DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

VOLUME II (Appendices)

PROPOSED ACTION:

WEGMANS FOOD MARKETS, INC. – FOOD MARKET CONSTRUCTION

LOCATION:

1750-1830 EAST AVENUE, ROCHESTER NY 14610

LEAD AGENCY:
Marcia Barry, Manager of Zoning
City Hall, Room 125B
30 Church Street
Rochester, NY 14614-1290

SUBMIT COMMENTS TO AND CONTACT FOR ADDITIONAL INFORMATION:

Dorraine Kirkmire, Senior City Planner
City Hall, Room 125B
30 Church Street
Rochester, NY 14614-1290
585-428-6698
Kirkmired@CityofRochester.Gov

DATE OF ACCEPTANCE:
June 7, 2010

COMMENTS MUST BE SUBMITTED ON OR BEFORE:
August 6, 2010

PUBLIC HEARING DATE:
July 12, 2010
6:30 p.m.
City Council Chambers
City Hall, 30 Church Street
Rochester, NY 14614

COSTICH ENGINEERING

PREPARED BY:

Wegmans Food Markets, Inc.
Site Development
100 Wegmans Market Street
Rochester, NY 14624
585-464-4790
Contact: Eric Bartles

Costich Engineering, P.C.
217 Lake Avenue
Rochester, NY 14608
585-458-3020
Contact: Garth Winterkorn

Nixon Peabody LLP
P.O. Box 31051
Clinton Square - Suite 900
Rochester, NY 14603-1051
585-263-1000
Contact: Tom Greiner

Bergmann Associates, P.C.
28 East Main Street
First Federal Plaza
Rochester, NY 14614
585-232-5135
Contact: Mark Johns

Bignell Watkins Hasser Architects, P.A.
One Park Place
Suite 250
Annapolis, MD 21401
410-224-2727
Contact: Ni Paul

FRA, a T.Y Lin International Company
255 East Avenue
Rochester, NY 14604
585-512-2000
Contact: Carl Ast

Bero Associates
32 Winthrop Street
Rochester, NY 14607
585-262-2035
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Rochester, NY 14607
585-262-2035
Contact: John Page

COSTICH ENGINEERING

APPENDICES

ENGINEER'S REPORT
FOR
Wegmans
EAST AVENUE

CITY OF ROCHESTER, COUNTY OF MONROE
STATE OF NEW YORK

PREPARED FOR:

WEGMANS FOOD MARKETS, INC.
100 WEGMANS MARKET STREET
ROCHESTER, NEW YORK 14624

PREPARED BY:

COSTICH
ENGINEERING

217 LAKE AVENUE
ROCHESTER, NEW YORK 14608

PROJECT NO. 2781

SEPTEMBER 2009
REVISED: MAY 4, 2010

ENGINEER'S REPORT
WEGMAN'S EAST AVENUE
CITY OF ROCHESTER, MONROE COUNTY

I. INTRODUCTION

The proposed Wegmans Food Market re-development on East Avenue, between Probert Street and North Winton Road in the City of Rochester, New York is outlined in this report. The existing site consists of an existing 46,697 square foot food market, a parking garage, parking and loading areas, a number of commercial buildings along East Avenue and associated site utilities; all of which will be demolished upon commencement of construction activities, with the exception of the "Fountain Bleu" building. The proposed development consists of a new 108,500± square foot Food Market, parking garage, parking lot and additional site improvements.

The following report will analyze the proposed stormwater quality measures for the entire site and new sanitary sewer and water services. Following the narrative of this report are appendices with corresponding calculations and exhibits.

II. SANITARY SEWERS

The proposed Food Market will be serviced by a 6 inch diameter PVC SDR-21 sanitary lateral extending from the southeast corner of the building to the existing 8 inch sanitary sewer on East Avenue. Additionally, the floor drain sewer system for the parking garage will connect to the existing 12 inch sanitary sewer located on University Avenue via a 6 inch sanitary lateral with a 500 gallon oil/water separator. This is due to the drains in the parking garage being treated as "floor drains" as there is no stormwater runoff tributary to the system. For the purposes of these calculations, the maximum domestic flow rate used for the proposed Food Market is 120 GPM, while the system in

the proposed parking garage uses a peak rate of 10 GPM. The calculations showing the capacity of the 6 inch sanitary lateral at the University Avenue connection point as well as the 6 inch sanitary lateral for the Food Market at the East Avenue connection can be seen at the rear of this report.

III. WATER DISTRIBUTION SYSTEM

The existing food market is currently serviced by a combined 8 inch DIP off the existing 12 inch diameter City of Rochester ductile iron watermain along East Avenue and will be abandoned in place once the new food market is fully operational. As the new food market now has a larger foot print, different uses and more current design criteria, flow test data in that area was requested to more accurately analyze the proposed system. Hydrant flow data supplied by the City of Rochester, as tested on 3/9/2010 is as follows:

- Static Pressure: 67 psi
- Residual Pressure: 56 psi
- Observed Flow: 2,142 gpm
- Flow at 20 psi: 4,693 gpm

The proposed food market will be fully sprinklered, an 8 inch DIP will be installed for fire service and a 4 inch DIP will provide the domestic water service.

The maximum required flow rates for the domestic and fire flow demands have been provided by Wegmans as 120 GPM and 1200 GPM, respectively. Using the abovementioned hydrant flow test information, along with the required demands, the water distribution system was modeled to evaluate its sufficiency. Upon investigation, it has been determined the current domestic demands can be met having a residual pressure of approximately 67 psi. After performing the necessary modeling for the fire service, it has been determined that the fire service will have a residual pressure of 65

psi at the first floor elevation. The calculations showing the results of the water distribution modeling for both fire and domestic can be seen at the rear of this report.

IV. STORMWATER MANAGEMENT

The existing conditions are shown on the "Existing Drainage Area Map", which can be seen at the rear of this report. Under existing conditions, stormwater sheet drains to a series of catch basins at various locations throughout the site or onto adjacent roads, connecting to various storm sewer systems. Ultimately, discharge from the site for the designated watersheds tie into existing City storm sewers located on each of the streets where the site has frontage (i.e. East Avenue, University Avenue, North Winton Road and Probert Street). The rational method (Q=CiA) was used to determine runoff for the various watersheds throughout the site to calculate the total discharge to the different connection points at each street. The following table summarizes the existing peak discharge rates leaving the site at the designated connection points.

EXISTING PEAK FLOW RATES

Area Designation	**Q_2 (cfs)**
East Avenue	7.07
University Avenue	11.91
North Winton Road	0.08
Probert Street	1.43
TOTAL	**20.49**

The developed conditions are shown on the "Developed Drainage Area Map", which can also be found at the rear of this report. Under developed conditions, all of the sites stormwater runoff will be captured in a series of storm sewers throughout the site. This runoff will then be directed to the City's storm sewers located along the same streets as stated earlier under existing conditions. The peak flow rates for the overall

development will be reduced below those listed under existing conditions due to an increase in green space as a result of the proposed development. In addition, three (3) CDS units will be utilized to provide water quality treatment prior to the stormwater leaving the site pursuant to the NYSDEC Stormwater Management Design Manual, dated August 2003 and Chapter 9 for re-development dated January 9, 2007. The following table summarized the developed peak discharge rates leaving the site.

