ST. MARY'S ROAD CORRIDOR STUDY

Completed for the University of Illinois by the Champaign County Regional Planning Commission

In cooperation with:
Illinois Department of Transportation
City of Champaign
City of Urbana
Fox Development Corporation

Volume 1 of 2
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St. Mary's Road Corridor Study

Prepared by the Champaign County Regional Planning Commission
for the University of Illinois

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This document is divided into two volumes due to binding constraints. Volume 1 contains Chapters 1-5 and Appendices 1-3. Volume 2 contains Appendix 4.

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1 Introduction

St. Mary's Road, between Neil Street and Lincoln Avenue, is a key roadway link utilized by retail, office, hotel and conference center businesses in and around the University of Illinois Research Park. This corridor also provides access to the Assembly Hall, existing recreational facilities and future facility developments as part of the University of Illinois Division of Intercollegiate Athletics (DIA). An administrative office building is also planned for the southwest corner of Fourth Street extended and St. Mary's Road. Given the amount of development planned for the future, this corridor will remain a critical transportation link.

Many different modes of transportation traverse the roadways throughout the St. Mary's Road corridor each day, including passenger vehicles, trucks, transit buses, pedestrians, and bicyclists. In some locations there are conflicts between these different modes of travel. Future developments in the corridor are likely to cause additional traffic flow, therefore affecting safety, congestion and level of service for all transportation modes.

Officials at the University of Illinois are concerned about future traffic congestion, conflicts among modes of transportation and safety in this corridor as a result of future development. The University retained the services of the Champaign County Regional Planning Commission (CCRPC) to perform a comprehensive transportation study for this corridor. This study is funded through the Illinois Department of Transportation (IDOT).

1.1 Study Area

The St. Mary's Road Corridor Study area is bounded by Florida Avenue/Kirby Avenue on the north, Lincoln Avenue on the east, Hazelwood Drive on the south, and Neil Street on the west. A map showing the study area location and boundaries is presented in Figure 1.

1.2 Study Purpose and Goals

The study focused on a multi-modal system-wide approach to solving transportation issues throughout the corridor. This corridor needs to function as a campus corridor where a balance of safety and mobility must be achieved for all roadway users. Some of the goals of this study are:

- Identify Operation and Safety Challenges
- Improve Mobility
- Improve Safety

The following products were created during the corridor study planning process and are included in this final report:

- Documentation of all existing conditions pertaining to land use and all modes of transportation.
- Description of the assessment process used to identify improvement projects.
- Documentation of findings from the future development alternatives evaluation.
- Description of the corridor's recommended transportation improvements.
- Documentation of the public involvement process including its proactive efforts to inform and involve the general public during the study process.

1.3 Study Management and Participants

All work completed by CCRPC during this study was reviewed by the St. Mary's Road Corridor Study Steering Committee. The steering committee included agencies directly affected by the recommendations put forth in this study and some who are responsible for implementing those recommendations. The steering committee included the following members:

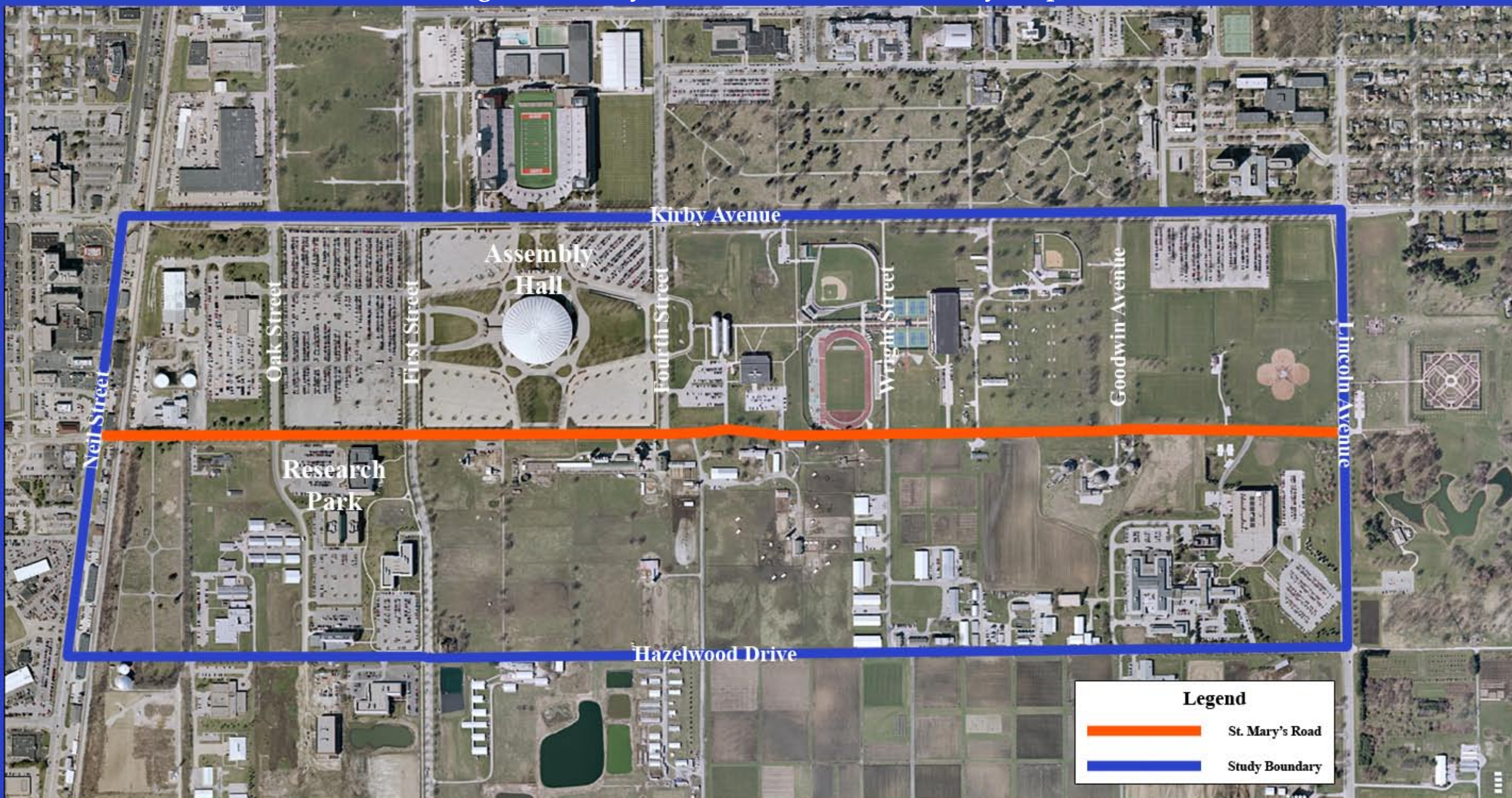
- The University of Illinois
  - *Facilities & Services*
  - *Division of Intercollegiate Athletics*
  - *Division of Campus Recreation*
  - *Department of Veterinary Medicine*
  - *Building Research Council*
- Fox Development Corporation
- Enterprise Works, Research Park & Incubation Facilities
- iCyt
- City of Champaign
- City of Urbana
- Illinois Department of Transportation, Division of Public and Intermodal Transportation

1.4 Report Organization

The final report is organized by the following chapters:

- Introduction
- Planning Process
- Existing Conditions Analysis
- Future Conditions Analysis
- Implementation Plan

Figure 1: Study Area Location and Boundary Map



2 Planning Process

An extensive planning process was undertaken in order to achieve the overall objective of developing future recommendations for the improvement of transportation facilities within the St. Mary's Corridor study area. The planning process began in March 2008 with the formation of the corridor Steering Committee. CCRPC staff worked through the following project phases to complete the St. Mary's Corridor Study:

1. Inventory & Analyze Existing Conditions
2. Consider Existing Plans & Policies
3. Determine Issues
4. Develop Goals
5. Public Involvement
6. Model Existing & Future Conditions
7. Develop Corridor Vision & Alternatives for the Future
8. Develop a Preferred Alternative
9. Develop an Implementation Plan
10. Create Final Report

2.1 Inventory and Analyze Existing Conditions

Data collection and analysis were completed at the beginning stage of the corridor study in order to understand the current issues, forces, and trends. The existing conditions data is also used as input for the travel demand model which helps determine future conditions and improvements. Land uses and transportation systems (automobile, bicycle and pedestrian) were elements considered in the existing conditions analysis.

2.2 Consider Existing Plans and Policies

Over the years there have been numerous documents created that have bearing on this study area and the improvements recommended by this study. The University of Illinois' *Campus Master Plan* is the document used to plan for the future development of campus facilities. This document sets the land uses and approximate locations of campus buildings and facilities for the future. The *Campus Master Plan* has significant implications for this study due to the location of the research park, I-Hotel, DIA facilities, and campus recreation facilities which fall within the study boundaries. The master plan for the research park was also reviewed and used to determine future development in the study area.

Existing plans pertaining to transportation were reviewed, included the *Long Range Transportation Plan for 2025 (LRTP)* and the *Special Event Traffic Management Plan* produced by the University of Illinois. The *LRTP* was used to generate compatible concepts with those that are recommended in this document. The *Special Event Traffic Management Plan* was used to determine what, if any effect, event traffic generated by Memorial Stadium and Assembly Hall would have on the corridor and the proposed improvements. Proposed improvements had to be checked against this plan as to not adversely affect the traffic circulation patterns which currently exist during special events.

2.3 Determine Issues

Issues, which act against the established goals of this study, were determined by CCRPC and the Steering Committee. In order to identify appropriate solutions the following issues were discussed and addressed as part of the future recommendations:

- Integration of the existing and future transportation networks.
- User Safety - minimize conflicts between all roadway users (motorists, pedestrians, cyclists) and the frequency of crashes.
- Roadway Capacity - some roadway segments and intersections are close to or are operating under congested conditions.
- Roadway Surface Quality - some roadway segments are not up to urban standards.
- Pedestrian and Bicycle Facilities - must provide adequate facilities for bicyclists and pedestrians.

2.4 Develop Goals and Objectives

The development of goals and objectives provided the study with a defined direction and guided the varying steps in the planning process toward a common solution. A goal is defined as an end state that will be brought about by implementing the corridor study's recommendations. Objectives are sub-goals that help organize the implementation of the plan into manageable parts. The Steering Committee and CCRPC staff formulated goals for the study based on issues identified during the existing conditions analysis.

GOALS AND OBJECTIVES FOR THE STUDY AREA

- Identify Operation and Safety Challenges
  - Identify existing transportation operation and safety challenges that will affect future transportation improvements.
- Improve Mobility
  - Find solutions that increase the efficiency and reliability of the transportation system by reducing congestion and improving other modes of transportation such as mass transit, bicycling and walking.
- Improve Safety
  - Provide safer conditions for all modes of transportation by reducing the frequency of crashes involving driving, biking, or walking.

2.5 Public Involvement

The land use and transportation changes which occur as a result of this study will affect the residents of the Champaign-Urbana community, especially those who work or attend classes at the University and those who work at the research park. Actively seeking input from area residents is a step in the planning process which CCRPC believes strongly in and strives to use methods of outreach which will attract large audiences to public participation events.

For this corridor study, CCRPC staff utilized a public open house method for public participation. The open house option allowed for a free flowing structure where members of the public were invited to come during set hours in the evening, walk around, view the displays, vote on specific design alternatives, ask questions of CCRPC staff, and provide comments on the project. The open house style worked well given the varying schedules of our target audiences; students, professors, research park employees, University employees, and the general public. Numerous methods of advertisement were used to reach as wide an audience as possible:

- Promotional flyers distributed and posted at all research park facilities and nearby academic facilities, offices, and businesses.
- Flyer was posted on the University of Illinois Facilities & Services website.
- Flyer was posted on the Smile Politely website.
- Flyer was sent out as part of the E-Week e-mail newsletter to the University community.
- Flyer was posted on the CCRPC website.

When the corridor study began in 2008, the planning process was slated to include three public participation events, one of which solicited votes from the public that directly affected future improvements to the corridor. The following meetings were part of the original planning process:

- *Goals, Objectives, Issues and Visions*
- *Proposed Recommendations, Evaluation and Prioritization*
- *Implementation Plan Review*

The corridor study process ultimately held two public open houses:

- April 24, 2008
- Forum: Existing Conditions and Future Improvement Visioning
- Location: Z3 Building Atrium
- Topics: Presented existing conditions, simulation of base year traffic conditions, development phasing in the corridor, and future transportation facility preference survey.

- September 30, 2008
- Forum: Proposed Future Transportation Improvements and Implementation Plan
- Location: I-Hotel and Conference Center
- Topics: Presented proposed transportation improvements and the implementation plan.

Table 1 shows the total number of people who attended each public open house and the methods of advertising used for each. The total number of attendees is based on how many people signed the attendance sheet at each meeting. The public forums were held in an open house format, which encourages people to come and go as they please. This loose format may have resulted in some attendees not signing in, therefore the number of actual attendees is most likely higher than that listed in Table 1.

Table 1: Public Participation Information

Meeting Date	Attended	Publicity			
		Direct Mailing	Website	Fliers	E-mail
April 24, 2008	47	-	X	X	X
September 30, 2008	48	-	X	X	X

CCRPC staff felt the meetings were well attended and the target audience of those who utilize the corridor most often were well represented. Overall comments and public participation at the meetings were also very positive and public comments were informative for staff. A summary of comments from each public open house can be found in Appendix 4.

2.6 Employment Projections

Employment projections were created for the corridor to determine how employment would grow by 2015, 2025 and 2035. These three horizon years correspond to the three time frames used for determining when transportation improvements will need to be put in place. The projections are based off the two master plans for the University of Illinois and its associated research park. After discussions with the University of Illinois and Fox Development, CCRPC staff placed future development into one of the three horizon years to determine additional employment that may be generated in the future. Table 2 shows employment changes for the base year and each horizon year.

Table 2: St. Mary's Employment

	2005	2015	2025	2035	2005 - 2035 Change
Projected Employment	5,605	9,013	12,202	13,400	7,795
% Increase from Previous Year	N/A	60.8%	35.4%	9.8%	139.1%

2.7 Model Existing and Future Conditions

The travel demand model helps identify problem areas in the transportation system so proper alternatives can be developed to remedy the issues. Using the travel demand model, developed by CCRPC, it is possible to quantitatively compare the current existing traffic conditions with multiple alternative solutions for the future to see how transportation improvements can help alleviate congestion and reduce travel times. The modeling tool gives planners, engineers, and local decision makers a view of probable future conditions with which to prioritize transportation improvement projects.

The model uses population and employment projections to reflect future changes in land use. Employment projections for this project are based on the assumed build-out of the study area at horizon years 2015, 2025 and 2035. Populations projections were not done for the study area due to the lack of future residential growth in the corridor. The model must also have an inventory of the existing transportation network to accurately predict future traffic volumes. Once a baseline scenario is formed for each of the horizon years, different transportation improvement projects can be tested in the model to see whether or not they reduce congestion and travel delays. By having the baseline scenario and different alternative scenarios, which include the various transportation improvement projects, local officials can evaluate which scenario best fits the goals of the corridor.

2.8 Develop Future Transportation Alternatives

Since the University of Illinois and Fox Development already had land use and development master plans put in place for the entire study area, CCRPC staff focused on generating alternatives for transportation improvements based on the proposed land uses from both master plans. A methodology of public involvement, local knowledge, and best planning and engineering practices was used to create the transportation alternatives. A three step process involving travel demand modeling, public input, and evaluating results was used to identify the preferred transportation improvements.

Transportation Improvement Alternatives

The CUUATS travel demand model was used in conjunction with employment projections to determine what future traffic volumes could be expected throughout the study corridor. The future volumes were then used in Highway Capacity Software (HCS) and Synchro 7 software to determine where capacity issues were occurring. Problem areas were determined for each horizon year throughout the entire corridor and a set of potential solutions for each issue was derived. These sets of solutions were presented to the Steering Committee, refined, and then presented at the first public open house session on April 24, 2008.

Public Input and Voting

The transportation issues and future improvement alternatives were presented to the public at the April 24, 2008 open house. Public participants were asked to vote for one alternative per transportation issue that best represented what they would like to see happen in the corridor. Participants were asked to vote using stickers provided to them at the sign-in table. Participants were given a certain color sticker depending on their affiliation with either the University, research park or being a member of the general public. The results from the open house voting were later tallied by CCRPC staff and can be found in Appendix 4.

Evaluation of Results

The results from the voting held at the first public open house were analyzed to ensure the public's preferred alternative was compatible with results generated by the travel demand model and the micro-simulations. In many cases, the public's preferred alternative was the most effective congestion mitigation improvement. Each preferred alternative was evaluated for its effectiveness in reducing congestion but also for its propensity to create a safer travel environment for all roadway users. In cases where the public's preferred alternative failed to create a more efficient or safe condition, another alternative was used.

2.9 Future Transportation Improvements

Using a combination of the public's preferred alternatives and CCRPC's evaluation of those alternatives, a list of proposed transportation improvement projects was created. The proposed improvement projects cover vehicular, bicycle and pedestrian modes of transportation. Given that this corridor is located within a broader campus setting, it was critical that proposed improvements take multi-modal travel options into consideration. It was also important that the proposed bicycle and pedestrian facilities connect with existing and planned facilities surrounding the study area.

As mentioned above, the final proposed transportation improvements were the result of the public participation effort, discussions with the Steering Committee, output results from the travel demand model and micro-simulations, and best engineering and transportation planning practices. The list of transportation improvements was broken down into three time horizons, 2015, 2025 and 2035 for prioritization and implementation efforts. The final listing of transportation improvements can be seen in Table 3.

The listing is a recommendation for improvements. Prioritization and timing of these projects can change if future conditions deviate from what this plan projects. If land uses change or development occurs faster or slower than projected, the timing of certain projects may be sped up or delayed.

Intersection of First Street and St. Mary's Road
Year 2015

Oak Street South of St. Mary's Road
Year 2025

Table 3 - Proposed Transportation Improvements

Near Term Improvements

Segment/Intersection	Proposed Improvements	Priority
St. Mary's Road		
Between Neil St. and Oak St.	Road Diet (from 4-lane to 2-lane) and provide two (5 ft.) bike lanes.	High
Between Neil St. and Oak St.	Construct a 6 ft. sidewalk on north side of St. Mary's Rd. and detectable warnings.	High

Improvements by 2015

Segment/Intersection	Proposed Improvements	Priority
St. Mary's Road		
Between Oak St. and First St.	Road Diet (from 4-lane to 3-lane or constructed median) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on north side and half of south side of the street with detectable warnings.	High
First St./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane, one TH lane and one RT lane at all approaches (restriping).	High
Between First St. and Fourth St.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct sidewalk on north side and half of south side with detectable warnings.	High
Fourth St./St. Mary's Rd. Intersection	Install a single-lane roundabout with one approach lane and one exit lane for each direction.	High
Between Fourth St. and Lincoln Ave.	Reconstruct roadway as a 2-lane with curb and gutter.	High
Between Fourth St. and Lincoln Ave.	Construct a 8' sidepath along north side and 6' sidewalk along south side of St. Mary's Rd.	Medium
Lincoln Ave./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane and one RT lane for EB approach; one RT lane and one TH lane for SB approach and one TH lane and one LT lane for NB approach and detectable warnings.	High
Fourth Street		
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on east side of the street with detectable warnings.	Medium
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 3-lane roadway with a center turning lane, two (5 ft.) bike lanes and 6 ft. sidewalks on both sides of the street.	Low

Improvements by 2025

Intersection/Segment	Proposed Improvements	Priority
St. Mary's Road		
Neil St./St. Mary's Rd. Intersection	Construct a right turn pocket at the SB approach.	High
Oak St./St. Mary's Rd. Intersection	Provide a left turn pocket at the NB approach (Restriping the intersection).	High
Oak Street		
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Provide a 6 foot sidewalk on the east side of the roadway and detectable warnings..	Medium
Between St. Mary's Rd. and Hazelwood Dr.	Provide 6 Ft. sidewalks on both sides of the roadway and detectable warnings.	Medium

Improvements by 2035

Intersection/Segment	Proposed Improvements	Priority
St. Mary's Road		
Neil St./St. Mary's Rd. Intersection	Re-time and optimize traffic signal.	High
Oak St./St. Mary's Rd. Intersection	Signalize intersection.	High
First Street		
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 8' sidepath along east side of the roadway.	Medium

*Improvements assume employment growth and traffic projections will be met.

