Edgewood Campus Transportation Master Plan
Madison, Wisconsin

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Prepared for
Edgewood Campus

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1. Introduction

Edgewood Campus is a 55-acre site located in Madison, Wisconsin that is comprised of three educational institutions: Edgewood College; Edgewood High School; and the Edgewood Campus School, an elementary and middle school. The three entities comprising the Edgewood Campus have completed a Campus Master Plan articulating future building and programming. As a part of this effort, the transportation impact of the master plan was in need of updating and analyzing. The component includes three segments; the traffic impact, parking impact, and the development of a Transportation Demand Management (TDM) program.

This study of Edgewood Campus serves four purposes: (1) assess the impact and extent of improvements the campus has implemented since the last transportation study in 2006; (2) evaluate the traffic impacts that the proposed future master plan improvement will have on the street network and recommend any improvements needed to accommodate site traffic; (3) assess the impact that the proposed master plan will have on parking conditions onsite and on the adjacent streets and recommend any measures that will alleviate the parking demand experienced presently and in the future; and (4) evaluate the campus's existing TDM program and make any recommendations for additional measures to reduce vehicular demand.

2. Executive Summary

The Master Plan Traffic Impact Analysis completed in 2005 demonstrated that as compared to a 1992 study, traffic volumes at the campus site have significantly shifted to the signalized Edgewood College Drive while removing traffic along Woodrow Street and Edgewood Avenue. The updated 2012 Master Plan Transportation Study shows that an aggressive Transportation Demand Management (TDM) has resulted in a reduction in both parking and peak hour trip demand. In addition, the participation in the TDM elements, such as transit ridership, remote parking, and van pooling has almost doubled since 2006/2007.

The projected enrollment increases for the campus can be accommodated with modest increases in parking, minor improvements to the existing infrastructure, and additional TDM measures. No additional street and/or intersection improvements are required as a direct result of traffic generated by Edgewood Campus. The campus will continue to make a conscious effort to increase transit ridership and promote remote parking facilities, which should continue to be encouraged in the future. Recommended traffic demand management (TDM) measures such as remote parking, long-term parking lots, and offsite classes could further reduce the traffic and parking loads experienced by the campus during peak conditions and should be considered for implementation.

3. Overview of Edgewood Campus

Campus Population

Discussions with staff from the three institutions were conducted to determine the existing student, faculty, and staff populations during the 2012 / 2013 school year. For comparison purposes, campus population data was also included from the 1993 / 1994 and 2004 / 2005 school years (as cited in previous studies of the campus, which will be discussed in greater detail below). **Table 1** illustrates a comparative analysis for the campus between the three time periods as well as future projected enrollments and staffing for each of the three campus institutions.

Table 1
EDGEWOOD CAMPUS POPULATION COMPARISON

Population	Year 1994[1]	Year 2005	Year 2012	Projected 10 year
Edgewood College				
Total Students	1,787	2381	2,252	2,660
Total Beds	*280*	*350*	*553*	*800*
Faculty & Staff	--- [2]	450	468	504
Edgewood High School				
Students	535	594	593	650
Faculty & Staff	--- [2]	88	106	125
Edgewood Campus School				
Students	265	304	275	300
Faculty & Staff	--- [2]	30	30	33

1 Data obtained from Mead & Hunt study (1995)

2 Data not cited in study

As can be seen in **Table 1**, since the last study in 2005, the enrollment at the high school has remained the same while there has been a modest increase in faculty and staff. The enrollment at the college and campus school has decreased. The overall campus population has decreased about 4% between 2005 and 2012. The projected enrollments for the total campus are expected to increase by 15% over the next 10 years. Likewise the number of student on-campus residents will increase from 553 to 800.

Previous Studies of Edgewood Campus

Three previous studies have been conducted for Edgewood Campus that evaluated traffic and parking conditions onsite and in its vicinity. In 1995, Mead & Hunt performed a traffic impact study to project full build out of the Campus (based on the Master Plan) and to recommend any improvements needed to accommodate this growth. One recommendation implemented was the construction and signalization of a primary access drive to serve the campus (which became Edgewood College Drive) from Monroe Street. In 2006, SAA performed a traffic and parking study of the Campus to evaluate parking conditions at and around the site as well as recommend any parking management procedures that would reduce the parking demand experienced in the area. Several recommendations from this study that were implemented include a restriction of freshmen obtaining parking permits, increased enforcement of parking violators, and event coordination between the three institutions. This 2006 study also documented the impact of access improvements and it found that the traffic volumes on Woodrow at Monroe Street had decreased by 50% while the traffic volumes at the main signalized intersection at Edgewood Drive had increased by 115%.

This study also determined that off street parking on campus was at capacity (over 90%) at peak times and on street parking in the neighborhood ranged between 53-60% of capacity. The study also projected that construction of additional housing on campus would reduce the overall trip demand in the campus area due to the reduction in commuting traffic volumes.

4. Existing Conditions

To evaluate and compare the existing traffic and parking conditions at Edgewood Campus with previous studies, a field review was conducted to ascertain existing traffic and parking characteristics at and around the campus site. These included land uses surrounding the campus; streets and intersections that will be impacted by the expansion; the supply of parking areas onsite and offsite (on-street); existing traffic volumes that are experienced in the vicinity of the site; and existing parking demands generated by Edgewood Campus.

Study Area

As previously stated, Edgewood Campus is a 55-acre, institutional site located in Madison, Wisconsin. Specifically, the site is located on the southeast side of Monroe Street between Woodrow Street and Edgewood Avenue. Land uses in the immediate vicinity of the site comprise of residential homes to the north, east, and west, Henry Vilas Park to the east, Lake Wingra to the south, and Wingra Park to the west. **Figure 1** shows the location of Edgewood Campus with respect to the surrounding streets.

Traffic Operations – External Streets

The following lists the principle streets that currently serve the Edgewood Campus site:

Monroe Street is a southwest-to-northeast, two-lane, undivided street that serves as the primary travel path to and from Edgewood Campus. No exclusive turning lanes are provided on Monroe Street at intersections in the vicinity of Edgewood Campus. Monroe Street permits on-street parking on both sides of the street; however, parking is restricted on the southeast side from 7:00 to 8:30 A.M. (providing two northeast bound lanes on Monroe Street during the weekday morning peak traffic period) and on the northwest side from 4:00 to 5:30 P.M. (providing two southwest bound lanes on Monroe Street during the weekday evening peak traffic period). Monroe Street has a posted speed limit of 25 miles per hour and is under the jurisdiction of the city of Madison.

Woodrow Street is a north-south, two-lane street that runs from Edgewood Drive north to its terminus at Monroe Street. No exclusive turning lanes are provided along Woodrow Street with all movements from Woodrow Street at Monroe Street under stop-sign control. On-street parking is permitted on the west side of Woodrow Street from an Edgewood Campus access drive to Monroe Street while on-street parking is permitted on the east side from Edgewood Drive to the Edgewood Campus access drive. Woodrow Street is under the jurisdiction of the City of Madison.

Figure 1: Site Location and Existing Street Network

Edgewood Avenue is a northwest-to-southeast, two-lane street that runs from Henry Vilas Park north to its terminus at Fox Avenue. North of Fox Avenue, the street is known as Allen Street. At its unsignalized intersections with Edgewood Drive, Vilas Avenue, and Jefferson Street, no exclusive turning lanes are provided. At its unsignalized intersection with Monroe Street, Edgewood Avenue is offset with its north approach located southwest of its south approach. The north approach does not provide any exclusive turning lanes while the south approach consists of an exclusive left-turn lane and an exclusive right-turn lane. All movements from Edgewood Avenue at the Monroe Street intersection are under stop-sign control. On-street parking is permitted on the east side of Edgewood Avenue from Jefferson Street to Keyes Avenue.

Edgewood Drive is a southwest-to-northeast, unimproved street that runs from Woodrow Street to its terminus at Vilas Park Drive. At its unsignalized intersection with Edgewood Avenue, no exclusive turning lanes are provided the street with all movements from Edgewood Drive under stop-sign control. Parking is prohibited on both sides of Edgewood Drive, which has a posted speed limit of fifteen miles per hour.

Jefferson Street is a southwest-to-northeast local street that runs from Edgewood Avenue to its terminus at Regent Street. At its unsignalized intersection with Edgewood Avenue, no exclusive turning lanes are provided with all movements from Vilas Avenue under stop-sign control. On-street parking is permitted on both sides of Jefferson Street.

Traffic Operations – Edgewood Campus

Primary access to Edgewood Campus is served by Edgewood College Drive, a north-south, two-lane street that connects Monroe Street to various buildings and parking areas on-site. At its signalized intersection with Monroe Street, Edgewood College Drive provides an exclusive left-turn lane and exclusive right-turn lane. Parking is prohibited on Edgewood College Drive, which has a posted speed limit of fifteen miles per hour.

In the center of the campus site, Edgewood College Drive intersects an east-west circulation drive that connects Woodrow Street to the west with various buildings and parking areas onsite. At its unsignalized intersection with Woodrow Street, this circulation drive permits westbound-to-northbound, right turn movements only. This condition reduces the traffic load along Woodrow Street south of the circulation drive as well as along Edgewood Drive.

Secondary access drives to Edgewood Campus site connect Monroe Street, Edgewood Avenue, and Edgewood Drive to ancillary parking lots located onsite. These access drives provide one inbound lane and one outbound lane with outbound movements under stop-sign control.

Figure 2 identifies and illustrates the existing traffic operations within Edgewood Campus as well as in the vicinity of the site.

Parking Operations

The Edgewood Campus site provides numerous parking areas onsite for students, faculty, and staff of the three institutions. The parking areas for these institutions is described below and also illustrated in **Figure 3.**

The Edgewood Campus provides 894 common use parking lots for students (residents and commuters), faculty, and staff to utilize. This is an increase of 40 spaces over the 854 parking spaces provided in 2005.

Edgewood College

Edgewood College provides 596 common use parking lots for students (residents and commuters), faculty, and staff to utilize. Two primary surface parking lots for the college are provided along the campus's western frontage while a parking structure for use by the college is located in the center of the campus site. Ancillary parking lots are also located along the eastern and southern frontage of the campus. The parking lot on the east side of the high school is restricted for faculty parking only.

Edgewood High School

Parking for students of Edgewood High School is accommodated via two surface parking lots located on the east side of Edgewood College Drive, south of Monroe Street. Parking for faculty and staff of the high school is provided via two ancillary parking lots that connect to Edgewood Avenue. The total surface parking lots comprise 261 spaces.

Edgewood Campus School

37 parking spaces for the campus school is provided by a surface parking lot located in the center of the site and are accessed by the east-west circulation drive.

In addition, numerous streets surrounding Edgewood Campus provide on-street parking on both sides of the street, which are shown in **Figure 3**.