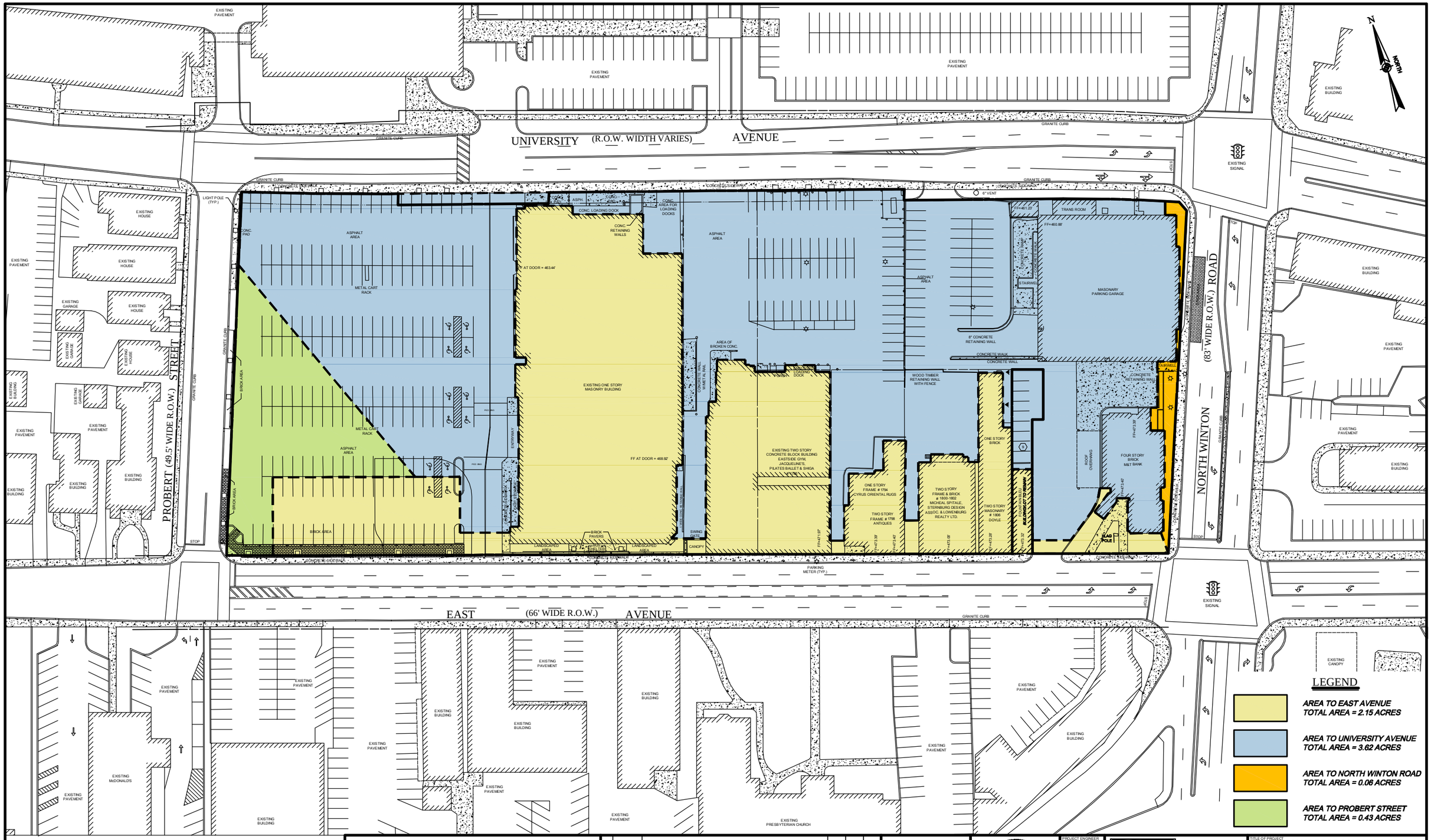
DEVELOPED PEAK FLOW RATES

Area Designation	Q_2 (cfs)
East Avenue	13.82
University Avenue	3.24
North Winton Road	2.13
Probert Street	0.06
TOTAL	**19.25**

It can be seen that the reduction in impervious area translates to a corresponding decrease in stormwater runoff. Supporting calculations can be found at the rear of the report.

V. SUMMARY

In summary, the existing site and utility infrastructure pose no restrictions to the proposed development for storm sewer collection, sanitary sewer collection or water distribution needs.



LEGEND

- AREA TO EAST AVENUE TOTAL AREA = 2.15 ACRES
- AREA TO UNIVERSITY AVENUE TOTAL AREA = 3.62 ACRES
- AREA TO NORTH WINTON ROAD TOTAL AREA = 0.06 ACRES
- AREA TO PROBERT STREET TOTAL AREA = 0.43 ACRES

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHK'D.	APVL'S.

STATE OF NEW YORK
MARK R. COSTICH
NO. 065077
Licensed Professional Engineer

PROJECT ENGINEER	G.W.
DRAWN BY	D.E.L.
BOUNDARY	D.T.H.
TOPO/BASE	D.T.H.
DATE	09/08/2009
SCALE	1"=40'

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND PLANNING
• SURVEYING
217 LAKE AVENUE
ROCHESTER, NEW YORK
14608
(585) 458-3020

TITLE OF PROJECT
WEGMANS FOOD MARKETS, INC.
1750 EAST AVENUE

TITLE OF DRAWING
EXISTING DRAINAGE AREA MAP

LOCATION OF PROJECT
CITY OF ROCHESTER
COUNTY OF MONROE, STATE OF NEW YORK

CLIENT
WEGMANS FOOD MARKETS, INC.
100 WEGMANS MARKET STREET
ROCHESTER, NEW YORK 14692

DWG # 2781.03
CE100
SHEET 1 OF 1

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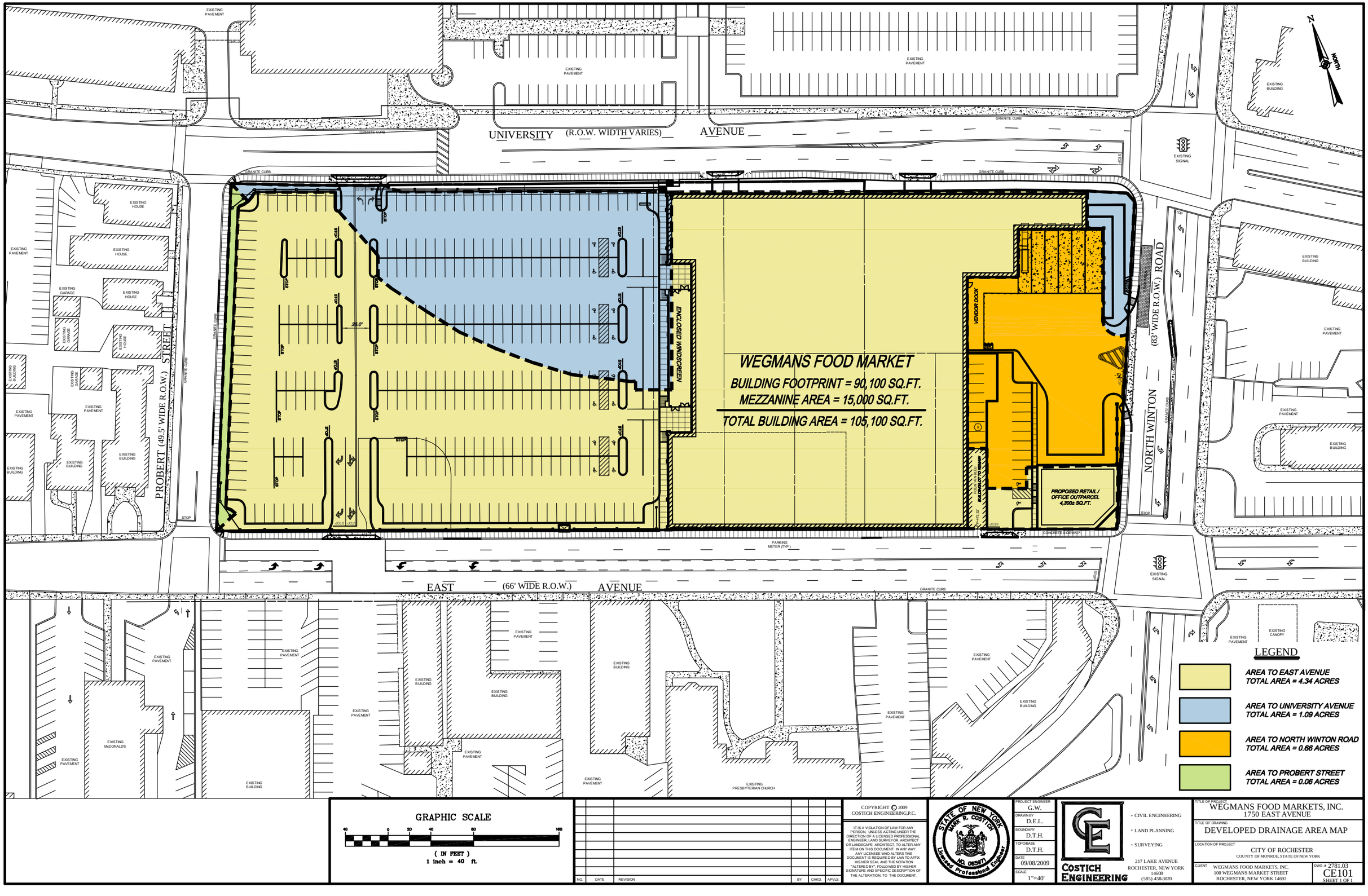