2.10 Implementation Plan

The list of recommended transportation improvements provided in Table 3 serves as the basis for the implementation table. The implementation table describes each project in detail, including what agencies will be responsible for the projects implementation, how much the project might cost to implement (in year 2008 dollars), a time frame for the projects implementation, and the priority of the projects during the given time period. This table represents the study's goals in bringing this corridor's transportation needs to life. The implementation plan for the St. Mary's Corridor Study can be found in Chapter 5.

Local officials and agencies need to set benchmarks by which the successful implementation of this plan can be measured. The implementation of this plan can be measured and monitored by having a list of concepts and project construction goals that need to be completed to ensure the goals and objectives of this study are met within the 25 year time frame. The improvements listed in the implementation table should be completed no later than the listed horizon year. The projects listed under each horizon year assume that the projected employment and traffic growths are met by each horizon year. If the projected growths occur before or after the listed horizon year, the timing of the improvements should be adjusted accordingly to avoid safety and congestion issues.

3 Existing Conditions

Existing Land Uses

The St. Mary's Road Corridor is a dynamic and constantly changing landscape of which its transportation and land use components must support some of the University's highest traffic generators. The University currently has a majority of its athletic facilities located in and around the St. Mary's Corridor bringing heavy volumes of traffic to the area. The University also located its research park in and around the corridor as well which currently supports commercial, office and educational facilities. The existing land use pattern within the corridor is somewhat split between parcels which are developing at their highest and best use and others which remain predominately agricultural in nature.

Driving along St. Mary's Road from Neil Street east to Lincoln Avenue, the make-up of the landscape changes significantly as the University and its development partners continue to change the land use patterns to those that better suit adjacent parcels. From Neil Street to First Street the predominate land use pattern is commercial and office due to the location of the research park and the development of the hotel and conference center and adjoining restaurant at the corner of First Street and St. Mary's Road.

From First Street to Fourth Street the land use pattern changes from commercial/ office to recreational and agricultural uses. The north side of St. Mary's Road is taken up by Assembly Hall and its associated parking lots. The south half of St. Mary's Road does contain the new hotel and conference center which is currently under construction and slated to be completed by Summer 2008. East of the hotel/ conference center are agricultural uses associated with the south farms.

From Fourth Street to Lincoln Avenue the land uses continue on as recreational and agricultural. The north side of St. Mary's Road contains the Division of Intercollegiate Athletics' campus which includes the Atkins Tennis Center, Illinois Field (baseball) and the track and field facility to name a few. The south side of St. Mary's Road is predominately agricultural uses associated with the farms. The historic round barns complex can be found along this stretch of St. Mary's Road as well as the Demirjian Indoor Golf facility. At the corner of St. Mary's Road and Lincoln Avenue is the College of Veterinary Medicine Campus.


Research Park



Neil Street to First Street



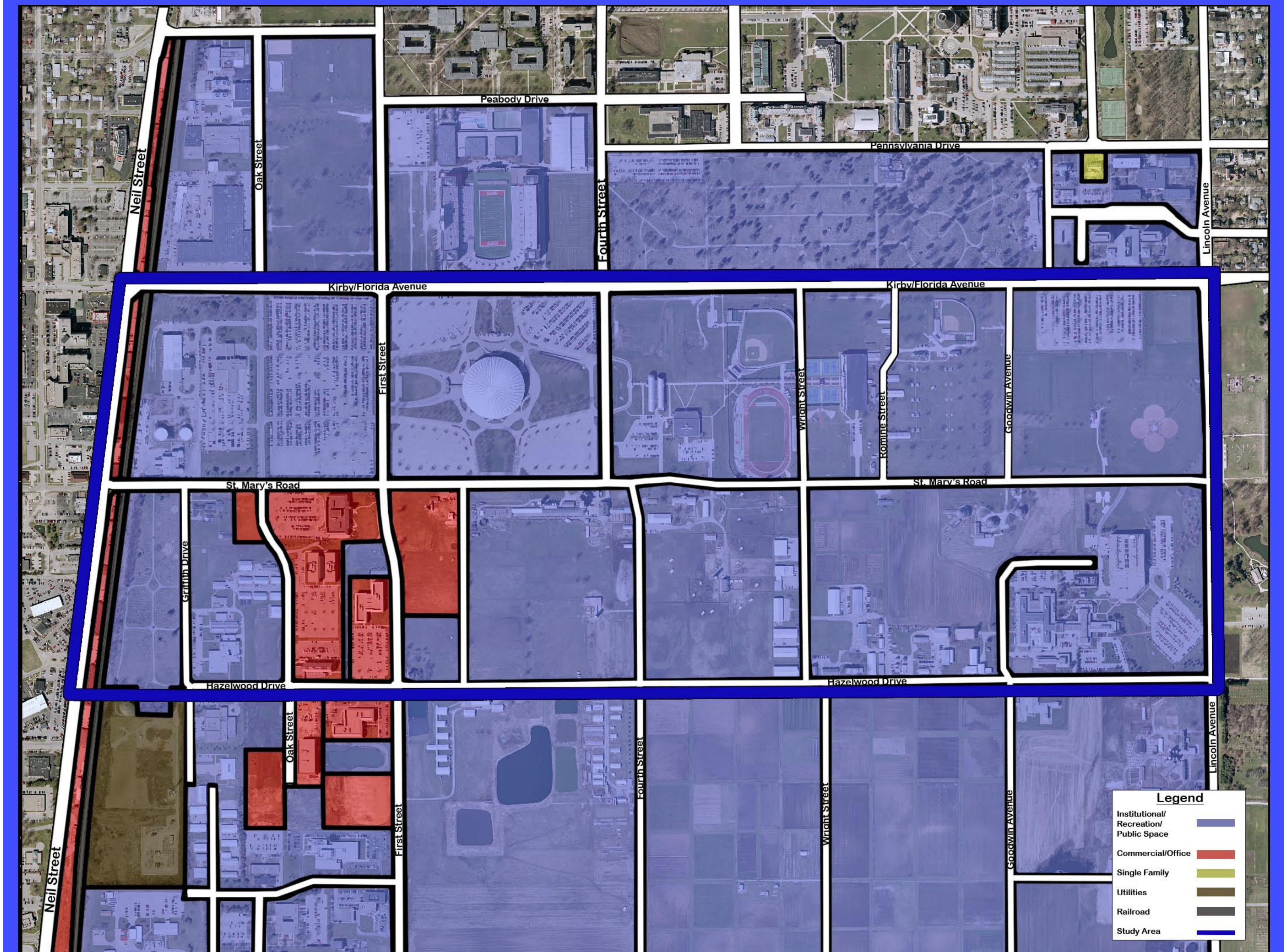
First Street to Fourth Street



Fourth Street to Lincoln Avenue


Figure 2 shows the current land use patterns in and around the St. Mary's Road Corridor. Nearly all parcels within the study area boundary fall into the institutional/recreation/public space category and most are owned by the University. The commercial/office land uses in the study area are mostly part of the research park except for the commercial strips along the east side of Neil Street.

Figure 2: Current Land Use Patterns



Existing Transportation Conditions

This section contains a compilation of data on traffic flow, existing traffic characteristics, travel conditions, transportation, pedestrian and bicycle facilities, and traffic safety for the study area. The data collected and analyzed for this section will help shape the decisions made regarding future transportation bicycle improvements.

3.1 Traffic Flow Data

Traffic flow data includes:

- Turning movement counts for selected intersections at the AM, Noon and PM peak hours.
- 24-hour traffic volume data on selected roadway segments within the corridor.

Traffic volume data collected within the study area on typical weekdays indicated that the morning peak hour was between 7:45 AM and 8:45 AM and the evening peak hour was between 4:30 PM and 5:30 PM.

Turning Movement Counts

Turning movement counts were conducted at selected intersections in October 2007. These counts were performed during three different typical weekday peak hour time periods: AM (7:00 AM to 9:00 AM), Noon (11:00AM to 1:00 PM), and PM (4:00 PM to 6:00 PM). Peak hour turning movement counts help to quantify existing traffic operation conditions at different intersections along the corridor.

Peak hour volumes were calculated using the turning movement counts for each approach at the selected intersections. Table 4 shows turning movement counts at selected intersections in the AM, Noon, (for two selected intersections) and PM peak hours. The peak hour approach volumes shown in Table 4 are the highest hourly volumes for the corresponding approaches for that peak period.

Table 4: Peak Hour Turning Movement Counts

Intersection	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Approach Volume (AM Peak Hour)												
Neil/St. Mary's	58	966	213	200	658	88	32	94	21	28	56	46
Oak/St. Mary's	19	22	15	10	44	10	125	271	159	24	86	23
First/St. Mary's	35	322	117	16	184	29	30	185	34	40	73	14
Fourth/St. Mary's	0	0	0	14	0	100	205	91	0	0	42	18
Wright/St. Mary's	12	3	10	0	0	0	0	108	15	7	45	0
Goodwin/St. Mary's	0	0	0	2	0	11	18	83	0	0	50	6
Lincoln/St. Mary's	20	543	0	0	260	55	27	0	26	0	0	0
Approach Volume (Noon Peak Hour)												
Oak/St. Mary's	117	37	27	11	31	45	43	199	107	11	209	12
First/St. Mary's	59	263	69	25	198	41	42	156	44	84	116	7
Approach Volume (PM Peak Hour)												
Neil/St. Mary's	24	753	45	39	1106	42	55	71	94	270	107	188
Oak/St. Mary's	145	63	24	17	31	115	16	101	26	10	266	10
First/St. Mary's	37	208	49	25	270	67	24	100	31	103	146	10
Fourth/St. Mary's	0	0	0	21	0	189	106	86	0	0	79	19
Wright/St. Mary's	12	0	7	0	0	0	0	99	1	3	68	0
Goodwin/St. Mary's	0	0	0	2	0	13	10	87	0	0	62	1
Lincoln/St. Mary's	15	355	0	12	530	24	59	1	40	0	0	11

As shown in Table 4, the Neil Street/St. Mary's Road intersection was the busiest intersection in the corridor. The highest approach volumes at each intersection during each peak hour are marked red in the table above. The Oak Street/St. Mary's Road and First Street/St. Mary's Road intersections experienced the highest traffic volumes during the noon peak hour.

24-Hour Traffic Counts

24-hour traffic count data was collected along specific segments of St. Mary's Road for analysis. This data was used to evaluate the existing operating conditions of the roadway segments along St. Mary's Road. Figure 3 shows the 24-hour traffic data collection points along the corridor denoted by the letters A, B and C.

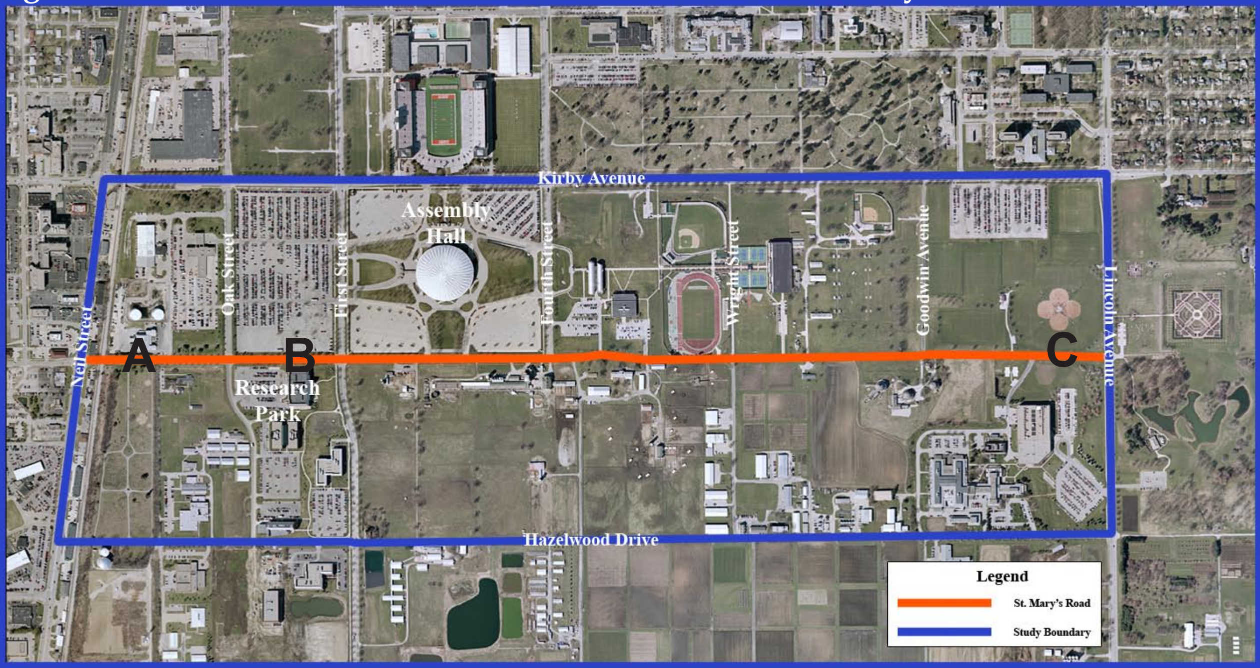
Hourly traffic volume variations at points A and B are also shown in the graphs associated with Figure 3. The AM, Noon, and PM peak hours were clearly discernible within the data collected at points A and B.

Table 5 shows the average daily traffic volumes at different segments of the study corridor.

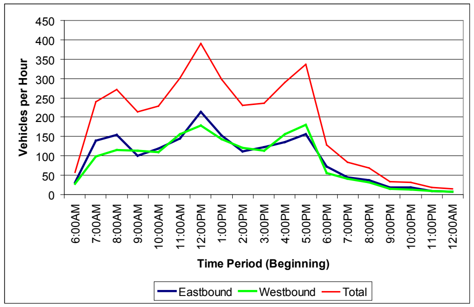
Table 5: Average Daily Traffic (ADT) Volumes (2006)

Roadway Segment	Average Daily Traffic (ADT)
St. Mary's Road E of Neil Street	3,200
St. Mary's Road W of First Street	3,850
St. Mary's Road W. of Lincoln Avenue	1,650

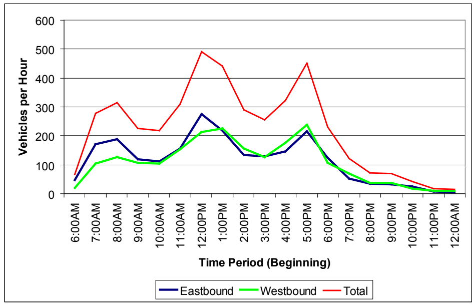
Figure 3: 24-Hour Traffic Data Collection Locations and Hourly Traffic Flow Variations



Segment A: Hourly Traffic Variation



Segment B: Hourly Traffic Variation



3.2 Existing Geometric Features of Roadways and Intersections

The existing geometric features of the roadways and intersections within the corridor were evaluated. The resulting output of this evaluation includes:

- Roadway functional classification
- Total lanes, roadway widths, presence of a roadway shoulder
- Roadway surface condition
- Intersection control type
- Number of approaches and number of lanes at each intersection approach

The functional classification of a roadway network categorizes roads with similar design and traffic characteristics. Roads are categorized by the function they perform in regard to providing access and mobility. A principal arterial, for example, provides mobility between long distances with minimal access to adjacent properties. A collector, on the other hand, provides access to adjacent properties rather than serving long distance.

Figure 4 shows the functional classification of the roadways in the study area.