Existing Public Transportation and Multi-Modal Routes

Currently, Monroe Street is utilized by the Madison Metro Transit System (Metro) for several bus routes that serve the Edgewood Campus site. Bus routes 3 and 58 travel along Monroe Street with bus stops at Edgewood Avenue and Edgewood College Drive. Based on 2012 data from the College, annual ridership to and from the campus are approximately 103,000 rides, significantly reducing the traffic and parking load to the campus. In addition, the Wingra Park bicycle route is identified along Monroe Street, Woodrow Street, and Edgewood Drive. The aforementioned bus and bicycle routes are shown in **Figure 4.**

Figure 2

SAA Schreiber / Anderson Associates, Inc

Edgewood Campus Traffic Impact Analysis

Existing Traffic Operations -- Weekday Morning Peak Hour

FIGURE 2

Project #2062 May 2005

Figure 3 On and Off Site Parking

Figure 4


MADISON ST
JEFFERSON ST
ADAMS ST
MONROE ST
BUS
BUS
BUS
BUS
3-58
EDGEWOOD AVE
EDGEWOOD COLLEGE DR
EDGEWOOD HIGH SCHOOL
EDGEWOOD CAMPUS
EDGEWOOD CAMPUS SCHOOL
EDGEWOOD DR
WOODROW ST
EDGEWOOD COLLEGE
Legend
Existing Bus Routes
BUS
Existing Bus Stop
Existing Bicycle Routes
SAA
Schreiber / Anderson Associates, Inc
Edgewood Campus Traffic Impact Analysis
Existing Multi-Modal Transportation Routes
FIGURE 4
Project #2062 May 2005

Existing Traffic Volumes

To determine the existing traffic volumes that are generated on the adjacent street network, peak hour traffic counts were conducted at several intersections surrounding the Edgewood Campus site. The location and dates of the counts is summarized below in **Table 2**. It should be noted that classes at all institutions were in session at the time of the counts. Counts were conducted from 7:00 A.M. to 8:30 A.M. to capture both peak weekday morning commuter traffic as well as inbound trips to Edgewood Campus. Counts were not conducted during the weekday evening peak period for the peak outbound period of the campus occurs before the weekday evening commuter peak hour (4:30 to 5:30 P.M.), resulting in traffic conditions that may not reflect peak traffic periods. The results of the counts indicate that the weekday morning peak hour of traffic occurred from 7:30 to 8:30 A.M. These volumes represent baseline conditions for analysis of existing and future traffic conditions and are illustrated in **Figure 5**.

Table 2
INTERSECTION COUNT LOCATION

Location	Date of Counts
Monroe Street & Edgewood Campus Drive	November, 2012
Monroe Street & Edgewood Avenue	November, 2012

In addition to peak-hour turning movement counts, 24-hour daily counts were acquired to assess the daily traffic load of roadways surrounding Edgewood Campus. Daily counts along Monroe Street and Edgewood Avenue for various years from 1989 to 2011 were obtained from the City of Madison traffic maps. The results of this count, as well as historical counts, are illustrated in **Table 3** (Monroe Street) and **Table 4** (Edgewood Avenue).

As can be seen from these daily counts, traffic along Monroe Street peaked in the mid 1990's and have been on a slow decline ever since resulting in a decline today of about 20% of their peak. Traffic on Edgewood Avenue (south end) peaked in 1989 and are now at about 50% of that volume. In particular in **Table 4**, the timeframe for a number of the proactive measures implemented by the campus are also shown. This includes the introduction of student shuttle services in 2005, the closing of the Park and Pleasure Drive to through traffic in 2006, and the addition of additional on-campus student housing in 2007.

Table 3

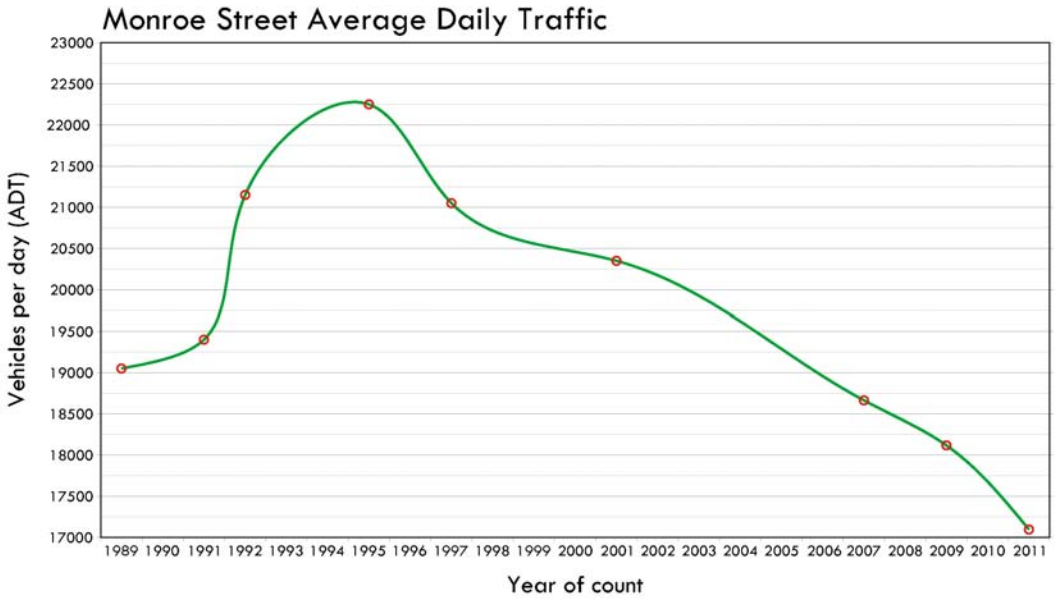
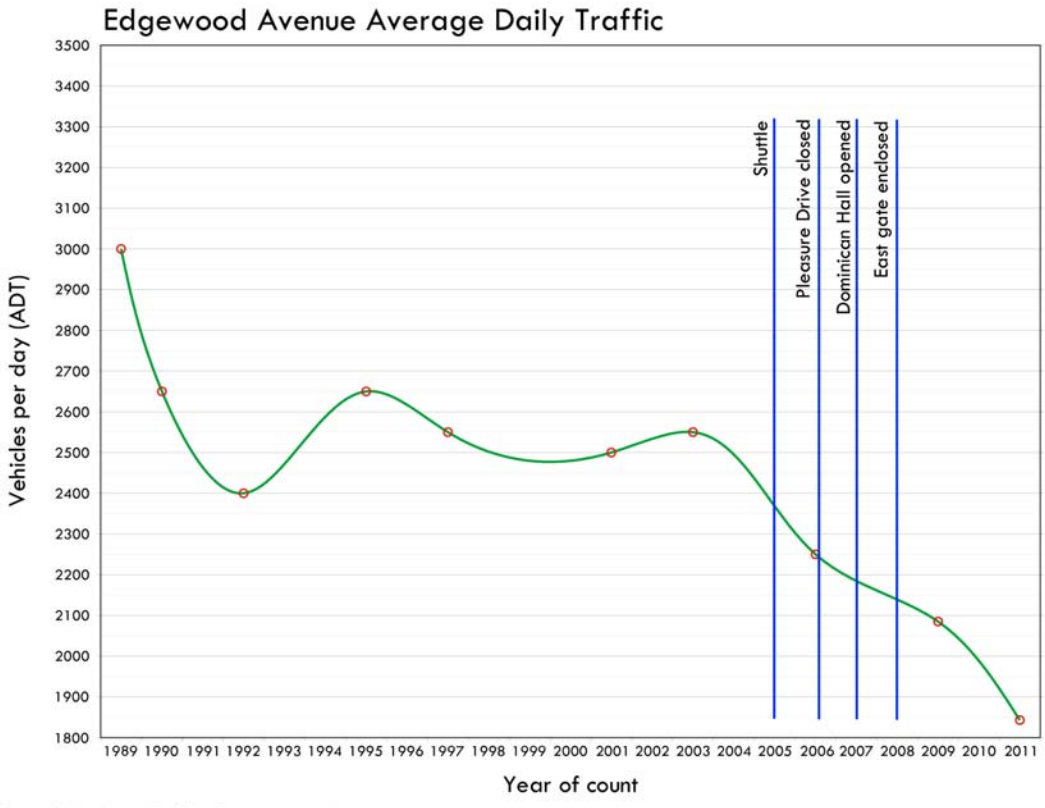


Table 4



City of Madison Traffic Engineering Data

As previously mentioned, a traffic impact study for Edgewood Campus was conducted in 2005. As part of that study, traffic counts at intersections surrounding the campus during the weekday morning peak hour were taken as shown in **Figure 5**. Traffic counts were again taken on several of the major intersections in 2012. When Year 2005 and 2012 intersection counts are compared the following is a summary of the results which are also shown in **Table 5**:

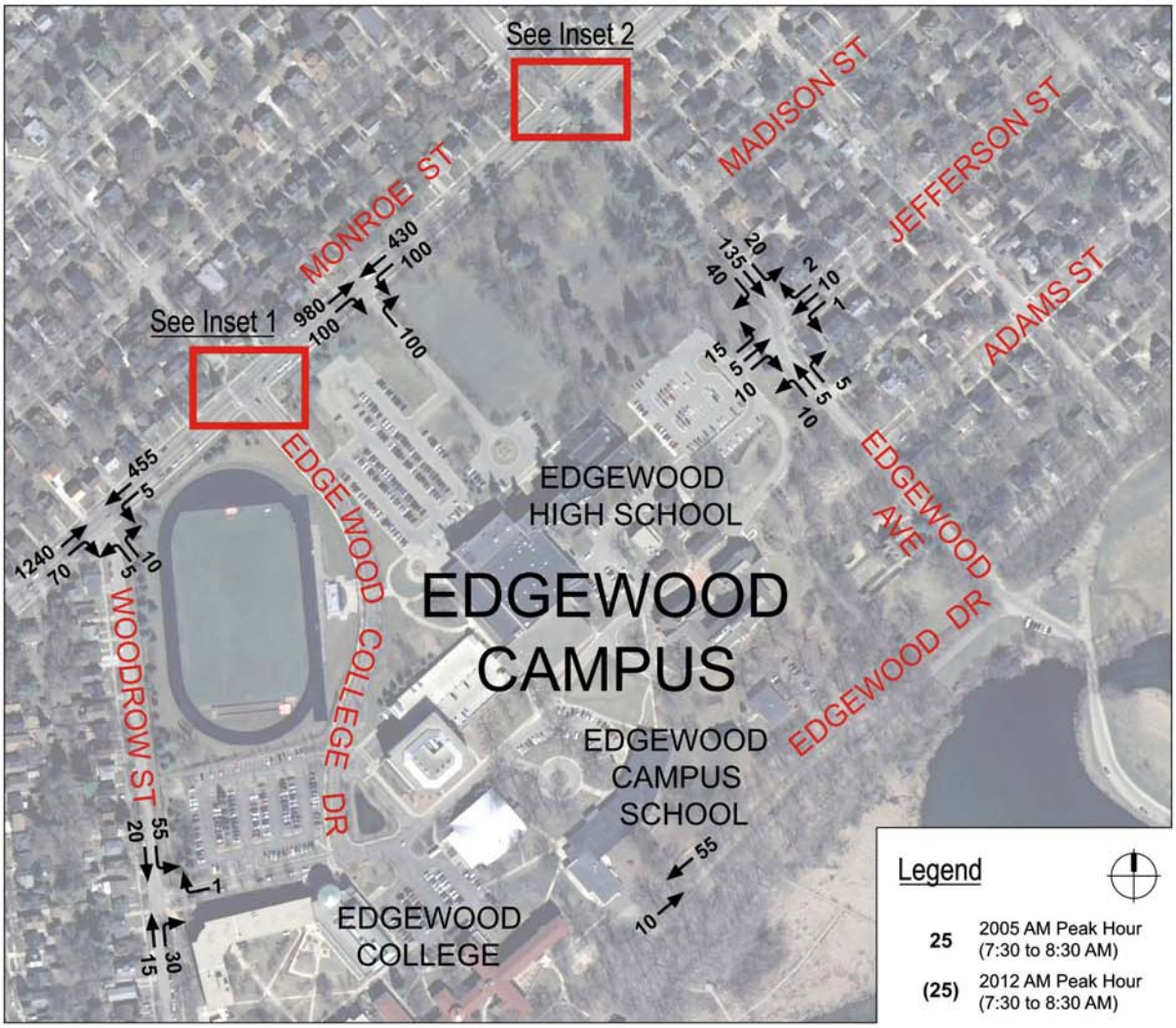
- The intersection traffic counts verify the peak hour counts on Monroe Street in the vicinity of the Edgewood Campus have decreased between 2005 and 2012.