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

STATE OF NEW YORK
MARK R. COSTICH
NO. 065971
Licensed Professional Engineer

PROJECT ENGINEER	G.W.
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COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND PLANNING
• SURVEYING
217 LAKE AVENUE
ROCHESTER, NEW YORK
14608
(585) 458-3020

TITLE OF PROJECT
WEGMANS FOOD MARKETS, INC.
1750 EAST AVENUE

TITLE OF DRAWING
DEVELOPED DRAINAGE AREA MAP

LOCATION OF PROJECT
CITY OF ROCHESTER
COUNTY OF MONROE, STATE OF NEW YORK

CLIENT
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ROCHESTER, NEW YORK 14692

DWG. # 2781.03
CE101
SHEET 1 OF 1

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Traffic Impact Study

Wegmans Food Market & Retail/Office Outparcel

East Avenue
Rochester, New York
Monroe County

December, 2009

PREPARED FOR:

Wegmans Food Markets, Inc.
P.O. Box 30844
Rochester, NY 14603-0844

CONTACT:
Dan Aken & Eric Bartles

PREPARED BY:

FRA
255 East Avenue
Rochester, NY 14604
p. (585) 512-2000

FRA
A T·Y·LIN INTERNATIONAL COMPANY





433164.04

TRAFFIC IMPACT STUDY

Wegman's Food Market & Retail/Office Outparcel

East Avenue
City of Rochester, New York

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TRAFFIC IMPACT STUDY
WEGMANS FOOD MARKET
East Avenue
City of Rochester, New York

EXECUTIVE SUMMARY

Wegmans Food Markets, Inc. is proposing to replace the existing supermarket on the north side of East Avenue between Probert Street and North Winton Road in the City of Rochester. The existing 40,500 square foot Wegmans store will be replaced by a new 105,100 square foot store on the same site and on the adjacent land to the east. Also included in the proposal is to construct a 4,700 square foot retail/office outparcel on the property at the northwest corner of East Avenue and North Winton Road.

This store location is one of the better performing stores, on a patron volume basis, and is in need of expansion to remain competitive in the marketplace. In anticipation of required site plan approval considerations, this Traffic Impact Study was conducted to assess the potential for impacts to the adjacent street network as well as investigate the interactions between the proposed site and the motor vehicles, pedestrians, and RTS buses using the public right-of-ways adjacent to the site.

Manual counts were originally conducted during the months of January and February 2004 to assess operating characteristics. To update this study, new manual counts at the intersection of East Avenue and Probert Street, and East Avenue and North Winton Road were conducted in September 2009 to analyze the change in volumes since 2004. This information was input into a computer based traffic model (Synchro 7.0) to develop a baseline scenario for comparison purposes. This information was combined with the proposed site plan from Wegmans to develop a series of models created to assess the projected future traffic conditions in the vicinity of the site.

Overall, the increase in traffic as a result of this application will be modest and will result in only minor increases in delay at certain locations. Further, the projected increases in delay can be mitigated by adjusting signal timings where needed.

Significant improvements are being recommended as part of this application, all of which will have a positive impact on the site and adjacent street networks. These improvements include:

- Relocating the existing Wegmans driveways on East Avenue and University Avenue as shown in the site plan and eliminating all access points to Probert Street. Resulting in a reduction of the overall number of curb cuts from 10 full access points to 3 full-access driveways and 3 limited-access driveways.
- Removal of the traffic signal at the East Avenue and Probert Street intersection and the installation of a new signal at the Wegmans Drive and East Avenue intersection.
- Streetscape improvements and pedestrian accommodations along East Avenue, Probert Street, University Avenue and North Winton Road; including

textured/painted crosswalks at all intersections and driveway locations within the vicinity of the project site.

- Installing a 100' westbound left-turn lane into the Wegmans Food Market site on University Avenue; affectively narrowing the travel lanes for the through movements in front of the Wegmans Food Market and the Harris Corporation buildings.

Based on the analysis conducted, which assessed the projected traffic volumes resulting from the proposed development, the proposed 105,000 SF Wegmans Food Market and 4,700 SF retail/office outparcel will not adversely impact the adjacent street network and will positively impact the pedestrian and vehicular environments on the adjacent streets.

I. INTRODUCTION

Wegmans Food Markets, Inc. is proposing to replace the existing supermarket on the north side of East Avenue between Probert Street and North Winton Road in the City of Rochester. The existing 40,500 square foot Wegmans store will be replaced by a new 105,100 square foot store on the same site and on the adjacent land to the east. Also included in the proposal is the construction of a 4,700 square foot retail/office outparcel on the property at the corner of East Avenue and North Winton Road. The total floor area of both projects is 109,800 SF, approximately 12,700 SF less than the current total floor area on the subject property.

The purpose of this Traffic Impact Study is to evaluate the potential impacts that the new Wegmans and retail/office development will have on traffic operations on the adjacent street system. The scope and parameters used in this study have been reviewed and approved by the Monroe County Department of Transportation (MCDOT) and reviewed and discussed with the City of Rochester and the New York State Department of Transportation (NYSDOT). The following general items were included in the original study:

- An inventory of existing roadway and traffic conditions in the vicinity of the project site.
- Traffic counts at major intersections surrounding the site.
- A projection of the amount of traffic to be generated by the new development and a projection of the directional distribution of site traffic on the adjacent highway system.
- A signal warrant analysis to determine whether the existing traffic signal at the intersection of East Avenue and Probert Street should be removed and replaced by a new signal on East Avenue at the new Wegmans driveway.
- A Level of Service analysis for each of the site driveway intersections and for nearby existing intersections.
- A review of the recent accident history on existing roadways surrounding the project site.
- A review of pedestrian accommodations and travel patterns along University Avenue, particularly between the Harris property and the subject site, incorporating findings by MCDOT for pedestrian accommodations.
- A review of the current RTS bus operations in the vicinity of the site, to address bus stops, staging areas, and potential conflicts with vehicles and pedestrians.
- Identification of mitigation measures to accommodate the new site-generated traffic.