Figure 4: Roadway Functional Class

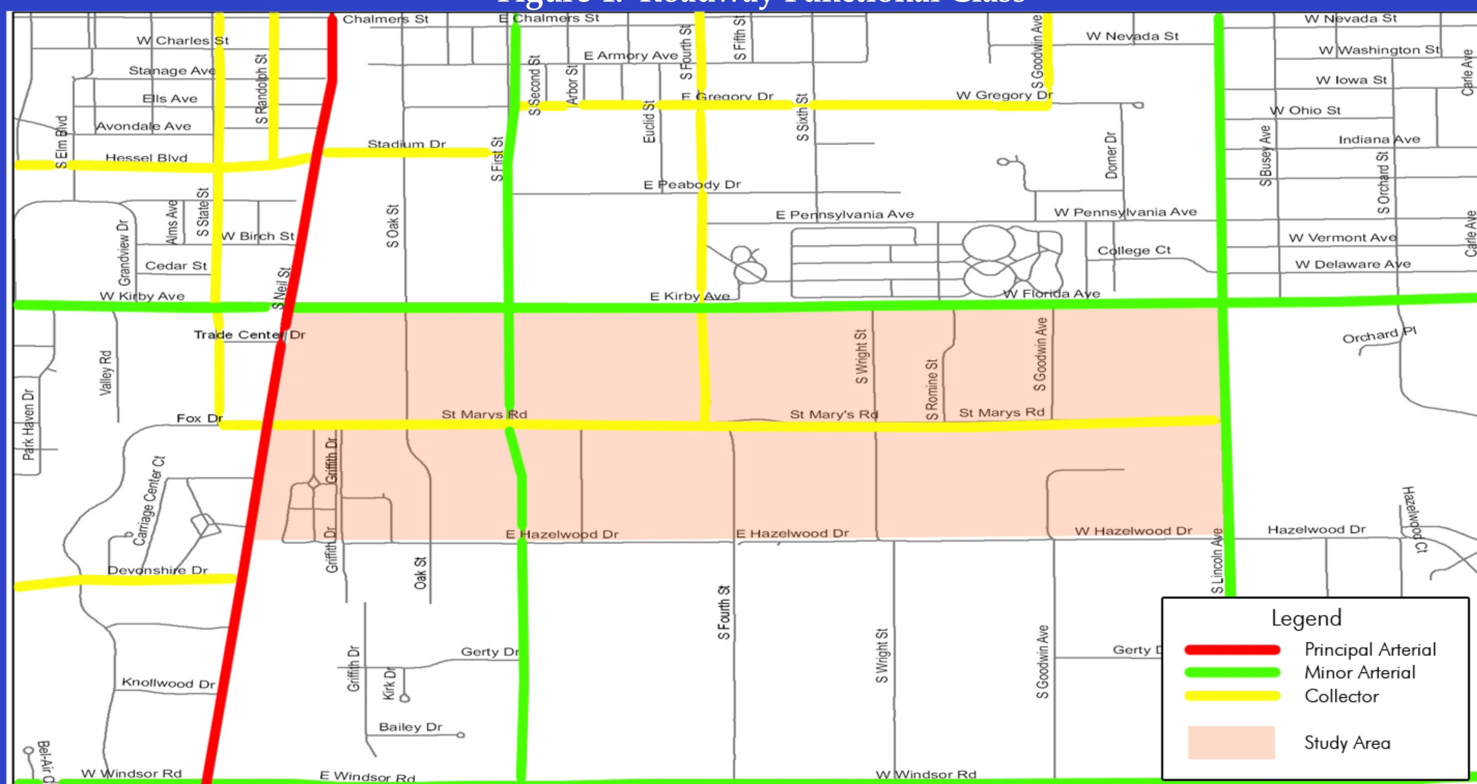
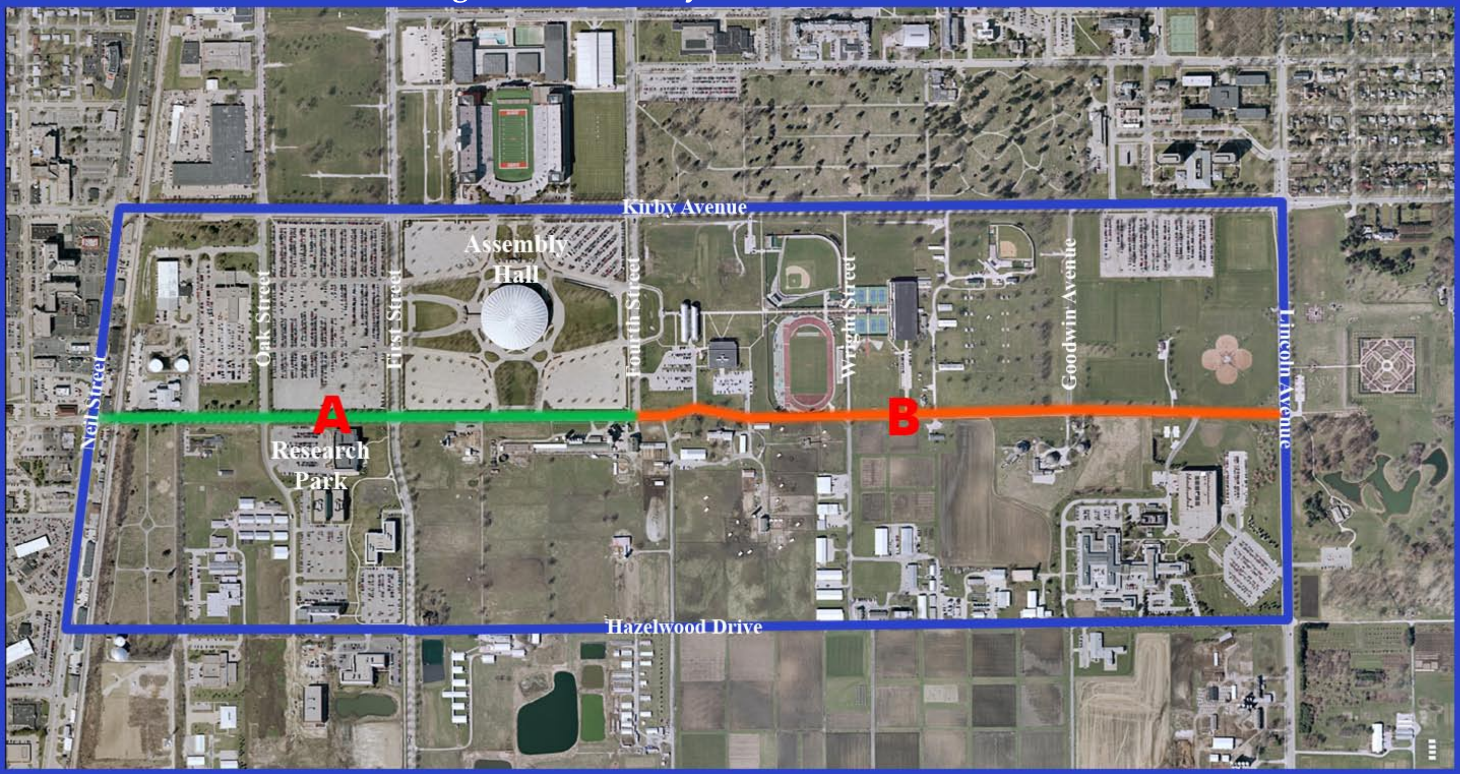
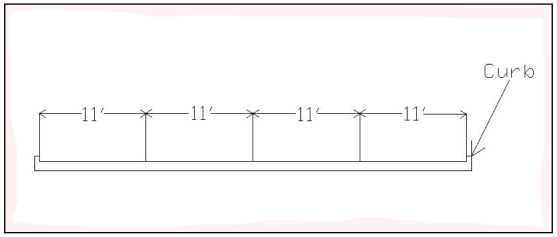


Figure 5 shows the location of the two different types of roadway cross-sections which exist along the St. Mary's Road Corridor. The Section A and Section B inset diagrams represent the two different cross-sections along St. Mary's Road as well as the total number of lanes, lane widths and shoulder treatment. It is important to note that the corridor does not have any on-street bicycle lanes, and the four lane segment of St. Mary's Road from Neil Street to Fourth Street does not have any shoulder.

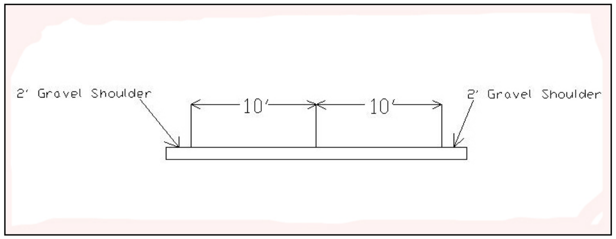
Figure 5: Roadway Cross-Section Details



Section A



Section B



Road Surface Conditions

As different modes of transportation traverse St. Mary's Road from west to east, the road surface conditions degrade from average to very poor. Cracking, pot holes, raveling, rutting, and patching are some of the issues affecting roadway conditions along the corridor. Figure 6 shows the breaks of six segments along St. Mary's Road; each segment number corresponds to a picture and surface condition details below. As detailed below, the St. Mary's Road corridor from Fourth Street to Lincoln Avenue is characterized by a very poor pavement surface. Poor drainage conditions cause water to pond on the road surface between Fourth Street and Lincoln Avenue during wet weather conditions, making for additional hazardous traveling conditions.

Figure 6: St. Mary's Road Surface Conditions

1 Neil St. - Oak St.

Condition: Average
Predominant Pavement Distress:
- Longitudinal Cracking
- Reflection Cracking
- Transverse Cracking

2 Oak St. - First St.

Condition: Average
Predominant Pavement Distress:
- Longitudinal Cracking
- Reflection Cracking
- Transverse Cracking

3 First St. - Fourth St.

Condition: Average
Predominant Pavement Distress:
- Reflection Cracking
- Transverse Cracking
- Pot Holes

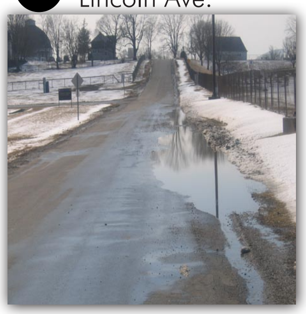
4 Fourth St. - Wright St.

Condition: Very Poor
Predominant Pavement Distress:
- Fatigue Cracking
- Block Cracking
- Patching and Rutting
- Edge Cracking and Raveling

5 Wright St. - Goodwin Ave.

Condition: Very Poor
Predominant Pavement Distress:
- Fatigue Cracking
- Block Cracking
- Patching and Rutting
- Edge Cracking and Raveling

6 Goodwin Ave. - Lincoln Ave.

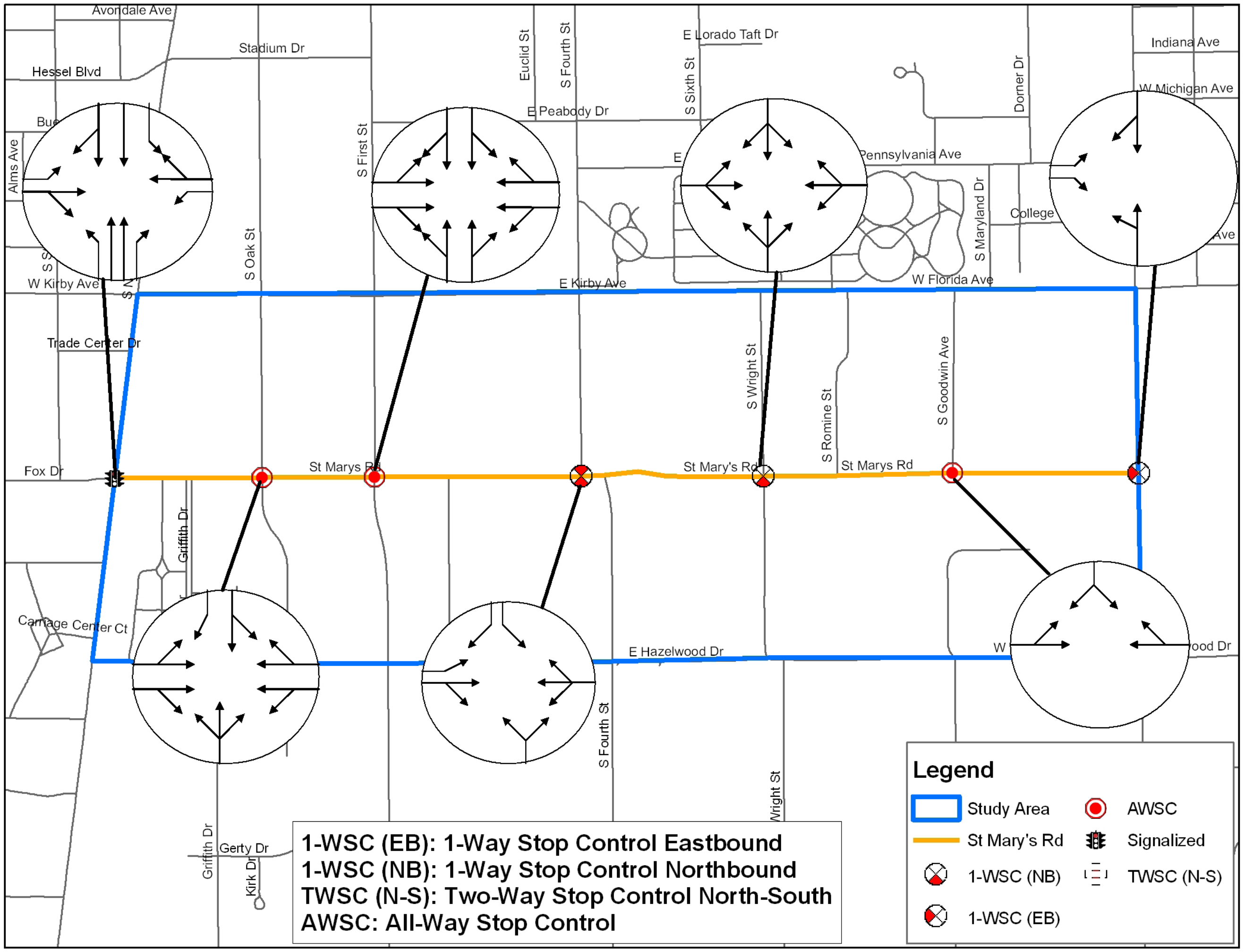


Condition: Very Poor
Predominant Pavement Distress:
- Fatigue Cracking
- Block Cracking
- Patching and Rutting
- Edge Cracking and Raveling

Intersection Controls

Figure 7 shows intersection details (number of lanes, types of traffic control) along the study corridor. The Neil St./St. Mary's Road intersection is the only signalized intersection in the study corridor.

Figure 7: Intersection Lane Configuration and Signal/ Sign Controls



3.3 Traffic Operations

The intersections and roadway segments within the corridor were evaluated in order to quantify the existing operating conditions. The analysis was completed using the HCS and Synchro 7 software. Both software programs are based upon the methodologies outlined in the "Highway Capacity Manual (HCM 2000)" published by the Transportation Research Board in 2000. A micro simulation analysis was completed using SimTraffic software.

Intersections

Selected intersection criteria such as level of service (LOS), approach delay and intersection delay were analyzed to determine the existing operational conditions during the AM and PM peak hours on typical weekdays.

Level of Service is a qualitative measure describing operational conditions, from "A" (best) to "F" (worst), within a traffic stream or at an intersection. Level of Service is quantified for signalized and unsignalized intersections using vehicle control delay. Control delay is the component of delay that results from the type of traffic control at the intersection. It is measured by comparing the controlled condition against the uncontrolled condition. The difference between the travel time that would have occurred in the absence of the intersection control and the travel time that results from the presence of the intersection control is the control delay. Average control delay per vehicle is estimated for each lane group, aggregated for each approach and for the intersection as a whole.

Table 6 describes the Level of Service criteria for signalized intersections.

Table 7 shows the Level of Service criteria for unsignalized intersections.

Table 6: LOS Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle	Description
A	Less than 10 seconds	Free flow
B	10.1 to 20 seconds	Stable flow (slight delays)
C	20.1 to 35 seconds	Stable flow (acceptable delays)
D	35.1 to 55 seconds	Approaching unstable flow (tolerable delay-occasionally wait through more than one signal cycle before proceeding)
E	55.1 to 80 seconds	Unstable flow (approaching intolerable delay)
F	Greater than 80.0 seconds	Forced flow (jammed)

Source: HCM 2000

Table 7: LOS Criteria for Unsignalized Intersections

Level of Service	Two-Way Stop Control	All-Way Stop Control
	Average Control Delay (seconds/vehicle)	Average Control Delay (seconds/vehicle)
A	Less than 10	Less than 10
B	10.1 to 15	10.1 to 15
C	15.1 to 25	15.1 to 25
D	25.1 to 35	25.1 to 35
E	35.1 to 50	35.1 to 50
F	Greater than 50	Greater than 50

Source: HCM 2000

Table 8 shows the level of service, approach delay and intersection delay at each intersection for the existing AM and PM peak hours.

Table 8: Intersection Delay and Level of Service in the Study Corridor

Intersection	Approach	LOS	Average Control Delay (sec/veh)	LOS	Average Control Delay (sec/veh)
		AM Peak		PM Peak	
Neil St./St. Mary's Rd	Eastbound Left	C	25.6	C	20.6
	Eastbound Thru/Right	D	42.5	D	46.6
	Westbound Left	C	26.8	D	38.0
	Westbound Thru/Right	D	36.1	C	28.2
	Northbound Left	A	6.7	B	17.0
	Northbound Through	C	26.2	B	13.7
	Northbound Right	A	6.7	A	3.4
	Southbound Left	B	17.9	B	13.1
	Southbound Thru/Right	B	18.1	B	17.2
	Overall	C	22.2	C	21.6
Oak St./St. Mary's Rd	Eastbound	B	13.9	B	10.6
	Westbound	A	9.6	B	12.1
	Northbound	B	10.3	B	16.8
	Southbound	B	10.1	B	10.9
	Overall	B	12.7	B	13.0
First St./St. Mary's Rd	Eastbound	B	12.8	B	11.2
	Westbound	B	11.8	B	13.5
	Northbound	B	15.6	B	12.2
	Southbound	B	12.1	B	13.3
	Overall	B	13.7	B	12.7
Fourth St./St. Mary's Rd	Eastbound Left	A	7.9	A	7.8
	Southbound	B	10.6	B	10.8
Wright St./St. Mary's Rd	Northbound	A	9.7	A	9.7
Goodwin Ave./St. Mary's Rd	Eastbound	A	7.7	A	7.8
	Westbound	A	7.4	A	7.6
	Southbound	A	6.9	A	7.0
	Overall	A	7.5	A	7.6
Lincoln Ave/St. Mary's Rd	Eastbound	C	17.8	E	40.0

Figures 8 and 9 show the level of service for each controlled intersection along the study corridor during the AM and PM peak hours.

Figure 8: Existing Intersection LOS for AM Peak Hour

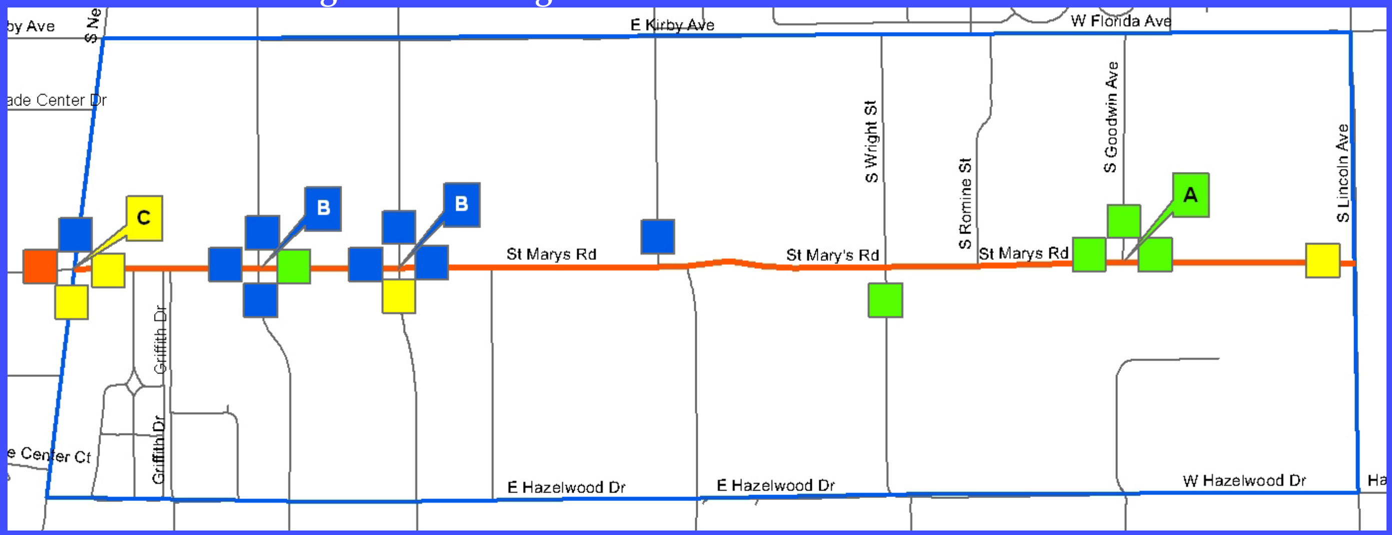
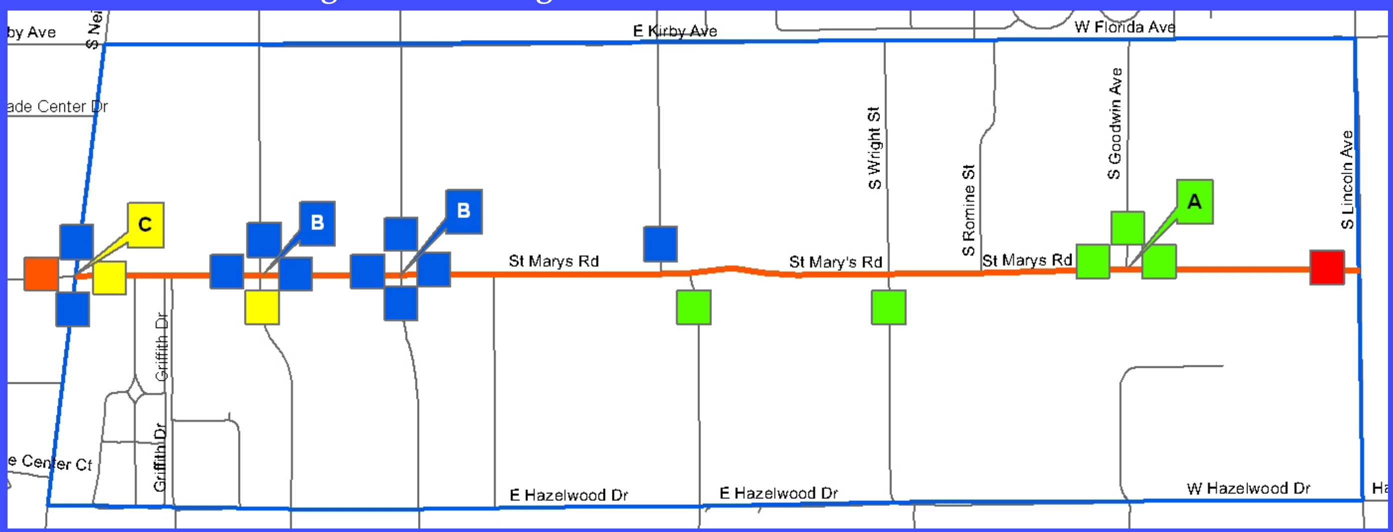


Figure 9: Existing Intersection LOS for PM Peak Hour



Roadway Segments

The St. Mary's Road corridor includes both 2-lane and 4-lane roadway segments. The main objective of this operational analysis was to determine Levels of Service along selected roadway segments.

