouble-free. In spring 2009, the College hired a part-time bicycle repair person who undertook maintenance of the bicycles.

- *Support*
  The shared bicycle program was initiated and supported by North Central College administration. The program has been popular with students.

- *Costs*
  The costs to purchase the bicycles have averaged approximately $100 per bicycle.

- *Sponsorships*
  No sponsorships have been established at this time to assist in promotion of the program, acquisition of bicycles, or fleet maintenance.

- *Damage to Bicycles*
  Consistent with experiences of shared bicycle programs at other campuses, damage to the fleet is an issue. The intent of the program is to provide a convenient option to travel around campus for everyone. Since the bicycles are left unlocked to increase accessibility, a resultant tradeoff is lack of accountability by users. Thus, damage to the bicycles has been experienced, and is a major concern.

- *Security / Theft*
  Also common at other campuses with similar programs, theft of bicycles from the campus has been the primary issue thus far for the program. Initially, locks were included with the bicycles when they were placed in circulation. Students rarely used the locks and others reportedly determined how to reprogram the lock combinations to remove the shared principle of the program. Bicycles were taken off campus, abandoned, and/or removed by parties unknown. Several bikes have been recovered by Campus Safety and Naperville Police.

- *Availability*
  As new bicycles were introduced at the beginning of each term, the availability was high. However, as each term progressed, bicycles disappeared due to theft and vandalism and bicycle availability was limited.

Table 6 summarizes the Cardinal Red Bike Program fleet for each term.

Table 6. Cardinal Red Bike Program Fleet Per Term

Description	Term			
	Spring 2008	Fall 2008	Spring 2009	Total
Bicycles Introduced	60	40	20	120
Bicycles Remaining After Each Term	N/A	N/A	17	17

N/A - Not Available

Moving forward, a new scheme has been developed starting in fall 2009. In response to the loss of bicycles since the programs inception, the College is refining the program to offer the bicycles for "rent" on a term-by-term basis. Starting in the Fall Term 2009, students were offered a Cardinal Red Bike for a deposit of $30 per term. This includes the cruiser-style bike for use on and off campus, a cable lock, and maintenance. The deposit is refunded when the bike is returned in tack.

North Central College should promote bicycle usage on campus. Over time, the program should be monitored and refined to maximize utilization and all of its related benefits. Other alternative refinements for consideration in the future, including potential benefits and constraints, are summarized below:

- *Check bicycles out at one or more campus locations*
  + Provides accountability by the user
  - May require staffing to manage check out facility

- *Automated system using ID cards at designated bicycle racks*
  + Provides accountability by the user
  + No staffing requirements
  - Costs of system purchase and maintenance

- *GPS equipped bicycles*
  + Provides tracking ability if bicycles are stolen or abandoned to minimize loss
  + Could be combined with check-out system
  - Costs of system purchase and maintenance

- *Partner with a Naperville Bike Shop to sponsor the program*
  + Savings in bicycle investment
  + Builds community support
  + Increases customer base for business

- *Consider offering free bicycles to students who do not bring a car to campus*
  + Encourage responsibility and ownership
  + Potentially reduce student parking demand on campus
  + Sponsorship opportunities
  - Costs of purchasing bicycles
  - Students who are not already bringing cars would get a bike thus rewarding existing behavior

Pedestrian Circulation and Safety

Walking is the most prevalent form of transportation on a college campus. Whether it is within campus (i.e., residence hall to class, recreation center to dinner, etc.), to and from campus (i.e., to downtown shops and restaurants, from the Metra station, etc.), or through the surrounding neighborhood, creating and maintaining a convenient, enjoyable, and safe pedestrian-friendly environment is a key objective of North Central College. The following section summarizes current pedestrian conditions and facilities on and near campus.

Pedestrian Counts

Similar to the bicycle counts and the vehicular traffic counts conducted in May 2009, the number of pedestrians crossing each intersection approach was counted. In addition, pedestrian counts were also performed at the following three key mid-block locations on campus that experience significant pedestrian crossings.

- Van Buren Street: Brainard Street - Loomis Street
- Benton Avenue: Brainard Street - Loomis Street

- School Street: Brainard Street - Loomis Street

Similar to the vehicular traffic counts, the pedestrian counts were conducted on a weekday for the 11-hour period from 7:00 AM to 6:00 PM. The time period allows review of pedestrian activity levels throughout the day.

As can be expected given the north-south orientation of campus, the general pedestrian patterns are north-south through the campus core, along the east side of Brainard Street, and crossing Chicago Avenue at Brainard Street and Ellsworth Street. Pedestrian counts along Loomis Street are comparatively lower than Brainard Street, except the Loomis Street/School Street intersection accommodates pedestrians crossing to/from Kimmel and Seybert Halls.

Other concentrations of pedestrian crossings include Brainard Street at Benton Street as pedestrians walk towards Kaufman Hall for meals and adjacent residence halls, the traffic signal at the Chicago Avenue/Ellsworth Street intersection to/from Ward and Peterson Halls, the alley along the north-south center of campus, and Chicago Avenue at Brainard Street as pedestrians cross between the North Campus (academic core) and South Campus (Athletic Core and parking). **Figure E** illustrates the current campus pedestrian facilities.

The pedestrian volumes are notably higher in period from mid-morning (9:30 AM) to mid-afternoon (3:30 PM) than during the morning and evening peak periods of auto traffic on the surrounding street system. The existing morning, midday, and evening peak hour pedestrian volumes are illustrated on **Figure F**.

Review of Pedestrian Circulation and Safety Issues

Based on review of data collected, observations, and input received from various stakeholders, the following summarizes key pedestrian circulation and safety issues.

- *North Avenue / Loomis Street*
  As previously discussed regarding traffic issues, the offset alignment of Loomis Street at North Avenue presents challenges for pedestrians crossing the intersection as well. Currently, marked crosswalks are maintained on the north, south, and east approaches of the intersection only. While pedestrian counts at this intersection are not as high as other intersections in the campus area, during the recent Fifth Avenue Study conducted by the City of Naperville, several neighbors expressed concern regarding conditions due to the intersection size and offset configuration with drivers not acknowledging crossing pedestrians until they had already begun to turn.

  Potential realignment of the south leg of Loomis Street to align with the north leg of the intersection would reduce the intersection size, improve sight lines and expectations for both drivers and pedestrians, and allow for the installation of a marked crosswalk on the west approach on North Avenue.

As an interim solution to improve pedestrian movements through the intersection, or in lieu of ultimately realigning Loomis Street, a pedestrian crosswalk should be considered for the west leg of the intersection on North Avenue.

- *Chicago Avenue /Brainard Street Intersection*
  Several comments received from stakeholders indicated that Chicago Avenue feels easier and safer to cross on the west side of Brainard Street compared to the east side due to a shorter crosswalk length. The west side of the intersection includes curb extensions, or bump-outs, on the north and south sides of Chicago Avenue. Curb extensions effectively reduce the crossing distance and improve the visibility of pedestrians at an intersection; thus, making the crossing feel safer and more comfortable.

  Installation of curb extensions on the east leg of Chicago Avenue at Brainard Street will reduce the crosswalk length and make the intersection more pedestrian-friendly.

- *Chicago Avenue / Ellsworth Street*
  Recent pedestrian traffic signal improvements at this intersection include audible warnings for visually impaired pedestrians. The audible warnings clearly indicate when it is safe to cross and improve safety and mobility for all users. However, based on observations, westbound vehicle queues extend along Chicago Avenue from Brainard Street through the intersection at Ellsworth Street in the evening peak hour. Vehicles often queue in the intersection when the signal changes. Signs directing motorists to not block the intersection and crosswalks should be considered.

  Although most pedestrians activate the pedestrian signals by pushing the pedestrian button, several pedestrians cross Chicago Avenue before the signal changes and walk between queued vehicles. The main issue this presents is that pedestrians crossing Chicago Avenue to the north between stopped vehicles may fail to see, or be seen by, eastbound vehicles on Chicago Avenue, resulting in potential for vehicle-pedestrian accidents. An educational effort to promote pedestrian safety and reinforce traffic control regulations should be considered to increase safety of pedestrians/students on and near campus.

- *Non-continuous sidewalk along Loomis Street*
  The west side of Loomis Street between Goldspohn Hall and just south of School Street is missing a link of sidewalk. While the sidewalk diverts around the west side of the Goldspohn Lot, the connectivity of the public sidewalk system is awkward and inconvenient. The College should consider completing this link of sidewalk at some point in the future.

- *Lack of marked mid-block crosswalk on School Street*
  Crosswalks and regulatory signs identify designated mid-block crossings between Brainard Street and Loomis Street on both Benton Avenue and Van Buren Avenue. These crosswalks also generally align with the central alley system often used as pedestrian and bicycle routes through the center of campus. However, no mid-block crosswalk is currently marked on School Street between Brainard Street and Loomis

Street. Although traffic volumes are low and pedestrians do not appear to have any difficulty safely crossing School Street to get to/from Larrance Academic Center, Kiekhofer Hall, and Oesterle Library, a mid-block crosswalk with appropriate regulatory signs should be installed.

General Auto, Bicycle, and Pedestrian Recommendations

The following outlines general recommendations to address existing and anticipated transportation issues impacting the campus.

Traffic

- Cooperate with the City of Naperville, in the event the City chooses to undertake the project, to integrate the re-alignment of Loomis Street south of North Avenue as part of any adjacent facility construction or modifications to eliminate the offset alignment of Loomis Street.

- Monitor future traffic volumes to determine whether warrants for a potential traffic signal at the Chicago Avenue/Brainard Avenue intersection are satisfied to address ongoing evening congestion and maintain a controlled pedestrian crossing.

- Continue to promote the availability of car share to students and the surrounding neighborhood. Increased membership will only contribute to reduced dependence on bringing private autos to campus.

Bicycle

- Install additional bicycle racks at several locations on campus, particularly at residence halls and academic classroom buildings to accommodate increased bicycle usage and avoid securing of bicycles to hand railings, signs, lampposts, and trees.

- Incorporate bicycle traffic in the design of a north-south pedestrian spine through campus between Brainard Street and Loomis Street.

- Continue to evaluate and explore ways to increase participation in the Cardinal Red Bike Program through incentives, partnerships, and advances in technology to increase accessibility and accountability.

Attachment A: Traffic and Circulation Issues and Infrastructure

Pedestrian

- Working with the City of Naperville, construct curb extensions on Chicago Avenue at the northeast and southeast corners of the Chicago Avenue/Brainard Street intersection to improve pedestrian visibility and effectively shorten the crosswalk length. Such curb extensions are currently located on the west side of the intersection.

- Install "Do Not Block Intersection" signs at the Chicago Avenue/Ellsworth Street intersection to discourage traffic from stopping in the middle of the intersection to increase awareness and visibility of crossing pedestrians.