This update of the study includes the following items:

- Manual turning movement counts updates for the intersections of East Avenue/Probert Street and East Avenue/ North Winton Road.
- A review of the most recent accident history and updates to the accident analysis.
- A comparison of the current data with the original June 2004 report to determine differences in trip generation numbers as well as volumes on the roadway network, and revise tables and figures.
- An update of the traffic analysis and output tables.
- Gap Study on East Ave between the existing Wegmans Driveway and N. Winton Road to determine adequate gaps are available for proposed exiting volumes.
- Identification of mitigation measures to accommodate the new site-generated traffic.

II. PROJECT DESCRIPTION

The existing Wegmans Food Market is served by one driveway to East Avenue, one driveway to University Avenue, and two driveways to Probert Street. Additionally there are four driveways behind the Wegmans Food Market (east of the existing store), two on East Avenue and two on University Avenue, that access a rear parking lot serving existing retail establishments and provides employees parking for Wegmans. All driveways are unsignalized.

Wegmans is now proposing to raze the existing store and construct a new 105,100 square foot store on the same site and on the adjacent land to the east. An enlarged parking lot with 339 spaces, versus the existing 213 spaces, will occupy the western portion of the site, while the new Wegmans building will occupy the eastern portion. Several existing buildings and a parking garage will be razed to accommodate the new Wegmans store.

The existing Wegmans driveways to East Avenue and University Avenue will each be relocated some 80 feet to the west. The driveway to East Avenue will be aligned directly opposite a driveway to the Country Club Diner. All existing site access to Probert Street will be eliminated. As part of the project, Wegmans is seeking the removal of the existing traffic signal at the intersection of East Avenue and Probert Street and the installation of a new traffic signal on East Avenue at the Wegmans driveway. The warrants for these traffic signals are discussed later in this report.

A new 198-space underground parking garage will be constructed directly beneath the new Wegmans building. The parking garage will be intended primarily for Wegmans employees, and will not be accessible to the general public. The garage will be served by two driveways on University Avenue, one of which will be a one-way entrance and the other a one-way exit.

This project also includes the construction of a 4,700 square foot retail/office outparcel on the northwest corner of East Avenue and North Winton Road. The new building will replace the former M&T Bank building at that location. The retail/office outparcel will be served by one driveway on East Avenue and by a right in/right out driveway on North Winton Road. The driveway to East Avenue is expected to allow all turning movements with no prohibitions. The right in/right out driveway to North Winton Road will be intended for retail/office traffic as well as for Wegmans service and delivery vehicles accessing the rear of the Wegmans building. Truck traffic will be encouraged to use the North Winton Road right out and avoid use of the retail/office driveway on East Avenue.

An updated site plan for the proposed project is shown in **Appendix 'A'**.

III. EXISTING HIGHWAY SYSTEM

The roadway system examined in this study consists of East Avenue from Probert Street to North Winton Road; University Avenue from Probert Street to North Winton Road; Probert Street from East Avenue to University Avenue; and North Winton Road from East Avenue to University Avenue. East Avenue and University Avenue follow a northwest/southeast orientation and are referred to as east/west streets for study purposes. Probert Street and North Winton Road follow a northeast/southwest orientation and are referred to as north/south streets.

All roadways in the study area are on the City of Rochester street system with a posted speed limit of 30 MPH. There are curbs and sidewalks on both sides of all streets. The following is a description of the individual streets and intersections in the study area:

East Avenue

East Avenue is a Prinicpal Arterial designated N.Y. Route 96 on the State Touring Route System. The section of East Avenue from Probert Street to North Winton Road consists of two 11-foot wide traffic lanes in each direction and an 11-foot wide two-way center lane for left turning vehicles.

The intersection of East Avenue and Probert Street is signalized. Probert Street is aligned directly opposite a one-way exit from a McDonalds Restaurant. The East Avenue approaches to the intersection consist of an exclusive left turn lane and two through lanes, with right turns made from the outside through lanes. The southbound Probert Street approach provides sufficient width for one left turn lane and one right turn lane. The outbound McDonalds driveway consists of one left turn lane and one shared through/right turn lane.

East Avenue forms a four-way signalized intersection with North Winton Road. The eastbound, westbound and southbound approaches consist of an exclusive left turn lane and two through lanes, with right turns made from the outside through lane. The northbound approach consists of an exclusive left turn lane, two through lanes, and an

exclusive right turn lane. The traffic signal includes green left turn arrow phases for all four approaches.

University Avenue

University Avenue in the vicinity of Probert Street consists of one variable-width traffic lane in each direction. The roadway widens to two 11-foot wide lanes in each direction about 200 feet east of Probert Street and continues to North Winton Road.

Probert Street intersects University Avenue directly opposite Joe Hue's Place. The intersection is unsignalized with stop signs for the Probert Street and Joe Hue's Place approaches.

University Avenue forms a four-way signalized intersection with North Winton Road. All four approaches consist of an exclusive left turn lane and two through lanes, with right turns made from the outside through lane. The traffic signal operation includes advance green left turn arrows for all four approaches.

Probert Street

Probert Street is a local street that extends for about 325 feet from East Avenue to University Avenue. Probert Street has a curb-to-curb width of 30 feet and consists of one traffic lane in each direction with parking permitted along the west curbline.

North Winton Road

North Winton Road between East Avenue and University Avenue consists of two 11-foot wide through lanes in each direction with exclusive left turn lanes on the respective approaches to East Avenue and University Avenue.

IV. ROADWAY ALIGNMENT AND SIGHT DISTANCES

All roadways surrounding the project site follow a nearly straight horizontal alignment. East Avenue, and Probert Street follow a near level vertical alignment; while North Winton Road drops approximately 14 feet in elevation from East Avenue to University Avenue and University Avenue drops approximately 10 feet from Probert Street to North Winton Road. All intersections in the study area form approximately 90-degree angles. The available sight distances from each of the proposed driveway locations are unrestricted. The available sight distances exceed the sight distance criteria utilized by the New York State Department of Transportation for both passenger cars and trucks.

V. EXISTING TRAFFIC VOLUMES

The Monroe County Department of Transportation (MCDOT) reported the following Average Daily Traffic (ADT) volumes on area roadways as listed below. On East Avenue west of Winton Road the ADT volumes have dropped between the years 2002 and 2006. Likewise, on Winton Road north of East Avenue the ADT volumes have dropped between the years 2001 to 2005.

Location	Year	AADT
East Avenue - West of Winton Road	2002	18,122
	2006	17,157
East Avenue – East of Winton Road	2001	8,765
University Avenue – East of Winton Road	2002	15,534
	2006	16,877
Winton Road – South of East Avenue	2001	16,661
Winton Road – North of East Avenue	2001	20,367
	2005	19,134

As a part of the TIS Update, FRA Engineering conducted manual turning movement counts at the following intersections in September 2009:

- East Avenue at Probert Street & McDonalds Driveway (non-Friday Weekday AM, Mid-Day, PM, Friday PM and Saturday Mid-day peaks)
- East Avenue at North Winton Road (Friday PM and Saturday Mid-day peaks)

The traffic counts were taken on a weekday morning other than Friday (7:00 AM to 9:00AM), a weekday mid-day other than Friday (12:00 PM to 1:00 PM), a weekday evening other than Friday (4:00 PM to 6:00 PM), a Friday evening (4:00 PM to 6:00 PM) and a Saturday mid-day (11:00 AM to 2:00 PM).

These counts were compared to the original 2004 counts to determine a growth factor. In comparison, volumes appeared to be generally consistent with the 2004 existing volumes. To determine the Existing 2009 volumes, a seasonal factor was applied to both the 2004 volumes and the 2009 volumes recently collected. A 15% growth factor was also applied to the East Avenue and Winton Road mainline volumes for the Weekday AM and Saturday Midday peak hours to determine current volumes. Wegmans driveway volumes were not seasonally factored as the current parking lot is operating at maximum capacity.