Roadway segment level of service is a term used to indicate the amount of congestion along a given roadway segment. LOS is based on factors like density, speed, volume to capacity ratio, travel time, maneuverability, comfort, convenience, and safety. LOS designation ranges from A to F, with LOS A representing no congestion and LOS F representing the worst congestion.

The selected segments were analyzed following the procedures described in Chapter 15, "Urban Streets" in the Highway Capacity Manual (HCM 2000). Level of Service for the urban street is based on the average through-vehicle travel speed for the segment or for the entire street under consideration. Table 9 shows urban street LOS by class. Brief descriptions of each level of service for urban streets are provided below:

LOS A- Describes primarily free-flow operations at average travel speeds. Drivers have complete freedom to maneuver within the traffic stream.

LOS B- At this level, the ability to maneuver within the traffic stream is slightly restricted. Control delays at signalized intersections are not significant.

LOS C- Represents stable operations. Ability to maneuver and change lanes in mid-block locations turn out to be more complicated than at LOS B.

LOS D- This level borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This situation may occur due to adverse signal progression, inappropriate signal timing, high volumes or a combination of these factors.

LOS E- Traffic flow faces significant delays at this level. Adverse progression, high signal density and high volumes are main contributing factors to this situation.

LOS F- This level is characterized by extremely low speeds. Intersection congestion is expected at critical signalized locations, with high delays, high volumes and extensive queuing.

Table 10 shows the analysis done for the selected roadway segments in the corridor. Travel speed and LOS shown for each segment.

Table 9: Urban Street LOS by Class

Urban Street Class	I	II	III	IV
Range of free flow speeds (FFS) (mi/h)	55-45	45-35	35-30	35-25
Typical FFS (mi/h)	50	40	35	30
LOS	Average Travel Speed (mph)			
A	> 42	> 35	> 30	> 25
B	> 34-42	> 28-35	> 24-30	> 19-25
C	> 27-34	> 22-28	> 18-24	> 13-19
D	> 21-27	> 17-22	> 14-18	> 9-13
E	> 16-21	> 13-17	> 10-14	> 7-9
F	≤ 16	≤ 13	≤ 10	≤ 7

Source: HCM 2000

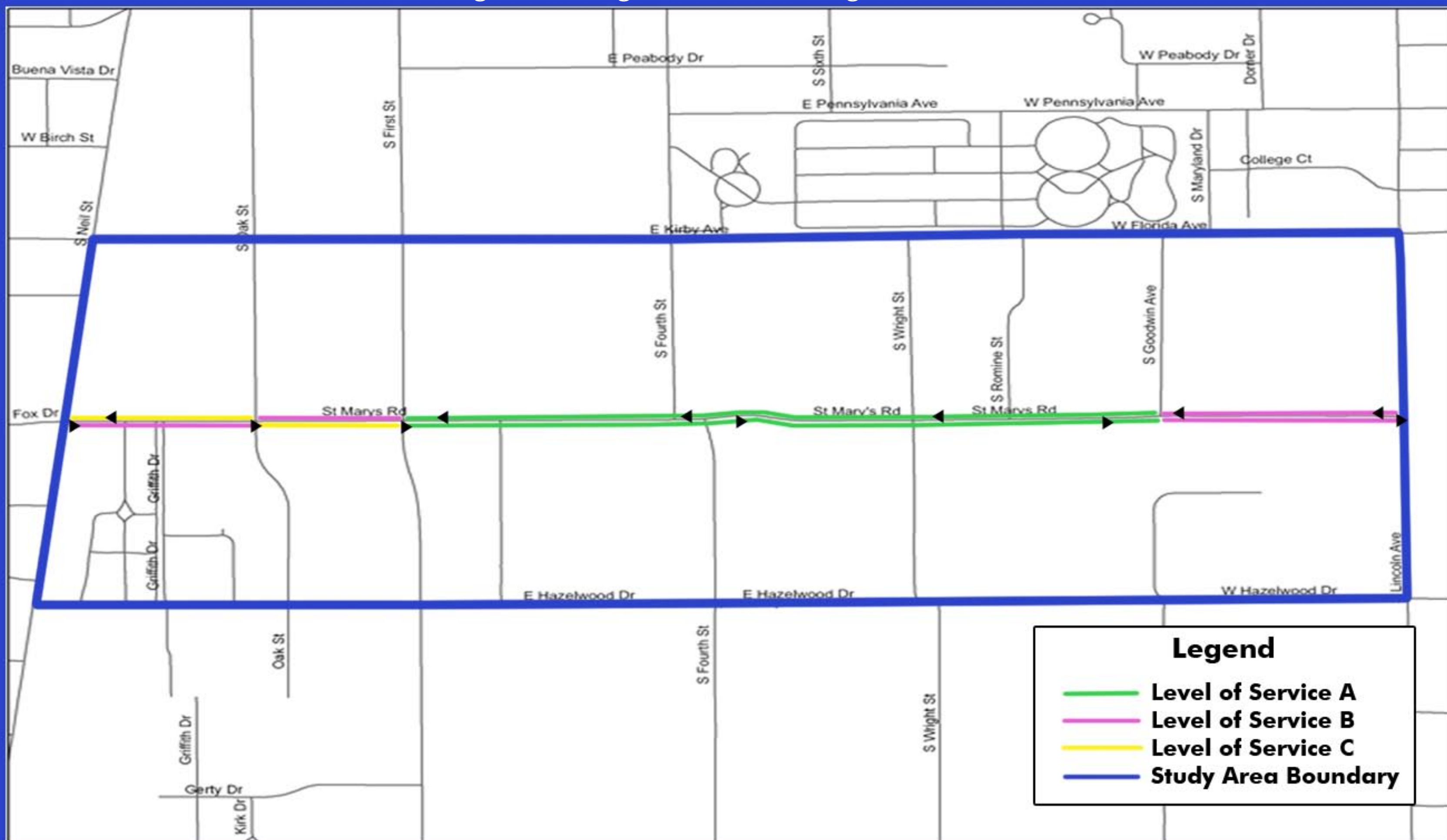
Table 10: Roadway Segment Level of Service

Roadway	Segment		AM Peak		PM Peak	
	From	To	Travel Speed (mph)*	LOS	Travel Speed (mph)*	LOS
St. Mary's Road	Eastbound					
	Neil Street	Oak Street	21.9	B	21.7	B
	Oak Street	First Street	18.7	C	18.9	C
	First Street	Goodwin Avenue	28	A	27.6	A
	Goodwin Avenue	Lincoln Avenue	17.9	C	21.9	B
	Westbound					
	Lincoln Avenue	Goodwin Avenue	22.9	B	23.5	B
	Goodwin Avenue	First Street	27.6	A	27.4	A
	First Street	Oak Street	20.7	B	19.9	B
	Oak Street	Neil Street	14.3	C	15.6	C

*based on field measurement

Figure 10 shows the LOS for the selected segments listed in Table 11 during the PM Peak hour in the corridor. The LOS for each segment is shown for both the east bound lane and west bound lane. The direction of flow is indicated by the black arrows along each segment.

Figure 10: Segment LOS During PM Peak Hour



3.4 Transportation Network Analysis

The study corridor was coded for micro-simulation analysis using the Synchro 7 and SimTraffic software. Figure 11 shows the coded network of the study corridor.

Figure 11: Corridor Coded Network

Table 11 shows different Measures of Effectiveness (MOE) values at 15-minute intervals during the AM and PM peak hours.

Table 11: Transportation MOEs

MOE	AM Peak 15-Minutes	PM Peak 15-Minutes
Vehicle Miles Traveled (mi)	458	523
Total Travel Time (hr)	21.8	26.7
Total Delay (hr)	5	7.4

3.5 Crash Analysis

Both intersection and mid-block crashes that occurred in the study area from 2002 to 2006 were evaluated to identify existing safety and operational problems.

Crash Trends

Figure 12 shows the total number of reported crashes per year from 2002-2006 in the study area. The highest number of crashes took place in 2003 and the lowest number of crashes occurred in 2002.

Figure 12: Crash Trends 2002-2006

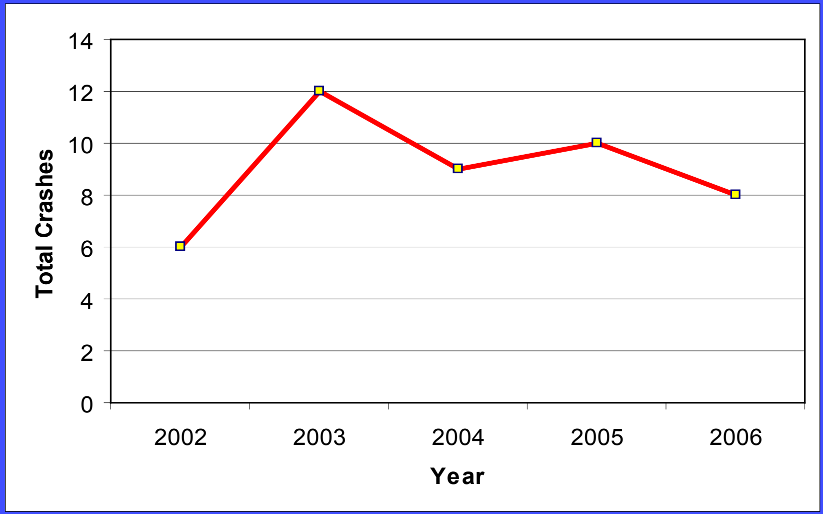


Table 12 shows the number of crashes per year at selected intersections in the corridor. There were 39 intersection crashes in the corridor from 2002 to 2006. The Neil Street/St. Mary's Road intersection had the highest number of crashes, with a total of 17 crashes during the five year time period. This intersection also had the highest traffic volumes compared to the other intersections throughout the corridor.

Intersection	Year					Total Crashes
	2002	2003	2004	2005	2006	
Neil St/St. Mary's Rd	2	3	4	3	5	17
Oak St/St. Mary's Rd	0	4	4	2	1	11
First St/St. Mary's Rd	2	2	0	2	1	7
Fourth St/St. Mary's Rd	1	0	0	0	0	1
Wright St/St. Mary's Rd	0	1	0	0	0	1
Goodwin Ave/St. Mary's Rd	0	0	0	0	0	0
Lincoln Ave/St. Mary's Rd	0	0	0	1	1	2
Total	**5**	**10**	**8**	**8**	**8**	**39**

Table 12: Intersection Crashes 2002-2006

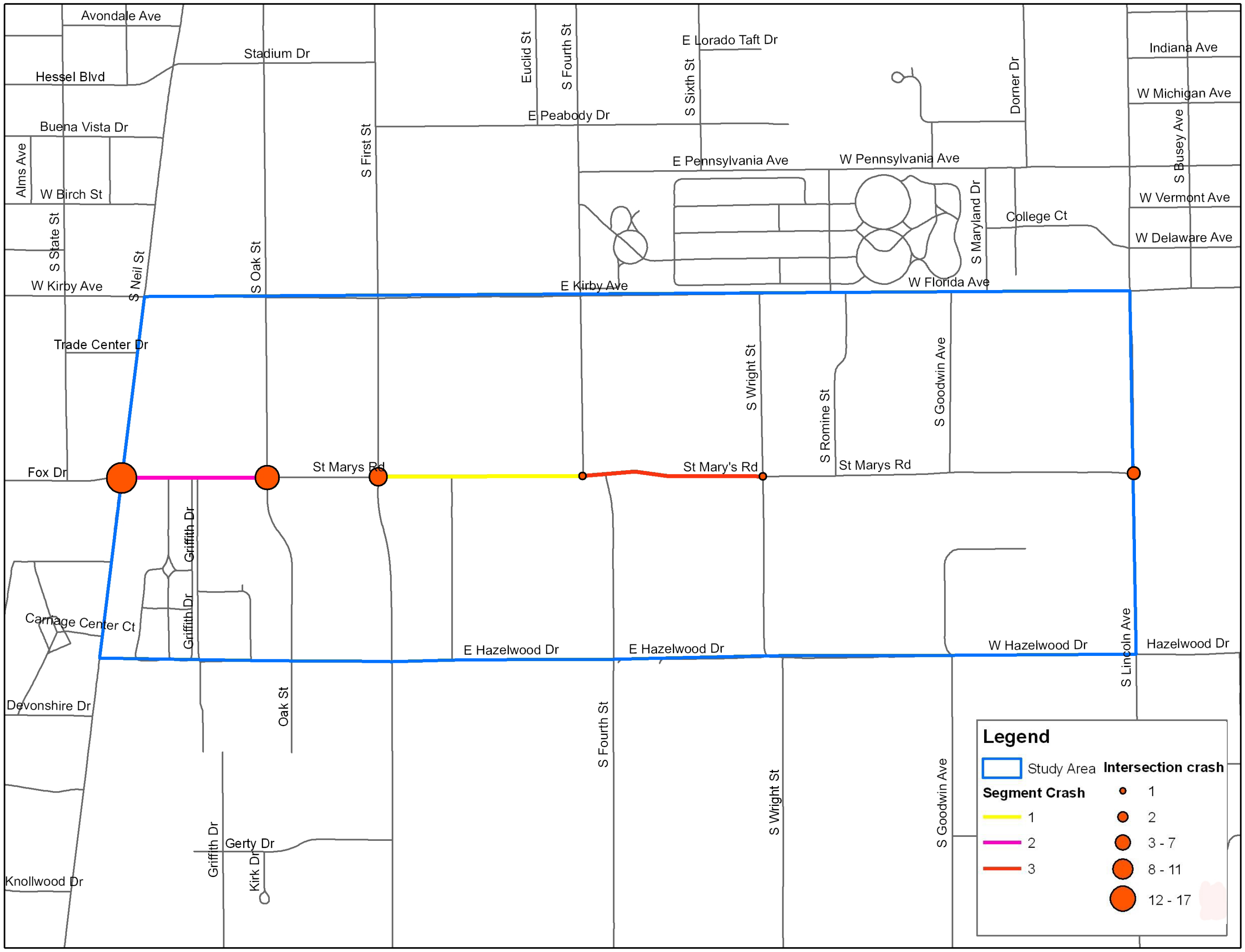
Table 13 represents the number of mid-block (or segment) crashes at different roadway segments along the corridor from 2002-2006. The results from the mid-block crash analysis show there were few mid-block crashes in the corridor from 2002-2006.

Table 13: Mid-Block Crashes 2002-2006

Roadway	Segment		Year					Total Crashes
	From	To	2002	2003	2004	2005	2006	
St. Mary's Rd.	Neil St.	Oak St.	0	1	0	1	0	2
St. Mary's Rd.	Oak St.	First St.	0	0	0	0	0	0
St. Mary's Rd.	First St.	Fourth St.	0	0	1	0	0	1
St. Mary's Rd.	Fourth St.	Wright St.	1	1	0	1	0	3
St. Mary's Rd.	Wright St.	Goodwin Ave.	0	0	0	0	0	0
St. Mary's Rd.	Goodwin Ave.	Lincoln Ave.	0	0	0	0	0	0
Total			**1**	**2**	**1**	**2**	**0**	**6**

Figure 13 shows the locations of all segment and intersection crashes which occurred in the corridor from 2002-2006.

Figure 13: Intersection and Segment Crash Locations



Crash Types

As indicated in Figure 14, turning and rear end crashes were the predominant crash patterns occurring at the corridor intersections, making up 38% and 26% of total crashes, respectively. There were a total of four angle crashes at the First Street/St. Mary's Rd. intersection. Poor sight distance, high approach speed, and failure to yield to the vehicle with the right of way are all probable causes of angle crashes at unsignalized intersections.

Figure 14: Crash Types at Intersections

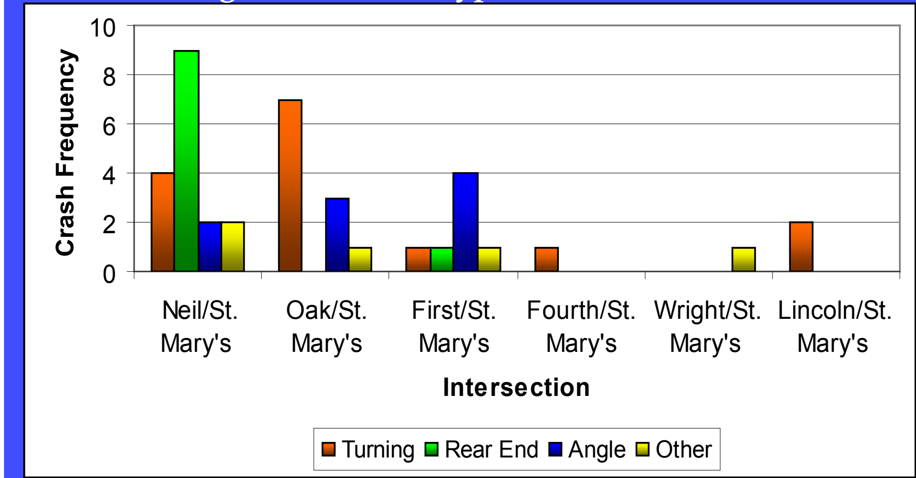


Table 14 shows crash patterns for mid-block crashes along the corridor. There was one reported mid-block pedestrian crash along St. Mary's Road between First Street and Fourth Street.