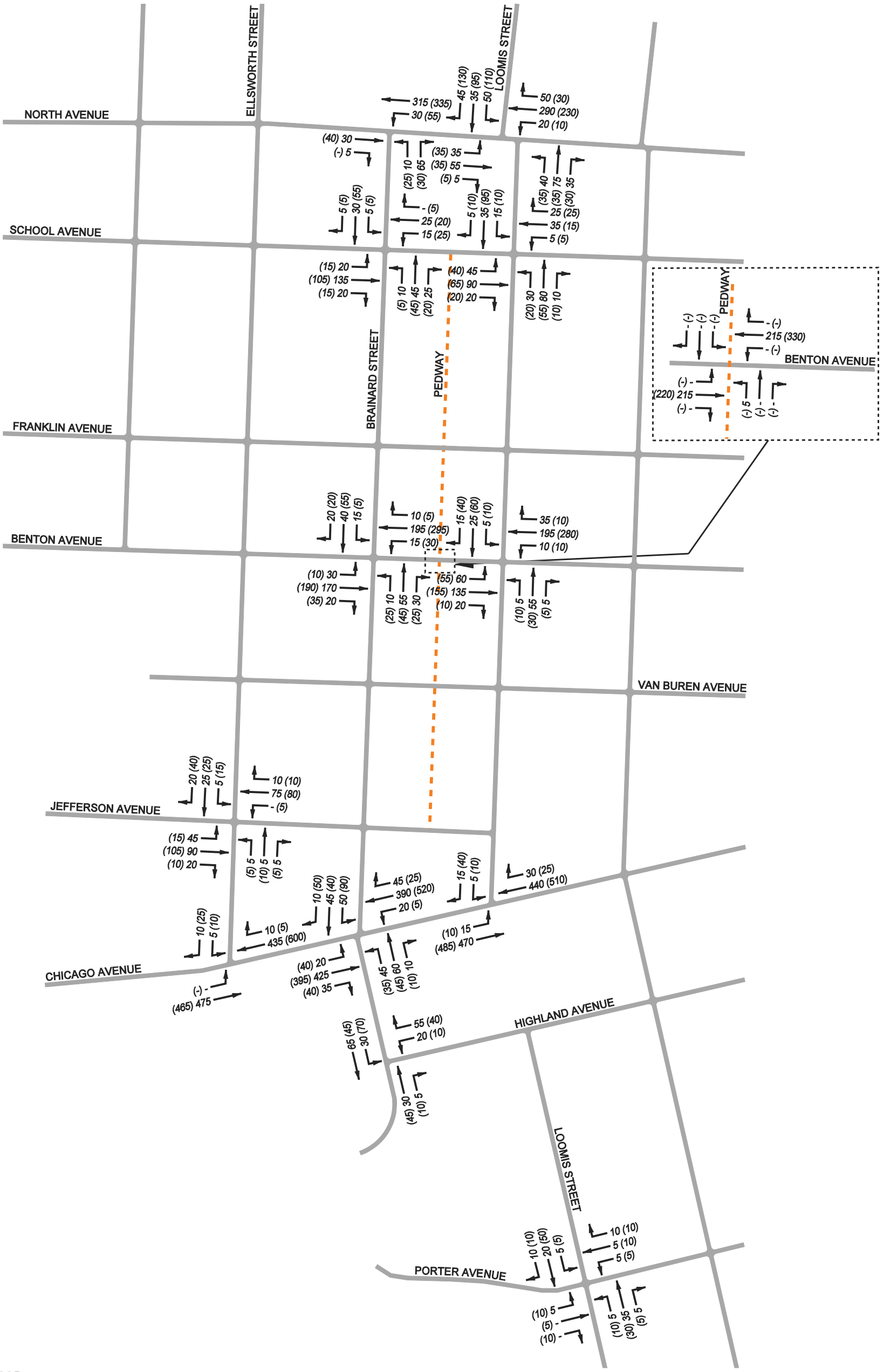
- Initiate a safety campaign geared towards students to educate them on traffic control regulations for pedestrians.

- Consider extending sidewalk along the west side of Loomis Street next to the Goldspohn Lot to maintain a direct pedestrian route and avoid having to walk around the parking lot.

- Establish a north-south pedestrian spine through campus, replacing the current alley between Brainard Street and Loomis Street. The shared-use pathway should accommodate both pedestrians and bicycles with amenities such as pedestrian-scale lighting, benches, and bicycle racks. Future design of a pedestrian spine should consider delineating the bicycle area from the pedestrian area to address potential conflicts between pedestrians and bicyclists, depending on anticipated traffic volumes.

- Construct mid-block crosswalks between Brainard Street and Loomis Street at the following locations:
    - > Van Buren Street
    - > Benton Avenue
    - > School Street

  The Van Buren Street and Benton Avenue locations will replace the existing painted mid-block crosswalks while the School Street location formalizes a mid-block crossing that links Oesterle Library on the south to Larrance Academic Center and Keikhofer Hall on the north. The crosswalks, with signs contrasting pavement materials/colors, promote visibility of crossing pedestrians, increase awareness of pedestrians by motorists, and slows vehicles as they pass through campus.



LEGEND

XX Weekday AM Peak Hour (7:30 - 8:30 AM)

(XX) Weekday PM Peak Hour (5:00 - 6:00 PM)

\- Less Than 5 Vehicles

CURRENT VEHICLE TRAFFIC PEAK HOUR VOLUMES

FIGURE A

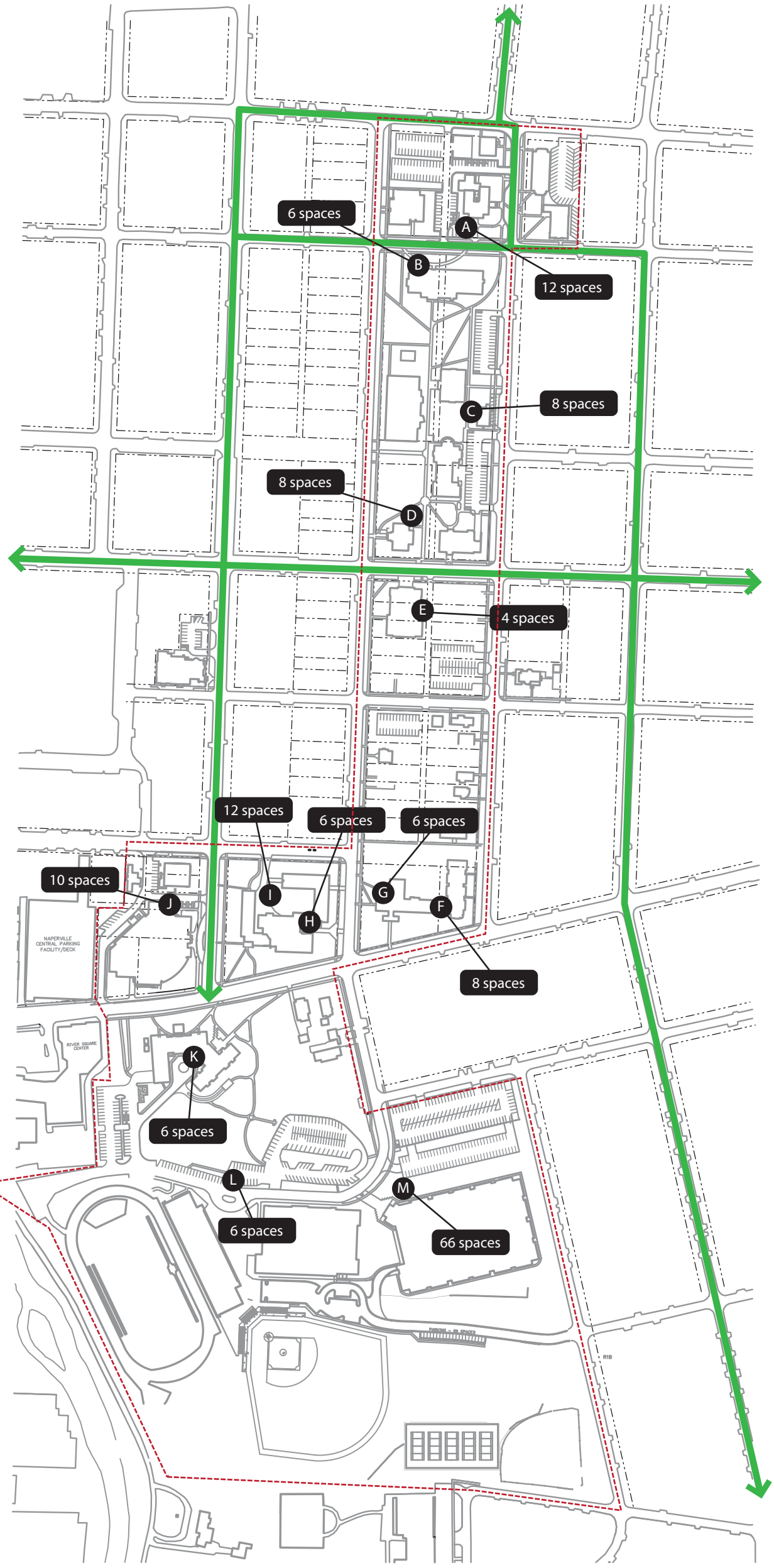
LEGEND

XX Weekday AM Peak Hour (7:30 - 8:30 AM)

(XX) Weekday PM Peak Hour (5:00 - 6:00 PM)