For the original TIS Report, FRA Engineering conducted manual turning movement counts at the following intersections in February 2004:

- East Avenue at Probert Street & McDonalds Driveway.

- East Avenue at Wegmans Driveway.
- East Avenue at Driveways to Adjacent Businesses (Country Club Diner, Eastside Gymnastics, Antique Shop).
- East Avenue at Winton Road.
- Probert Street at Wegmans Driveways.
- University Avenue at Probert Street and Joe Hue's Place.
- University Avenue at Wegmans Driveway.
- University Avenue at Driveways to Wegmans Employee Parking and Parking Garage.
- University Avenue at North Winton Road.

The original 2004 traffic counts were taken on a weekday morning (7:00 AM to 9:00 AM), a weekday afternoon other than Friday (4:00 PM to 6:00 PM), a Friday afternoon (4:00 PM to 6:00 PM) and a Saturday (11:00 AM to 2:00 PM). The traffic volumes recorded at each intersection during the peak hour periods are illustrated in **Figures 2 through 5**.

At the request of MCDOT, this study examined traffic conditions during the weekday morning, weekday afternoon, Friday afternoon, and Saturday mid-day peak hours.

VI. PROJECTION OF SITE-GENERATED TRAFFIC

The standard source of trip generation data is the Institute of Transportation Engineers' (ITE) Report Trip Generation, 8th Edition. However, the ITE Report does not provide sufficient trip data for large (80,000+ square foot) supermarkets. Consultants for Wegmans Food Markets have conducted trip generation studies at a large sample of Wegmans stores in New York State and Pennsylvania. Their studies have indicated that large Wegmans stores have different trip characteristics than smaller or mid-size stores.

If the average trip rates obtained at the large Wegmans stores were applied to the proposed 105,100 square foot store on East Avenue, the resulting traffic projections for the new store would be lower than the actual traffic volumes recorded at the existing 40,500 square foot store. This does not appear to be realistic.

Officials from Wegmans Food Markets anticipate a nominal increase in sales as a result of the new store footprint. For purposes of projecting traffic, it was estimated that the traffic generation of the new Wegmans store would be 35% higher than the existing store; which is conservative. Because of its urban location the trip rates for this store are skewed since many patrons frequent the store several times per week, often on their way home from work, versus completing one large shopping trip on the weekends, which is typical of other store locations. As a result, the calculated trip generation rate for the existing store is 2.85 times higher than that of the average Wegmans Food Market (including 15 or more stores greater than 90,000 SF in size).

The ITE category 'General Office Building' was used to project traffic for the proposed retail/office outparcel on the northwest corner of East Avenue and North Winton Road. This use was chosen to represent retail/office because it includes both office and retail uses,

and the size of the proposed building is comparable to the studies ITE used to determine the trip generation numbers. The gross square footage of the retail/office outparcel (4,700 SF) was used as the trip generation parameter.

The following table shows the actual trip generation of the existing Wegmans store, the projected increase in trips resulting from the new Wegmans store, and the trip generation for the proposed office/retail space:

Table 1 - Trip Generation Table

Description	Weekday AM Peak Hour			Weekday PM Peak Hour			Friday PM Peak Hour			Saturday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Number of Trips Generated by Existing Wegmans Store	211	166	377	388	393	781	371	410	7814	419	383	802
Projected Increase in Trips resulting from Expansion (35%)	74	58	132	136	138	274	130	144	274	147	134	281
Total Number of Trips for New Wegmans	285	224	509	524	531	1055	501	554	1055	566	517	1083
Projected Trips for Office/Retail Building	15	13	28	50	51	101	49	51	100	42	40	82

Some of the projected trips generated by the new Wegmans and office/retail are expected to be drawn from the existing traffic stream passing by the site. These vehicles, referred to as 'pass-by trips', represent intermediate stops at the site on the way to another trip destination. Studies conducted by Wegmans Food Markets indicate that pass-by trips account for an average of 32% of their traffic during the weekday afternoon peak hour and 19% during the Saturday peak hour. In addition to these rates used for analysis, a 32% pass-by rate was also used for the Friday PM peak hour and a conservative pass-by rate of 20% was used for the weekday morning peak hour.

Pass-by trip rates for the proposed office/retail were obtained from an ITE publication called the Trip Generation Handbook (2008). Based on the ITE studies, a 45% pass-by rate was used for the office/retail during the weekday PM and Friday peak hours. A conservative 20% pass-by rate was used for the weekday AM and Saturday peak hours.

The following table shows the projected trip generation for the Wegmans expansion and the office/retail parcel according to the number of pass-by trips and primary (new) trips:

Table 2 - Trip Generation Categorized by Trip Type

Land Use	Trip Type	Weekday AM Peak Hour			Weekday PM Peak Hour			Friday PM Peak Hour			Saturday Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Wegmans Expansion	Primary	61	45	106	92	94	186	86	100	186	120	107	227
	Pass-By	13	13	26	44	44	88	44	44	88	27	27	54
	TOTAL	**74**	**58**	**132**	**136**	**138**	**274**	**130**	**144**	**274**	**147**	**134**	**281**
Office/Retail	Primary	12	10	22	27	28	55	27	28	55	34	32	66
	Pass-By	3	3	6	23	23	46	22	23	46	8	8	16
	TOTAL	**15**	**13**	**28**	**50**	**51**	**101**	**49**	**51**	**100**	**42**	**40**	**82**

VII. TRIP DISTRIBUTION

The projected traffic for the new Wegmans store was distributed to the surrounding highway system by taking into consideration the existing Wegmans directional patterns and the surrounding residential and business concentrations. Wegmans officials expect that the future Wegmans directional patterns should be similar to the existing patterns, except that a somewhat higher percentage may be anticipated from the south via Winton Road. The estimated percentage distribution of the new Wegmans expansion and retail/office traffic on the highway system is shown in **Figures 6 and 7**. These percentages apply to the newly generated traffic and not pass-by traffic. The distribution of pass-by traffic was based on the directional proportions of existing traffic passing by the site driveways.

The projected traffic volume distribution of new (primary) trips for the Wegmans expansion and the office/retail parcel is shown for each of the peak hours in **Figures 8 through 11**. The traffic volumes in these figures do not include existing traffic or pass-by traffic. The estimated distribution of pass-by traffic is shown in **Figures 12 through 15**.

An additional consideration is the redistribution of existing Wegmans traffic to the new driveways. As noted earlier, the existing driveways to Probert Street will be eliminated and the driveways to East Avenue and University Avenue will be relocated. The redistributed existing traffic volumes are shown in **Figures 16 through 19**.

VIII. BACKGROUND AND COMBINED TRAFFIC

The anticipated opening of the new Wegmans store is expected to be Summer 2012. To account for expected growth in existing traffic over that time period, an annual growth rate of 0.5% was applied to the through traffic volumes in the study area. The growth rate was not applied to existing Wegmans traffic.

The resulting volumes were then added to the projected new and pass-by traffic distributions for the Wegmans store and the office/retail parcel. The total volumes, shown in **Figures 20 through 24**, represent anticipated traffic conditions after the new Wegmans and the office/retail development are completed. These volumes were used to evaluate the proposed site access plan and the potential impacts of the site-generated traffic.

MCDOT has determined that a signalized pedestrian crossing is warranted for the crossing located adjacent to the Harris Corporation Building. MCDOT will allow Wegmans to install a traffic signal at the parking lot driveway on University Avenue concurrent with the pedestrian crossing. Therefore, all future analysis assumes a traffic signal at the University Avenue driveway location.

IX. LEVEL OF SERVICE ANALYSIS

The critical locations for traffic operations are normally at the intersections of major streets or driveways. Each of the proposed Wegmans driveways were evaluated for Level of Service, lane requirements, and signal warrants. In addition, a capacity analysis was conducted for the following existing intersections to determine the impact of the site-generated traffic:

- East Avenue at Probert Street & McDonalds Driveway.
- East Avenue at North Winton Road.
- University Avenue at Probert Street.
- University Avenue at North Winton Road.