Table 14: Mid-Block Crash Types

Year	Roadway	Segment		Crash Type
		From	To	
2002	St. Mary's Rd.	Fourth St.	Wright St.	Fixed Object
2003	St. Mary's Rd.	Neil St.	Oak St.	Angle
2003	St. Mary's Rd.	Fourth St.	Wright St.	Rear-end
2004	St. Mary's Rd.	First St.	Fourth St.	Pedestrian
2005	St. Mary's Rd.	Neil St.	Oak St.	Rear-end
2005	St. Mary's Rd.	Fourth St.	Wright St.	Rear-end

Road Surface Condition

Table 15 indicates that the majority of intersection crashes (67%) occurred when the pavement surface was dry. Intersection crashes occurring during wet/snowy/icy conditions made up 33% of all crashes in the corridor. Approximately 50% of the wet/snowy/icy road surface intersection crashes occurred at the Neil St./St. Mary's Rd. intersection.

Table 15: Road Surface Conditions

Intersection	Pavement Surface					
	Dry		Wet		Snow/Icy	
	Num.	%	Num.	%	Num.	%
Neil St./St. Mary's Rd.	11	65	4	24	2	12
Oak St./St. Mary's Rd.	8	73	3	27	0	0
First St./St. Mary's Rd.	3	43	3	43	1	14
Fourth St./St. Mary's Rd.	1	100	0	0	0	0
Wright St./St. Mary's Rd.	1	100	0	0	0	0
Lincoln Ave./St. Mary's Rd.	2	100	0	0	0	0
Total	**26**	**67**	**10**	**26**	**3**	**8**

Road Lighting Conditions

Table 16 indicates that most of the intersection crashes took place during the daytime. There were only a few nighttime crashes in the corridor.

Table 16: Roadway Light Conditions

Intersection	Roadway Light Condition							
	Daylight		Dark		Dark Rd. Lit		Dawn/Dusk	
	Num.	%	Num.	%	Num.	%	Num.	%
Neil St./St. Mary's Rd.	13	76	0	0	2	12	2	12
Oak St./St. Mary's Rd.	10	91	0	0	1	9	0	0
First St./St. Mary's Rd.	7	100	0	0	0	0	0	0
Fourth St./St. Mary's Rd.	1	100	0	0	0	0	0	0
Wright St/St. Mary's Rd.	0	0	1	100	0	0	0	0
Lincoln Ave/St. Mary's Rd.	2	100	0	0	0	0	0	0
Total	**33**	**85**	**1**	**3**	**3**	**8**	**2**	**5**

Crash Severity

Crash severity levels are generally classified as: fatal crash, injury crash (level A, B, and C), and property damage only (PDO) crash. The Illinois Department of Transportation's (IDOT) Division of Traffic Safety categorizes injury severity levels as: A injury, B injury, and C injury, where "A" is the most severe and "C" is the least severe injury.

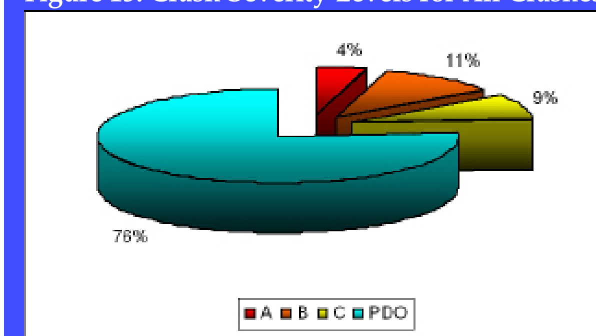
Table 17 shows the severity levels of intersection crashes along the study corridor. The EPDO (Equivalent Property Damage Only) values in Table 15 represent the crash severity rate for the corresponding intersection. The higher the EPDO value for an intersection, the more hazardous the location.

Table 17: Intersection Crash Severity Levels

Intersection	Crash Severity					EPDO Index
	Fatal	Injury			PDO	
		A	B	C		
Neil St./St. Mary's Rd.	0		2	1	14	1.53
Oak St./St. Mary's Rd.	0	1	1	1	9	5.50
First St./St. Mary's Rd.	0		1		6	1.57
Fourth St./St. Mary's Rd.	0			1		2.00
Wright St./St. Mary's Rd.	0				1	1.00
Lincoln Ave./St. Mary's Rd.	0	1			1	25.50
Total	**0**	**2**	**4**	**3**	**31**	

Figure 15 shows the percentages of crash severity levels for all the crashes (intersection and mid-block) in the study corridor.

Figure 15: Crash Severity Levels for All Crashes



Pedestrian and Bicycle Crashes

There was one reported pedestrian crash in the corridor which occurred at 8 a.m. on August 3rd, 2004. Table 18 shows the details of that pedestrian crash.

Table 18: Pedestrian Crash Details

Location	Weather	Road Surface	Injury Level	Vehicle Information	Vehicle Direction	Vehicle Maneuver
St. Mary's Rd. (between Fourth St. and First St.)	Clear	Dry	B-Injury	Passenger Car	West	Going Straight

3.6 Travel Time, Delay, and Speed Study

The objective of a travel-time and delay study is to assess the quality of traffic movement along a route/corridor and determine the locations, types, and extent of traffic delays using a moving test vehicle. There are various ways of performing travel-time and delay studies. For this study, staff used the average vehicle method. Travel time and delay data was collected using a GPS device.

Data was collected along the St. Mary's Road corridor during the AM and PM peak hours. Figure 16 shows the average travel speed along different segments of St. Mary's Road corridor during the AM and PM peak hours.

Figure 16: Average Travel Speed Along the Corridor

As shown in Figure 16, the average travel speed along the St. Mary's Road corridor between First Street and Goodwin Avenue was higher than the posted speed limit for both of the peak hours. Travel speeds along all other segments were lower than the posted speed limit.

Table 19 shows average travel time and delay values along different segments of the study corridor.

Table 19: Average Travel Time and Delay Values

Roadway	Segment	Eastbound			
		Total Delay (sec)	Travel Time (sec)	Total Delay (sec)	Travel Time (sec)
St. Mary's Rd.		AM Peak		PM Peak	
	Neil - Oak	6.5	33.3	7.3	33.7
	Oak - First	10.3	29.3	9.2	28.3
	First - Goodwin	7.7	100.8	7.7	102.0
	Goodwin - Lincoln	21.5	50.3	13.3	43.0
		Westbound			
		AM Peak		PM Peak	
	Lincoln - Goodwin	8.3	31.8	7.5	39.3
	Goodwin - First	8.5	100.8	9.8	102.0
	First - Oak	7.7	26.0	8.2	27.0
	Oak - Neil	25.2	47.7	21.3	45.2

3.7 Access Management

Access management strives to limit and consolidate access along major roadways, while promoting a supporting street system and unified access and circulation systems for development. The result is a roadway that functions safely and efficiently for its useful life, and a more attractive corridor. CUUATS has an established Access Management Classification based on the Access Management Guidelines for the urbanized area highway system.

As shown in Figure 3, St. Mary's Road is classified as a collector roadway. Collector roads provide equal importance for service to through-traffic movements and access to abutting land. Figure 17 shows the hierarchy of roadways in a functionally designed roadway system.

Figure 17: Movement and Access

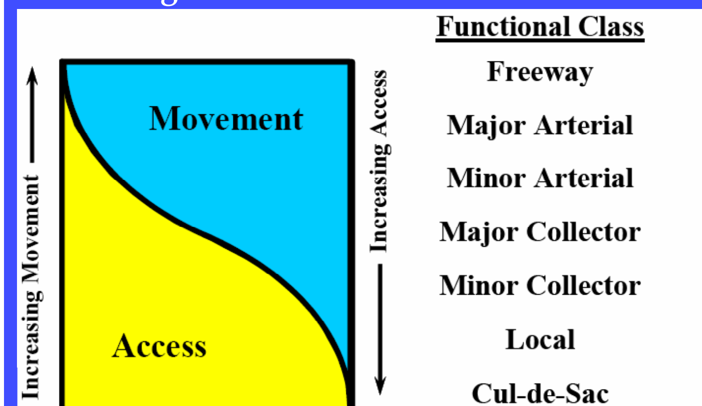


Table 20 shows spacing, traffic operation control types and movement information for intersections in the selected segments of the corridor. The number of access points to adjacent properties between intersections is also shown in the table.

All the roadways in the study corridor were assigned access level six for development. According to the CUUATS Access Management Guidelines, access level six for development describes interrupted flow in both directions of the roadway. At this access level, drivers can perform left and right turning maneuvers from side entries. Therefore the guidelines for access management were not applicable for the study corridor.

Table 20: Access Characteristics and Spacing Between Intersections

Roadway	Cross Street	Movement	Access Design	Traffic Control	Access Points	Distance (miles)
St. Mary's Road	Neil Street	Full	At-Grade	Traffic Signal		
					3	0.2
	Oak Street	Full	At-Grade	AWSC		
					0	0.15
	First Street	Full	At-Grade	AWSC		
					8	0.28
	Fourth Street	Full	At-Grade	TWSC (N-S)		
					5	0.25
	Wright Street	Full	At-Grade	1-WSC (NB)		
					3	0.26
	Goodwin Avenue	Full	At-Grade	AWSC		
					3	0.25
	Lincoln Avenue	Full	Full	1-WSC (EB)		

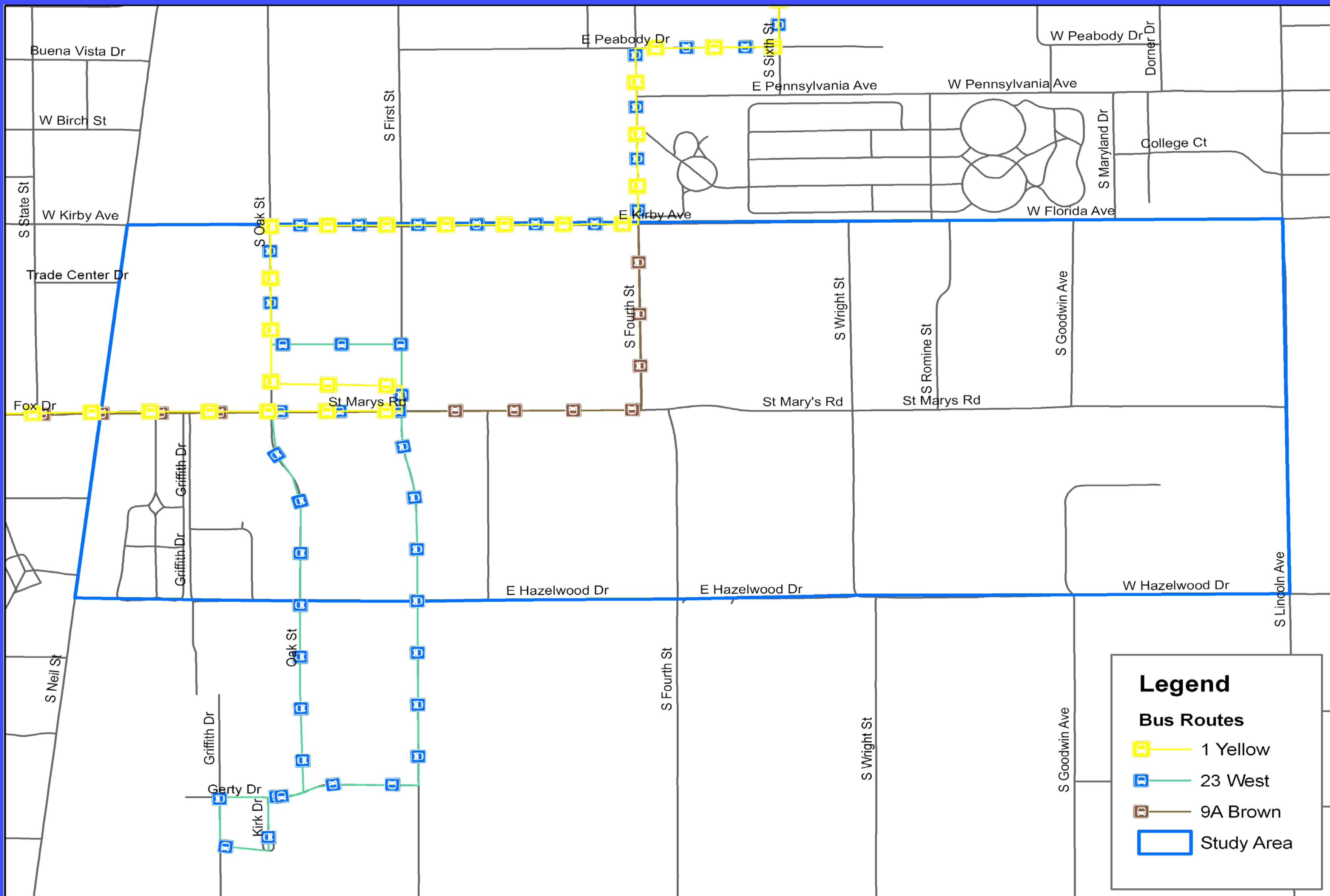
3.8 Transit Service

The Champaign Urbana Mass Transit District (CU-MTD) is the agency responsible for providing transit service in the Champaign-Urbana urbanized area. Several CU-MTD bus routes provide transit service along the corridor. Table 21 shows the detailed information for weekday daytime CU-MTD bus route operations in the corridor. Figure 18 shows the weekday daytime bus service routes along the corridor.

Table 21: Weekday Daytime Bus Routes in the Corridor

Bus Route	Headway	Area Covered
1-Yellow	30 minutes (6AM-6PM)	University campus and the cities
9A Brown	30 minutes (6AM-6PM)	University campus and the cities
23 Shuttle West	10-15 minutes (6AM-10AM) 10 minutes (10AM-7PM)	University campus

Figure 18: CU-MTD Bus Routes



3.9 Pedestrian and Bicycle Facilities

Pedestrians and bicyclists are legitimate road users. Safe and easily accessible pedestrian and bicycle facilities are one of the major prerequisites of a livable community. Currently there are no bicycle facilities along the St. Mary's Road corridor. A small segment of pedestrian sidewalks are present along the south side of St. Mary's Road from First Street to Oak Street. Field observations recorded pedestrians and bicyclists using the corridor during both the AM and PM peak hours. A majority of the observed bicyclists shared the roadway with motor vehicles along the corridor during peak hours. Figure 19 and Figure 20 show the number of bicyclists sharing the roadway with motor vehicles at each intersection approach during the AM and PM peak hours, respectively.

Figure 19: Bicyclists During the AM Peak Hour

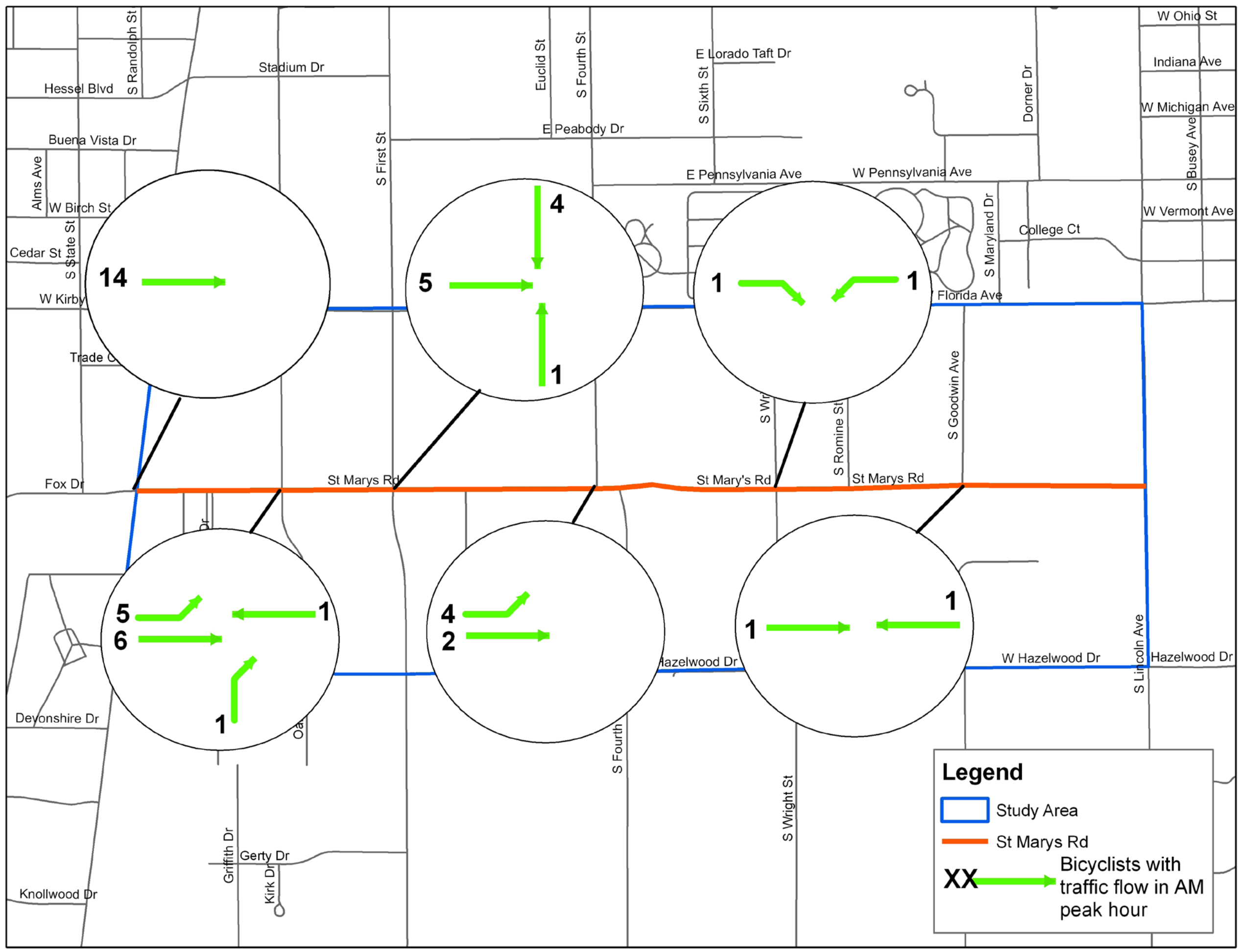
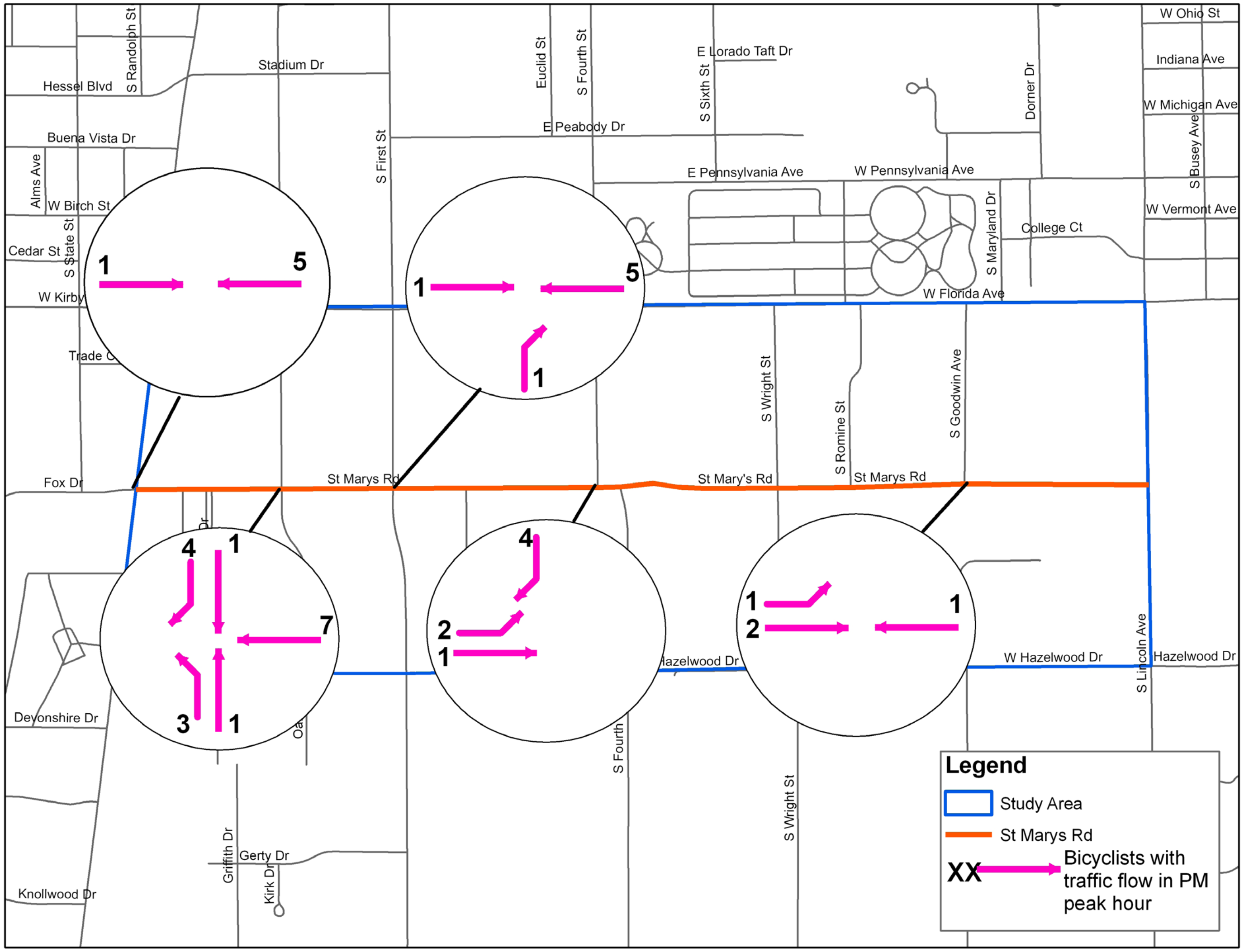


Figure 20: Bicyclists During the PM Peak Hour



Figures 21 and 22 show the number of pedestrians and bicyclists crossing different intersection approaches during the AM and PM peak hours, respectively. The First Street/St. Mary's Road intersection experienced the highest number of pedestrian and bicyclist crossings during the PM peak hour.