CURRENT BICYCLE PEAK HOUR VOLUMES

FIGURE B



LEGEND

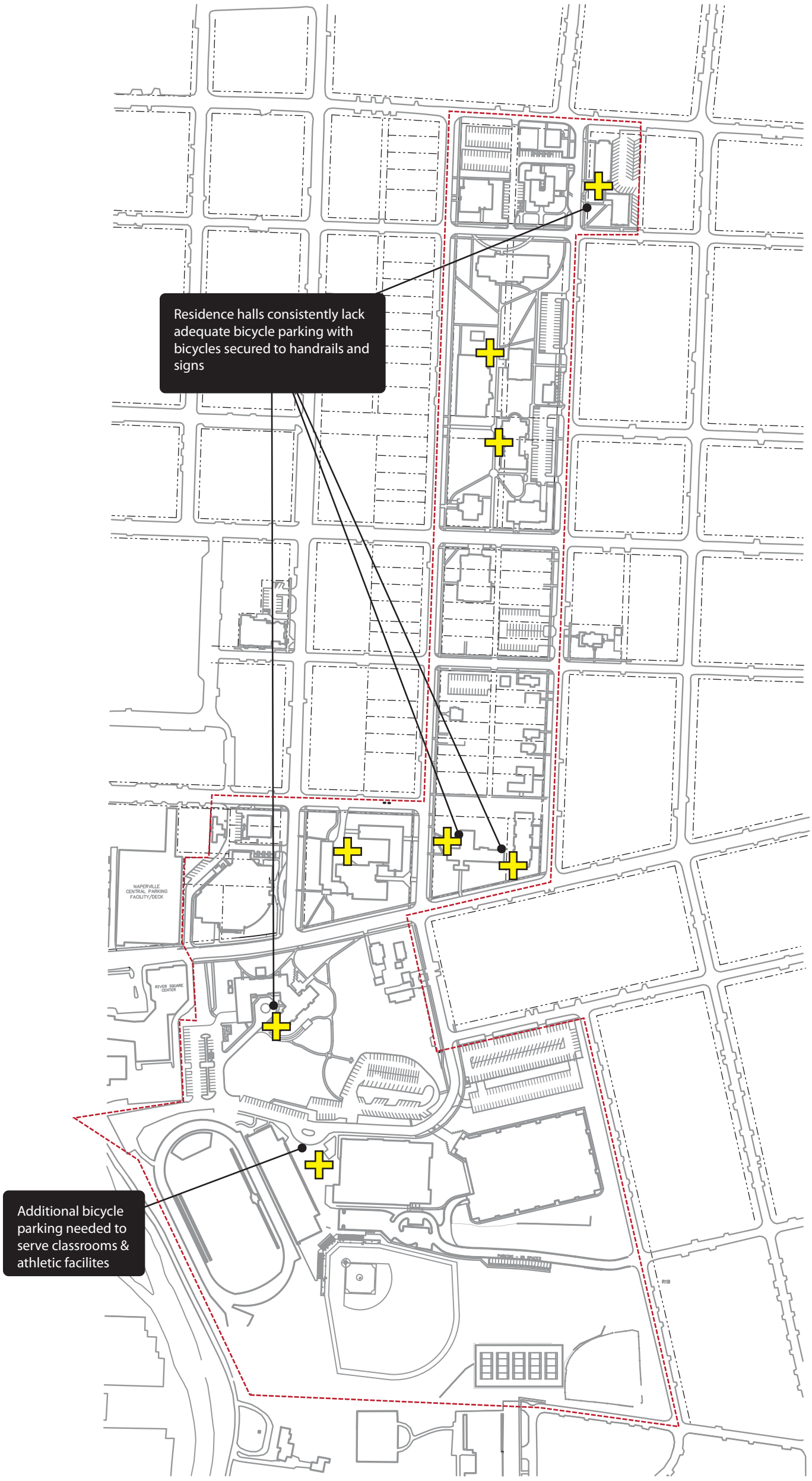
X — Bicycle Rack

X spaces — Capacity

City of Naperville On-Street Bike Routes

CURRENT BICYCLE RACK PARKING

FIGURE C

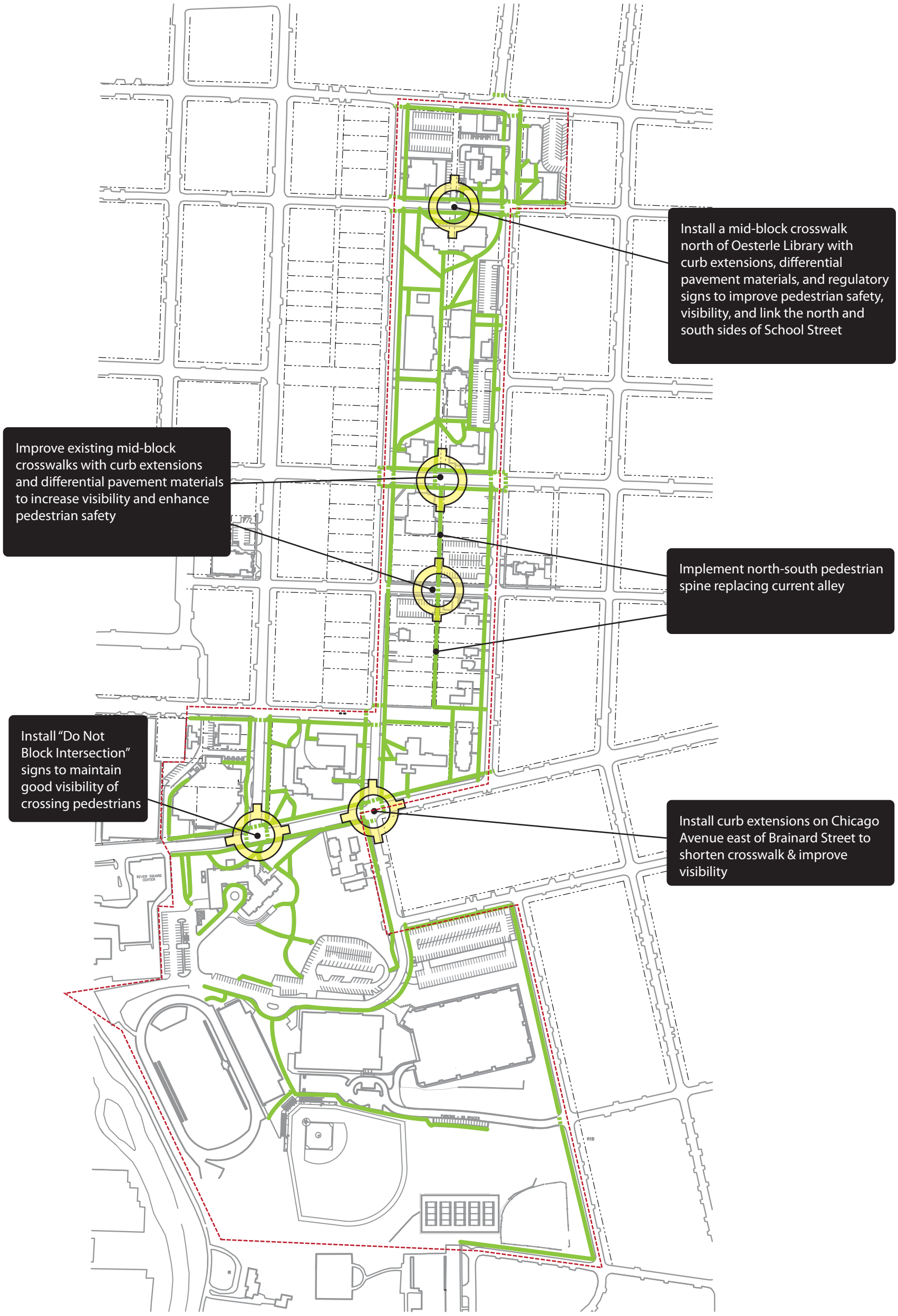


LEGEND

Additional Bicycle Racks

BICYCLE PARKING RECOMMENDATIONS

FIGURE D



LEGEND

Current Pedestrian Path

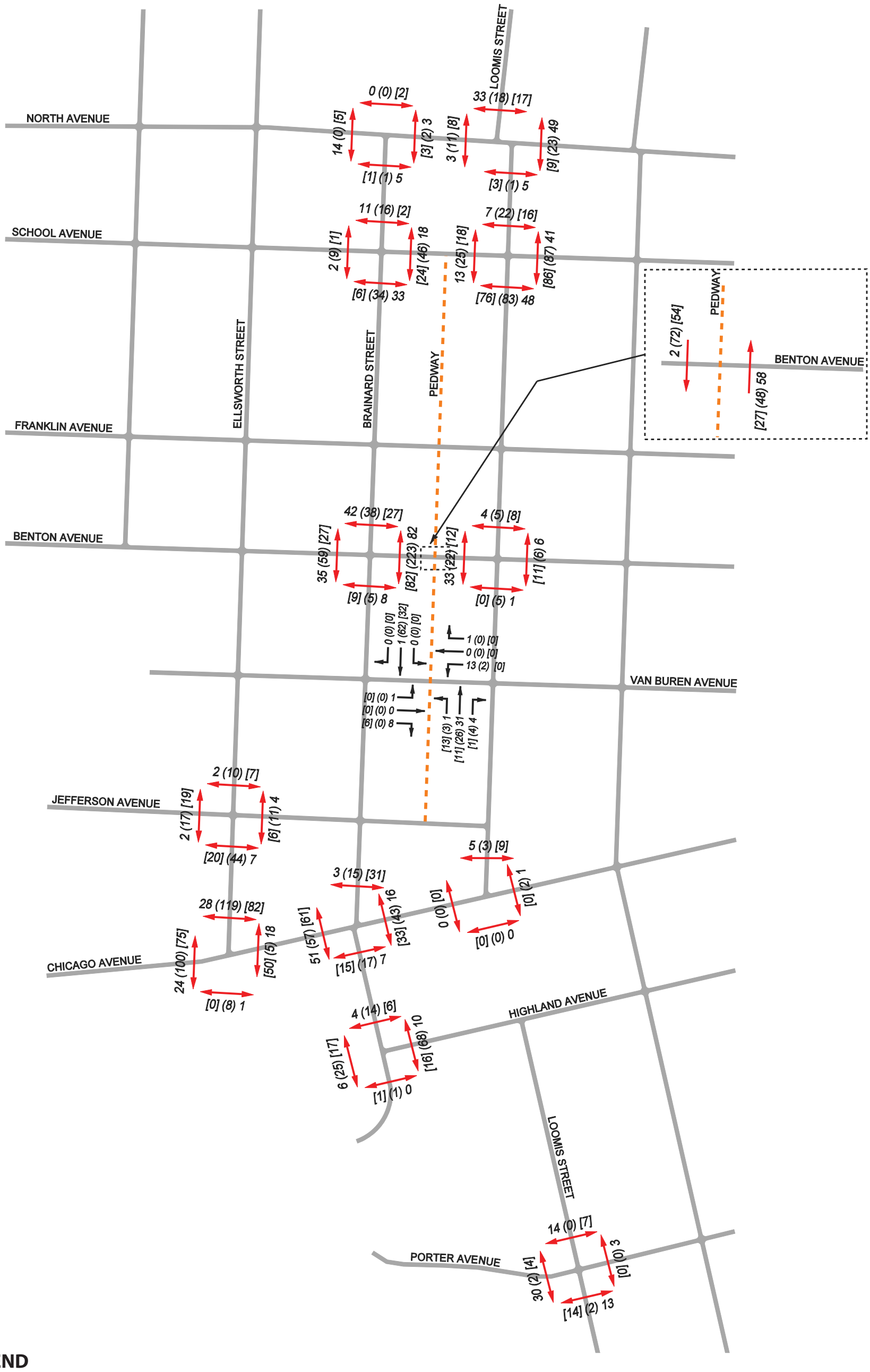
CurrentMarked Crosswalk

Key Pedestrian Crossing

XX Recommended Facilities

PEDESTRIAN FACILITIES

FIGURE E



LEGEND

XX Weekday AM Peak Hour (7:30 - 8:30 AM)

(XX) Weekday Midday Peak Hour (11:30 AM - 12:30 PM)

[XX] Weekday PM Peak Hour (5:00 - 6:00 PM)

\- Less Than 5 Vehicles

CURRENT PEDESTRIAN PEAK HOUR VOLUMES

FIGURE F

Attachment B: Parking Analysis

Current Parking Conditions

With a campus of more than 2,700 residential and commuter students and over 500 faculty and staff, successfully managing the parking needs of all users can be challenging. Given limited real estate, most college campuses consistently face challenges in providing adequate parking to serve campus needs. The following section presents and documents existing parking facilities (off-street and on-street), utilization conditions, and current policies used by North Central College to manage parking on campus.

Off-Street Campus Parking Facilities

North Central College currently maintains approximately 1000 parking spaces in 18 off-street parking facilities. Each parking lot or structure is dedicated to a range of users from a single group, such as commuter students, to multiple groups, such as faculty/staff/residential students. A summary of off-street parking facilities and characteristics on- and off-campus area is provided below.

Off-Street Parking Locations

Figure G illustrates the current campus off-street parking facilities along with their respective capacities and user designation.

In addition to those on-campus locations illustrated in Figure G, the College maintains a lease agreement with All Saints Catholic Academy to provide a remote, off-campus parking lot. Located approximately one mile west of campus (1155 Aurora Avenue), the remote lot is served by a free campus shuttle system that also maintains regular stops at the Wentz Concert Hall and Fine Arts Center, Westfield Mall, and Target.

Off-Street Parking Utilization

As part of the agreement with the City of Naperville to construct the Res/Rec Center in 2008 and implement the remote parking program in lieu of constructing additional parking on campus, the College monitors parking utilization in its off- and on- street parking facilities. This monitoring program, performed by Campus Safety, is completed each term and transmitted to the City. **Table 7** summarizes the parking utilization of off-street parking facilities during the spring 2009 term. As indicated in the table below, the peak period of parking demand in the College's off-street parking facilities occurs at 1:00 PM when 766 of the 940 surveyed parking spaces are occupied (81 percent).

Attachment B: Parking Analysis

TABLE 7. OFF-STREET PARKING UTILIZATION (SPRING 2009)

Location (Users)	Capacity	Occupied Spaces															Max	Peak Occupancy
		7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	10:00 PM	12:00 AM	2:00 AM		
Upper Highland Lot (All College)	175	74	74	77	81	87	89	90	89	88	89	80	72	61	68	73	90	51%
Lower Highland Deck (All College)	64	28	47	51	54	58	60	59	51	53	59	47	41	16	20	21	60	94%
Merner Lot (All College)	113	73	98	101	110	108	113	125	105	117	134	133	131	69	75	79	134	119%
Patterson / Ward Lot (Residential Students)	52	49	46	47	48	47	46	45	46	46	47	47	46	49	51	51	51	98%
Porter Street (Faculty/Staff/Commuter Students)	73	39	41	38	40	40	39	37	42	40	35	35	32	3	3	3	42	58%
Van Buren Lot (Faculty/Staff)	26	9	24	26	26	26	26	26	22	24	20	15	10	7	2	3	26	100%
Pfeiffer Lot (Faculty/Staff)	48	5	28	39	48	48	48	48	45	46	45	24	15	1	0	0	48	100%
Old Main Lot (Commuter Students)	34	6	26	30	31	29	30	31	32	31	23	22	23	5	2	3	32	94%
Goldspohn Lot (Commuter Students)	31	1	28	28	28	28	28	28	28	28	11	26	25	4	1	1	28	90%
Larrance / Keikhofer (Faculty/Staff/ Residential Students)	107	22	56	69	79	88	90	91	95	97	45	67	75	31	31	25	97	91%
Kimmel / Seybert Lot (Residential Students)	54	52	51	54	52	50	51	49	53	51	44	49	48	51	53	58	58	107%
Meiley-Swallow Lot (Commuter Students)	15	0	4	7	10	12	13	15	12	13	10	12	11	4	2	0	15	100%
Stadium /Pond Lot (All College)	26	24	27	26	26	25	26	26	25	25	23	21	20	24	24	24	27	104%
109-125 S. Loomis (Faculty/Staff)	13	5	5	8	13	12	11	15	17	17	12	9	3	2	4	5	17	131%
Kaufman Hall (Faculty/Staff)	9	4	6	6	7	7	8	7	7	6	4	4	5	3	3	1	8	89%
Remote Lot- - ASCA (Residential Students)	100	79	79	73	68	68	70	74	62	69	66	75	75	78	78	80	80	80%
Total [1]	940	470	640	680	721	733	748	766	731	751	667	666	632	408	417	427		
% Utilization		50%	68%	72%	77%	78%	80%	81%	78%	80%	71%	71%	67%	43%	44%	45%		

1 – Not included in capacity and counts are the 41 spaces at 999 E. Chicago Avenue and the 20 spaces at the Wentz Concert Hall and Fine Arts Center which were not in use on the day of the count for a total of 1001 off-street parking spaces

Attachment B: Parking Analysis

On-Street Parking Facilities

On-street parking on the neighborhood streets adjacent to the campus is key in serving the daily parking demand of the College. A summary of on-street parking locations in the campus area, parking regulations, and utilization characteristics is provided below.