A capacity analysis was conducted for each intersection by using procedures set forth in the 2000 Highway Capacity Manual, published by the Transportation Research Board. The purpose of a capacity analysis is to determine the traffic 'Level of Service' for movements that may be stopped during normal intersection operation. The Highway Capacity Manual defines the intersection Level of Service in terms of average vehicle delays, ranging from 'A' for very short delays to 'F' for very long delays. Levels of Service of 'D' or higher are normally considered to be acceptable for the peak hour periods. The Level of Service definitions are shown in Appendix 'C'.

All intersections were analyzed by using the Synchro, version 7.0 (Build 761) computer modeling software. Geometric and traffic control data were based on the Synchro model utilized by the Monroe County Department of Transportation. The Synchro outputs are provided in Appendix 'D'.

The Levels of Service determined by the analysis are shown in the following table:

Table 3 – Level of Service Summaries

East Avenue Wegman's TIS (HCM Output)												
	Existing 2009				Projected 2012 - With Signal at East Ave/Probert				Projected 2012 - With Signal at East Ave/Wegman's Driveway			
	AM	PM	Fri PM	SAT	AM	PM	Fri PM	SAT	AM	PM	Fri PM	SAT
East Ave & Probert												
EB L	A (4)	B (16)	A (6)	A (4)	A (4)	A (4)	A (4)	A (4)	A (2)	A (1)	A (2)	A (1)
EB TT	A (2)	B (10)	A (4)	A (3)	A (2)	A (2)	A (2)	A (2)	-	-	-	-
WB T TR	A (10)	B (18)	B (11)	A (7)	A (6)	A (10)	A (9)	A (6)	-	-	-	-
NB L	C (23)	D (35)	C (20)	C (21)	C (23)	C (24)	C (23)	C (23)	D (28)	F (59)	D (27)	D (33)
NB TR	C (22)	C (34)	B (20)	C (20)	C (23)	C (23)	C (23)	C (23)	B (15)	C (21)	B (14)	B (15)
SB LTR	B (20)	C (33)	C (25)	C (20)	B (19)	C (21)	C (32)	C (23)	C (16)	C (17)	B (11)	B (11)
Overall	A (8)	B (18)	A (10)	A (8)	A (6)	A (8)	A (9)	A (6)		UNSIGNALIZED		
East Ave & N Winton Rd												
EB L	C (26)	C (24)	C (24)	C (25)	C (27)	C (22)	C (29)	C (26)	C (25)	B (20)	C (29)	C (28)
EB T TR	D (38)	D (48)	D (39)	D (39)	D (41)	D (49)	D (44)	D (43)	C (34)	D (42)	D (44)	D (42)
WB L	C (29)	C (28)	C (28)	C (28)	C (33)	C (28)	C (30)	C (28)	C (33)	C (28)	C (30)	C (28)
WB T TR	C (33)	C (33)	D (36)	D (36)	C (34)	C (33)	C (35)	D (37)	C (34)	C (33)	C (35)	D (37)
NB L	D (37)	C (25)	B (20)	B (16)	D (48)	C (30)	B (19)	B (17)	D (46)	C (31)	B (19)	B (17)
NB T T	C (26)	C (29)	C (26)	C (22)	C (25)	C (29)	C (25)	C (23)	C (24)	C (30)	C (25)	C (23)
NB R	C (22)	C (25)	C (22)	C (20)	C (21)	C (26)	C (21)	C (21)	B (20)	C (26)	C (21)	C (21)
SB L	B (11)	B (14)	A (8)	B (10)	B (12)	B (14)	A (8)	B (11)	B (12)	B (14)	A (8)	B (12)
SB T TR	C (37)	C (27)	B (16)	B (16)	C (34)	C (29)	B (17)	B (17)	C (35)	C (29)	B (17)	B (20)
Overall	C (33)	C (33)	C (26)	C (25)	C (34)	C (34)	C (27)	C (27)	C (32)	C (32)	C (27)	C (28)
University Ave & N. Winton Rd												
EB L	D (41)	C (33)	E (71)	C (30)	D (41)	C (34)	E (60)	C (31)	D (41)	D (35)	E (60)	C (31)
EB T TR	C (29)	C (34)	D (43)	C (27)	C (29)	C (35)	D (50)	C (28)	C (29)	C (35)	D (50)	C (28)
WB L	C (28)	D (41)	E (57)	C (28)	C (28)	D (42)	D (46)	C (28)	C (28)	D (42)	D (46)	C (28)
WB T TR	D (37)	C (29)	D (37)	C (27)	D (38)	C (30)	D (40)	C (27)	D (38)	C (30)	D (40)	C (27)
NB L	B (19)	B (18)	C (27)	C (23)	C (26)	B (18)	D (36)	B (20)	C (26)	B (16)	C (33)	C (25)
NB T TR	B (13)	C (24)	C (34)	C (22)	B (13)	C (24)	D (39)	C (24)	B (14)	C (22)	D (37)	C (22)
SB L	C (27)	D (40)	E (64)	C (31)	C (29)	D (40)	E (68)	C (32)	C (29)	D (41)	E (68)	C (32)
SB T TR	C (30)	C (29)	D (37)	C (28)	C (31)	C (29)	D (40)	C (29)	C (31)	C (29)	D (40)	C (29)
Overall	C (28)	C (30)	D (42)	C (26)	C (29)	C (31)	D (45)	C (28)	C (29)	C (30)	D (45)	C (27)
University Ave & Probert St												
EB TR	-	-	-	-	-	-	-	-	-	-	-	-
WB LT	A (1)	A (3)	A (2)	A (2)	A (1)	A (2)	A (2)	A (1)	A (1)	A (2)	A (2)	A (1)
NB LR	D (30)	E (36)	E (37)	C (19)	C (20)	C (20)	C (20)	C (15)	C (20)	C (20)	C (20)	C (15)
Overall		UNSIGNALIZED				UNSIGNALIZED				UNSIGNALIZED		
East Ave & Wegman's Driveway												
EB L	-	-	-	-	A (9)	A (1)	A (10)	A (10)	A (10)	B (10)	A (10)	A (8)
EB T TR	-	-	-	-	-	-	-	-	A (10)	A (10)	A (8)	A (8)
WB L	-	-	-	-	A (9)	A (9)	A (9)	A (9)	A (6)	A (9)	A (9)	A (9)
WB T TR	-	-	-	-	-	-	-	-	A (7)	A (10)	B (11)	A (10)
NB LTR	-	-	-	-	C (22)	F (83)	F (75)	F (69)	C (30)	C (32)	C (33)	C (31)
SB LTR	-	-	-	-	D (30)	F (575)	F (616)	F (445)	C (32)	D (50)	D (42)	D (51)
Overall	-	-	-	-		UNSIGNALIZED			B (11)	B (17)	C (27)	B (17)
University Ave & Wegman's Driveway												
EB TR	-	-	-	-	A (4)	A (7)	A (6)	A (5)	A (3)	A (7)	A (6)	A (5)
WB L	-	-	-	-	A (2)	A (3)	A (3)	A (3)	A (2)	A (3)	A (2)	A (7)
WB T	-	-	-	-	A (4)	A (2)	A (7)	A (2)	A (3)	A (3)	A (3)	A (6)
NB LR	-	-	-	-	C (23)	C (23)	C (23)	C (23)	C (23)	C (22)	C (22)	C (23)
Overall	-	-	-	-	A (5)	A (8)	A (9)	A (8)	A (5)	A (8)	A (7)	A (9)

Wegmans Driveway at East Avenue: A capacity analysis was conducted for the intersection of East Avenue and the new Wegmans driveway for both unsignalized and signalized control. The unsignalized analysis indicated that left turns from the new Wegmans driveway would operate at Level of Service 'F' during the weekday PM, Friday PM and Saturday peak hours. Delays to outbound left turns would be very long due to the relatively high outbound left turn volume, the amount of conflicting through traffic on East Avenue, and the significant number of left turns from East Avenue into the driveway. The left turns from East Avenue receive gap priority and utilize many of the available gaps in the East Avenue traffic stream.