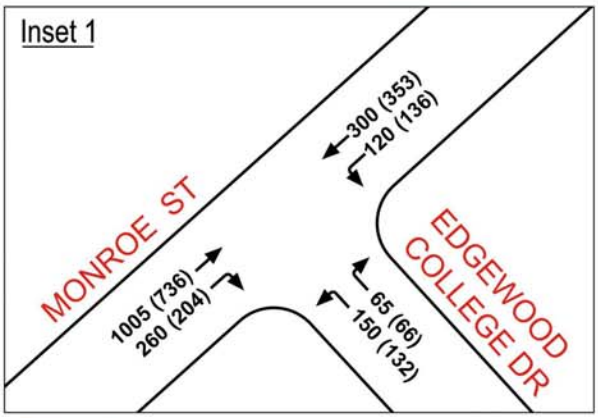
- The morning peak hour flows on Monroe Street have increased southbound and decreased northbound between 2005 and 2012.

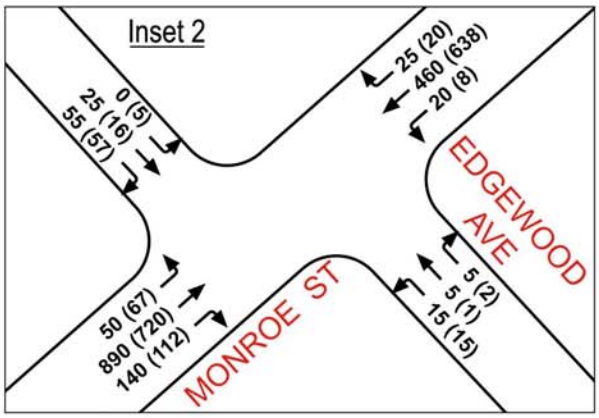
- Traffic counts onto Edgewood Avenue and Edgewood College Drive have both decreased between 2005 and 2012.

- While overall enrollment at the campus has decreased between 2005 and 2012, traffic volumes on the local streets and entering the campus have decreased even more.

Figure 5







SAA Schreiber / Anderson Associates, Inc

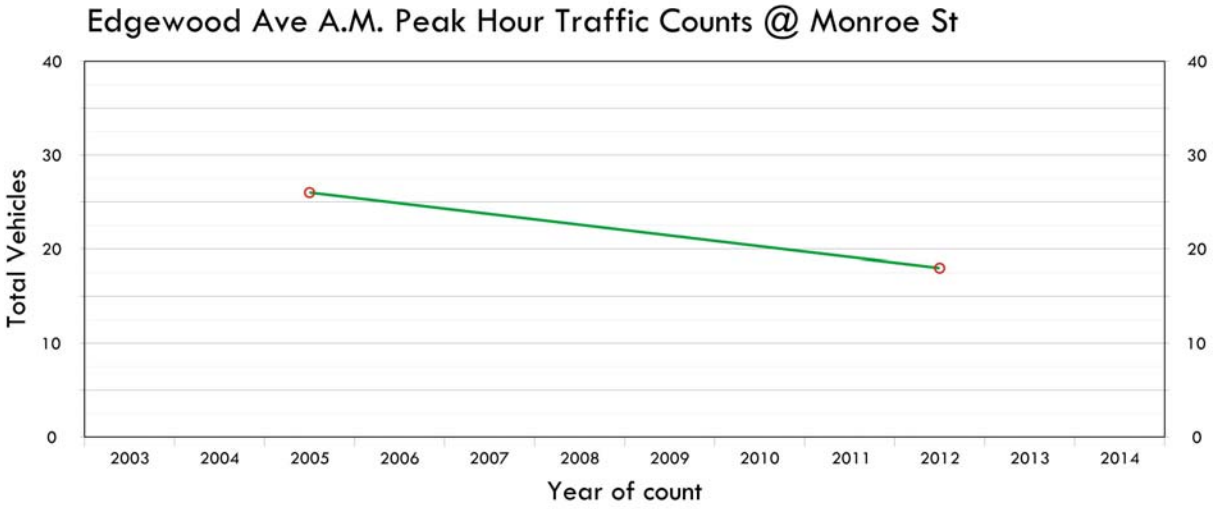
Edgewood Campus Traffic Impact Analysis

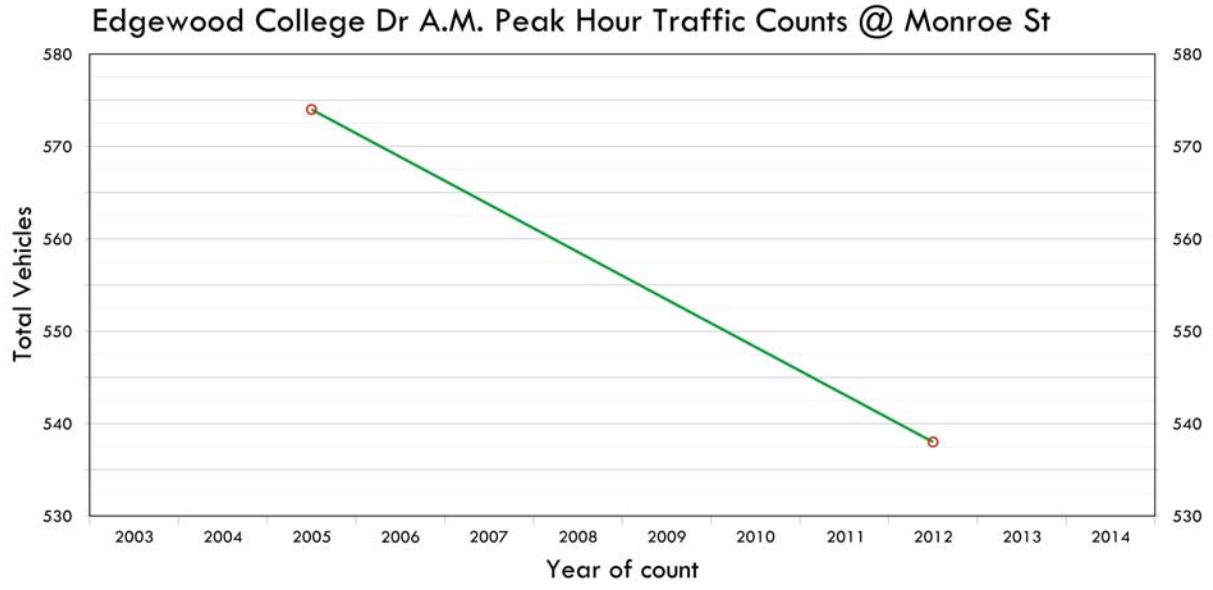
Year 2005 & 2012 Weekday Morning Traffic Volumes

FIGURE 5

Project #2062 May 2005

Table 5
SITE TRAFFIC VOLUMES – Edgewood Ave and Edgewood College Drive





Existing Parking Occupancy Demand

As previously stated, parking studies for Edgewood Campus were performed in 2002, 2005, and 2012. These studies involved a parking occupancy count of all on-campus and off campus (on-street) parking areas. Counts were conducted during the weekday midday (11:00 A.M. to 2:00 P.M.) time period as this time period experiences the highest parking demand for institutional land uses. To provide a comparative analysis of parking conditions the parking occupancy count was conducted midweek during the aforementioned peak parking period. The count locations consisted of the same on-campus and off-campus parking locations as counted in the previous parking study. The results of these counts, which can be found in the appendix of this study, indicate that over both the on-campus and off-campus parking demand had been reduced from 2005 to 2012 as shown in **Table 6**. The 2005 off-campus parking peaked at 59 percent occupancy while this dropped to 55% in 2012 for the areas within a 2-block radius of the campus during peak periods. The on-campus parking demand had also dropped to below 90% in 2012 as compared to 2005.

After the parking study was conducted, Edgewood College implemented a parking policy in which freshmen students could not obtain a parking permit for use of on-site parking spaces. Because of this, it was assumed that freshmen students that drove to campus would be forced to utilize parking on the surrounding streets within a two-block radius of the campus. This may have resulted in a six percent increase in on-street parking from Year 2002 to Year 2005. It should be noted, though, the student population of Edgewood College increased by approximately eight percent during this same time period. Given that parking conditions within Edgewood Campus operates at capacity during both time periods, this increase could be expected given that the increase in the student population will generate more commuters traveling to the campus site. As such, the restriction of freshmen parking within Edgewood Campus had a marginal impact to on-street parking characteristics. It is more likely that the increase in parking occurred due to the increase of the Edgewood College student population.

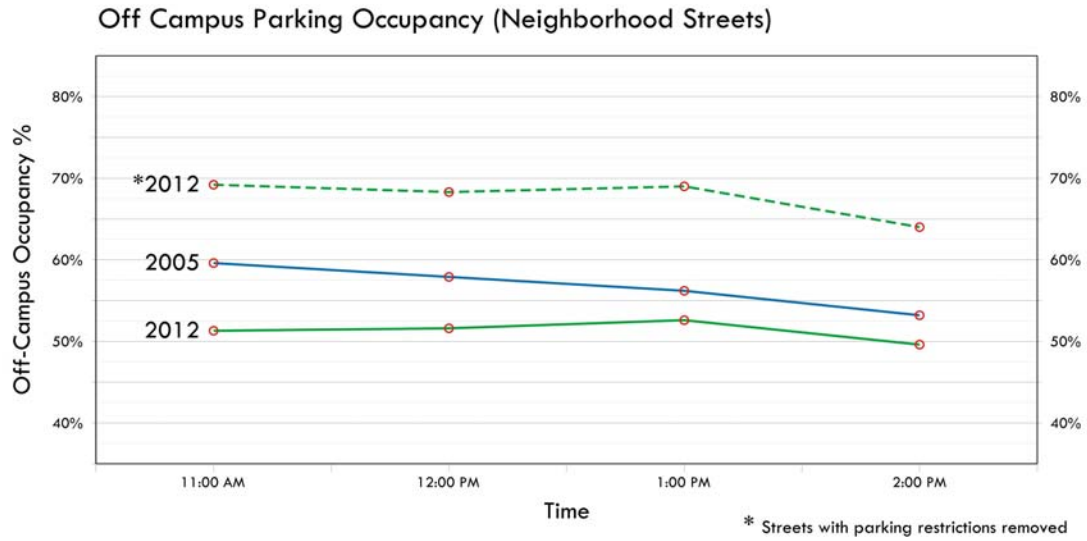
Following the 2005 study, the Edgewood Campus worked with the neighborhood in restricting on street parking areas within the two block campus area that was surveyed. These restrictions included limited time periods (e.g. 2 hr), restricted days (e.g. no parking on Tuesday, and full parking restrictions). The college also further implemented some of its TDM measures such as providing remote parking for its employees, off campus parking for residence halls, and hiring a TDM coordinator to implement a more aggressive TDM program.

For a comparison of the impact of the parking restrictions on the off campus streets, **Table 6** shows the occupancy demand if the streets with parking restrictions were removed from the parking supply which would increase the parking demand on the remaining streets to close to 70%. The implication being that the parking restrictions have pushed more of the parking onto the streets that do not have parking restrictions.

The overall maximum peak demand for off-campus parking has actually decreased by about 14% between 2005 and 2012.

To address concerns that overnight parking was occurring on the streets closest to the campus, an overnight parking survey was done on the first block of Jefferson Street. The results of that survey are shown on **Table 7.** This survey indicates that parking peaks mid morning and drops off during the day, picks up again in the early evening, and then falls off overnight.