On-Street Parking Locations

On-street parking is generally available on one side of each street within the campus area. In an effort to regulate the utilization of the on-street parking, promote parking turnover, restrict train commuters from parking on the streets and keep residential students from utilizing on-street spaces for long-term parking, the on-street spaces in the surrounding neighborhood maintain 4-hour limits. This 4-hour on-street parking limit has proven to be very successful in balancing the college's parking needs with the after-hours needs of residents and their guests.

Figure H illustrates the existing on-street parking areas within the campus area along with their respective capacities.

On-Street Parking Utilization

Similar to the College's commitment to monitor off-street parking on campus, on-street parking utilization is also surveyed each term and reported to the City of Naperville. **Table 8** summarizes the parking utilization of adjacent on-street parking facilities during the spring 2009 term. As indicated in the table below, the peak period of parking demand in the nearby on-street parking facilities occurs at 12:00 PM when 251 of the 400 parking spaces are occupied (63 percent). The counts are of ALL vehicles parked on the street and not all are College related.

Attachment B: Parking Analysis

TABLE 8. ON-STREET PARKING UTILIZATION (SPRING 2009)

Location	Capacity	Occupied Spaces															Max	Peak Occupancy
		7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	10:00 PM	12:00 AM	2:00 AM		
Chicago (Ellsworth - Brainard)	21	2	8	8	12	17	15	15	14	15	12	11	9	6	2	1	17	81%
Chicago (Brainard - Loomis)	22	6	9	10	14	16	16	16	16	12	16	19	18	13	7	2	19	86%
Chicago (Loomis - Sleight)	19	0	4	5	9	10	11	10	10	9	7	6	4	4	0	0	11	58%
Highland (Brainard - Loomis)	11	0	9	9	10	11	10	10	10	11	4	4	2	1	1	2	11	100%
Highland (Loomis - Sleight)	6	1	1	0	1	1	1	1	1	0	0	0	0	1	0	1	1	4%
Porter (Loomis - Sleight)	6	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	1	17%
Prairie (Loomis - Sleight)	6	2	2	2	2	2	2	1	1	0	0	0	0	4	3	3	4	67%
Jefferson (Ellsworth - Brainard)	18	2	7	7	8	7	7	8	8	7	7	6	4	13	10	6	13	72%
Van Buren (Court - Ellsworth)	5	0	2	2	0	0	0	1	1	0	1	0	1	4	0	0	4	80%
Van Buren (Ellsworth - Brainard)	8	0	1	1	1	0	0	0	0	0	0	0	0	0	2	2	2	25%
Van Buren (Brainard - Loomis)	6	0	5	5	5	4	4	3	3	1	0	0	2	0	0	0	5	83%
Van Buren (Loomis - Sleight)	6	1	4	4	4	5	5	5	5	4	1	0	1	1	1	1	5	83%
Benton (Ellsworth - Brainard)	11	3	10	10	10	9	9	8	7	6	4	2	2	2	3	1	10	91%
Benton (Brainard - Loomis)	4	2	4	4	4	4	4	4	4	3	1	0	0	2	1	0	4	100%
North (Ellsworth - Brainard)	8	0	0	1	6	6	6	5	4	4	1	0	0	0	1	0	6	75%
North (Brainard - Loomis)	7	0	4	4	7	7	7	7	5	4	4	2	2	4	3	0	7	100%
North (Loomis - Sleight)	9	2	7	7	7	7	8	7	7	9	7	5	4	5	5	5	9	100%
Ellsworth (Jefferson - Van Buren)	22	0	1	0	0	0	0	0	0	0	0	0	0	6	0	0	6	27%
Ellsworth (Van Buren - Benton)	9	6	4	5	7	7	7	6	6	5	3	2	1	8	1	0	8	89%

Attachment B: Parking Analysis

TABLE 8. ON-STREET PARKING UTILIZATION (SPRING 2009) - CONTINUED

Location	Capacity	Occupied Spaces															Max	Peak Occupancy
		7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	10:00 PM	12:00 AM	2:00 AM		
Brainard (Chicago - Jefferson)	8	3	6	5	6	6	8	7	6	6	4	3	3	8	1	1	8	100%
Brainard (Jefferson - Van Buren)	7	0	0	0	7	6	7	7	6	7	4	3	1	1	1	1	7	100%
Brainard (Van Buren - Benton)	9	0	7	7	9	9	8	8	7	6	4	4	3	1	0	0	9	100%
Brainard (Benton - School)	27	4	25	24	27	27	27	27	27	26	18	19	19	6	5	1	27	100%
Brainard (School - North)	10	1	6	7	10	10	10	10	9	10	8	7	6	1	0	0	10	100%
Loomis (Prairie - Highland)	23	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	2	9%
Loomis (Chicago - Van Buren)	14	8	8	8	12	12	14	14	8	9	7	6	6	8	6	6	14	100%
Loomis (Van Buren - Benton)	8	0	8	8	8	8	8	8	7	5	4	2	2	2	0	0	8	100%
Loomis (Benton - Franklin)	10	3	9	9	9	9	9	9	10	9	7	5	4	5	0	0	10	100%
Loomis (Franklin - School)	20	7	19	17	20	20	19	19	18	19	14	8	6	0	0	0	20	100%
Loomis (School - North)	11	5	8	8	10	10	11	11	10	10	2	1	1	2	2	2	11	100%
Sleight (Chicago - Van Buren)	14	1	1	1	2	2	2	1	0	0	0	0	1	1	0	0	2	14%
Sleight (Van Buren - Benton)	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Sleight (Benton - Franklin)	8	0	7	7	7	7	7	7	6	5	4	2	2	1	0	0	7	88%
Sleight (Franklin - School)	9	2	2	1	7	7	7	7	7	9	6	4	4	1	0	0	9	100%
Sleight (School - North)	10	0	1	1	2	2	2	2	2	1	0	0	1	3	0	0	3	30%
Total	400	**61**	**191**	**189**	**244**	**249**	**251**	**245**	**226**	**213**	**151**	**123**	**109**	**114**	**55**	**35**		
% Utilization		15%	48%	47%	61%	63%	63%	61%	57%	53%	38%	31%	27%	29%	14%	9%		

Attachment B: Parking Analysis

Parking Management Policies

Managing the parking needs for faculty and staff is a challenge that is vital to the College's operations and competitiveness amongst peer institutions. The College has employed several strategies and initiatives to reduce parking demand and auto travel to, from, and within campus. This section presents the current key campus parking management policies.

Off-Street Parking Permit Prices

North Central College currently employs a parking permit program for faculty/staff, residential students living on campus, and commuter students. The permits, or stickers, are color-coded to identify the designated user. Until fall 2009, the permit distribution was open, meaning that all applicable students could apply for a parking permit and the number of permits distributed throughout the year is not limited. Parking permits are issued for the right to park in off-street campus parking. However, receipt of a campus parking permit does not guarantee a parking space on campus as the total number of permits issued exceeds the number of available spaces.

For years, North Central College has offered a tiered approach to parking permit prices for residential students, meaning that the price varies depending on year in school. First-year students pay the highest annual fee while seniors pay the lowest fee. In 2003, as part of an effort to reduce the number of vehicles brought to campus by residential students, the College began annual increases of $50 for residential parking permits. That year, the annual permit fee for first-year students was increased to $150. The annual permit fee was established for a freshman class and maintained as that respective class proceeded through their sophomore, junior, and senior years. Each year between 2003 and 2008, the annual permit cost for the subsequent freshman class has increased by $50.

In fall 2008, the College implemented the remote parking with a policy requiring all resident freshmen to park in the remote lot. The remote lot, served by a free campus shuttle, was successful and reduced campus parking demand by approximately 80 cars in the first year.

Faculty and staff do not pay an annual permit fee to receive a permit and park on-campus. **Table 9** outlines the recent and current parking permit fee schedule.

TABLE 9. PARKING PERMIT FEE SCHEDULE

Description	School Year						
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Student (Resident)							
Freshman	$150	$200	$250	$300	$350	Remote[1]	Remote[2]
Sophomore	$100	$150	$200	$250	$300	$350	$350
Junior	$50	$100	$150	$200	$250	$300	$300
Senior	$50	$50	$100	$150	$200	$250	$250
Student (Commuter)	$50	$50	$50	$50	$50	$50	$50
Faculty / Staff	$0	$0	$0	$0	$0	$0	$0
Remote Lot	N/A	N/A	N/A	N/A	N/A	$0	$50

N/A - Not applicable

1 - In Fall 2008, Freshman were not allowed to receive on-campus parking permits and were required to park off-campus at a remote lot (All Saints Catholic Academy - 1155 Aurora Avenue) serviced by a campus shuttle

2 - In Fall 2009, North Central College offered the remote parking option to the sophomore, junior, and senior classes as an opportunity to reduce permit costs for students and reduce campus parking demand. All students pay $50

The increases in the annual parking permit fee have helped to reduce the number of vehicles brought to campus by residential students. In the past, just over half of the residential students parked on campus. Since then, the ratio of permits per residential student has decreased to approximately 0.41. Table 10 summarizes the recent trend in residential students and residential permits issued.

TABLE 10. RESIDENTIAL PARKING PERMITS PER STUDENT

Description	School Year						
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Residential Enrollment	984	942	998	1,083[1]	1,140	1,236	1,329
Residential Permits	563	599	495	421	562	527[2]	544
Permits Per Residential Student	0.57	0.64	0.50	0.42	0.49	0.43	0.41

1 - Includes 70 students living off-campus at Railway Apartments and therefore not included in ratio calculation

2 - Includes remote parking permits of 100 in 2008-2009 and 164 in 2009-2010

Campus Shuttle Service

As previously noted, in conjunction with establishing a remote parking lot at All Saints Catholic Academy in fall 2008, the College implemented a campus shuttle service. The shuttle service,

operating daily from 12:00 PM to 11:00 PM, is free to all students displaying a student ID. The shuttle route includes The Fine Arts Center and Wentz Concert Hall on campus, the remote lot, Target and Fox Valley Mall on IL Route 59 west of campus, back to the remote lot, and returning to The Fine Arts Center. The shuttle headway is one hour for all stops along the route. However, the remote lot maintains two stops as shuttles pass the lot both to and from campus.

Since the campus shuttle serves off-campus areas other than the remote parking lot, it contributes to providing mobility for students without using their own vehicles and is one of a variety of methods the College is using to reduce traffic and parking demand on campus.