A signalized capacity analysis indicates that all movements at the intersection would operate at acceptable Levels of Service with a three-phase traffic signal. Signal faces and vehicle detection should be provided for the new Wegmans driveway as well as the opposing Country Club Diner driveway. The Wegmans driveway will operate acceptably with one inbound lane and one outbound lane; however, two exiting lanes (one exclusive right-turn and one shared left-through) would reduce onsite queue lengths (see Section X – Signal Warrant Analysis).

Probert Street at East Avenue: A capacity analysis was conducted for the intersection of East Avenue and Probert Street based on a stop sign control on the Probert Street approach. The analysis for projected traffic indicates that the stop sign-controlled Probert Street approach would operate at acceptable Levels of Service during all peak hours. However, left turns from the McDonalds driveway opposite Probert Street would operate at deficient Levels of Service during the weekday PM peak hour without the existing signal. The left turn volume from the McDonalds driveway is very low at only 17 and 19 vehicles during the weekday PM and Friday PM peak hours, respectively. The delays to driveway traffic would stem from the relatively heavy through traffic volume on East Avenue and not from the minor left turn volume on the driveway. Traffic from Probert Street and from the McDonalds driveway will benefit from gaps in the East Avenue traffic stream created by the new signal at the Wegmans driveway. The analysis indicates that there will be more than sufficient gaps in the traffic stream to accommodate the outbound traffic (see Section XI – Gap Analysis). Also, under the future conditions, there would be fewer vehicles turning from Probert Street onto East Avenue, thus reducing the competition for utilizing the gaps in the East Avenue traffic flow.

A queuing analysis was conducted to determine whether eastbound queues on East Avenue would extend from the new Wegmans traffic signal into the Probert Street intersection. The Synchro analysis indicates that during the weekday PM peak hour and the Saturday midday peak hour the 95th-percentile queue length on East Avenue would be 163 feet and 165 feet respectively. This is greater than the 150-foot distance between the new Wegmans driveway and Probert Street. However, the periodic queues on East Avenue are not expected to extend to the Probert Street intersection during the other peak hour periods studied.

The Synchro analysis for all other intersections in the study area indicated acceptable Levels of Service for both existing and projected conditions with the following exceptions:

University Avenue at North Winton Road: The analysis of this intersection for existing conditions indicated Level of Service 'E' for the eastbound left turn movement, the westbound left turn movement, and the westbound left turn movement during the Friday PM peak hour only. The impact of the site-generated traffic on this condition is projected to be minor. The Level of Service for eastbound left turns and southbound left turns will remain at 'E', and the westbound left turns can be improved to LOS 'D' with signal timing adjustments.

University Avenue at Probert Street: The analysis of this intersection for existing conditions indicated LOS 'E' for the northbound approach during the weekday PM and Friday PM peak hours. The shift in traffic caused by the closure of the Probert Street driveways will decrease the traffic at this intersection and improve the movement to LOS 'C'.

Overall, the impact of the new Wegmans and office/retail development traffic is expected to be minor at all locations away from the site entrances. The new site traffic pattern will be dispersed more uniformly due to traffic signals at both driveways (University Avenue & East Avenue), thereby minimizing the impacts at any one location.

X. SIGNAL WARRANT ANALYSIS

The new Wegmans driveway to East Avenue will be located about 150 feet east of Probert Street. Wegmans is seeking the removal of the existing traffic signal at the intersection of East Avenue and Probert Street and the installation of a new traffic signal at the intersection of East Avenue and the Wegmans driveway. A traffic signal warrant analysis was conducted for each of these intersections to determine whether the existing and projected traffic volumes meet the signal warrants set forth in the New York State Manual of Uniform Traffic Control Devices (MUTCD). The following warrants were applied:

Warrant #1A– Minimum Vehicular Volume (Eight-Hour Vehicular Volume Warrant):
The 'Minimum Vehicular Volume, Condition A' warrant is satisfied where the volume of intersecting traffic is the principal reason for consideration of signal installation. The warrant is satisfied when the minimum volumes specified in the MUTCD are met or exceeded for each of any eight hours of an average day. **This warrant was met for 8 hours of an average day at the intersection of East Avenue and Wegmans driveway. It was not met for the intersection of East Avenue and Probert Street during existing or proposed conditions.**

Warrant #1B – Interruption of Continuous Traffic (Eight-Hour Vehicular Volume Warrant):
The 'Interruption of Continuous Traffic, Condition B' warrant is satisfied where the volume of the major street traffic is so heavy that the traffic on the intersecting minor street suffers excessive delay or conflict in entering or crossing the major roadway. The warrant is satisfied when the minimum volumes specified in the MUTCD are met or exceeded for each of any eight hours of an average day. **This warrant was met for 8 hours of an average day at the intersection of East Avenue and Wegmans driveway. It was not met for the intersection of East Avenue and Probert Street during existing or proposed conditions.**

The 'Combination of Conditions A & B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied, but where at least 80 percent of the stated volume values in both warrants 1A and 1B are met. **This warrant was not applicable for the intersection of East Avenue and Wegmans Driveway; however, it was met for the intersection of East Avenue and Probert Street for existing conditions only.**

Warrant #2 – Four-Hour Volume Warrant:
The 'Four Hour Volume' warrant is satisfied when the plotted points representing the vehicles per hour on the major street and the corresponding vehicles per hour on the higher volume minor street lie above the curves shown in the MUTCD for any four hours of an average day. **This warrant was met for four hours of an average day at the intersection of East Avenue and Wegmans driveway. It was not met for the intersection of East Avenue and Probert Street during the existing or future scenarios.**

Warrant #3 - Peak Hour Volume Warrant:
The 'Peak Hour Volume' warrant is satisfied when the plotted points representing the vehicles per hour on the major street and the corresponding vehicles per hour on the higher volume minor street lie above the curves shown in the MUTCD for any single hour of an average day. **This warrant was met for a single hour of an average day at the intersection of East Avenue and Wegmans driveway. It was not met for the intersection of East Avenue and Probert Street during the proposed scenarios, however the warrant was met for the existing conditions.**

The signal warrant analysis is shown in **Appendix 'E'**. The existing traffic volumes at the intersection of East Avenue and Probert Street meet only the 'Combination of Warrant 1A & 1B' and 'Peak Hour Volume' warrants. The projected traffic volumes at this intersection would not meet any of the signal warrants. The elimination of Wegmans access to Probert Street will result in a significant reduction in traffic volume on Probert Street. Therefore, the existing traffic signal at the intersection of East Avenue and Probert Street would no longer be warranted.

The signal warrant analysis for the intersection of East Avenue and the new Wegmans driveway indicated that the projected traffic volumes would meet the 'Eight Hour Volume', 'Four Hour Volume' and 'Peak Hour Volume'. It is expected that about half of the outbound driveway traffic will turn left and half will turn right. Therefore, a traffic signal will be warranted at the new Wegmans driveway on East Avenue.

MCDOT has determined that a signalized pedestrian crossing is warranted for the crossing located adjacent to the Harris Corporation Building. MCDOT will allow Wegmans to install a traffic signal at the parking lot driveway on University Avenue concurrent with the pedestrian crossing. Therefore, all future analysis includes a signalized driveway on University Avenue.