Figure 21: Pedestrian/Bicycle Crossing During the AM Peak Hour

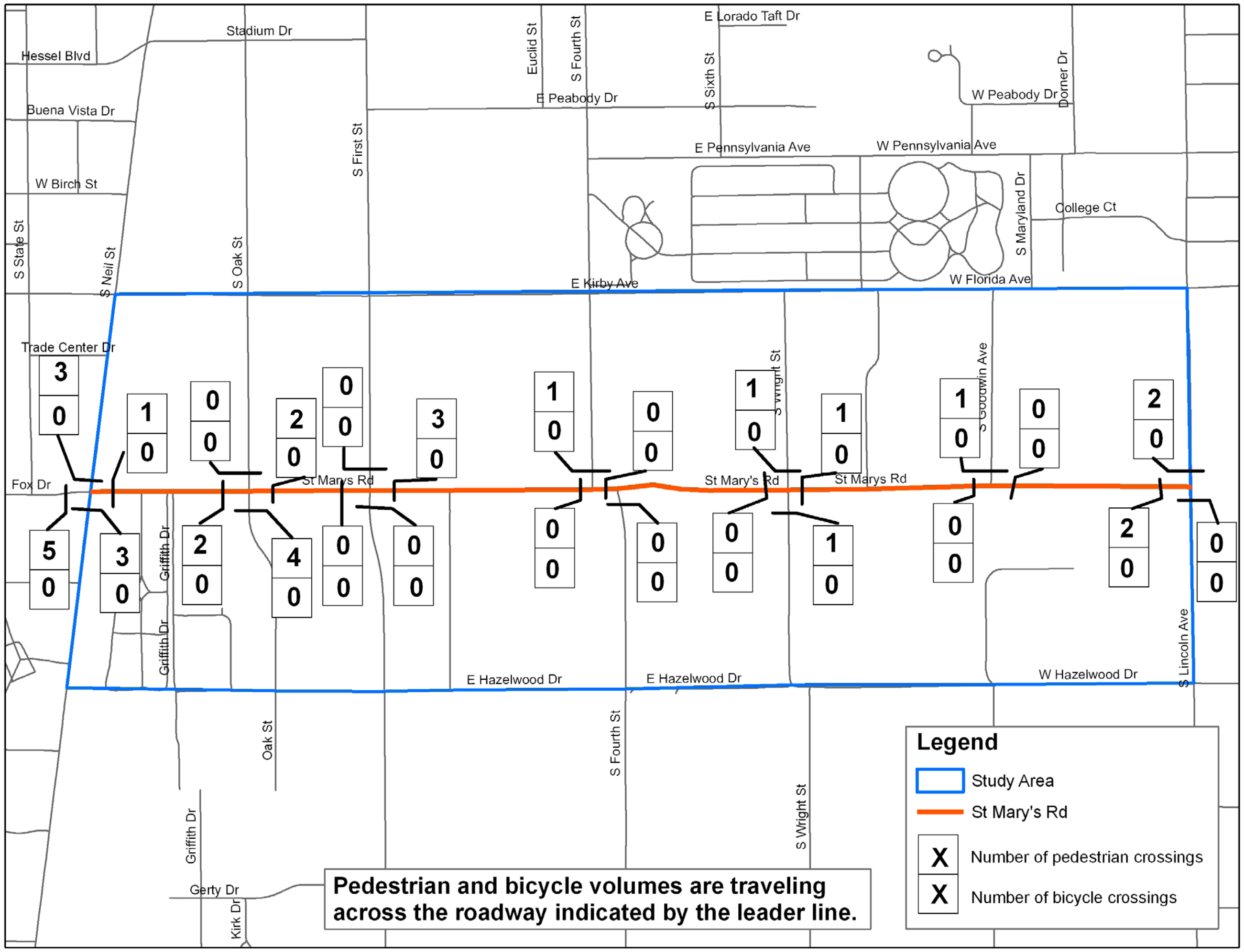
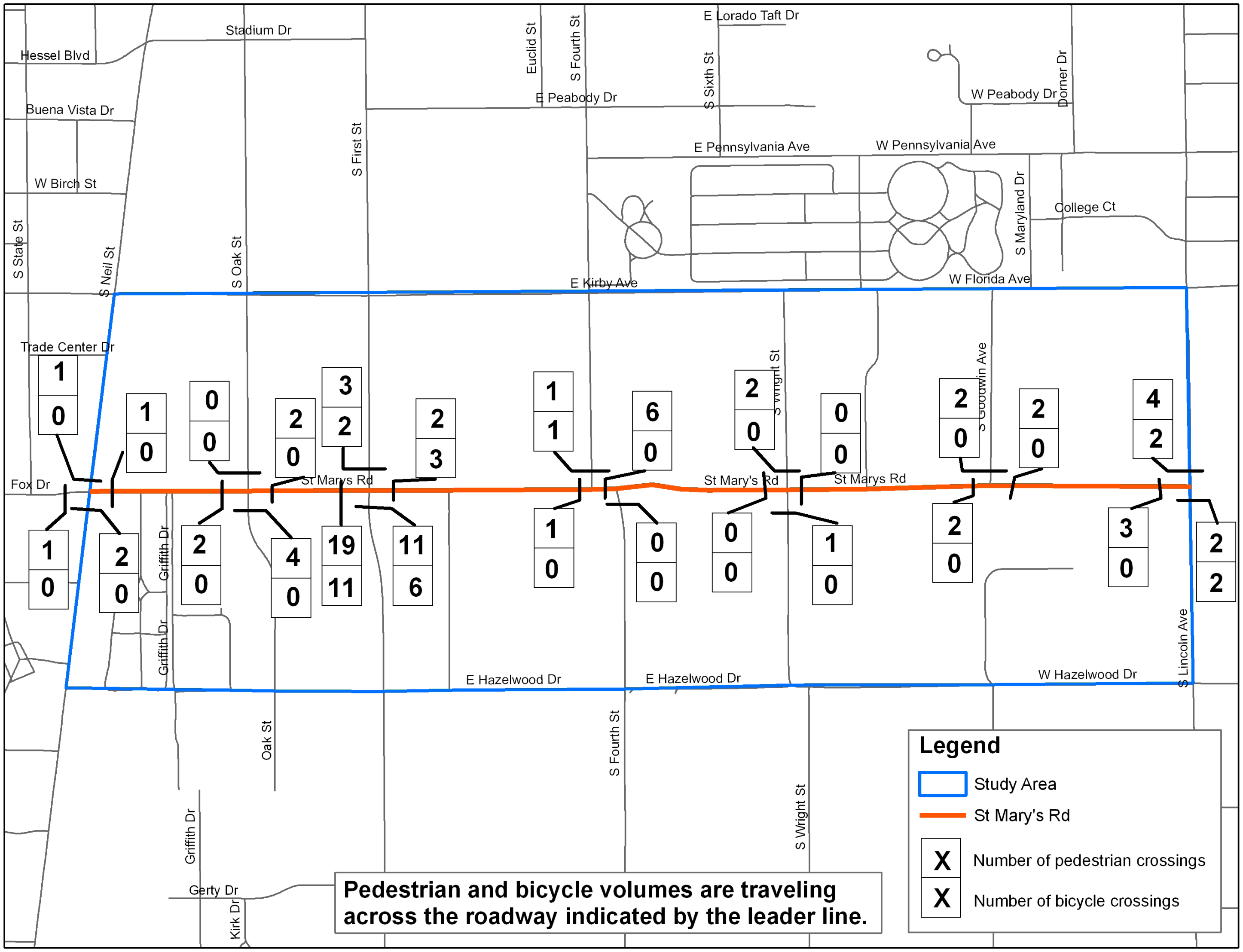
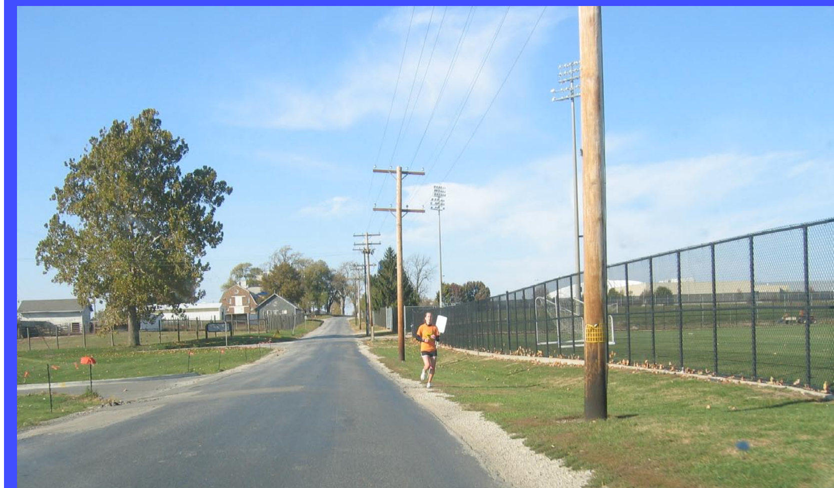


Figure 22: Pedestrian/Bicycle Crossing During the PM Peak Hour



Lack of sidewalks and paved shoulders, and poor roadway surface conditions are the biggest challenges for pedestrians and bicyclists using the corridor. Along the east side of Fourth Street, pedestrians have to walk on a gravel/grass shoulder. Figure 23 shows a pedestrian using the gravel shoulder.

Figure 23: Pedestrian Hazards



3.10 Other Transportation Constraints

The St. Mary's Road corridor has a number of other constraints that affect movement through the corridor. The following issues were identified as constraints throughout the corridor:

Vertical Clearance

The corridor is functionally classified as a collector street. Collector streets should have at least 14 feet of vertical clearance at underpasses over the entire roadway width. The vertical clearance under the railway viaduct which spans the east leg of the Neil Street/St. Mary's Road intersection is only 11 feet 10 inches. Figure 24 shows the railroad viaduct and the clearance height constraint.

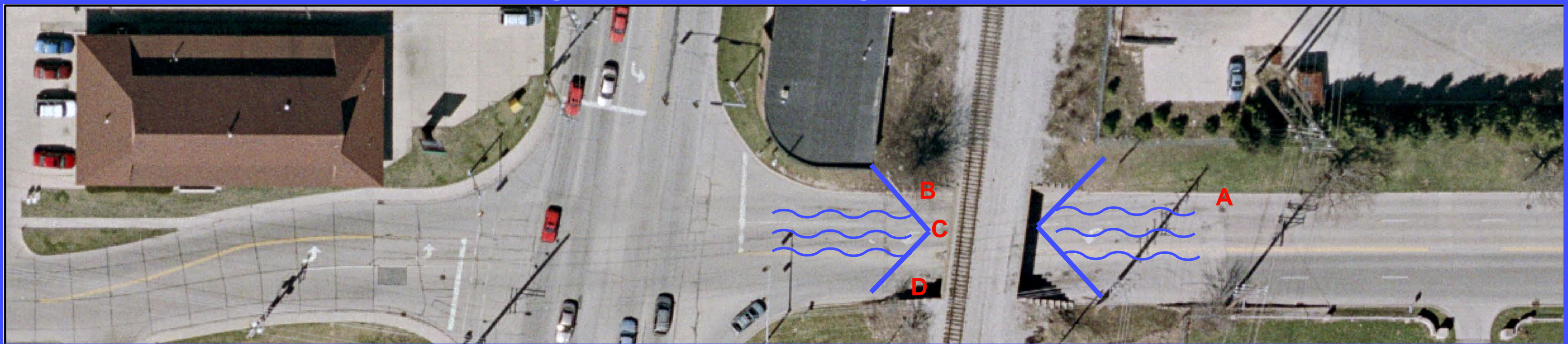
Figure 24: Clearance Constraint

Drainage Issues

Another constraint restricting movement in the corridor is stormwater drainage problems on the east leg of the Neil Street/St. Mary's Road intersection underneath the railroad viaduct. Standing water during rainfall events and snowmelt create adverse conditions for all road users. The existing drainage inlets are insufficient during significant rainfall events and fail to drain this catchment area properly.

Figure 25 shows the location of each stormwater inlet which drains water flowing into the catchment area below the railroad viaduct. The blue lines and arrows show the direction of waterflow. Letters A-D in the figure correspond to the pictures below and show the type and condition of each inlet.

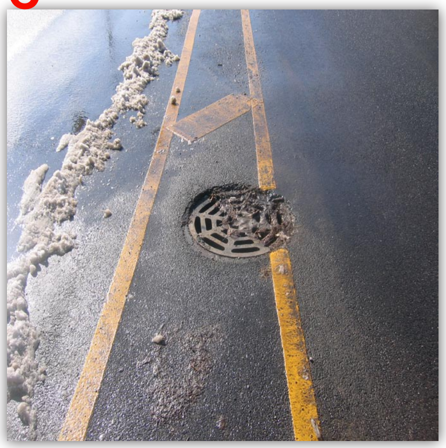
Figure 25: Surface Drainage Conditions



A

B

C



D

Additional Driving Hazards

The corridor is within the University District boundary and provides access to the Research Park and many different special event and recreational centers. Unfortunately, deteriorating roadway conditions, poor drainage and a lack of sufficient facilities for pedestrians and bicyclists negatively affect the corridor's capacity to serve travelers successfully. In order to properly advise roadway users of the hazards they may encounter along the corridor, several warning signs and indicators have been put in place. Figures 26 and 27 show two examples of signage used in the corridor to warn users of potential hazards.

Figure 26: Water Depth Chart Under Viaduct

Figure 27: Warning Signage

Special Event Traffic Summary

The Steering Committee requested CUUATS staff to complete an analysis of the current Special Event Traffic Circulation Plan used by local law enforcement agencies to determine what effects the plan has on the St. Mary's Road corridor. The full report and CUUATS recommendations can be found in Appendix 1.

Transportation Conclusions

A comprehensive analysis of the existing transportation network within the study area identified some critical traffic and safety related issues. Key findings of the study include:

- The study corridor serves as an important link utilized by the businesses in and around the University of Illinois Research Park and it provides access to the Assembly Hall and other existing recreational facilities.
- The study corridor is experiencing significant infrastructure development.
- Overall geometric conditions of a major portion of the corridor are very poor.
- The intersections and roadway segments along the study corridor do not have any significant traffic operational issues (e.g., congestion).
- Bicycle and pedestrian facilities are almost non-existent throughout the study corridor.
- The study corridor was assigned access level six as per the CUUATS
- Access Management Guidelines. Therefore, the access management guidelines were not applicable for the study corridor.
- The CU-MTD operates three transit routes during regular weekdays in the corridor.

Chapter Conclusion and Formulation of Future Scenarios

In order to create future transportation and land use scenarios, it's important to review and understand current conditions so as to have a stand point with which to look at the future. Without knowing the current conditions it is difficult to predict and plan for future improvements. This existing conditions report provides that stand point as we begin looking at possible future improvements for this corridor.

The St. Mary's Road corridor has both challenges and opportunities giving way for good planning and decision making to shape a successful outcome. The ever growing research park, Assembly Hall, DIA sports complexes, educational buildings, agricultural nodes and campus recreation fields all add attractiveness and purpose to this corridor and act as trip generators for south campus. The relatively undeveloped portion of the study area, from Fourth Street east to Lincoln Avenue, creates opportunities for significant transportation improvements. These improvements should focus on all modes of transportation including transit, bicycle and pedestrian movement.

As the research park and other developments along the corridor build out, congestion and traffic will become a larger issue. An increase in congestion without phasing in transportation improvements will create unsafe and significantly longer commutes for all modes of travel. This, coupled with other transportation constraints such as low clearance height under the viaduct and poor roadway drainage, justify the need for smart and efficient transportation solutions to take us well into the future.

The following chapter describes the methodology and results from the regional travel demand model and presents the recommended transportation improvements which will alleviate future congestion along the corridor.

4 Future Conditions

The St. Mary's Road Corridor Study's planning process and public involvement process resulted in a set of recommended future transportation improvements. These improvements, if implemented, are anticipated to create a safer, more efficient multi-modal transportation network throughout the St. Mary's Road corridor. This network will also link up with the existing transportation facilities throughout the Champaign-Urbana area and University of Illinois campus. These improvements also correspond to the three goals identified at the beginning of the planning process: Identifying Operation and Safety Challenges, Improving Safety, and Improving Mobility. The future conditions chapter documents the methodology for estimating future traffic volumes, the Levels of Service (LOS) that would result in the future if no improvements to the existing roadways are made, and the future transportation recommendations, their effectiveness, and their measurable effect on the transportation network.