City of Naperville Parking Contributions (Central Parking Facility)

North Central College contributes a fee per ticket for events at the Fine Arts Center to the City of Naperville as compensation for utilization of the adjacent Central Parking Facility (CPF). Due to the proximity of the Fine Arts Center to the CPF, it is reasonable to expect a portion of visitors to events at the Fine Arts Center to parking in the CPF. The financial contribution to the City compensates for the burden placed on the downtown parking supply to satisfy the parking needs of the College with respect to scheduled events at the Fine Arts Center. **Table 11** outlines the general contribution schedule to the City.

TABLE 11. CENTRAL PARKING FACILITY CONTRIBUTION SCHEDULE

Description	Contribution
Per Event	
Events with paid admission[1]	$0.50 per ticket
Level II or III events after 7:00 PM with paid/unpaid attendance greater than 300[2]	$0.50 per ticket
Annual Contribution Minimum	
Year 1 and Year 2	$6,500
Year 3 and Beyond	$13,000

1 - Except for faculty, staff, and students since they are already considered captive to the campus and are not expected to park in the CPF

2 - Level II events are NCC artists or local/regional non-profit presentations expected to occur 86 times per year and projected parking demand of 150-200 spaces per event. Level III events are commercial concerts/performances/presentations which are expected to occur 10 times per year and projected parking demand of 270-302 spaces per event.

Attachment B: Parking Analysis

Although the College does maintain ample parking on campus to accommodate the parking demand associated with events at the Fine Arts Center, much of it is not considered conveniently proximate to the Fine Arts Center. Rather than construct additional parking next to the venue for such events, agreements and partnerships with the City of Naperville to utilize existing parking allow the College to maximize efficient use of available land for the most productive and desired purposes (i.e., functional academic, office, or residential space, open space, etc.).

Campus Parking Enforcement

Campus Safety regularly patrols the campus area to enforce parking regulations in College-controlled parking facilities, including facilities.

In 2008, North Central College requested permission from the City of Naperville to begin ticketing illegally parked vehicles violating parking regulations. At this time, the City has not granted permission Campus Safety to issue tickets. The City continues to enforce on-street parking regulations on the streets within the surrounding campus area.

Campus Parking Facilities and Management

With a campus of nearly 60 acres, including approximately 1000 off-street parking spaces , the College is a major landholder next to downtown Naperville. Due to the limited availability of land on campus, it is vital that available land is used as its most productive and efficient function.

In the context of its Master Land Use Plan, North Central College should also be viewed as a business in a very competitive market. Students selecting a college have many hundreds of choices. They and their families must balance numerous variables (i.e., cost, value, quality, facilities, location). One significant contributing factor, on a campus where more than ¾ of students' homes are within a 1½ hour drive and where the majority of students work off campus, is the availability of transportation and parking. As addressed in each of the Master Land Use Plans beginning two decades ago, the College should continue to monitor parking conditions on campus and evaluate alternatives to manage them.

On the supply side, North Central College aims to maximize the use of available land for academic functions, residential uses, and recreational/open space. One primary objective for the Master Land Use Plan is to refrain from using additional real estate footprint for parking. Furthermore, to the extent possible, the College should manage increased enrollment and faculty/staff populations by maintaining the current number of off-street campus parking spaces, managing the demand side of the campus parking equation, possibly seeking additional remote parking opportunities, and if necessary, construct additional off-street

parking within the existing parking footprint. Through policies and programs directed at reducing the number of autos brought to campus and encouraging non-auto modes of transportation, the College can reduce the need to provide additional off-street parking on campus.

Key principles towards continued management of campus parking include:

- No net additional off-street parking footprint on campus
- Replace current parking that is displaced by new campus construction with structured parking within existing parking footprint, remote parking, and/or shared parking arrangements
- Maintain use of 4-hour on-street parking to serve daytime demand
- Seek opportunities of multi-use or shared parking spaces
- Orient parking on the periphery of campus or off campus to distribute demand and reduce conflicts with pedestrian activity in the campus core

The following section highlights potential on- and off-campus parking opportunities, alternatives to accommodate new campus facilities along with their resultant impact on parking conditions, and options to serve and manage the additional campus parking demands.

On-Campus Parking Opportunities

As the campus evolves over the next ten years and beyond, opportunities to replace, relocate, or increase parking efficiency are available using existing campus real estate. The following summarizes potential on-campus parking opportunities along with associated benefits and constraints. The number of parking spaces that may result from each opportunity will vary depending on the ultimate layout and design while balancing parking needs on campus.

- *Kimmel and Seybert Halls*
  + Potential to accommodate displaced parking at north end of campus resulting from new academic facility construction
  + Coupled with potential facility construction to the immediate west, provides opportunity to incorporate realignment of Loomis Street at North Avenue
  + Parking demand using the displaced lot would also be displaced
  - Displaces two residence halls

- *Expansion under Highland Lot*
  + Continues parking in an existing parking location without increasing the parking footprint
  + Multi-use for athletic and special events in South Campus
  - Concentrates more parking and resulting traffic in South Campus

- *Merner Lot*
  + Current parking location on campus
  + Take advantage of elevation change to visually block views of parking from street and neighbors
  + Multi-use for athletic and special events in South Campus
  - Vehicle access is generally limited to Brainard Street
  - Concentrates more parking and resulting traffic in South Campus

- *Tennis Courts at Prairie Avenue*
  + Utilize elevation change to construct two levels of parking and limit views of parking from street and neighbors
  - Location is at far south end of campus
  - Displaces tennis courts

- *Handicap Parking / Loading Lane on East Side of Brainard Street next to Pfeiffer Hall*
  + Provides convenient and accessible event parking for Pfeiffer Hall
  + Allows loading activities to occur off-street and minimizes impact on traffic flow
  + Multi-use space
  - Loss of green space

Off-Campus Parking Opportunities

In fall 2008, North Central College initiated a remote parking lot served by a campus shuttle bus. The remote lot, located approximately one mile west of campus at All Saints Catholic Academy, provided increased parking supply without allocating additional campus property towards parking. Through a parking permit policy requiring all freshmen who obtain a permit to park in the remote lot, convenient shuttle service between campus, the remote lot, and a couple shopping destinations in Naperville, the remote parking program has been successful. Starting in 2009, remote parking permits are available to all students at a significantly reduced annual fee compared to an on-campus permit and the number of spaces leased by the College has increased to approximately 170.

Expansion or establishment of new off-campus parking opportunities should continue as the College grows and strives to avoid increasing the off-street parking footprint on campus. The following summarizes potential options for consideration along with key benefits and constraints. Similar to on-campus opportunities, the number of spaces associated with each opportunity will depend on various factors including needs of off-campus landowners/partners, complimentary periods of peak parking demands, and acquisition process, among others.

- *Expand All Saints Catholic Academy Remote Parking Agreement*
  + Utilizes an existing parking lot

  + Opportunity to grow the existing remote parking program for students using incentives and/or revising the permit policy
  + Already a current shuttle stop, thus avoiding impact to the shuttle schedule and efficiency
  - Although some students bike between the remote lot and campus, it is not within convenient walking distance of campus
  - Limited availability for growth after accounting for parking needs by All-Saints

- *City of Naperville Public Works Site*
  + Within walking distance of campus
  + Potential development partnership and shared parking agreement with another entity
  + Location adjacent to the railroad tracks limits impact of parking lot on neighbors
  - Desired long-term use of property is unclear
  - Property is not currently controlled by North Central College which would have to be part of the public process for acquisition.

- *Shared Agreement with City of Naperville at reinvented Central Parking Facility (CPF)*
  + Adjacent to campus
  + Easily walkable for students, faculty, and staff
  + Complimentary peak parking periods (weekdays for College; weeknights and weekends for downtown businesses) provide multi-use opportunity
  + Partnership utilizes an existing parking location and does not require significant additional property
  - Timeline and funding to reconstruct CPF is not committed
  - Potential costs

- *Local/Neighborhood Church Parking Lots*
  + Complimentary peak periods of parking demand (weekdays for College; weeknights and weekends for church services, classes, and activities) provide multi-use opportunity
  + Easily walkable for commuter students, faculty, and staff
  + Utilize existing parking lots

Potential Facility Parking Needs and Options

Specific facility needs have been defined for the 2020 Master Land Use Plan. Potential new facilities identified in the 2020 Master Land Use Plan include a Science Center, a residence hall, and potentially a new academic/faculty office building. Alternative sites capable of accommodating these facility needs have been identified. Some combination of the potential sites may be used for construction, while others may remain in their existing use. Some potential sites currently maintain off-street parking and eventual construction on such a site would displace current parking supply. North Central College has committed to replacing parking that is displaced without increasing the off-street parking footprint on campus, or a demonstrated reduction in demand through parking management in lieu of

replacement; thus, other sites on or off campus may be needed to accommodate replacement parking. **Table 12** summarizes the various parking options associated with the alternative potential facility needs on campus.

TABLE 12. ALTERNATIVE CAMPUS FACILITY PARKING NEEDS

Description	Scenario A	Scenario B	Scenario C	Scenario D
New Facility				
Science Center	Site A_{west}[1]	Site A_{east}[1]	Site B[1]	Site C[1]
Residence Hall / Academic #1	Site A[2]			
Residence Hall / Academic #2	Site B[2]			
Residence Hall #3	Site C[2]			
Off-Street Parking Displaced				
Science Center	107	54	0	0
Residence Hall / Academic #1	13	13	13	13
Residence Hall / Academic #2	0	0	0	0
Residence Hall #3	0	0	0	0
Sub Total	120	67	13	13
Parking Demand				
Science Center	0[3]			
Residence Hall / Academic #1	0.43 spaces per additional residential student[4]			
Residence Hall / Academic #2	0.43 spaces per additional residential student[4]			
Residence Hall #3	0.43 spaces per additional residential student[4]			

1 - Refer to Map 4 (North Central College Science Center Options)

2 - Refer to Map 5 (North Central College Academic, Office, and Student Residential Options)

3 - Science Center is not anticipated to exclusively generate need for additional faculty/staff beyond normal growth in College faculty/staff levels

4 - Future residence halls may accommodate either relocated students already on campus or increased student enrollment. Thus, additional parking demand would be generated if a new residence hall accommodates increased student enrollment. The number of new students assigned to each potential residence hall is currently unknown.

Recommended Parking Policies and Practices

While it currently appears that there is enough parking on campus, as the College continues to grow over the next decade and beyond, several strategies are available to assist in managing the transportation and parking demands on campus. Some solutions require a "bricks-and-mortar" approach such as constructing new parking, creating curb extensions or raised crosswalks at pedestrian crossings, or installing additional bicycle racks. Other solutions are policy-based with programs, services, and incentives to manage transportation and parking conditions.

The policies and strategies summarized below can be implemented individually, but can also be combined to supplement or strengthen the desired effectiveness. These recommendations are intended to provide options for consideration by the College and will require further study and evaluation as the needs for implementation develop. The following summarizes recommended transportation and parking policies along with descriptions and key considerations.

- *Increase residential parking permit fees*
  In balance with student recruitment and competitiveness among peer institutions, North Central College should increase the annual parking permit fee for residential students. Since the annual permit fees were increased between 2003 and 2009, the number of vehicles brought to campus per residential student reduced considerably.

  + Reduce the number of autos brought to campus
  + Reduce burden to provide additional off-street parking as enrollment increases
  - Students grow weary of increased rates and fees

- *Designate sophomore residential students to remote parking*
  As needs for additional campus parking arise, designate residential sophomore students, or a portion thereof, to remote parking. Initially, limited on-campus parking permits may be issued to sophomores through a lottery system with remaining permits issued for remote parking. As parking needs increase, all sophomores can transition to a remote lot.

  + Reduce on-campus parking demand
  + Flexibility with opportunity to transition from a portion to all of sophomore class
  - Balance with student recruitment and retention among peers

- *Introduce annual faculty/staff parking permit fees*
  Requiring an annual permit fee for faculty/staff helps to reduce the number of permits issued as well as providing an incentive to use non-single-occupied autos to/from campus.