Table 6 - Off and On-Street Parking Demand



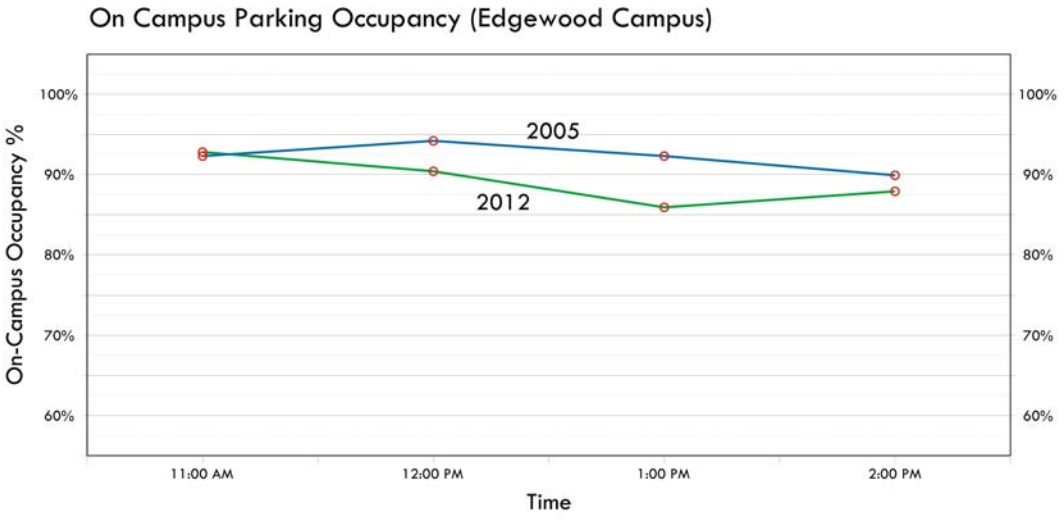
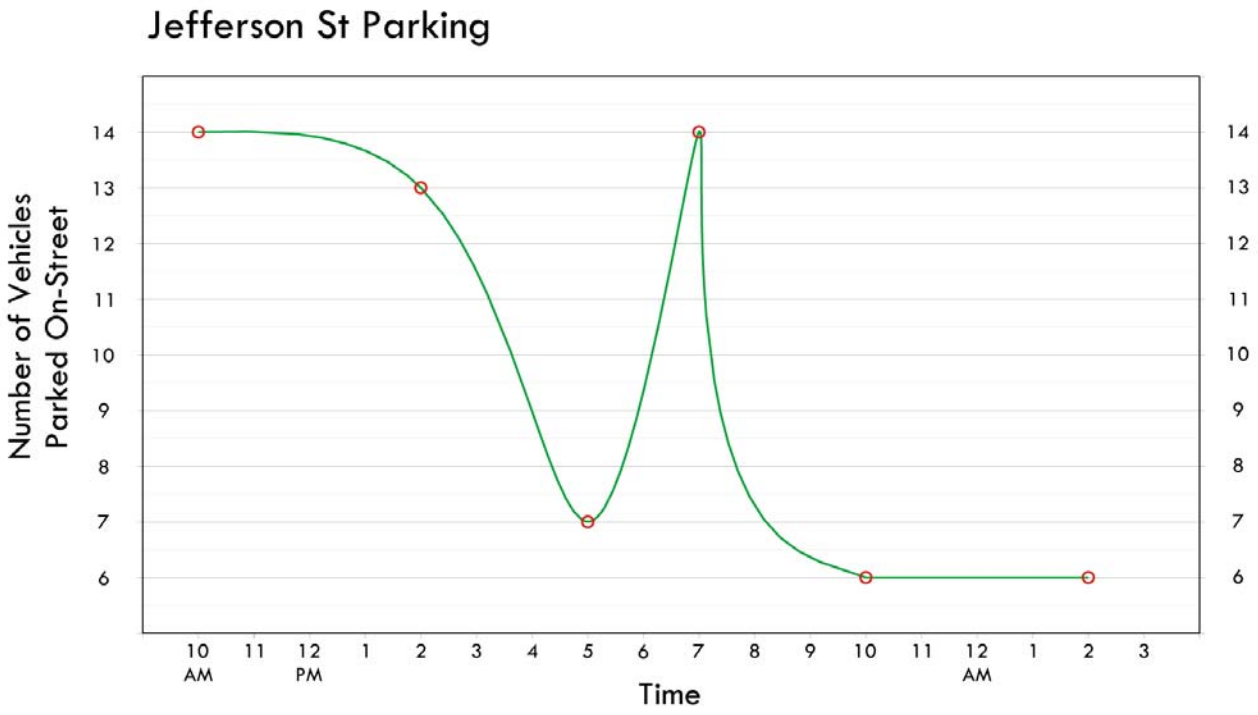


Table 7


Jefferson St Parking
Number of Vehicles Parked On-Street
14
13
12
11
10
9
8
7
6
10 AM
11
12 PM
1
2
3
4
5
6
7
8
9
10
11
12 AM
1
2
3
Time

5. Existing Transportation Demand Management (TDM) Methods

Overview of Ongoing Efforts

Transportation Demand Management (TDM) strategies represent a relatively new, but ever evolving, approach to transportation planning. TDM seeks to address transportation challenges, such as the need for adequate parking, with projects and programs that manage travel demand rather than respond with the supply of additional infrastructure. Research increasingly shows that TDM and parking management have had demonstrable and cost-effective success in influencing people's core travel choices and behaviors, thereby reducing vehicle trips, congestion, and vehicle emissions All the while, TDM plays a critical role in improving mobility, accessibility, and the efficiency of local and regional transportation networks.

Beginning with Edgewood's 2005 master planning process, Edgewood College has made a substantial effort to implement TDM practices on its campus and is committed to continuing these and similar efforts as a matter of practice. Edgewood College's "Alternative Transportation Program" is a relatively comprehensive, institutionalized TDM approach that has grown since 2005 to be an increasingly effective contributor to reduced traffic and parking demand on and around the Edgewood Campus. On the next page, **Table 8** summarizes existing TDM/Alternative Transportation programs in place at Edgewood as of May 2013.

Table 8
TDM METHOD SUMMARY

Program/Policy/Practice	Description
First-year resident parking restriction	Resident students are not eligible for an on-campus parking pass their first year on campus; must participate in Alternative Transportation Program
New-hire parking restriction	Newly hired employees are not immediately eligible for an on-campus parking permit; are expected to participate in Alternative Transportation Program
Parking & Transportation Coordinator	In 2008, the college added full-time administrative staff to oversee and grow the college's Alternative Transportation Program
Commuter Shuttle/Off-site Parking	Since 2006, the college has offered a free shuttle to remote parking lots for students, faculty and staff
Safe Ride Shuttle	Since 2007, the college has provided a free shuttle on weekend evenings (Thurs – Sat) between campus and nearby commercial, dining, and entertainment areas
Shopping Shuttle	The college provides a free shuttle to shopping destinations (West Towne Mall, Hilldale, Target) on designated days
Increased enforcement of parking violators	The college continues working with the Madison Police Department to bolster enforcement of on-street parking regulations around the campus
Provide Metro transit passes to all students, faculty, and staff of Campus	All valid Edgewood ID's can be used as a Metro transit pass and is paid for by the college
Carpool Program	The college offers reduced-cost parking permits and preferential parking location for registered carpool participants
Incentive Program	All users of shuttle, carpool, and registered walkers/bikers eligible for a "punch card" which can be redeemed for gift cards, movie passes, and other benefits
Continued bike/pedestrian encouragement	The college continues to expand bike and moped parking on-site, and has a registered walker and biker program that ties to the incentive program above

TDM Impacts (2005 – 2012)

Edgewood College's efforts at accommodating and encouraging alternatives to the single-occupant vehicle for travel to and from its campus have had measurable success, as evidenced in the previous section of this report. The following data further illustrate the success of the college's program, and offer rationale for continued support and enhancement of the Alternative Transportation Program:

- Peak hour trips to campus decreased by 10% between 2005 and 2012
- The number of commuter student parking passes issued by the college decreased from **860** passes in 2007 to **736** passes in 2012 ; resident parking passes remained stable at **123** total
- The number of free Madison Metro bus passes issued almost doubled from **1,442** in 2005 - 2006 to **2,173** in 2011 - 2012
- Metro trips utilizing the Edgewood pass program more than doubled from **40,000** in 2005 to **103,000** in 2012
- In five years, Commuter Shuttle registration increased by more than 75%, from **84** registered riders in 2007 to **150** registered riders in 2012
- Safe Ride Shuttle usage has more than doubled, from a total of **7,047** rides in 2008 to **14,096** rides in 2012; the program now averages over 500 riders per weekend

While the college has utilized TDM to realize success in reducing demand for parking and peak hour traffic, Edgewood High School and Campus School have so far been less involved in TDM implementation. The primary concern at the high school and campus school level is indicated as being the broad geographic distribution of both institutions' populations throughout southern Wisconsin. Still, both schools were engaged in this process and expressed an interest in exploring TDM measures in the near future.

6. Characteristics of the Campus Master Plan

Projected Trip Generation

The amount of site traffic to be generated by a particular site is based upon the land use and size of the site. Projected trip generation rates were estimated based on the ITE Trip Generation Manual in **Appendix A** for each of the three institutions on campus. It is estimated that the additional enrollment (**Table 1**) over the next 10 years based on the Master Plan will increase by 78 trips or 7% over current estimated campus peak hour trip generation. This projection is less than the projected increase in enrollment due to the additional residence halls that will be added as well as the continued success of the TDM program.

Projected Parking Generation

In addition to the traffic impacts that the proposed Master Plan will have on Edgewood Campus, consideration was given to analyze the parking impact that the additional student enrollment will demand. Several sources were utilized to project the amount of parking needed to accommodate the residence halls, which are described below:

- Parking rates published in the ITE *Parking Generation Manual, 3rd Edition* and shown in **Appendix B** for each of the three institutions. This would result in the need for 161 additional parking spaces. This would include 133 additional spaces for the college and 28 additional spaces for the high school and campus school.

- Parking supply ratios developed in the 2002 parking study of the campus which state that a ratio of 0.22 parking spaces per student/faculty/staff exists onsite; with the addition of 548 additional students and faculty, this would result in 120 additional parking spaces over the current supply. This ratio reflects the parking supply ratio upon full build-out of the Campus, as cited in the Master Plan.

From the aforementioned sources, a range of projected parking demand from 120 to 161 parking spaces was derived. For purposes of this study, it was assumed that the parking demand generated by the increase in student population will be similar to existing demand ratios already experienced onsite. Therefore, the provision demand for an additional 161 parking spaces will result in the need to increase the existing parking supply by 18%.

7. Future Conditions

In order to evaluate the traffic and parking impacts of the proposed residence halls, the adjacent intersections and streets were analyzed based on the estimated volumes of existing background traffic and ambient growth on the street network. In addition, the parking supplies were analyzed based on existing parking demands of the campus as well as the projected parking demand of the residence halls. From these analyses, recommendations were developed for street improvements and onsite parking facilities.

Future Roadway Improvements

Based on discussions with MDOT staff, there are no improvements to streets and intersections in the vicinity of Edgewood Campus that are currently under consideration.

Edgewood Drive

Edgewood Drive is a two-lane, unimproved street that runs along the southern frontage of Edgewood Campus. Currently, Edgewood Drive has trees and vegetation that grow just outside the traveled way, creating narrow travel lanes and restricting traffic flow. In addition, bicyclists and pedestrians frequently use the travel lanes due to the lack of sidewalks or other adequate paths along Edgewood Drive. Historical traffic counts indicate that traffic volumes on Edgewood Drive East have decreased and at their current volumes do not warrant any further improvements.

Monroe Street & Edgewood Avenue Intersection

Based on MDOT's Year 2012 Traffic Signal Priority List, the intersection of Monroe Street with Edgewood Avenue is currently ranked twelfth among similar intersections for consideration of installing traffic signals for traffic control. However, all intersections must meet minimum traffic requirements (warrants) to be considered for traffic signalization. Currently, volumes at this location do not meet any of the required warrants necessary to be considered for signalization. There were also no recorded accidents at this intersection that would have been preventable if a traffic signal were in place. In addition, the existing geometric design of this intersection would need to be modified to accommodate traffic signals as well as the dedication of land by the campus to align the approaches of Edgewood Avenue. Future studies of this intersection can continue to be conducted to determine whether volumes at this location will require traffic signals.