4.1 Estimating Future Traffic Volumes

In order to determine how the study corridor might operate in the future, travel demand forecasts are required. The travel demand forecasts are the result of input data such as land use and development projections, employment projections and various transportation forecasting procedures. As mentioned earlier, land use and development forecasts were created using the Campus Master Plan and Research Park Development Plan, as well as interviews with key personnel from the University of Illinois and Fox Development Corporation. Employment projections were created based on future development projections for three horizon years:

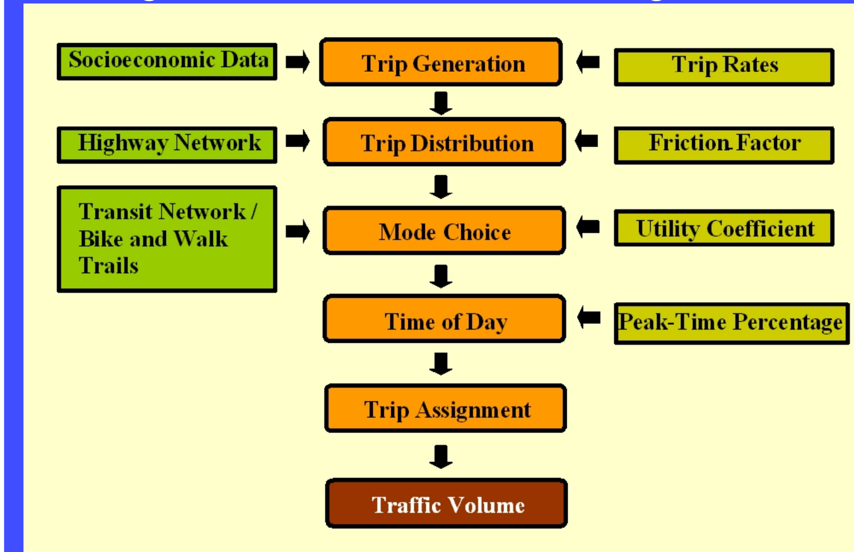
- 2015
- 2025
- 2035

The employment projections were added as input to the travel demand model along with various other factors. The land use designations for each horizon year can be seen in Appendix 3.

Travel demand forecasting is a fundamental planning tool which involves predicting the impacts that different policies and programs will have on travel patterns in the urbanized area. The CUUATS travel demand model has four basic steps:

- Trip Generation (How many trips will be made?)
- Trip Distribution (Where will the trips start and finish?)
- Mode Split (What modes will be used?)
- Traffic Assignment (What routes will be used?)

Figure 28: Travel Demand Forecasting Process



The end products of the travel demand forecasting process for a specific scenario are the traffic volumes along the study area road network. Figure 28 shows the inputs, different steps, and output of a typical travel demand forecasting process.

CUUATS staff used the travel demand model developed in-house for the Champaign-Urbana-Savoy urbanized area to analyze the future impacts on travel along the study corridor resultant from future development.

A figure showing the travel demand model input details (roadway network, traffic analysis zones, centroids, and centroid connectors) for the study corridor can be found in Appendix 3.

4.2 Estimating Intersection Turning Movement Volumes

Intersection turning movement data are very important when analyzing existing intersections and planning and designing future intersections and interchanges. Turning movement data for the future horizon years (2015, 2025, and 2035) were obtained using travel demand model traffic forecasts.

4.3 Future Transportation Conditions

In order to recommend transportation improvement projects which could mitigate congestion, reduce delay, and create a more safe and efficient transportation network, baseline "No Build" forecasts were created for the three horizon years: 2015, 2025, and 2035. These baseline future forecasts are used as the control scenario with which mitigation recommendations can be measured against to maximize effectiveness. The "No Build" scenarios for each horizon year represent traffic volumes and Level of Service (LOS) measurements before any transportation improvement projects are introduced into the travel demand model. The following sections will compare the "No Build" and "Full Improvement" scenarios for horizon year 2035. To see the results for horizon years 2015 and 2025, see Appendix 3.

4.4 Neil Street and St. Mary's Road Viaduct

During the initial phase of presenting the future transportation recommendations to the Steering Committee, CUUATS' recommendation for diverting pedestrian and bicycle traffic away from the Neil Street viaduct was questioned by the committee. Staff's original proposal, based on safety concerns, was to divert pedestrian and bicycle traffic wishing to cross Neil Street, north on Oak Street and west on Kirby Avenue to cross Neil Street. The current viaduct configuration at St. Mary's Road and Neil Street has three travel lanes for automobiles but lacks any pedestrian and/or bicycle facilities. Given the higher than expected volumes of pedestrian and bicycle crossings at that intersection, devising a solution that safely accommodated pedestrians and bicyclists traveling under the viaduct was a priority. The Steering Committee directed CUUATS staff to explore all possible alternatives for the viaduct issue and report back on the alternatives.

CUUATS staff prepared a report for the Steering Committee which described seven different alternatives for the viaduct issue. The chosen alternative for improving the viaduct was Alternative B: Road Diet with Pedestrian and Bicycle Facilities. This alternative proposes reducing the current four lane section along St. Mary's Road between Neil Street and Oak Street to a two lane section. The reduction in lanes provides extra pavement width which can be converted into two five foot bike lanes and a five foot sidewalk along the north side of St. Mary's Road. Unfortunately, there is not enough room under the current viaduct to provide a sidewalk on the south side of St. Mary's Road, therefore pedestrians will have to cross at either Fox Drive or Oak Street to access the north sidewalk.

The photos on this page show the proposed improvements (Alternative B) to the segment of St. Mary's Road between Oak Street and Neil Street. Due to the importance placed on pedestrian and bicycle safety by this study, these improvements are proposed to be constructed prior to horizon year 2015. As the research park and University continue to grow, the study area will see an increase in pedestrian and bicycle traffic. Providing safe facilities for those modes of transportation will only become more pertinent in the future. If additional pedestrian and bicycle facilities are needed to connect the study area to residences in west Champaign, Alternative G should also be implemented. The creation of the multi-use path along the rail line connecting the research park west to Devonshire Drive provides a second east/west connection for those living west of the research park and commuting to work by walking or biking. The complete viaduct alternatives report can be found in Appendix 2.

Looking west along St. Mary's Road between Oak Street and Neil Street: Horizon Year 2015

Looking west along St. Mary's Road under viaduct: Horizon Year 2015

4.5 No Build Scenario vs. Full Improvement Scenario

The analysis completed on the existing transportation network was done under two scenario types. The first is the no build scenario where traffic forecasts were made using the travel demand model in combination with a micro-simulation of the corridor using Synchro 7 software. The second scenario used the forecasts completed for the no build scenario and added in the recommended transportation improvements for each horizon year to analyze the effects the recommendations had on the transportation network. Completing an analysis for both, the no build and full improvement scenarios, provided a control scenario (no build) with which to compare the effectiveness of various transportation improvement options to each other. The end result of this iterative process was a full improvement scenario which provided transportation recommendations that mitigate a range of transportation issues in a safe, efficient and economical way.

For comparison purposes, the future conditions for the no build and full improvement scenarios were evaluated using measurements for horizon year 2035. Horizon year 2035 represented full build-out for the research park and the southern portion of the campus master plan. Horizon year 2035 also represented the worst conditions in the no build scenario and represented the year when all recommended transportation improvements were to be completed in the full improvement scenario. Appendix 3 contains all level of service measurements, turning movement counts, and traffic forecasts for horizon years 2015, 2025 and 2035 for both the no build and full improvement scenarios.

Full Improvement Scenario

Table 22 shows the recommended transportation improvements for the entire study area. The recommended improvements are meant to address not only automobile mobility needs, but the mobility needs of pedestrians and bicyclists as well. The current transportation network, particularly in and around the research park, is lacking facilities for pedestrians and bicyclists. The construction of sidewalks, sidepaths and on-street bike lanes throughout the study area will address this issue and create an interconnected system of streets, bike facilities and sidewalks for all roadway users.

Figures 29 and 30 on pages 46 and 47 show the intersection level of service (LOS) along St. Mary's Road for the no build and full improvement scenarios. The full improvement scenario shows significant improvements in intersection LOS for the year 2035. A majority of the intersection legs are operating at LOS B or C and all intersections are operating at LOS D or higher as compared to LOS F for the no build scenario.

Figures 31 and 32 on page 48 show the roadway segment level of service along St. Mary's Road for the no build and full improvement scenarios. The full improvement scenario again shows significant improvement in segment LOS for the year 2035. A majority of the roadway segments went from LOS F in the no build scenario to LOS C or D in the full improvement scenario. The only segment which remained at LOS F is the westbound Oak Street to Neil Street segment along St. Mary's Road. The low level of service along this segment is due to the reduction in travel lanes in order to accommodate the bicycle and pedestrian facilities. This trade-off was necessary in order to establish safe passage along this segment for all modes of transportation.

Table 22 - Proposed Transportation Improvements

Near Term Improvements		
Segment/Intersection	Proposed Improvements	Priority
St. Mary's Road		
Between Neil St. and Oak St.	Road Diet (from 4-lane to 2-lane) and provide two (5 ft.) bike lanes.	High
Between Neil St. and Oak St.	Construct a 6 ft. sidewalk on north side of St. Mary's Rd. and detectable warnings.	High

Improvements by 2015		
Segment/Intersection	Proposed Improvements	Priority
St. Mary's Road		
Between Oak St. and First St.	Road Diet (from 4-lane to 3-lane or constructed median) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on north side and half of south side of the street with detectable warnings.	High
First St./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane, one TH lane and one RT lane at all approaches (restriping).	High
Between First St. and Fourth St.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct 6' sidewalk on north side and half of south side with detectable warnings.	High
Fourth St./St. Mary's Rd. Intersection	Install a single-lane roundabout with one approach lane and one exit lane for each direction.	High
Between Fourth St. and Lincoln Ave.	Reconstruct roadway as a 2-lane with curb and gutter.	High
Between Fourth St. and Lincoln Ave.	Construct a 8' sidepath along north side and 6' sidewalk along south side of St. Mary's Rd.	Medium
Lincoln Ave./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane and one RT lane for EB approach; one RT lane and one TH lane for SB approach and one TH lane and one LT lane for NB approach and detectable warnings.	High
Fourth Street		
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on east side of the street with detectable warnings.	Medium
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 3-lane roadway with a center turning lane, two (5 ft.) bike lanes and 6 ft. sidewalks on both sides of the street.	Low

Improvements by 2025		
Intersection/Segment	Proposed Improvements	Priority
St. Mary's Road		
Neil St./St. Mary's Rd. Intersection	Construct a right turn pocket at the SB approach.	High
Oak St./St. Mary's Rd. Intersection	Provide a left turn pocket at the NB approach (Restriping the intersection).	High
Oak Street		
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Provide a 6 foot sidewalk on the east side of the roadway and detectable warnings..	Medium
Between St. Mary's Rd. and Hazelwood Dr.	Provide 6 foot sidewalks on both sides of the roadway and detectable warnings. Stripe two 5 foot bike lanes along Oak Street.	Medium

Improvements by 2035		
Intersection/Segment	Proposed Improvements	Priority
St. Mary's Road		
Neil St./St. Mary's Rd. Intersection	Re-time and optimize traffic signal.	High
Oak St./St. Mary's Rd. Intersection	Signalize intersection.	High
First Street		
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 8' sidepath along east side of the roadway.	Medium

*Improvements assume employment growth and traffic projections will be met.