  + Reduce the number of permits issued

+ Establishes a basis for other transportation and parking demand management strategies
- Faculty/Staff will not appreciate the additional costs
- There is insufficient off-street parking to guarantee a spot if most employees choose to purchase a parking pass
- Employees will continue to have access to on-street parking which may negate the effort

- *Establish a carpool/rideshare program for faculty/staff and commuter students*
  A carpool or rideshare program can effectively reduce the number of autos brought to campus and parked each day. Options for ride-matching participants with compatible schedules and locations are available through online services. Supplemental programs include discounted/free parking permit fees, priority parking spaces designated for participants, and guaranteed ride home credits in case someone needs to leave early or stay late compared to their normal schedule.

  + Reduce traffic and the number of cars parked on campus
  + Minimal startup costs (potential ridematching service)
  - Requires administration and enforcement to be effective

- *Create a Non-Auto Commute Club*
  Introduce a program for those who choose not to obtain a parking permit and commute to campus by modes other than single-occupied auto for a set number of days each week or month. Such programs build a culture and pride in sustainable transportation choices. Incentives to encourage participation in such non-auto programs often include rewards, prizes, and merchant discounts, among others. Examples may include partnerships with neighborhood or downtown Naperville businesses (i.e., restaurant discounts, gift cards, etc.) that are easily accessible by foot or bike from campus, weekly/monthly/annual prizes (i.e., gift cards, trips, additional vacation time), recognition programs, sustainable benefits such as carbon offset donations, or related subsidies towards non-auto commute items (i.e., bicycles, shoes, helmets, locks).

  + Encourages non-auto transportation options
  + Reduces parking demand on campus
  + Promotes healthy lifestyles
  - Cost of incentives

- *Establish a Transportation Improvement Fund through parking permit fees*
  Allocate parking permit fees, or a portion thereof, towards a dedicated fund used to implement transportation and parking improvements on campus. Potential uses may include improved pedestrian sidewalks and paths, additional bicycles for the Cardinal Red Bike Program, new bicycle racks, rewards for a non-auto commute club, pedestrian safety improvements, and parking enhancements among others. Establishing a dedicated Transportation Improvement Fund from parking fees also provides transparency for those paying the fees and an understanding that they are

going towards tangible and related improvements, which typically improves acceptance of increased fees.

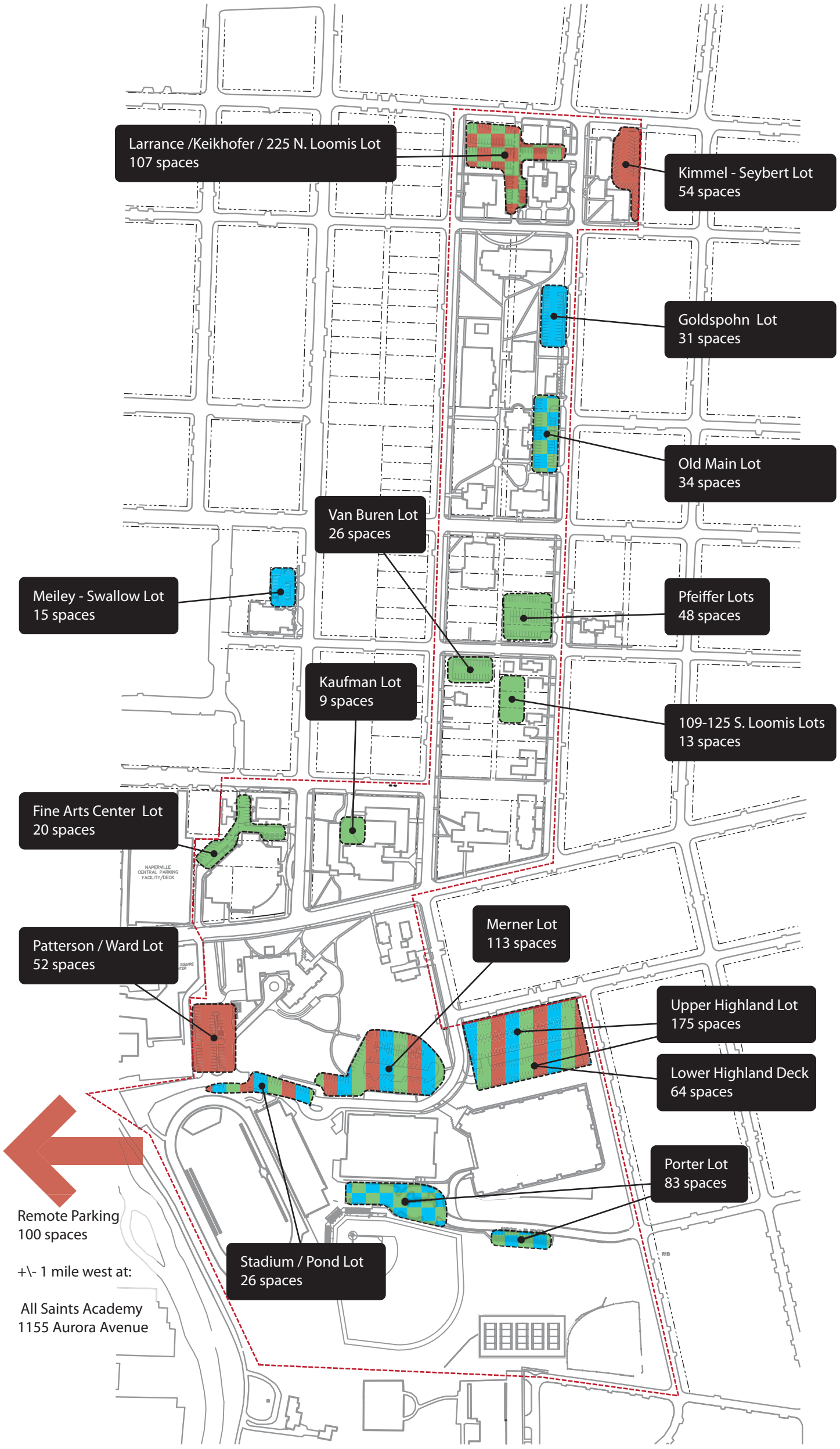
+ Provides funding source for transportation and parking improvements
- Permit fee revenue is already allocated to help underwrite cost of campus safety

- *Allow Flex Schedules / Compressed Work Week / Telecommute Support*
  Some staff may have work responsibilities that are compatible with non-traditional work hours or have flexibility to work from home. Clearly, not everyone would be eligible. Flex schedules maintain a core range of hours at work while allowing flexibility in start and end times. This allows staff to avoid rush hours or take care of family responsibilities such as getting children to/from school or day care. Compressed work weeks allow staff to work an extra hour or two over the course of several days and stay home one day every week or two. This can result in lower traffic and parking demand on those days at home. Finally, telecommuting support assists those who can work from home one or more days; thus, not generating traffic or parking demand.

  + Reduces peak hour traffic generation and parking demand on campus
  + Builds staff morale by reducing commute times
  + May reduce space needs for administrative and office functions
  - Not all staff are compatible or eligible
  - Difficulty in keeping offices open during operating hours as many offices are one-person

- *Investigate developing an Employer Assisted Housing program*
  Employer Assisted Housing programs provide financial assistance through grants for faculty and staff to purchase a home near campus or connected transit lines. Grants are typically used towards down payments and closing costs

  + Improves accessibility to campus and ability to use non-auto modes of transportation
  + Reduces commute times
  + Increases the investment of the College to the community

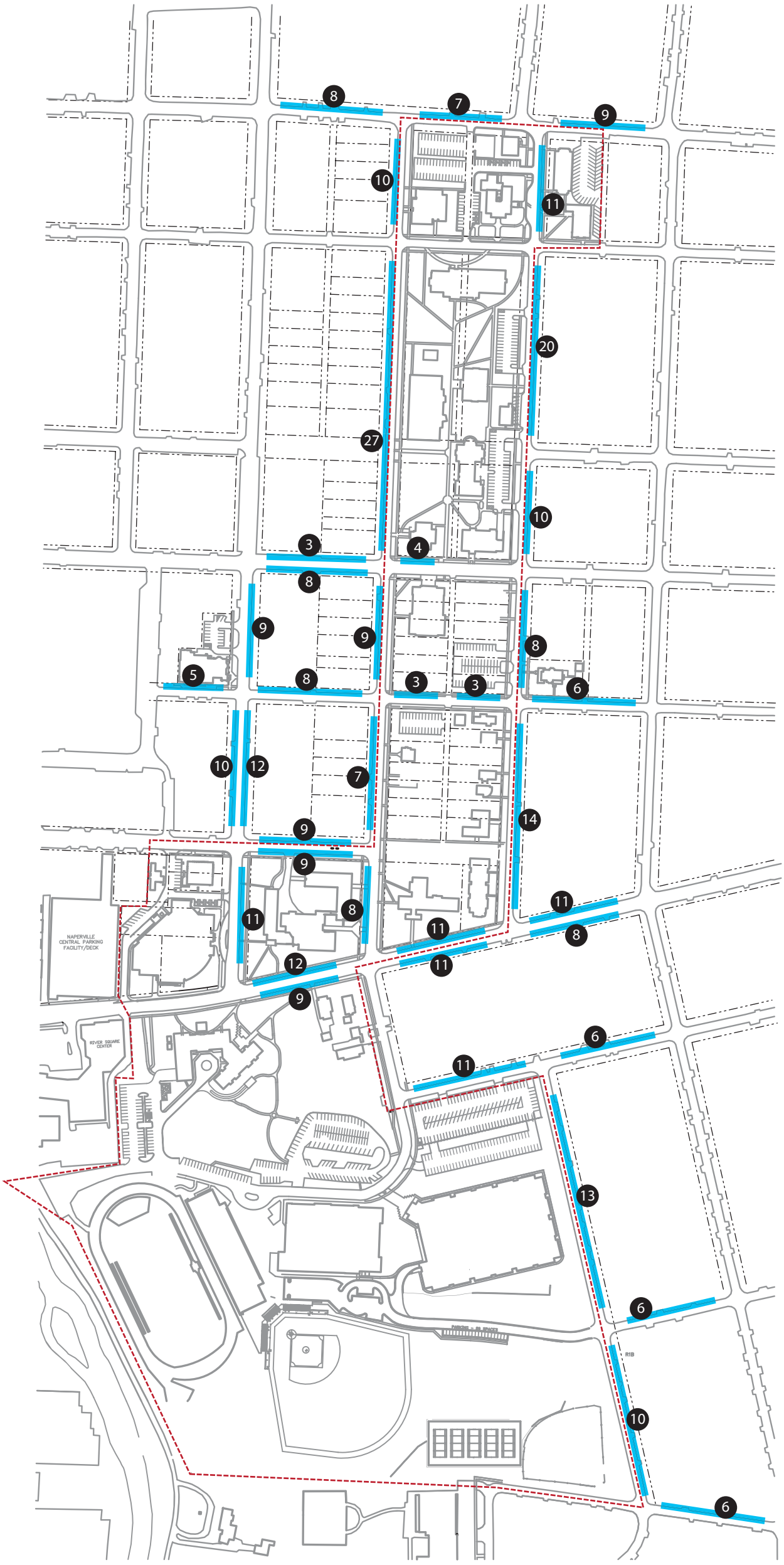


LEGEND

- Residential Student Parking
- Faculty / Staff Parking
- Res. Student / Faculty / Staff Parking
- Commuter Student Parking
- All College Parking
- Com. Student / Faculty / Staff Parking

OFF-STREET PARKING FACILITIES

FIGURE G



LEGEND

On-Street Parking

Estimated Number of Spaces

ON-STREET PARKING FACILITIES

FIGURE H

Attachment C: Stormwater Management and Utility Support

CEMCON, Ltd. has collected and reviewed available infrastructure system data and stormwater management issues as they relate to planned campus-wide improvements. The topographic and planimetric base map (*attached hereto*) was updated to illustrate the overall campus facilities/layout and those existing service utilities from the public record as well as site development plans and surveys for several campus areas recently prepared by CEMCON, Ltd.