Because it is unknown if these improvements will be constructed, if even at all, these improvements **will not** be assumed under analysis of future conditions for this study.

Monroe Street & Edgewood Drive Intersection

This intersection is currently signalized. MDOT has reviewed traffic operations, particularly the southbound left hand turn movement and the possible removal of additional parking during the afternoon peak hour to better accommodate turning movements. To date these analysis have not shown that there is a turning movement problem at this intersection nor that the removal of additional parking would result in any operational improvement of the intersection.

Traffic Impact Analysis

To determine the impacts that the proposed Edgewood College Master Plan will have on the adjacent street network, as well as any subsequent street and/or intersection improvements needed to accommodate site traffic, intersection capacity analyses were conducted at impacted intersections under existing and future conditions. **Table 9** illustrates the intersection level of service (LOS) and projected intersection delay under 2005, 2012 and future (2022) traffic conditions at intersections in the immediate vicinity of the Edgewood Campus. Intersection LOS is a letter designation that describes traffic operations at a given intersection. These designations range from LOS 'A' (unimpeded traffic flow) to LOS 'F' (extreme delays). Intersection delay is the projected amount of time that a vehicle would need to travel through the intersection. Intersection delay is measure in seconds of time. To analyze the impacted intersections, the software package Synchro was utilized.

It should be noted, though, that the intersection level of service and delay considers all movements conducted at a particular intersection. While an intersection may have an overall satisfactory level of service, an approach or movement may still operate poorly. Likewise, an intersection may have a poor level of service because only one or two movements operate unsatisfactorily. For further explanation of intersection level of service and delay, as well as the capacity analysis worksheets, please refer to **Appendix.**

Table 9
INTERSECTION LOS AND DELAY SUMMARY – WEEKDAY MORNING PEAK HOUR

Previous Conditions (Year 2005)														
			NEastbound			SWestbound			NWestbound			SEastbound		
Intersection	LOS	Delay	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Monroe Street & Edgewood College Drive[1]	B	19.8	-	B	B	C	C	-	D	-	B	-	-	-
			-	13	13	32	32	-	48	-	11	-	-	-
Monroe Street & Woodrow Street[2]	A	0.3	-	A	A	B	A	-	D	-	D	-	-	-
			-	0	0	13	0	-	32	-	32	-	-	-
Monroe Street & Edgewood Avenue[2]	A	4.6	A	A	A	B	B	A	F	F	F	E	E	E
			8.6	8.6	0.6	11	11	0	167	81	81	47	47	47
Edgewood Avenue & Jefferson Street[2]	A	2.5	B	B	B	B	B	B	A	A	A	A	A	A
			10	10	10	11	11	11	3.8	3.8	3.8	0.7	0.7	0.7
Monroe Street & Site Access Drive[2]	A	1.6	-	A	A	B	A	-	-	-	C	-	-	-
			-	0	0	13	0	-	-	-	15	-	-	-
Woodrow Street & Site Access Drive[2]	A	7.2	-	-	-	-	-	A	-	A	A	A	A	-
			-	-	-	-	-	6.6	-	6.8	6.8	7.5	7.5	-

Existing Conditions (Year 2012)														
			NEastbound			SWestbound			NWestbound			SEastbound		
Intersection	LOS	Delay	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Monroe Street & Edgewood College Drive[1]	B	11.7	-	B	B	B	B	-	A	-	A	-	-	-
			-	12	12	12	12	-	9.5	-	8.3	-	-	-
Monroe Street & Woodrow Street[2]	A	0.3	-	A	A	B	A	-	D	-	D	-	-	-
			-	0	0	13	0.1	-	27	-	27	-	-	-
Monroe Street & Edgewood Avenue[2]	A	3.1	A	A	A	A	A	A	F	F	B	D	D	D
			9.4	9.4	0.7	9.9	9.9	0	74	74	12	34	34	34
Monroe Street & Site Access Drive[2]	A	1.8	-	A	A	B	A	-	-	-	B	-	-	-
			-	0	0	11	1	-	-	-	13	-	-	-

Future Conditions (Year 2022)														
			NEastbound			SWestbound			NWestbound			SEastbound		
Intersection	LOS	Delay	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Monroe Street & Edgewood College Drive[1]	B	11.9	-	B	B	B	B	-	A	-	A	-	-	-
			-	12	12	12	12	-	9.7	-	8.4	-	-	-
Monroe Street & Woodrow Street[2]	A	0.3	-	A	A	B	A	-	D	-	D	-	-	-
			-	0	0	13	0.1	-	27	-	27	-	-	-
Monroe Street & Edgewood Avenue[2]	A	3.4	A	A	A	A	A	A	F	F	B	E	E	E
			9.4	9.4	0.7	9.9	9.9	0.1	80	80	12	36	36	36
Monroe Street & Site Access Drive[2]	A	1.8	-	A	A	B	A	-	-	-	B	-	-	-
			-	0	0	11	1	-	-	-	14	-	-	-

1 Signalized Intersection
2 Unsignalized Intersection

LOS – Level of Service
Delay – Measured in Seconds

The results of the intersection capacity analyses indicate that all impacted intersections currently, and will continue to, operate adequately during the weekday morning peak hour with the exception of the intersections of Monroe Street with Woodrow Street and Edgewood Avenue. At these locations, outbound movements from the minor streets (Woodrow Street and Edgewood Avenue) experience longer than desired delays due to the high volume of traffic on Monroe Street not providing adequate gaps for turning movements to occur. This is not an uncommon situation, though, especially when minor streets intersect high-volume arterials, such as Monroe Street, under stop-sign control. In addition, a field review of these locations indicate that during the weekday morning peak period, vehicles from the minor streets did not experience significant delays to perform their turning movements; this observation, coupled with the low volumes of traffic projected at these minor streets during the weekday morning peak hour, indicate that no external roadway improvements are needed to accommodate future traffic conditions.

Parking Impact Analysis

Based on the aforementioned parking generation analyses, the full build of the Master Plan is projected to increase the off campus parking demand by 161 parking spaces. The Master Plan shows the potential to add an additional 198 spaces as a part of future constructing. These new spaces include a 30 space addition to the high school parking lot near Monroe Street, a vertical expansion of the existing parking deck to accommodate another 68 spaces, the construction of a two story parking ramp over the existing De Ricci surface lot with 95 additional spaces, and the reconfiguration of the Campus lot to accommodate another 5 parking spaces.

Internal Circulation

To accommodate pedestrian traffic and facilitate loading and emergency vehicles for the proposed residence halls, an internal circulation drive was constructed to connect the Edgewood Avenue surface parking lot with the existing circulation drive that serves Edgewood Campus School. To discourage the use of non-authorized vehicles, gates were installed at entry points of the drive. The gates can be opened to allow for loading purposes, emergency use, and the moving in and out of students from the residence halls. Refuse collection for the esidence halls was centralized at a location that **does not** require the use of the circulation drive. These locations include the refuse collection area for the high school and by Siena Apartments.

Based on a field review of the campus, coupled with the results of the traffic counts, a significant number of student drop-offs occur at the high school and campus school during the weekday morning peak hour. Parents dropping off children at the campus school utilize Edgewood College Drive for direct access between the school and Monroe Street; however, parents dropping off children at the high school have a more convoluted route to access Monroe Street. While an access drive is provided to the high school from Monroe Street, this access drive prohibits left-turns onto Monroe Street from 7:00 to 9:00 A.M. Therefore, motorists at the high school drop-off area wishing to travel southwest on Monroe Street have to travel through the high school parking lot to access Edgewood College Drive for access to southwest Monroe Street. These motorists interact with vehicles using the parking lot as well as pedestrians walking from the parking lot to the high school, creating many conflict points between parked vehicles and cut-through traffic as well as between cut-through traffic and pedestrians. Therefore, consideration should be given to provide a more direct route to Edgewood College Drive from the high school drop-off area that will reduce or eliminate interaction between cut-through traffic and vehicles and pedestrians using the parking lot.

8. Traffic Demand Management (TDM) Plan

Anticipated Benefits

Edgewood College has committed to reducing parking demand and parking – both on campus and in their neighborhood - as a central theme in its future growth and development strategy. Furthermore, TDM aligns to the college's sustainability principles perfectly, and advances the college's goals and objectives in several ways, as highlighted below:

- Congestion and Trip Reduction: The data in this report indicate that TDM has been demonstrated to effectively reduce vehicle trips and associated impacts on campus and in the neighborhood. Reduced congestion and trip reduction equals reduced vehicle emissions, reduced commute times, improved quality of life, and end-user cost savings among other things.

- Cost-effective – TDM programs and parking reform have relatively low up-front capital costs and ongoing operating costs, when measured against capital costs such as roads and parking lots and structures. Additionally, the TDM proposed for Edgewood College largely seeks to leverage existing infrastructure, such as transit service, bicycle facilities, and shuttle buses. Effective parking management can serve as a component of funding for TDM, providing additional cost-effectiveness.

- **Quick results, long-term impacts** – capital projects – in addition to being costly – often take years to design, acquire permits, and construct. TDM can be implemented on a comparably fast timeline, and the impacts from TDM initiatives are often immediate and lasting. A comprehensive and well-integrated TDM positively influences travel behavior and mode choice by providing travelers with a reliable, affordable, and comfortable alternative to driving alone to and from their daily destinations.

- **Market and Political Viability** – large numbers of people within the region and at Edgewood College in particular already "participate" in TDM by choosing to ride a bike, taking a shuttle or bus, or carpooling. Increasingly, many private and public institutions and employers celebrate their TDM and other sustainability efforts and benefits as a means to attract quality employees and students. Couple the increasing acceptance (or even expectation) of alternative transportation choices with the benefits outlined above and it's reasonable to say that TDM is a politically viable and market-savvy initiative for Edgewood College.

- **Regional Leadership** – Edgewood College has emerged as an innovative and responsive leader with respect to its contribution to regional sustainability, air quality, traffic congestion, livability, and quality-of-life.

Proposed TDM Program

The proposed TDM program is introduced with the dual purpose of bringing up-to-date previously completed plans for Edgewood College as well as to expand upon recommendations found in past plans and studies - specifically focusing on recommendations that are most viable for the entire Edgewood community and can leverage existing assets and investments.

Parking Measures

- *Increase remote parking for residents* – explore opportunities to expand off-campus parking to accommodate the projected growth in on-campus residents. Align shuttle service to accommodate needed resident access to their vehicle for work commitments and weekend trips.
- *Preferential car-free housing* – incentivize resident commitment to not having a car on campus by offering first choice of residential units on campus.

Transit/Shuttle Measures

- *Expand Metro pass program* – engage the Campus School and High School to participate in the free Metro pass program for its faculty, staff, and students. Explore

cost implications and the feasibility of financing through parking or other existing fees.

- *Expand commuter shuttle* –shuttle ridership has increased since its introduction, and indications are that an east or south shuttle/parking location is needed. Additionally, the three schools should explore the possibility of accommodating faculty and staff at the high school and campus school on the shuttle, and/or offering the shuttle on Fridays.

Carpooling Measures

- *Free carpool permit* – consider offering a free parking permit to any car that agrees to carry 3 or more riders to park in designated carpool lots. Continue the reduced cost carpool permit for 2 riders.
- *Preferred carpool parking* – the high school has expressed an interest in offering "preferred parking" for students who choose to carpool.
- *Shared Car service* – explore the potential to host an on-campus shared car service, whether operated through a commercial provider such as ZipCar or as an institutionally owned and operated service. A shared car could be used by those who don't bring a car to campus for incidental trips such as off-site meetings, personal appointments, etc.