Figure 29: Intersection Level of Service for No Build Scenario in 2035

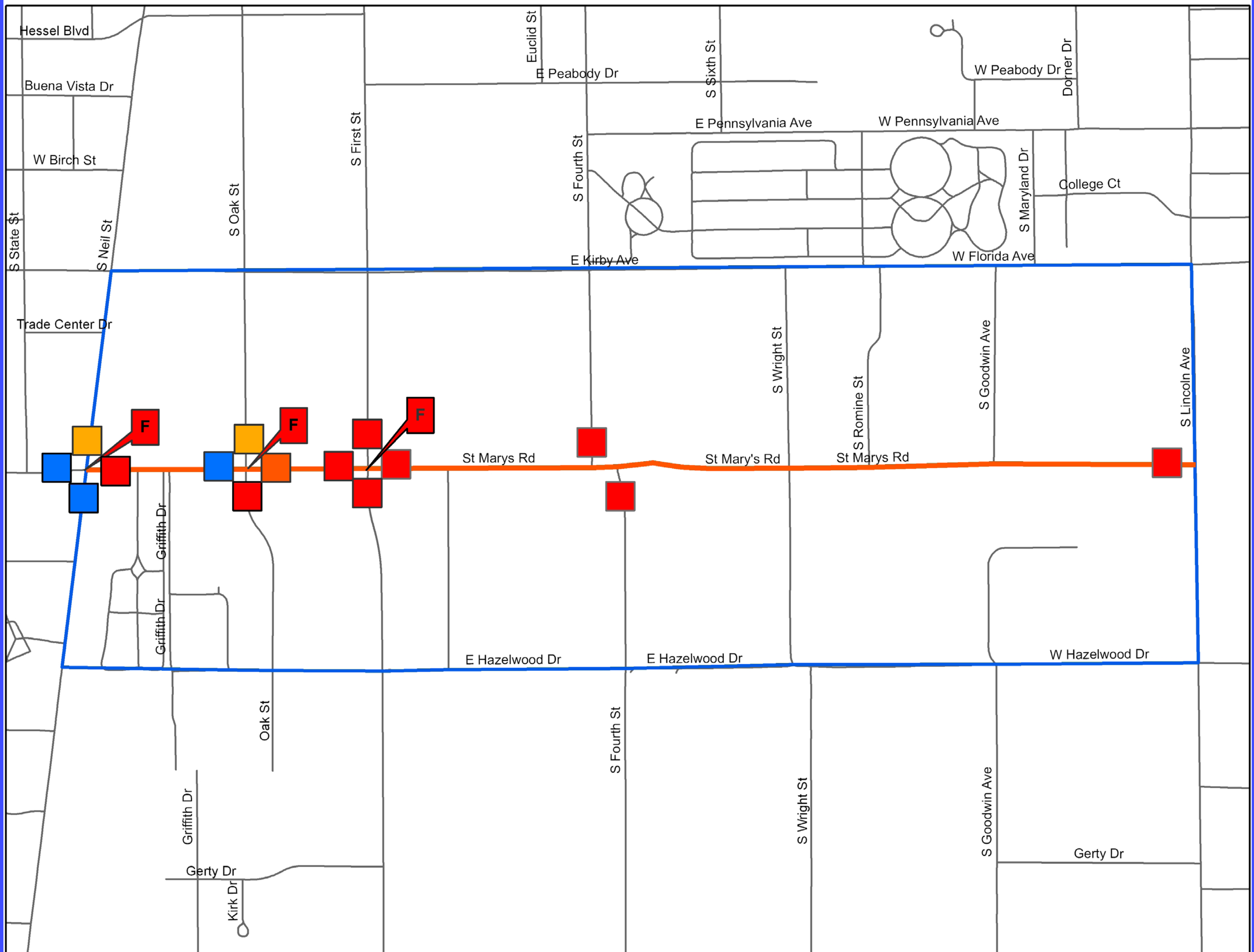


Figure 30: Intersection Level of Service for Full Improvement Scenario in 2035

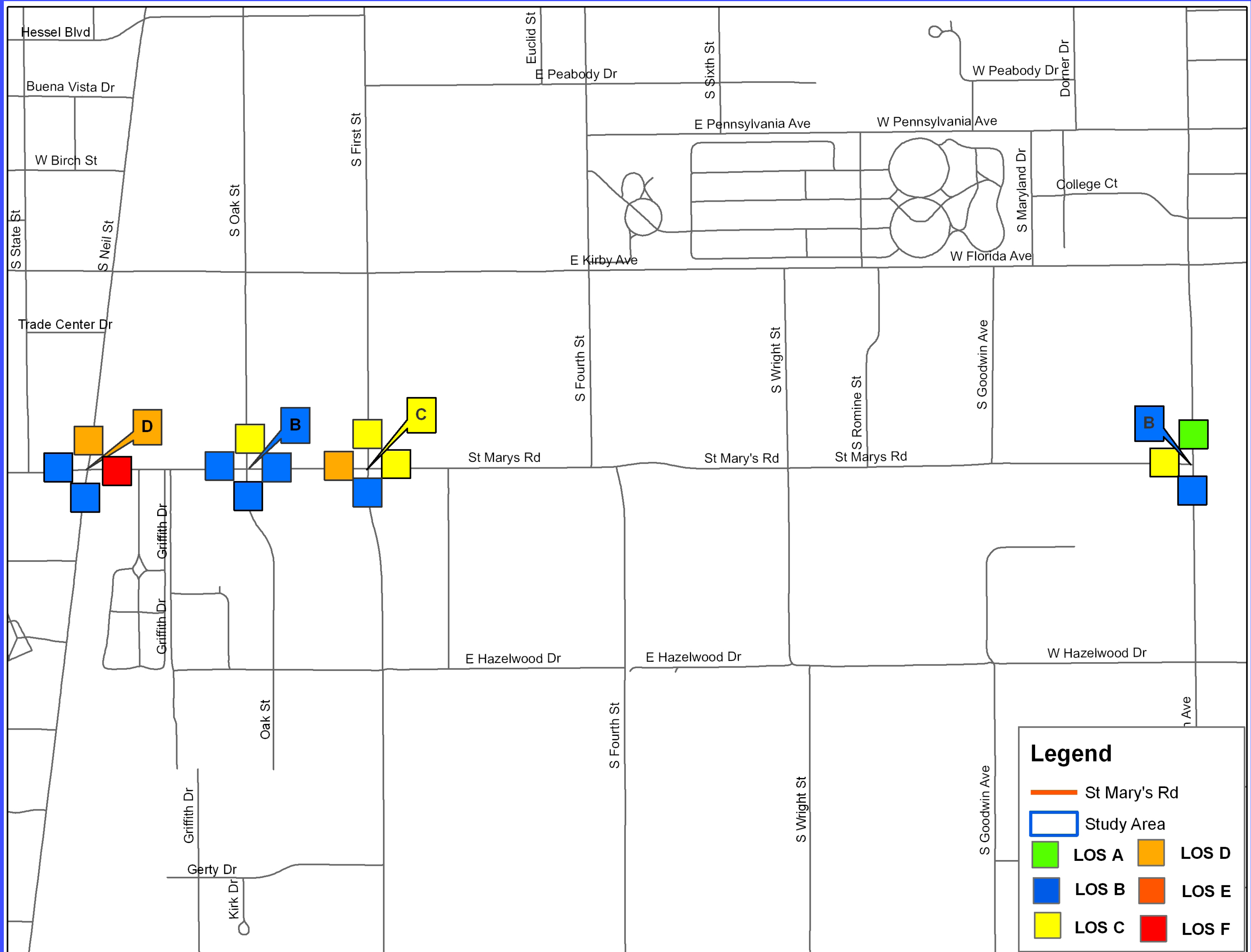


Figure 31: Road Segment Level of Service for No Build Scenario in 2035

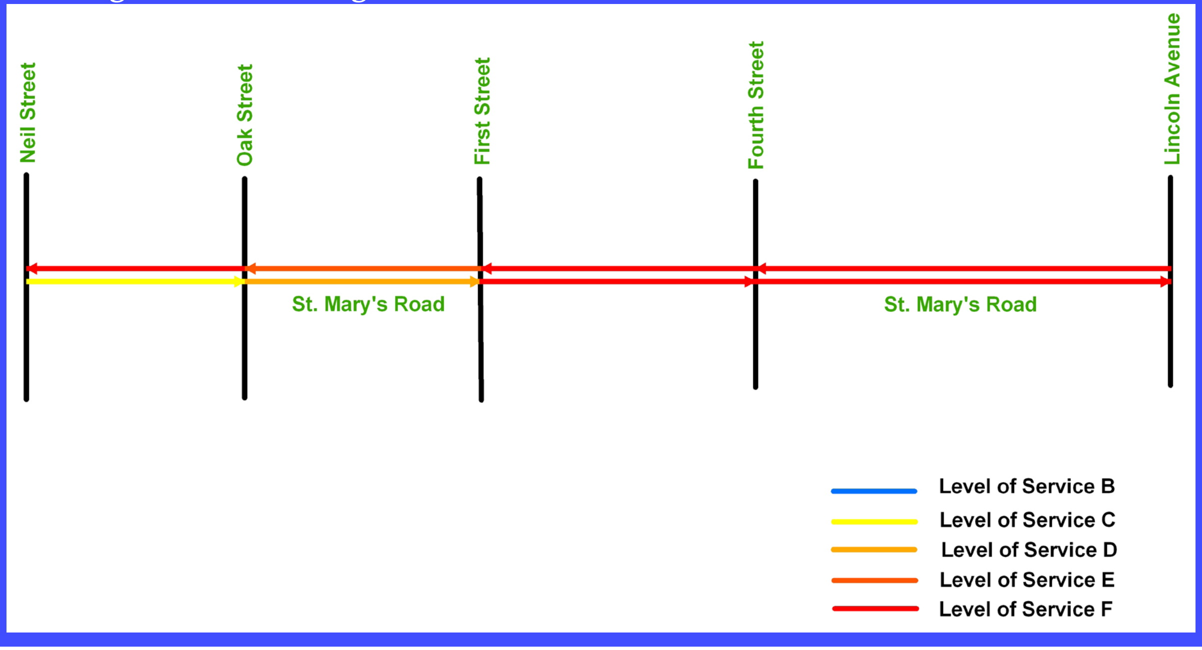
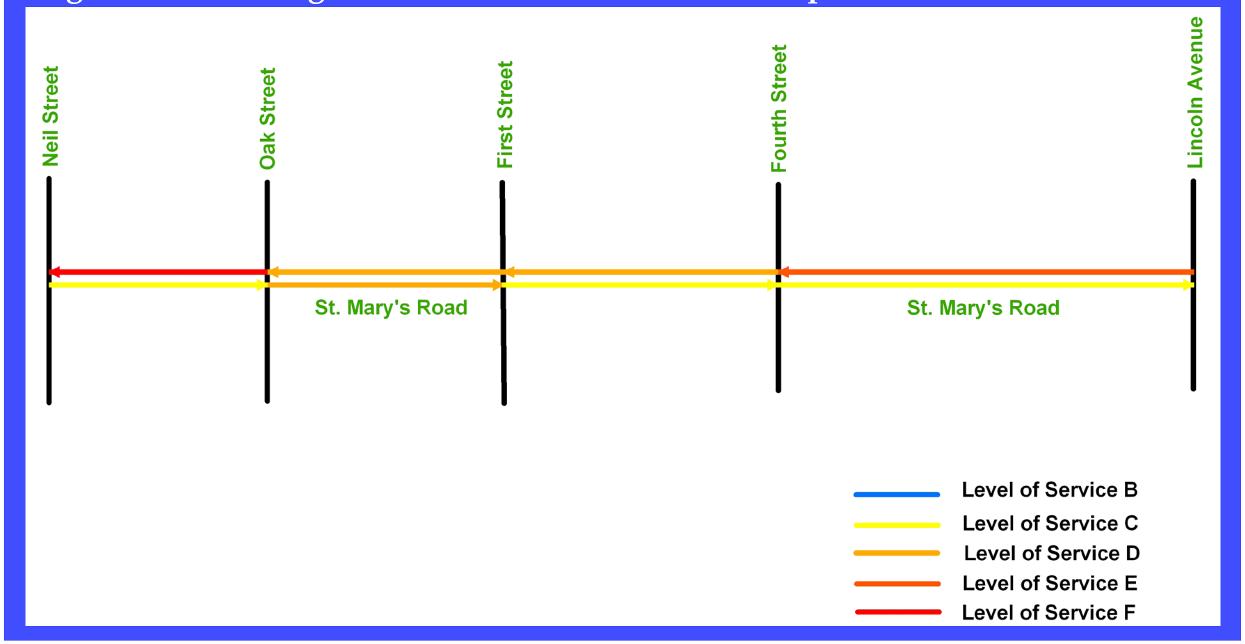


Figure 32: Road Segment Level of Service for Full Improvement Scenario in 2035



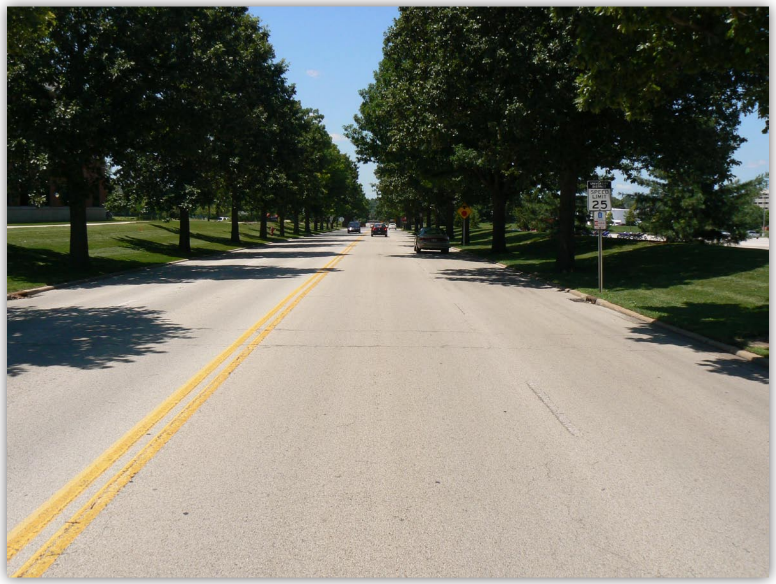
4.6 Proposed Improvements: Before and After

Before and after photo renderings were developed for each recommended transportation improvement as a visual aid to help the public understand what the proposed improvements could look like once constructed. The following pages show the before and after renderings organized by horizon year with a brief description of each improvement.

Horizon Year: Pre-2015

St. Mary's Road from Oak Street to Neil Street

Road diet from four lanes to two lanes, two five-foot bike lanes, six-foot sidewalk on the north side of St. Mary's Road.



Horizon Year: 2015

St. Mary's Road from First Street to Oak Street

Road diet from four lanes to three lanes (or center median), two five-foot bike lanes, six-foot sidewalks on the north and south sides of St. Mary's Road.

Horizon Year: 2015
First Street and St. Mary's Road Intersection
Construct signalized intersection and provide on LT lane, one TH lane, and one RT lane at all approaches.

Horizon Year: 2015
Fourth Street and St. Mary's Road Intersection
Construct a single-lane roundabout with one approach lane and one exit lane for each direction.

Horizon Year: 2015

St. Mary's Road from Fourth Street to Lincoln Avenue

Construct two-lane roadway with curb and gutter.

Construct eight-foot sidepath along north side of St. Mary's Road and construct six-foot sidewalk along south side of St. Mary's Road.

Horizon Year: 2015

Lincoln Avenue and St. Mary's Road Intersection

Signalize intersection and provide one LT lane and one RT lane for EB approach; one RT lane and one TH lane for SB approach; and one TH lane and one LT lane for NB approach and detectable warnings.

Horizon Year: 2015

<u>Fourth Street from Kirby Avenue to St. Mary's Road</u>

Road diet from four lanes to three lanes and provide two five-foot bike lanes. Construct six-foot sidewalk on east side of the street.

Horizon Year: 2015

<u>Fourth Street from St. Mary's Road to Hazelwood Drive</u>

Construct a three lane roadway with center turn lane and provide two five-foot bike lanes and six-foot sidewalks on both sides of the street.

Horizon Year: 2025
<u>*Oak Street and St. Mary's Road Intersection*</u>
Construct a left turn pocket at the NB approach (re-stripe intersection)

Horizon Year: 2025
<u>*Oak Street from Kirby Avenue to St. Mary's Road*</u>
Road diet from four lanes to three lanes. Construct two five-foot bike lanes and a six-foot sidewalk on the east side of Oak Street.

Horizon Year: 2025
Oak Street from St. Mary's Road to Hazelwood Drive
Provide six-foot sidewalks on both sides of the roadway with detectable warnings. Stripe two five-foot bike lanes along Oak Street.

Horizon Year: 2035
Oak Street and St. Mary's Road Intersection
Signalize intersection.

Horizon Year: 2035

First Street from Kirby Avenue to St. Mary's Road

Construct an eight-foot sidepath along the east side of First Street.

4.7 Public Comment

Public comment throughout the planning process for this corridor study has been strong and overwhelmingly in favor of adding pedestrian and bicycle facilities wherever possible throughout the study area. During the second and final public open house in September of 2008, the public comments regarding the recommended transportation improvements were supportive. A complete inventory of public comments from both public open houses can be found in Appendix 4.

4.8 Additional Recommendations

A number of transportation related issues were brought up during the existing conditions analysis and public open houses that are not directly addressed by the transportation recommendations for this corridor. While our recommendations do not directly address these issues, they should not be ignored and do play a part in the successful implementation of this plan.

Transit Service and Facilities

As the corridor grows, transit service will need to play a larger role in creating another travel option for students, employees and the general public traveling and working throughout the study area. The scope of this study did not include planning for additional transit service or the placement of additional transit facilities. As development occurs, transit improvements should timed to coincide with the needs of travelers within the study corridor. Coordination efforts should be made between CU-MTD, the University of Illinois and Fox Development to ensure the timing of improvements aligns with the needs of transit users. Transit stops and shelters should be constructed in conjunction with decisions affecting transit routes.

Viaduct Stormwater Drainage

The east leg of the Neil Street/St. Mary's Road intersection under the viaduct has been susceptible to flooding and standing water resultant from rainfall events and snowmelt. The current drainage system is insufficient and cannot clear stormwater fast enough to eliminate hazardous conditions for drivers, pedestrians and bicyclists. Lighting improvements and lighter colored paint should be applied to the viaduct to make the passage more secure for pedestrians and bicyclists. As upgrades are made to this section of roadway, it is necessary to check the capacity and condition of the existing drainage system under the viaduct.

Vertical Clearance

Vertical clearance under the viaduct is also an issue for larger trucks using St. Mary's Road for access to the study area. The current height from the road to the bottom of the viaduct is 11′ 10″. Viaducts spanning collector streets should have a vertical clearance of at least 14′. Unfortunately, reconstructing the viaduct and/or roadway to create the extra three feet of clearance is a difficult and costly recommendation. One recommendation for this issue is to place additional signage ahead of the viaduct warning drivers of the low clearance.

5 Implementation

Implementing the recommended transportation improvements in the St. Mary's Road Corridor Study will improve safety and travel efficiency for all modes of transportation. In order for the improvements to happen in a timely and cost effective manner, there needs to be a high level of cooperation between the cities, the University and developers in the corridor. To help establish multi-modalism in the corridor, projects should not focus solely on improvements for the automobile but should incorporate facilities for all modes during design and construction. Developers may be asked to incorporate new practices into site design and construction to include sidewalks or sidepaths along roadways and practice access management to avoid curb-cuts that could conflict with pedestrians and bicyclists. This chapter will include information about the implementation of the recommended transportation improvements. The implementation table provides the project name, horizon year, project priority, agencies responsible, and estimated construction cost in 2008 dollars. The implementation table is show in Table 23.

5.1 Implementation Table

The implementation table (Table 23) presents projects broken out by horizon year. Within the table, information is provided about each recommended transportation improvement in terms of:

- *Project Location*: Intersection or roadway segment location for improvements.
- *Proposed Improvements*: What is being proposed at the project location?
- *Horizon Year*: What horizon year does the project need to be completed by?
- *Project Priority*: What is the relative importance of the project?
- *Estimated Cost of Construction*: What is the estimated construction cost in 2008 dollars?
- *Agencies Responsible*: Who would need to participate in the implementation of the project?

Project Prioritization

The recommended transportation improvement projects listed in the implementation table have been given a priority label of High, Medium or Low. This priority ranking should be used as a guide for implementing projects as funding becomes available. Project priorities are based on a number of factors from safety improvements to increasing roadway connectivity. The following is a brief description of each priority ranking:

- *High:* Projects that have positive benefits, such as significantly improving safety, mobility, and reducing traffic congestion. Projects also have a high benefit to cost ratio. High priority projects should be implemented during the specified horizon year time frame.
- *Medium:* Projects that have positive benefits but may require larger monetary investment for design and construction. These projects may also have a lower priority because they do not provide a greater positive benefit than projects ranked as "high" in the table.
- *Low:* Projects that have mixed or minimal positive benefits and may require additional funding or support from the agencies and participating parties. Funding for these projects may be limited and/or unlikely during the specified horizon year.

Estimating Improvement Costs

Based on recent transportation projects in the urbanized area and construction cost estimates from around the United States, estimated costs were created for each project listed in the implementation table. These estimates are for construction only and do not include design, engineering, right-of-way acquisition, or utility adjustments which can make up a considerable amount of a project's budget. The following resources were used to help estimate the cost of each proposed project:

- City of Urbana Public Works Department
- City of Champaign Engineering Department
- Illinois Department of Transportation
- T.Y. Lin International
- League of Illinois Bicyclists
- Florida Department of Transportation

Project Funding Sources

The implementation table does not outline potential funding sources to help cover the cost of constructing the projects because of uncertainties in funding resources. With the current transportation authorization bill, SAFETEA-LU, set to go insolvent in Fiscal Year 2009 many uncertainties arise when it comes to funding transportation projects. There are questions about funding sources, grant sources, federal dollars for transportation projects that must be answered by the new transportation authorization bill before funding sources can be established for these projects. The funding sources and implementation table will have to be revisited once the new transportation bill is in place and sources can be identified.

Alternative Project

During the public participation events CUUATS staff encountered many requests asking that the section of St. Mary's Road from Fourth Street east to Lincoln Avenue include five foot bike lanes instead of the eight foot sidepath. This request will need to be evaluated further to determine right-of-way needs, funding for the additional pavement width and whether a rural or urban roadway cross-section is needed at this location.

Table 23: Implementation Table

Near Term Improvements				
Segment/Intersection	Proposed Improvements	Priority	Estimated Cost	Participating Agencies
St. Mary's Road				
Between Neil St. and Oak St.	Road Diet (from 4-lane to 2-lane) and provide two (5 ft.) bike lanes.	High	$5,180	University of Illinois
Between Neil St. and Oak St.	Construct a 6 ft. sidewalk on north side of St. Mary's Rd. and detectable warnings.	High	$142,600	University of Illinois
Total Estimated Cost			$147,780	

Improvements by 2015				
Intersection/Segment	Proposed Improvements	Priority	Estimated Cost	Participating Agencies
St. Mary's Road				
Between Oak St. and First St.	Road Diet (from 4-lane to 3-lane or constructed median) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on north side and half of south side of the street with detectable warnings.	High	$119,885	University of Illinois
First St./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane, one TH lane and one RT lane at all aproaches (restriping).	High	$200,000	University of Illinois
Between First St. and Fourth St.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct 6’ sidewalk on north side and half of south side with detectable warnings.	High	$199,770	University of Illinois
Fourth St./St. Mary's Rd. Intersection	Install a single-lane roundabout with one approach lane and one exit lane for each direction.	High	$350,000	University of Illinois
Between Fourth St. and Lincoln Ave.	Reconstruct roadway as a 2-lane with curb and gutter.	High	$490,000	University of Illinois
Between Fourth St. and Lincoln Ave.	Construct a 8' sidepath along north side and 6' sidewalk along south side of St. Mary's Rd.	Medium	$539,490	University of Illinois
Lincoln Ave./St. Mary's Rd. Intersection	Signalize intersection and provide one LT lane and one RT lane for EB approach; one RT lane and one TH lane for SB approach and one TH lane and one LT lane for NB approach and detectable warnings.	High	$200,000	City of Urbana University of Illinois
Fourth Street				
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Construct a 6 ft. sidewalk on east side of the street with detectable warnings.	Medium	$141,475	University of Illinois
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 3-lane roadway with a center turning lane, two (5 ft.) bike lanes and 6 ft. sidewalks on both sides of the street.	Low	$1,425,000	University of Illinois
Total Estimated Cost			$3,665,620	

Table 23 (cont.): Implementation Table

Improvements by 2025

Intersection/Segment	Proposed Improvements	Priority	Estimated Cost	Participating Agencies
Neil St./St. Mary's Rd. Intersection	Construct a right turn pocket at the SB approach.	High	$350,000	IDOT*
Oak St./St. Mary's Rd. Intersection	Provide a left turn pocket at the NB approach (Restriping the intersection).	High	$5,000	University of Illinois
Oak Street				
Between Kirby Ave. and St. Mary's Rd.	Road Diet (from 4-lane to 3-lane) and provide two (5 ft.) bike lanes. Provide a 6 foot sidewalk on the east side of the roadway and detectable warnings..	Medium	$130,075	University of Illinois
Between St. Mary's Rd. and Hazelwood Dr.	Provide 6 foot sidewalks on both sides of the roadway and detectable warnings.	Medium	$154,000	University of Illinois Fox Development Co.
Total Estimated Cost			$639,075	

*Project cost mostly attributed to high cost of right-of-way acquisition.

Improvements by 2035

Intersection/Segment	Proposed Improvements	Priority	Estimated Cost	Participating Agencies
Neil St./St. Mary's Rd. Intersection	Re-time and optimize traffic signal.	High	$5,000	IDOT
Oak St./St. Mary's Rd. Intersection	Signalize intersection.	High	$150,000	University of Illinois
First Street				
Between St. Mary's Rd. and Hazelwood Dr.	Construct a 8' sidepath along east side of the roadway.	Medium	$195,350	University of Illinois Fox Development Co.
Total Estimated Cost			$350,350	

5.2 Conclusion

The purpose of the St. Mary's Road Corridor Study was to plan for the logical development of a multi-modal transportation system that suggests additional safety and congestion mitigation improvements. These improvements are based on anticipated land uses and growth in the study area which affects transportation trips throughout the study area. In working with stakeholders and the Steering Committee to identify goals and objectives, this corridor plan clarifies solutions for critical issues and how solutions can be implemented.

To successfully implement the transportation recommendations proposed in this plan, the planning process established by this document and persons involved in the study should continue to stay involved and integrated into the decision making process. Benchmarks for success should be created in order to measure the mitigation efforts as the transportation recommendations are put into place over the next 25 years. All necessary efforts should be made to implement these recommendations using best planning and engineering practices, and the recommendations established in this plan should be implemented proactively instead of reactively before transportation issues arise.