To the extent necessary, CEMCON, Ltd. has coordinated with City of Naperville staff to solicit information on the public utility systems within and adjacent to the North Central College Campus as well as planned public system upgrades. The collected information was utilized to assess possible deficiencies that may impact elements of the 2010 - 2020 Master Land Use Plan. Following is a summary of utility and stormwater management issues to be considered at this juncture in the planning process.

I. Stormwater Management and Conveyance Systems

A. South Campus

As illustrated on the attached exhibit, approximately 38 acres (*64%*) of the overall 59± acre campus is located south of Chicago Avenue. Of these 38 acres, approximately 14.5 acres drain directly to the West Branch DuPage River, with the 23.5 acre balance draining to the Steeple Run Tributary (*tributary enters the campus at Porter/Loomis.*) Since 1998, North Central College has completed numerous flood control and stormwater management and conveyance improvements within the South Campus. Each of these improvements was configured such that stormwater could be adequately conveyed and managed (*via detention/retention basin*) in accordance with the DuPage County "Countywide Stormwater and Flood Plain Ordinance". The City of Naperville is required to enforce the County Ordinance for all development and re-development projects that fall within the Ordinance guidelines. Significant stormwater management and conveyance improvements in the South Campus that have been completed since 1998 include:

- Steeple Run Flood Control Project at North Central - South Campus in 1998 – 1999 which improved low flow and overland flood route conveyance capacity and location, and enabled the College to improve the football and baseball stadiums and construct additional parking south of Merner Fieldhouse and Championship Plaza. A stormwater detention facility was constructed just west of the baseball stadium to control rainfall-runoff for the referenced improvements as well as future improvements contemplated at the time.

- In 1999 – 2000, Ward Hall was constructed as an addition to Patterson Hall. The improvements provided for a stormwater management (retention) facility to control rainfall – runoff for both facilities as well as associated parking and access drive improvements. This well landscaped retention facility—the pond--has now become an amenity on the south campus.

- In 2008 – 2009, the "LEED Certified" RES/REC Center was constructed immediately east of Merner Fieldhouse. As part of this project, approximately 1.9 ac.-ft. of additional stormwater storage (*underground tank and pipes*) was constructed. This additional storage functions in concert with the detention facility located just west of the baseball stadium, and provides stormwater management at the required 0.1 cfs/ac release rate for all improvements within the South Campus. This includes an additional storage provision for the Highland Parking Deck (Phase I) and any future improvements to the adjoining Highland surface lot.

- In 2009-2010, North Central completed the Tennis Court Complex near the south property line of the South Campus (just west of the softball field). This project also included an underground storage tank with approximately 0.7 ac.-ft. of storage to allow for the requisite 0.1 cfs/acre release rate.

B. North of Chicago Avenue

For the 21± acres of developed campus property north of Chicago Avenue, stormwater management (*storage*) exists for the facility renovations and site development that have occurred since the 1990's. As illustrated on the attached exhibit, approximately 3 acres of the property drains easterly (*via Franklin Street storm sewer*) to the Steeple Run Tributary, with the 18-acre balance draining westerly to the W. Branch via numerous limited size storm sewer systems and overland flood routes (roadways).

Significant stormwater management and conveyance improvements within the campus north of Chicago Avenue that have been completed since 1996 include:

- The Wentz Concert Hall and Fine Arts Center includes connected underground stormwater management storage north and south of Chicago Avenue.

- Old Main facility includes above ground storage in green space areas adjacent to the building.

- Kiekhofer Hall renovation included stormwater management storage within the parking lots north and west of the building.

- Meiley–Swallow Hall includes underground storage in the reconstructed parking lot north of the building.

- Schneller Sisters Residence Hall and Seager Residence Hall include stormwater detention storage in the open space area between Seager Hall and Chicago Avenue.

Attachment C: Stormwater Management and Utility Support

C. General Planning Guidelines

At this point in the planning process it is not practicable to define or even locate the exact stormwater management and conveyance controls and parameters which will be required per Ordinance for new development and/or re-development of campus facilities under the proposed 2010 - 2020 Master Land Use Plan. Rather, a review of the Ordinance requirements as they relate to general Master Land Use Plan components would be most useful as a planning tool and for promoting discussions with City officials. In addition to stormwater management controls outlined below, the "DuPage County Countywide Stormwater and Floodplain Ordinance (Sec. 15-113.11) does require (where practicable and necessary) the use of Best Management Practices (BMP's) for projects considered "Development" under the Ordinance. In general, BMP's are measures to help prevent stormwater quality degradation and to enhance stormwater quality. BMP's manage stormwater quality through the control, capture and treatment of stormwater pollutants. In March 2008, DuPage County published the "Water Quality Best Management Practice Technical Guidance" manual to provide guidance on the design and implementation of BMP measures. The referenced manual outlines possible Stormwater Treatment BMPs which are usually permanent in nature such as naturalized/vegetated detention basins, infiltration swales, permeable pavements, etc., and Sediment and Erosion Control BMPs such as silt fencing and sediment traps, which are incorporated into most all development projects. As a general rule, the effectiveness of BMPs is site specific and should only be selected where appropriate and cost effective.

1. Building Renovation and Additions

The Master Land Use Plan recommends numerous building renovations to improve the quality and function of interior space as well as enhance existing façades. In theory, renovation does not change the building footprint, would not alter the character or amount of rainfall-runoff, and therefore would not require stormwater storage.

The DuPage County Stormwater Ordinance provisions do not apply to minor building renovations, including additions whereby the lot is less than 1 acre in size, or where new development will not total more than 25,000 S.F. for a lot that is greater than 1 acre in size; in this case(s), the City of Naperville has developed standards entitled "Proposed Stormwater Detention Requirements for Re-development Sites less than 1 acre in size". The standards and guidelines under the referenced document vary depending on existing percent impervious of the site as well as cumulative building footprint expansion percentage related to existing building size. Under the City standard, detention volume is calculated based on 0.15 cfs/ac. and no stormwater detention is required where the cumulative impervious footprint expansion is less than 500 sq. ft.

As a general rule for Building Renovation and Minor Addition portions of the Master Land Use Plan, a maximized reduction in impervious surface and use of Best Management Practices (BMP's) will be an objective, and will be required by the City of Naperville and the DuPage County Stormwater Ordinance.

2. Pedestrian Access Corridors

The Master Land Use Plan also illustrates a pedestrian spine and integrated access corridors (*sidewalk*) through the campus between Chicago Avenue and North Avenue. This walkway system will replace and improve (*in phases*) the existing system. Given the linear nature of the planned walkway system and inherent topographic constraints, it may not be feasible or possible to provide full stormwater management storage for the walkway reconfiguration. Rather, the focus of the walkway improvements should be on reducing overall impervious area while enhancing function, aesthetics, open space, and even creating natural areas. When coupled with the planned pavement removal, the ability to reduce impervious unmanaged stormwater runoff areas is greatly enhanced, and can provide a runoff rate and volume reduction watershed benefit. For the linear pedestrian spine improvements, methods of infiltrating rainfall-runoff into the ground should be evaluated. For example, permeable pavers or pavements over a layer of open-graded stone can provide for stormwater storage (currently under review by DuPage County for use as storage credit) and a Best Management Practice by filtering and infiltrating runoff. In addition, a perforated HDPE pipe and open graded stone backfill system could be considered as a method of providing stormwater storage and a BMP such as that utilized for a portion of the stormwater storage for the NCC Wentz Concert Hall Project in 2008. These methods of stormwater management can provide for a dual-use within a single improvement footprint, in lieu of utilizing valuable and limited open space for surface storage.

3. New Development or Re-Development Areas

The Master Land Use Plan recommends a New Science Center, Additional Academic / Classroom space, Student Housing, Faculty Offices, and a Natatorium. A number of potential options are presented, including renovations and additions, new development, or re-development of existing building sites. As with recent development and redevelopment projects within the overall campus, the City will require stormwater management (*storage*) for the above planned facilities. Stormwater storage is the only means by which rainfall-runoff can be attenuated to prevent increasing flow rates in downstream connecting storm sewer systems. The adjacent City storm sewers are somewhat limited in size, and most likely are taxed during even moderately intense rainfall events.

For planning purposes, institutional-type development will require 0.4 to 0.5 acre-feet of stormwater storage per acre of development or re-development. For comparison, 0.5 ac.-ft. is approximately equivalent to 163,000 gallons. This intermittently inundated storage is typically provided in above ground depressions which may or may not function as dual purpose areas. Above ground storage provides potential for the use of Best Management Practices through creation of natural areas to promote infiltration and enhance water quality. In space-limited areas, underground storage is an option to above ground storage, and this storage method has been utilized on several recent College projects as outlined above. If the requisite stormwater storage cannot physically or feasibly be placed on-site, storage facilities may be located off-

site provided that stormwater be conveyed from the development site to the off-site facility. Where on-site and off-site stormwater storage can not be accomplished in whole or in part, the County has implemented a Detention Variance Fee Program or Fee-in-Lieu-of storage. This program is typically viewed as a last resort option and requires a significant technical and funding analysis approval process.

It should also be noted that the DuPage County Stormwater Ordinance was updated in March 2005 to include additional stormwater provisions for "re-development" sites. In general, for development sites greater than 1 acre whereby the existing site is at least 80% impervious as of March 2005, 2-year storm event storage may be provided at a 0.04 cfs/acre release rate in lieu of 100-year event storage. There are numerous criteria outlined in the Ordinance that must be satisfied to meet the eligibility requirements for the reduced storage, however, this Ordinance provision should be evaluated for eligibility on each College project involving re-development.

As the campus planning progresses and definitive project phasing and site development parameters are defined, the College will endeavor to closely coordinate with City staff to discuss individual projects and review available and acceptable options for stormwater management and cost-sharing.

II. Water Distribution and Fire Protection System

As illustrated on the attached base map exhibit, public water main size and location data was collected from the City as well as from engineering plan and survey documents prepared by CEMCON, Ltd. for recent projects. In general, public water supply for the College Campus north of Chicago Avenue consists of a 6 - 8 inch water main grid with 8 inch main along Loomis, a 10 inch main on Benton, and a 12 inch main on North Avenue. Fire hydrants exist at each block corner throughout the Campus, and at numerous mid-block locations due to fire suppression improvements to residence halls implemented by NCC over the last 5 – 7 years. All residence halls on campus now include an internal Fire Suppression (*Sprinkler*) System. The South Campus water supply is via 8-inch main extended through and between Chicago Avenue and Loomis Street as part of the Ward Residence Hall and South Campus Athletic Facilities Improvements. Fire hydrants exist just south of the Ward Residence expansion, between the new football grandstand and Merner Fieldhouse, and immediately south of Merner. In 2008 as part of the RES/REC Center project, the College installed a 12-inch watermain (*see Base Map*) along Loomis Street between Highland Avenue and Porter Avenue to further enhance water supply (*fire protection*) for the project.

The City of Naperville Water and Wastewater Department was contacted to obtain operational information and system capacity studies or data. The City staff indicated that there are no known domestic water service issues within the campus vicinity in terms of maintenance, water pressure or water quality.

Since 2000, the City of Naperville has installed significant water distribution in and around the campus and downtown area (*See Base Map*). Specifically, the City has installed a 12" watermain from the east along Highland Avenue to Brainard Street, north on Brainard Street

to Chicago Avenue, along the south side of Chicago Avenue to Ellsworth Street, and north on Ellsworth Street to Jefferson Street. This 12" watermain also extends westerly from Ellsworth Street along Chicago Avenue and Jefferson Street to the downtown area. In addition, the City has installed a 12" watermain along North Avenue between Sleight Street and Ellsworth Street. The City plans to extend the 12" main on North Avenue westerly to Mill Street to further enhance water distribution supply in the vicinity.