Bicycling and Walking Measures

- *Bike Parking* – increase the availability and convenience of bike parking as the Master Plan is implemented. Consider providing covered bike parking to provide formalize and prioritize biker comfort and offer protection of bikes from the elements.
- *Lockers/Showers* – provide dedicated lockers and showers accessible only to bicycle and other "human-powered" commuters.
- *BikeShare* – consider an on-campus shared bicycle service. This would work similarly to a shared car service (i.e., could be used for incidental trips). On some campuses, this type of program is run as a "recycle-a-bicycle" service, where individuals can donate a used bike to the institution which is then repaired as needed and offered for "check-out" by the campus population.
- *Bicycle Assistance Program* – provide conveniently located, free (or at least, inexpensive) bicycle maintenance, repairs, and parts on campus for bike commuters.
- *B-Cycle* – work with Madison B-Cycle to explore establishment of a B-Cycle station on campus. B-Cycle is a bike sharing service that allows users to check out bicycles for a certain period of time for a fee. Currently, B-Cycle has stations at Knickerbocker and Monroe and at Harrison and Monroe.

Other Measures

- *Incentive programs* – follow the college's lead and establish an incentive program for the high school and campus school populations.

- *Mopeds* – mopeds are becoming increasingly popular commute options, and take up much less "real estate" to park than do automobiles. Proactively provide convenient, safe, dedicated moped and motorcycle parking throughout the campus.
- *Hours/scheduling* – where feasible, offer flexible work schedules for staff and faculty throughout the campus to minimize peak traffic and parking demand, and consider balancing the college's class schedules (such as increasing the number of Friday classes). Coordination among schools with respect to special events, programming, and class scheduling must continue to be a priority in order to minimize spikes in parking and traffic demand to the extent possible.
- *Online learning/teaching* – **especially at the college, on-line classes will only continue to increase in number and popularity. While there is no substitute for an in-person learning experience, some courses may lend themselves well to remote learning.**

9. Recommendations

Edgewood College has committed to an aggressive TDM program to reduce vehicle trips and parking on campus. The addition of housing on campus will reduce the amount of site traffic that will be generated particularly during the peak hour. Given the adequate traffic operations currently experienced surrounding the site, these conditions will likely continue with the addition of the residence halls and the student population as shown in the Master Plan. The reduction in overall traffic both on Monroe Street and Edgewood Avenue also provide additional capacity for campus growth. Finally, the Master Plan also shows the potential for adding more parking supply to the campus than will be created by the additional school enrollments further reducing the demand of off street parking.

10. Conclusion

This study examined the traffic and parking impacts of the proposed master plan which is projected to add 490 students to the campus and 247 student beds to Edgewood College Campus. The study analyzed the existing and future traffic and parking conditions upon buildout of the Master Plan. Modifications and improvements were developed to mitigate existing conditions and the impact that the proposed projected will have on traffic and parking conditions in the area.

Based on the data collected and the analyses performed, the following conclusions were reached regarding the impact that proposed project would have on the adjacent street system:

1. The street and access recommendations cited in the previous Edgewood Campus Master Plan successfully reduced site traffic on the surrounding neighborhood streets and shifted this traffic to the main signalized Monroe Street access drive.

2. The addition of residence halls to Edgewood Campus will not adversely impact traffic operations on the adjacent street network. Conversely, the amount of site traffic projected to enter and exit the campus during the weekday morning peak hour will likely decrease as the future residents will no longer commute to campus.

3. Although construction of the residence halls and an increase in the on campus parking supply will likely reduce the parking demand on surrounding streets, other measures must be implemented to further reduce the traffic and parking demand within Edgewood Campus.

4. The implementation of a remote parking area for faculty and staff should continue to be encouraged as this may be more convenient for those who commute long distances.

5. The provision of a long-term parking area for students will allow residents to have vehicles onsite, but moves them away from high-turnover parking areas that are more accommodating for commuters and visitors.

6. The restriction of on-street parking areas has removed vehicles parked over long periods of time from on-street parking supplies.

Appendix

Appendix A – Traffic Projections

Appendix B – Parking Projections

Appendix C - Parking

- 2005 On-street and Off-street Parking Counts
- 2013 On-street and Off-street Parking Counts Projections

Appendix D – Explanation of Level of Service and Delay

Appendix E – Intersection Analysis Reports

Appendix F – Edgewood HS TDM Plan

Appendix G – Edgewood Schools Campus Transportation Plan Addendum

Appendix A: Traffic Projections

Based on ITE Trip Generation Model 8th Addition
College
2660-2252 =408 additional students
Subtract 247 additional on campus for 408 additional students for trips (161 students X .21 trips) is 34 additional trips during the morning peak hour
High School
650 – 593 =57 additional students at .42 trips per student during the morning peak
24 additional peak hour trips
Campus School
300- 275 =25 additional students at .81 trips per student during the morning peak
20 additional peak hour trips
Total additional am peak hour trips 78 trips
As a check assume .308 trips per student (all schools)
With 243 students that would mean 75 additional trips

Estimated existing peak hour trips generation
College
2252 x .21 trips= 473 trips during the morning peak hour
High School
593 x .42= 249 trips
Campus School
275 x .81 =223 trips
Total current trips
945 trips
Which corresponds with our existing trip count of 960 am peak hour trips

Appendix B: Parking Projections

Based on ITE Parking Manual, 3rd Addition

College

National average parking demand is .3 spaces per school population
Target parking space demand-2720 x .3=816 spaces
Existing spaces= 596
Existing parking ratio- 596 spaces/2720 population=.22 spaces per population
Deficit= 220 stalls
Students
2252
Faculty and Staff
468

High School

Ave national parking demand is .26 spaces per student
593 x .26 =154 spaces
Existing spaces= 261 stalls
Existing parking ratio-261 spaces/593 students=.44 spaces per student
Surplus of = 79 spaces
Students
593
Faculty and Staff
106

Grade School

Parking Demand is .11 spaces per student
275 x .11 spaces=30 spaces
Existing stalls= 37 spaces
Existing Parking ratio-37/275=.13 spaces per student
Surplus of 7 spaces
Students
275
Faculty and Staff
30

Overall Parking Demand
1114 spaces
Overall Campus Supply
894
Current overall campus deficit = 220 parking stalls

Appendix B continued

Edgewood Campus Projected Parking Demand

Based on projected enrollment, the following is the projected parking demand based on the master plan:

Edgewood College
444 additional students, faculty and staff
444 x .3 spaces= 133 additional parking spaces

High School
62 additional students
57 x .44 spaces per student= 25 spaces

Grade School
25 additional students
25 x .11 spaces= 3 additional spaces

Total projected additional spaces 161 parking spaces

APPENDIX C: ONSTREET & OFFSTREET PARKING COUNTS

EDGEWOOD CAMPUS
MADISON, WISCONSIN
WEDNESDAY, APRIL 27, 2005

ONSTREET PARKING LOCATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Total
Time	8	24	23	17	8	11	31	6	13	20	20	18	29	7	11	7	7	7	7	8	9	7	7	7	7	7	7	7	7	347
11:00 AM	5	7	16	1	8	7	29	0	9	16	12	15	29	6	11	5	8	4	5	7	9	4	1	0	1	0	6	2	4	227
12:00 PM	5	7	15	1	7	7	29	0	7	16	10	16	29	6	9	5	9	4	4	8	8	4	2	0	1	0	7	1	4	221
1:00 PM	3	7	13	0	7	6	30	1	12	16	10	16	28	7	9	6	8	4	4	7	7	3	2	0	1	0	7	1	3	218
2:00 PM	3	5	11	0	6	6	29	0	12	15	10	16	28	7	9	7	8	4	3	6	7	3	2	0	1	1	6	1	3	209

	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	Total	Grand	% Occ
Time	7	7	13	8	14	8	14	8	14	14	13	10	11	12	14	14	14	25	26	12	25	24	12	7	5	7	5	7	8	358	705	
11:00 AM	0	2	6	2	3	5	13	2	12	8	3	3	7	3	3	5	2	17	20	5	22	18	5	6	0	5	4	5	7	193	420	59.6%
12:00 PM	0	3	7	1	3	6	13	4	12	5	3	2	5	2	3	1	0	17	20	4	23	20	7	6	0	7	3	5	5	187	408	57.9%
1:00 PM	0	1	7	1	2	5	12	4	9	4	3	4	5	2	2	0	0	14	22	7	22	20	7	6	0	7	3	4	5	178	396	56.2%
2:00 PM	0	1	5	2	3	4	11	5	10	3	3	2	6	2	2	0	0	17	17	7	22	17	5	5	0	5	2	4	6	166	375	53.2%

OFFSTREET PARKING LOCATIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Total	% Occ
Time	146	74	291	9	1	9	16	27	183	20	27	20	18	37	587	
11:00 AM	140	65	---	9	1	7	11	27	171	16	26	18	14	37	542	92.3%
12:00 PM	140	68	---	9	1	6	14	26	178	17	26	17	17	34	553	94.2%
1:00 PM	146	68	---	9	1	7	14	25	174	12	26	16	17	27	542	92.3%
2:00 PM	141	73	---	9	1	7	14	22	144	17	26	19	18	37	528	89.9%

COUNT LOCATIONS

1	NW Monroe (Terry - Woodrow)	26	NE Van Buren (Adams - Vilas)	51	SE West Lawn (Leonard - Edgewood)	
2	NW Monroe (Woodrow - Edgewood College)	27	SW Van Buren (Monroe - Madison)	52	SE West Lawn (Edgewood - Prospect)	
3	NW Monroe (Edgewood-College - Edgewood)	28	SW Van Buren (Madison - Jefferson)	53	NE Leonard (Keyes - West Lawn)	
4	NW Monroe (Edgewood - Van Buren)	29	SW Van Buren (Jefferson - Adams)	54	NE Leonard (West Lawn - Monroe)	
5	SE Monroe (Terry - Woodrow)	30	SW Van Buren (Adams - Vilas)	55	SW Leonard (Keyes - West Lawn)	
6	SE Monroe (Woodrow - Edgewood College)	31	NW Madison (Edgewood - Lincoln)	56	SW Leonard (West Lawn - Monroe)	
7	SE Monroe (Edgewood College - Edgewood)	32	NW Madison (Lincoln - Van Buren)	57	NE Edgewood (Keyes - West Lawn)	
8	SE Monroe (Edgewood - Lincoln)	33	SE Madison (Edgewood - Lincoln)	58	NE Edgewood (West Lawn - Monroe)	
9	SE Monroe (Lincoln - Van Buren)	34	SE Madison (Lincoln - Van Buren)			
10	W Terry	35	NW Jefferson (Edgewood - Lincoln)			
11	E Terry	36	NW Jefferson (Lincoln - Van Buren)			
12	W Woodrow (Access - Monroe)	37	SE Jefferson (Edgewood - Lincoln)	A	College Lot along Woodrow	
13	E Woodrow (Edgewood - Access)	38	SE Jefferson (Lincoln - Van Buren)	B	College Lot in center of Campus	
14	NE Edgewood (Monroe - Madison)	39	NW Adams (Edgewood - Lincoln)	C	College Parking Garage	
15	NE Edgewood (Madison - Jefferson)	40	NW Adams (Lincoln - Van Buren)	D	College Lot along Woodrow	
16	NE Lincoln (Monroe - Madison)	41	SE Adams (Edgewood - Lincoln)	E	College Lot along Woodrow	
17	NE Lincoln (Madison - Jefferson)	42	SE Adams (Lincoln - Van Buren)	F	College Lot along Woodrow	
18	NE Lincoln (Jefferson - Adams)	43	NW Vilas (Edgewood - Lincoln)	G	Siena Apartments	
19	NE Lincoln (Adams - Vilas)	44	NW Vilas (Lincoln - Van Buren)	H	College Lot along Jefferson	
20	SW Lincoln (Monroe - Madison)	45	SE Vilas (Edgewood - Lincoln)	I	High School Student Parking Lot	
21	SW Lincoln (Madison - Jefferson)	46	SE Vilas (Lincoln - Van Buren)	J	High School Drop-Off/Pick-Up Area	
22	SW Lincoln (Jefferson - Adams)	47	NW West Lawn (Monroe - Leonard)	K	High School Staff Parking Lot	
23	SW Lincoln (Adams - Vilas)	48	NW West Lawn (Leonard - Edgewood)	L	High School Staff Parking Lot	
24	NE Van Buren (Madison - Jefferson)	49	NW West Lawn (Edgewood - Prospect)	M	High School Staff Parking Lot	
25	NE Van Buren (Jefferson - Adams)	50	SE West Lawn (Monroe - Leonard)	N	Campus School Parking Lot	

APPENDIX C: ONSTREET & OFFSTREET PARKING COUNTS

EDGEWOOD CAMPUS
MADISON, WISCONSIN
WEDNESDAY, NOVEMBER 28, 2012

ONSTREET PARKING LOCATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Total
Time	9	7	23	17	8	11	31	6	13	20	20	18	29	7	4	7	7	7	7	8	9	7	7	7	7	7	7	7	7	324
11:00 AM	9	7	16	3	8	11	31	3	9	18	15	19	15	2	4	6	6	4	4	3	6	3	2	0	1	2	6	2	4	219
12:00 PM	7	7	14	4	5	8	29	2	12	19	15	21	16	3	4	7	6	2	4	5	7	2	2	1	1	3	7	1	6	220
1:00 PM	5	6	16	3	7	11	28	2	11	17	15	21	16	3	4	6	6	5	2	6	7	2	3	0	2	3	7	1	6	221
2:00 PM	4	4	10	2	5	9	25	2	11	16	15	19	16	3	4	5	5	6	3	6	7	3	4	0	2	3	7	1	6	203
10:00 AM														2	4															
2:00 PM														4	4															
5:00 PM														3	1															
7:00 PM														2	2															
10:00 PM														2	2															
2:00 AM														2	2															

	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	Total	Grand	% Occ
Time	7	7	13	8	14	8	14	8	14	14	13	10	11	12	14	14	14	25	26	12	25	24	12	7	5	7	5	7	8	358	682	
11:00 AM	5	2	2	3	0	5	2	6	1	1	1	1	2	2	10	0	6	18	16	0	21	18	0	0	0	3	0	2	4	131	350	51.3%
12:00 PM	5	1	4	3	2	6	2	4	2	2	0	1	2	1	8	0	6	17	15	0	22	18	1	0	0	4	0	1	5	132	352	51.6%
1:00 PM	5	1	5	4	2	4	3	5	1	1	1	2	2	0	10	0	4	19	16	2	23	17	2	0	0	3	0	1	5	138	359	52.6%
2:00 PM	4	0	3	2	2	5	4	3	1	1	1	2	4	2	8	0	4	18	19	4	20	15	2	0	0	3	2	1	5	135	338	49.6%
10:00 AM						7		7																								
2:00 PM						6		7																								
5:00 PM						4		3																								
7:00 PM						9		5																								
10:00 PM						3		3																								
2:00 AM						3		3																								

Total	Grand	% Occ
310	461	
217	319	69.2%
218	315	68.3%
220	340	73.8%
202	304	65.9%

OFFSTREET PARKING LOCATIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Total	% Occ
Time	146	71	267	9	3	6	19	17	183	18	83	17	18	37	627	
11:00 AM	143	66	-	9	2	4	16	5	180	9	72	16	18	37	577	92.0%
12:00 PM	136	64	-	8	2	4	16	7	183	8	73	12	17	32	562	89.6%
1:00 PM	143	61	-	7	2	4	16	7	175	5	75	12	0	27	534	85.2%
2:00 PM	137	64	-	5	2	4	16	4	163	12	73	13	17	37	547	87.2%

College total	596	
High School total	261	
Grade School total	37	
Total	894	894

COUNT LOCATIONS

1	NW Monroe (Terry - Woodrow)
2	NW Monroe (Woodrow - Edgewood College)
3	NW Monroe (Edgewood-College - Edgewood)
4	NW Monroe (Edgewood - Van Buren)
5	SE Monroe (Terry - Woodrow)
6	SE Monroe (Woodrow - Edgewood College)
7	SE Monroe (Edgewood College - Edgewood)
8	SE Monroe (Edgewood - Lincoln)
9	SE Monroe (Lincoln - Van Buren)
10	W Terry
11	E Terry
12	W Woodrow (Access - Monroe)
13	E Woodrow (Edgewood - Access)
14	NE Edgewood (Monroe - Madison)
15	NE Edgewood (Madison - Jefferson)
16	NE Lincoln (Monroe - Madison)
17	NE Lincoln (Madison - Jefferson)
18	NE Lincoln (Jefferson - Adams)
19	NE Lincoln (Adams - Vilas)
20	SW Lincoln (Monroe - Madison)
21	SW Lincoln (Madison - Jefferson)
22	SW Lincoln (Jefferson - Adams)
23	SW Lincoln (Adams - Vilas)
24	NE Van Buren (Madison - Jefferson)
25	NE Van Buren (Jefferson - Adams)
26	NE Van Buren (Adams - Vilas)
27	SW Van Buren (Monroe - Madison)
28	SW Van Buren (Madison - Jefferson)
29	SW Van Buren (Jefferson - Adams)
30	SW Van Buren (Adams - Vilas)
31	NW Madison (Edgewood - Lincoln)
32	NW Madison (Lincoln - Van Buren)
33	SE Madison (Edgewood - Lincoln)
34	SE Madison (Lincoln - Van Buren)
35	NW Jefferson (Edgewood - Lincoln)
36	NW Jefferson (Lincoln - Van Buren)
37	SE Jefferson (Edgewood - Lincoln)
38	SE Jefferson (Lincoln - Van Buren)
39	NW Adams (Edgewood - Lincoln)
40	NW Adams (Lincoln - Van Buren)
41	SE Adams (Edgewood - Lincoln)
42	SE Adams (Lincoln - Van Buren)
43	NW Vilas (Edgewood - Lincoln)
44	NW Vilas (Lincoln - Van Buren)
45	SE Vilas (Edgewood - Lincoln)
46	SE Vilas (Lincoln - Van Buren)
47	NW West Lawn (Monroe - Leonard)
48	NW West Lawn (Leonard - Edgewood)
49	NW West Lawn (Edgewood - Prospect)
50	SE West Lawn (Monroe - Leonard)
51	SE West Lawn (Leonard - Edgewood)
52	SE West Lawn (Edgewood - Prospect)
53	NE Leonard (Keyes - West Lawn)
54	NE Leonard (West Lawn - Monroe)
55	SW Leonard (Keyes - West Lawn)
56	SW Leonard (West Lawn - Monroe)
57	NE Edgewood (Keyes - West Lawn)
58	NE Edgewood (West Lawn - Monroe)

Streets with restricted parking (1 or 2 hour)
Counts that were done on 4/3/2013

A	College Lot along Woodrow
B	College Lot in center of Campus
C	College Parking Garage
D	College Lot along Woodrow
E	College Lot along Woodrow
F	College Lot along Woodrow
G	Siena Apartments
H	College Lot along Jefferson
I	High School Student Parking Lot
J	High School Drop-Off/Pick-Up Area
K	College and High School Staff Parking Lot
L	High School Staff Parking Lot
M	High School Staff Parking Lot
N	Campus School Parking Lot

Appendix D: Explanation of Level of Service and Delay

Level of Service Conditions for Signalized Intersections

Level of Service	Definition	Delay per Vehicles (seconds)
A	Very short delay, with extremely favorable progression. Most vehicles arrive during the green phase and do not stop at all.	≤10.0
B	Good progression, with more vehicles stopping than for Level of Service A, causing higher levels of average delay.	>10 and ≤20.0
C	Light congestion, with individual cycle failures beginning to appear. Number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.	>20.0 and ≤35.0
D	Congestion is more noticeable, with longer delays resulting from a combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop and the proportion of vehicles not stopping declines.	>35.0 and ≤55.0
E	Limit of acceptable delay, high delays result from poor progression, high cycle lengths, and high v/c ratios.	>55.0 and ≤80.0
F	Unacceptable delay occurring, with oversaturation.	>80.0

Source: *Highway Capacity Manual,* 2000.

Level of Service Conditions for Unsignalized Intersections

Level of Service	Average Total Delay (seconds/vehicle)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0

F	>50.0

Source: *Highway Capacity Manual,* 2000.

Appendix E

Intersection Analysis Reports

Intersection	
Intersection Delay, s/veh	1.8

Movement	NWL	NWR	NET	NER	SWL	SWT
Vol, veh/h	0	100	750	100	100	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	109	815	109	109	663
Number of Lanes	1	0	2	0	0	2

Major/Minor			Major 1		Major 2	
Conflicting Flow All	1419	462	0	0	924	0
Stage 1	870	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Follow-up Headway	3.52	3.32	-	-	2.22	-
Pot Capacity-1 Maneuver	128	547	-	-	735	-
Stage 1	370	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	98	547	-	-	735	-
Mov Capacity-2 Maneuver	98	-	-	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	415	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.2	0	2.4
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NET	NER	NWLn1	SWL	SWT
Cap, veh/h	-	-	547	735	-
HCM Control Delay, s	-	-	13.2	10.746	1
HCM Lane V/C Ratio	-	-	0.20	0.15	-
HCM Lane LOS	-	-	B	B	A
HCM 95th-tile Q, veh	-	-	0.7	0.5	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	16	57	15	1	2	67	720	112	8	638	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		100	0		0	0		0
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	17	62	16	1	2	73	783	122	9	693	22
Number of Lanes	0	1	0	0	1	1	0	2	0	0	2	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	1260	1772	358	1362	1722	452	715	0	0	904	0	0
Stage 1	722	722	-	989	989	-	-	-	-	-	-	-
Stage 2	538	1050	-	373	733	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	127	82	638	107	88	555	881	-	-	748	-	-
Stage 1	384	429	-	265	323	-	-	-	-	-	-	-
Stage 2	495	302	-	620	424	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	107	67	638	67	71	555	881	-	-	748	-	-
Mov Capacity-2 Maneuver	107	67	-	67	71	-	-	-	-	-	-	-
Stage 1	318	420	-	220	268	-	-	-	-	-	-	-
Stage 2	407	250	-	526	416	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	33.7	68.9	1.3	0.2
HCM LOS	D	F	-	-

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SWL	SWT	SWR
Cap, veh/h	881	-	-	70	555	208	748	-	-
HCM Control Delay, s	9.454	0.7	-	73.5	11.5	33.7	9.869	0.1	-
HCM Lane V/C Ratio	0.08	-	-	0.26	0.00	0.41	0.01	-	-
HCM Lane LOS	A	A	-	F	B	D	A	A	-
HCM 95th-tile Q, veh	0.3	-	-	0.9	0.0	1.8	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	132	66	736	204	136	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5			4.5
Lane Util. Factor	1.00	1.00	0.95			0.95
Frt	1.00	0.85	0.97			1.00
Flt Protected	0.95	1.00	1.00			0.99
Satd. Flow (prot)	1770	1583	3424			3491
Flt Permitted	0.95	1.00	1.00			0.57
Satd. Flow (perm)	1770	1583	3424			2016
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	72	800	222	148	384
RTOR Reduction (vph)	0	45	46	0	0	0
Lane Group Flow (vph)	143	27	976	0	0	532
Turn Type	NA	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	16.0	16.0	17.0			17.0
Effective Green, g (s)	16.0	16.0	17.0			17.0
Actuated g/C Ratio	0.38	0.38	0.40			0.40
Clearance Time (s)	4.5	4.5	4.5			4.5
Vehicle Extension (s)	3.5	3.5	4.0			3.0
Lane Grp Cap (vph)	674	603	1385			816
v/s Ratio Prot	c0.08		c0.29			
v/s Ratio Perm		0.02				0.26
v/c Ratio	0.21	0.05	0.70			0.65
Uniform Delay, d1	8.8	8.2	10.4			10.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.7	0.1	1.8			1.9
Delay (s)	9.5	8.3	12.2			12.0
Level of Service	A	A	B			B
Approach Delay (s)	9.1		12.2			12.0
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	0.3