In addition, the City has recently commissioned the development of a calibrated City-wide Water Distribution Computer Model which can be utilized to evaluate system pressure, fire flow, storage, etc. for a variety of system demand scenarios, as well as a useful tool for design and identification of needed capital improvements. Based on the model analysis, the City provided CEMCON, Ltd. with a copy of a fire flow analysis exhibit which illustrates available fire flow (gpm) under the Maximum Day Demands, which is a typical fire flow analysis scenario. Modeling results indicate that available fire flow would be approximately 4,000 gpm in the campus areas north of Chicago Avenue, and 3,000 to 4,000 gpm in the South Campus area. These project fire flows are consistent with the Naperville Municipal Water and Sewer Code (Chapter 2 – Article A) suggested guidelines which dictate 3,000 to 4,000 gpm fire flows for institutional areas.

Although domestic water supply does not appear to be a problem within the campus, the City should carefully review the extent of Master Plan renovations and new development planned and conduct a comprehensive analysis to define both private and public fire protection demands and infrastructure requirements. Ideally, this effort should be completed early in the planning stage to establish a plan and capital improvement cost estimates for future infrastructure improvements.

III. Sanitary Sewer Collection System

From the public record and site development plans prepared by CEMCON, Ltd., sanitary sewer main size and location data was included on the attached base map. Except for the South Campus area which is served by an 18-inch sanitary trunk sewer installed by the College in 1999 as part of the South Campus Athletic Field and Stadium Improvements, the campus sanitary sewer collection system consists of 8-inch mains on Brainard and Loomis connected to the 10 inch trunk sewer on Benton Avenue, and an 8-inch main on Ellsworth Street connected to the 10 inch trunck sewer on Chicago Avenue. Both of these trunk sewers connect to the Washington Street sewer system.

The City was contacted and did not have any flow studies available for the Benton or Chicago Avenue trunk sewers, but did indicate that these sewer lines were among the oldest in the City having been constructed between 1900 and 1910. The referenced sewers consist of clay pipe, but have been lined to control infiltration inflow. The City indicated that there are no known capacity deficiencies in these sewers.

At this point it is difficult to determine the additional sewer loading which would result from the building renovation (*if any*) due to updating mechanical systems, classroom relocations and daily building usage changes. Based on the possible locations for the future Science

Center, it should be feasible to install an adequate gravity service connection to existing adjacent sewer mains or sewer main manholes.

It is recommended that the City conduct flow and system condition studies for the Benton and Chicago Avenue sanitary sewers to define the current capacity utilized and additional capacity available for service area improvements. North Central could then utilize this data for planning, system impact evaluations, infrastructure improvement requirements and funding analysis.

IV. Electrical and Communication Distribution Systems

A. Electrical Distribution System

Since the mid-1990's, the City of Naperville Department of Public Utilities – Electric (DPU-E) has completed significant upgrades to the electrical utility infrastructure in and around the NCC Campus. The electrical distribution upgrades, which involved the installation of underground duct banks, not only provided additional service and back-up capacity for NCC, but also reinforced the local system with a needed connection to the Washington Street Substation. The attached "Base Map for North Central College", illustrates the general location of the City's electrical facilities throughout the NCC Campus.

In addition to the multi-phase upgrade generally described above, NCC and the DPU-E have been coordinating on a potential electric utility infrastructure improvement associated with the future Pedestrian Spine Project. For the referenced project, it is contemplated that the existing overhead electric, telephone and cable utilities would be relocated to an underground duct bank system within the vacated alley between Jefferson Avenue and Benton Avenue. The DPU-E has produced some design/details for this future improvement, however, significant coordination regarding infrastructure location must be completed to define and eliminate potential conflicts between the electric utility infrastructure, existing NCC communication duct bank, and contemplated Pedestrian Spine infrastructure and amenities.

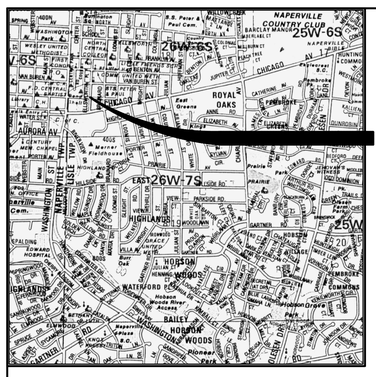
The DPU-E has completed an initial review of the Draft 2010-2020 Master Land Use Plan and has indicated that ample electric capacity is available for the new and renovated structures contemplated and identified in the subject master land use plan. In addition, the DPU-E has indicated that NCC will be required to pay for new or adjusted electrical facilities, and pay any Infrastructure Availability Charge (IAC) as may be required for new load on the system.

B. Communication System

In 1995, NCC completed a campus-wide communication system upgrade. As illustrated on the "Base Map for North Central College", the existing communication duct bank extends to all NCC facilities from the South Campus to North Avenue. The communication system enhancement allowed NCC to effectively organize all internal (Intranet) voice and data

services, and route those services through a main distribution hub at Carnegie Hall. The communication duct bank generally consists of 4 – 12 4-inch PVC pipes encased in concrete at top and bottom depths of 24 and 48 inches, respectively. Currently, both copper and fiber cables are fed through the duct bank system, and numerous manholes/handholes are provided to allow flexibility and capacity for existing and future facility service connections.

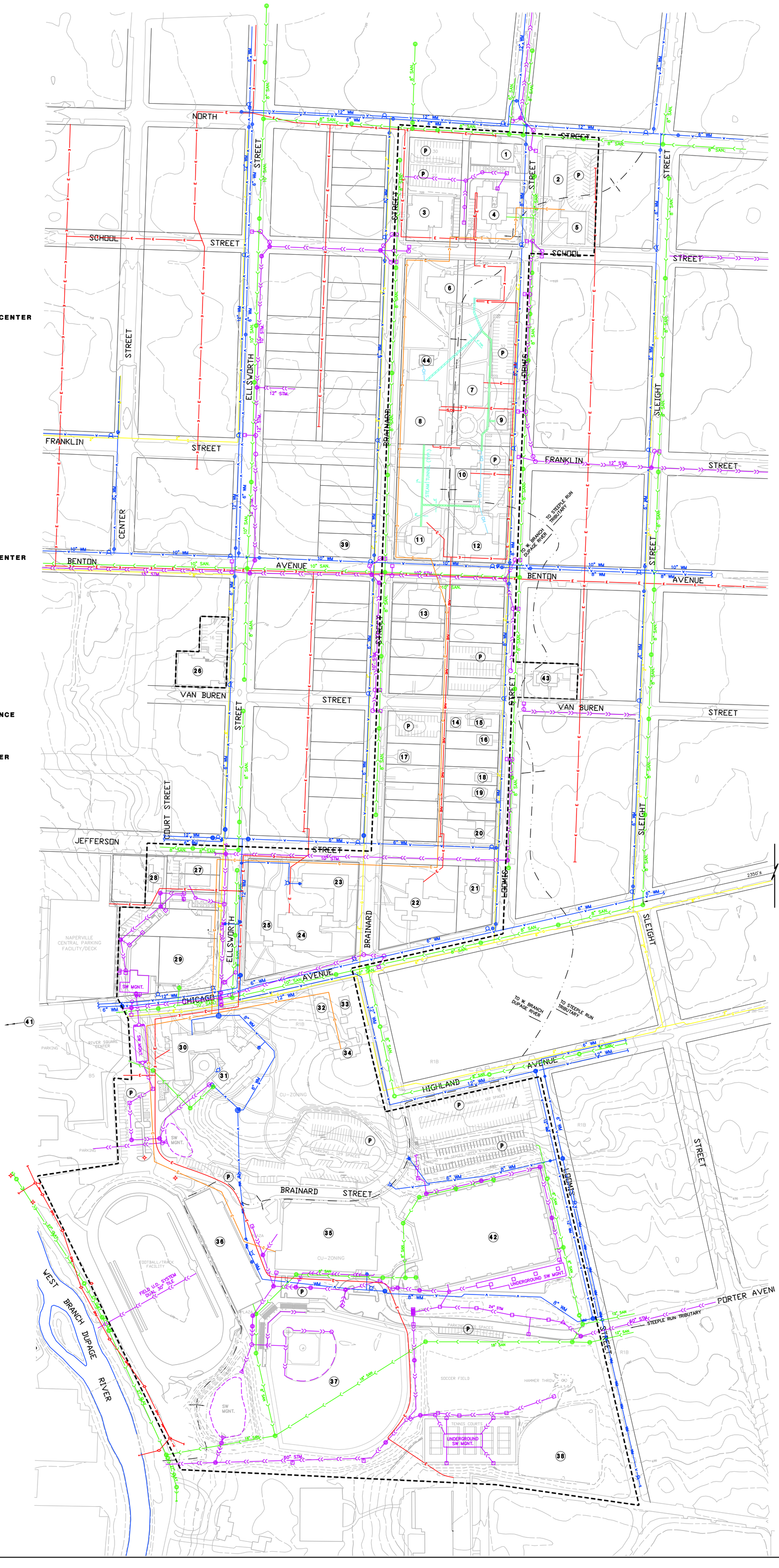
BASE MAP FOR NORTH CENTRAL COLLEGE
NAPERVILLE, ILLINOIS



LOCATION MAP

BUILDING IDENTIFICATION:

1 225 N. LOOMIS HOUSE
2 KIMMEL RESIDENCE HALL
3 LARRANCE ACADEMIC CENTER
4 KIEKHOFER HALL
5 SEYBERT RESIDENCE HALL
6 OESTERLE LIBRARY
7 GOLDSPOHN HALL
8 KROEHLER SCIENCE CENTER
9 ROLLAND CENTER BOILERHOUSE CAFE
10 OLD MAIN
11 CARNEGIE HALL
12 HAROLD AND EVA WHITE ACTIVITIES CENTER
13 PFEIFFER HALL
14 322 E. VAN BUREN HOUSE
15 330 E. VAN BUREN HOUSE
16 109 S. LOOMIS HOUSE
17 116 S. BRAINARD HOUSE
18 119 S. LOOMIS HOUSE
19 125 S. LOOMIS HOUSE
20 STUDENT VILLAGE RESIDENCE HALL
21 TOWNHOUSE RESIDENCE HALL
22 SEAGER RESIDENCE HALL
23 RALL RESIDENCE HALL
24 KAUFMAN DINING HALL
25 GEIGER RESIDENCE HALL
26 MEILEY-SWALLOW HALL
27 100 E. JEFFERSON AVENUE
28 48 E. JEFFERSON AVENUE
29 WENTZ CONCERT HALL & FINE ARTS CENTER
30 PATTERSON RESIDENCE HALL
31 WARD RESIDENCE HALL
32 224 E. CHICAGO HOUSE
33 OLIVER HALL
34 PRESIDENT'S HOUSE
35 MERNER FIELD HOUSE
36 BENEDETTI-WEHRLI STADIUM
37 ZIMMERMAN STADIUM (ALUMNI FIELD)
38 SHANOWER FAMILY FIELD
39 PETER & PAUL HALL
40 BUSINESS OPERATIONS AND MAINTENANCE
999 E. CHICAGO AVENUE
41 NAPER PLACE
119 S. MAIN STREET
42 RESIDENCE HALL & RECREATION CENTER
43 28 SOUTH LOOMIS STREET
44 CHILLER ENCLOSURE
P PARKING



N

100 50 0 100
SCALE: 1" = 100'

LEGEND

- 680 EXISTING CONTOURS
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- 6" WM EXISTING WATERMAIN
- E EXISTING ELECTRIC TRANSMITION LINE
- OHW EXISTING ELECTRIC OVERHEAD WIRE
- C EXISTING COMMUNICATION DUCT BANK
- EXISTING UTILITY POLE
- EXISTING MANHOLE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- WATERSHED DIVIDE
- G EXISTING GAS MAIN
- EXISTING STEAM TUNNEL (ACTIVE)
- EXISTING STEAM TUNNEL (ABANDONED)
- CH EXISTING CHILLED WATER LINE
- S EXISTING STEAM LINE
- S,CH EXISTING DUAL-USE STEAM AND CHILLED WATER LINE

NOTE: ALL UTILITY LOCATIONS AND SIZES ARE APPROXIMATE BASED ON RECORD UTILITY ATLASES PROVIDED BY THE MUNICIPALITY OR OTHER SOURCES.

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