Movement	NWL	NWR	NET	NER	SWL	SWT
Vol, veh/h	5	10	1240	70	5	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	11	1348	76	5	495
Number of Lanes	1	0	2	0	0	2

Major/Minor			Major 1			Major 2
Conflicting Flow All	1644	712	0	0	1424	0
Stage 1	1386	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Follow-up Headway	3.52	3.32	-	-	2.22	-
Pot Capacity-1 Maneuver	90	375	-	-	474	-
Stage 1	197	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	89	375	-	-	474	-
Mov Capacity-2 Maneuver	89	-	-	-	-	-
Stage 1	197	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.8	0	0.2
HCM LOS	D	-	-

Minor Lane / Major Mvmt	NET	NER	NWLn1	SWL	SWT
Cap, veh/h	-	-	181	474	-
HCM Control Delay, s	-	-	26.8	12.683	0.1
HCM Lane V/C Ratio	-	-	0.09	0.01	-
HCM Lane LOS	-	-	D	B	A
HCM 95th-tile Q, veh	-	-	0.3	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.9

Movement	NWL	NWR	NET	NER	SWL	SWT
Vol, veh/h	0	110	750	111	110	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	120	815	121	120	663
Number of Lanes	1	0	2	0	0	2

Major/Minor			Major 1			Major 2
Conflicting Flow All	1447	468	0	0	936	0
Stage 1	876	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Follow-up Headway	3.52	3.32	-	-	2.22	-
Pot Capacity-1 Maneuver	122	542	-	-	727	-
Stage 1	368	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	90	542	-	-	727	-
Mov Capacity-2 Maneuver	90	-	-	-	-	-
Stage 1	368	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.5	0	2.5
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NET	NER	NWLn1	SWL	SWT
Cap, veh/h	-	-	542	727	-
HCM Control Delay, s	-	-	13.5	10.924	1
HCM Lane V/C Ratio	-	-	0.22	0.16	-
HCM Lane LOS	-	-	B	B	A
HCM 95th-tile Q, veh	-	-	0.8	0.6	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	17	57	16	2	3	67	720	118	9	638	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		100	0		0	0		0
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	18	62	17	2	3	73	783	128	10	693	22
Number of Lanes	0	1	0	0	1	1	0	2	0	0	2	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	1262	1781	358	1368	1727	455	715	0	0	911	0	0
Stage 1	724	724	-	992	992	-	-	-	-	-	-	-
Stage 2	538	1057	-	376	735	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	127	81	638	106	88	552	881	-	-	743	-	-
Stage 1	383	429	-	264	322	-	-	-	-	-	-	-
Stage 2	495	300	-	617	424	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	105	66	638	64	71	552	881	-	-	743	-	-
Mov Capacity-2 Maneuver	105	66	-	64	71	-	-	-	-	-	-	-
Stage 1	317	420	-	218	266	-	-	-	-	-	-	-
Stage 2	404	248	-	521	415	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	35.9	73	1.3	0.2
HCM LOS	E	F	-	-

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SWL	SWT	SWR
Cap, veh/h	881	-	-	68	552	200	743	-	-
HCM Control Delay, s	9.454	0.7	-	79.5	11.5	35.9	9.91	0.1	-
HCM Lane V/C Ratio	0.08	-	-	0.30	0.00	0.43	0.01	-	-
HCM Lane LOS	A	A	-	F	B	E	A	A	-
HCM 95th-tile Q, veh	0.3	-	-	1.1	0.0	2.0	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	145	73	736	225	150	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5			4.5
Lane Util. Factor	1.00	1.00	0.95			0.95
Frt	1.00	0.85	0.96			1.00
Flt Protected	0.95	1.00	1.00			0.99
Satd. Flow (prot)	1770	1583	3415			3487
Flt Permitted	0.95	1.00	1.00			0.58
Satd. Flow (perm)	1770	1583	3415			2036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	79	800	245	163	384
RTOR Reduction (vph)	0	49	52	0	0	0
Lane Group Flow (vph)	158	30	993	0	0	547
Turn Type	NA	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	16.0	16.0	17.0			17.0
Effective Green, g (s)	16.0	16.0	17.0			17.0
Actuated g/C Ratio	0.38	0.38	0.40			0.40
Clearance Time (s)	4.5	4.5	4.5			4.5
Vehicle Extension (s)	3.5	3.5	4.0			3.0
Lane Grp Cap (vph)	674	603	1382			824
v/s Ratio Prot	c0.09		c0.29			
v/s Ratio Perm		0.02				0.27
v/c Ratio	0.23	0.05	0.72			0.92dl
Uniform Delay, d1	8.8	8.2	10.5			10.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.8	0.2	1.9			2.0
Delay (s)	9.7	8.4	12.4			12.2
Level of Service	A	A	B			B
Approach Delay (s)	9.2		12.4			12.2
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	0.3

Movement	NWL	NWR	NET	NER	SWL	SWT
Vol, veh/h	5	11	1240	76	6	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	12	1348	83	7	495
Number of Lanes	1	0	2	0	0	2

Major/Minor			Major 1		Major 2	
Conflicting Flow All	1649	715	0	0	1430	0
Stage 1	1389	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Follow-up Headway	3.52	3.32	-	-	2.22	-
Pot Capacity-1 Maneuver	90	373	-	-	471	-
Stage 1	196	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	88	373	-	-	471	-
Mov Capacity-2 Maneuver	88	-	-	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	745	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.5	0	0.3
HCM LOS	D	-	-

Minor Lane / Major Mvmt	NET	NER	NWLn1	SWL	SWT
Cap, veh/h	-	-	185	471	-
HCM Control Delay, s	-	-	26.5	12.751	0.1
HCM Lane V/C Ratio	-	-	0.09	0.01	-
HCM Lane LOS	-	-	D	B	A
HCM 95th-tile Q, veh	-	-	0.3	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	145	73	736	225	150	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.0	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3415		1770	3539
Flt Permitted	0.95	1.00	1.00		0.19	1.00
Satd. Flow (perm)	1770	1583	3415		345	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	79	800	245	163	384
RTOR Reduction (vph)	0	53	57	0	0	0
Lane Group Flow (vph)	158	26	988	0	163	384
Turn Type	NA	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	16.1	16.1	17.1		24.7	24.2
Effective Green, g (s)	16.1	16.1	17.1		24.7	24.2
Actuated g/C Ratio	0.33	0.33	0.35		0.50	0.49
Clearance Time (s)	4.5	4.5	4.5		4.0	4.5
Vehicle Extension (s)	3.5	3.5	4.0		3.0	3.0
Lane Grp Cap (vph)	578	516	1184		262	1737
v/s Ratio Prot	c0.09		c0.29		c0.04	0.11
v/s Ratio Perm		0.02			0.27	
v/c Ratio	0.27	0.05	0.83		0.62	0.22
Uniform Delay, d1	12.3	11.4	14.8		16.2	7.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.2	5.4		4.5	0.1
Delay (s)	13.4	11.5	20.2		20.7	7.2
Level of Service	B	B	C		C	A
Approach Delay (s)	12.8		20.2			11.3
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Appendix F

Edgewood High School – Parking and Transportation Management Plan

Edgewood High School is comprised of approximately 610 students, ninth through twelfth grade. We have 60 faculty and 43 staff. We have 261 total parking spots on campus. Edgewood High School is committed to partnering with the neighborhoods, Campus School and Edgewood College to minimize traffic coming to and from campus, daily. To reduce traffic the follow initiatives have been implemented for academic school year, 2013-14.

- **Bike, incentives for teachers and students. Free breakfast or lunch per quarter.**
- **Walker incentives for teachers and students. Free breakfast or lunch per quarter.**
- **Discounted bus tickets available to faculty, staff, and students.**
- **Staggered start and release times for our student body.**
- **Organized administrative management of student carpools from outskirt townships.**
- **Staggered release times from campus school.**
- **Reduced visitor parking to encourage family volunteer car pooling.**

Appendix G - EDGEWOOD SCHOOLS
CAMPUS TRANSPORTATION PLAN ADDENDUM

Current College Procedures

- During the academic year the college limits events that take place on campus Monday-Thursday 7am-3pm. Limiting events ensures guests are not using parking spaces needed for faculty, staff and students.
- Any event taking place during a high volume class time is first approved through Transportation Services. Approval is based on campus parking needs and any other events taking place.
- The Deming Way Campus, located in Middleton, WI, is utilized as an auxiliary site, if we cannot accommodate the group on the main campus.
- Friday-Sunday and after 3pm during the week, we do not see high volumes of traffic, therefore event guests are welcomed to campus and parking is available.
- The need for parking is greatly reduced in the summer due to limited class offerings. Like many colleges and universities, Edgewood College offers event space and services for camps and conferences. These groups are provided with ample parking on campus. Groups who bus their participants to campus are instructed to drop off students in front of Regina Hall.
- All groups, including those using busses, are instructed to enter campus using the main Edgewood College Drive.
- Events staff work directly with Transportation Services to ensure spaces are blocked if necessary and appropriate signage is provided.
- The Woodrow gate will close 24/7 beginning the day after the College's Commencement and will open on the first day of school for whichever of the 3 Edgewood Schools opens earliest.
- Departments hosting large events are directed to provide specific instruction to guests to use the central drive when arriving to campus. Visitor parking is currently free to all guests.
- The three schools will take city events into account, such as Badger Football Saturdays, when planning events on each campus.

Potential Process Improvements

- Steps are being taken to add verbiage to campus maps directing all traffic down the central drive.
- Transportation Services has successfully worked with the city of Madison to find strategies to redirect traffic down the central drive on electronic mapping services such as Mapquest and Google Maps. This situation will be monitored to ensure future problems do not resurface.

Current Three School Communication

- If any of the three schools (Edgewood Campus School, Edgewood High School, Edgewood College) is planning a large event that will impact another school,

communication is sent from the event host school liaison to the impacted school liaison. Use of facilities is approved by the liaisons at each school. Liaisons for each school are listed below.
    - Joyce Wodka, Campus School
    - Carol Anzelmo, High School
    - Samantha Tiller, Events Services Coordinator and Erin Bykowski, Assistant Director Transportation Services; Edgewood College.
- Requests are confirmed or denied based on the facility needs of each school
    - Clients are required to submit a minimum of two weeks' notice
    - Cancellation of events must be submitted no later than 72 hours in advance
- The communication chain prevents the schools from booking multiple large events on the same day and also allows the schools to utilize parking availability over the entire campus to its fullest potential.

Future Procedures with Growth

- The college will continue with the procedures outlined above with the addition of the following procedures to ensure successful management of parking and transportation needs with growth.
- When needed, the Three Schools will form a communications committee to regularly discuss event and transportation management.
    - The Communications Committee will include:
        - Samantha Tiller, Edgewood College, Events and Conferences Services Coordinator
        - Erin Bykowski, Edgewood College, Assistant Director Transportation Services
        - Carol Anzelmo, High School Support Staff
        - Joyce Wodka, Campus School Business Manager
        - Suann Saltzberr, Edgewood College, Assistant Director of Athletics
    - Any events that will directly affect the neighborhood will then be communicated via the neighborhood liaison to the neighborhood.
- Staff will continue to accommodate groups by continually seeking alternative parking and transportation arrangements.
- Events requiring the use of multiple busses will be scheduled around peak class times and/or will be parked at alternative locations such as our Campus Shuttle Program parking lots off campus.
- Groups requesting event space beyond capacity will be asked to use alternative transportation or will have their request declined.