XI. GAP ANALYSIS

A gap analysis was conducted on East Avenue between N. Winton Road and the existing Wegmans entrance on East Avenue, on October 15, 2009. Two studies were conducted, one during an off-peak hour between 2:30pm – 3:30pm and one during the weekday evening peak hour between 4:45pm – 5:45pm. The results of the gap study are shown in **Appendix 'H'**.

The Highway Capacity Manual indicates that there is a 7.0 second minimum gap required for one vehicle to turn left onto a four-lane major road from a minor street or driveway. Any subsequent vehicle attempting to gain access using the same gap requires an additional 3.4 seconds.

There were opportunities for 58 vehicles to obtain left-turn access to East Avenue during the weekday evening peak hour, according to the gap study. For the off-peak, there were opportunities for approximately 100 vehicles to obtain left-turn access to East Avenue.

Given that the exiting volume at the proposed Wegmans driveway onto East Avenue for the weekday evening peak is 298 vehicles, there will not be sufficient gaps for these exiting vehicles. The installation of a traffic signal would allow for these vehicles to exit the site.

There will be 460 opportunities for the 144 right-turning vehicles exiting Wegmans parking lot without a traffic signal, which is acceptable. The McDonald's 36 right-turning vehicles will have opportunities for 415 vehicles to exit, without a traffic signal, which is also acceptable.

XII. ACCIDENT HISTORY

An accident study was performed by FRA Engineering in the "Wegmans Food Market & Bank" East Avenue TIS dated June 2004. The study analyzed the three-year period from January 1, 2001 through December 31, 2003 between 1701 East Avenue (McDonald's Restaurant) and 1844 East Avenue (Wendy's Restaurant). A total of 86 accidents were reported within the study area including the intersections of Probert Street and Winton Road. The intersection of East Avenue/Probert Street exceeded the Countywide Accident Rate (17 accidents) as well as the midblock area between Probert Street. Therefore, these two locations were re-investigated as a part of this study. Winton Road at East Avenue (36 accidents) was below the Countywide accident rate and was not further analyzed. Refer to **Appendix 'I'** for the previous accident analysis.

Available accident data for the 2006 revision reported on a three-year period from March 1, 2003 through February 28, 2006 and was obtained through the City of Rochester Police Department for the study area between 1701 East Avenue (McDonald's Restaurant) and Winton Road including the Probert Street intersection. During this three-year period, a total of 6 accidents occurred at the Probert Street intersection, 8 accidents occurred west of Probert Street, and 19 accidents occurred along East Avenue between Probert Street and Winton Road. Refer to **Appendix 'I'** for the previous accident analysis.

An update of the accident analysis for this 2009 revision reports on a three-year period from July 1, 2006 through June 30, 2009 and was obtained through the City of Rochester Police Department for the study area between 1701 East Avenue (McDonald's Restaurant) and Winton Road including the Probert Street intersection. During this three-year period, a total of 7 accidents occurred at the Probert Street intersection, 5 accidents occurred west of Probert Street, 26 accidents occurred along East Avenue between Probert Street and Winton Road, and 19 accidents occurred at the N. Winton Road intersection. Refer to **Appendix 'I'** for the current accident analysis.

Table 4 summarizes the number and types of accidents that occurred within the project limits during the most recent three-year study period.

Table 4
Type of Accident by Year

Location	Period	Fatality	Injury	Property Damage Only
	7/1/2006 – 6/30/2007			
East Avenue/Probert St.		0	0	2
Midblock *(West of Probert St)*		0	0	2
Midblock *(Probert St. to Winton Road)*		*0*	*1*	*8*
East Avenue/N. Winton Road		*0*	*3*	*4*
SUBTOTAL:		***0***	***4***	***16***
	7/1/2007 – 6/30/2008			
East Avenue/Probert St.		0	0	3
Midblock *(West of Probert St)*		0	1	1
Midblock *(Probert St. to Winton Road)*		*0*	*0*	*7*
East Avenue/N. Winton Road		*0*	*0*	*2*
SUBTOTAL:		***0***	***1***	***13***
	7/1/2008 – 6/30/2009			
East Avenue/Probert St.		0	0	2
Midblock *(West of Probert St)*		0	0	1
Midblock *(Probert St. to Winton Road)*		*0*	*1*	*7*
East Avenue/N. Winton Road		*0*	*2*	*6*
SUBTOTAL:		***0***	***3***	***16***
TOTAL:		**0**	**8**	**45**
		0%	*15%*	*85%*

As provided in the table above, which summarizes the reportable accidents that occurred within the corridor, 15 percent (8 out of 53) of the accidents resulted in injury, and 85 percent (45 out of 53) of the accidents resulted in property damage only. No fatalities were reported.

Accident rates were calculated for the intersection of East Avenue at Probert Street and the midblock area between Probert Street and Winton Road). The average accident rates were calculated and compared to the countywide rates as well as the previous study rates. A summary is provided in **Table 5**.

Table 5

Accident Rate Summary

Location	2009 Study Calculated Rate	2006 Study Calculated Rate	2004 Study Calculated Rate	Countywide Average Rate
Intersection of East Avenue/Probert Street				
	0.37 acc/mev*	0.28 acc/mev	0.69 acc/mev*	0.35 acc/mev
Midblock (Probert Street to N. Winton Road)				
	7.28 acc/mvm*	5.24 acc/mvm*	10.49 acc/mvm*	3.81 acc/mvm

Note: Accidents per million entering vehicles (acc/mev)
Accidents per million vehicle miles (acc/mvm)
* Exceeds Countywide Average Rate

The East Avenue/Probert Street intersection and midblock section (between Probert Street to Winton Road) well exceeded the countywide average rate the 2004 accident study from January 1, 2001 through December 31. The 2006 data indicates the East Avenue/Probert Street intersection was below the average rate and the midblock section rate had been significantly reduced but still above the Countywide accident rate. The most recent 2009 data indicates the East Avenue/Probert Street intersection is slightly higher than the countywide average rate and the midblock section rate is still less than the 2004 study, however still significantly higher than the countywide average rate. Accident summary sheets and a Collision diagrams are provided in **Appendix 'I'**.

East Avenue/Probert Street

There were a total of 7 accidents that occurred during the three year time period studied at the intersection of East Avenue and Probert Street. The accidents were 4 Rear End accidents, 1 Overtaking accident, 1 Left Turn accident, and 1 Right Turn accident.

Of the 7 accidents there was no clear pattern or problems identified. Three of the Rear End accidents occurred in the westbound direction with vehicles stopped for the red light.

Midblock Between Winton Road and Probert Street

There were a total of 24 accidents that occurred during the three-year time period studied for this midblock. A majority of the accidents occurred during the day, under good weather conditions and dry pavement conditions. Of the 24 accidents, there were 9 Left-Turn

accidents, 7 were Right-Angle accidents, 4 Overtaking accidents, 2 Rear End accidents, 1 Head-On accident, and a single accident involving a bicycle.

Further investigation revealed 8 of the 16 left-turn and right-angle accidents involved vehicles making a left-turn into the path of an oncoming vehicle indicating they thought the travel way was clear and their view was obstructed. Right-angle accidents often occur when a vehicle is attempting to make a left-turn out of a driveway in traffic. Five of the left-turn and right-angle accidents occurred at the Wegmans driveway. This can be mitigated with the installation of a traffic signal at the proposed Wegmans driveway.

Of the 4 Overtaking accidents, 2 were vehicles gaining access to exclusive turn lanes while operators were not paying attention. There was no other clear pattern or problems identified.

At the driveway location of the former M&T Bank, the history of accidents show no pattern of issues involving entering and exiting of the driveway. Given that the proposed retail/office space at this location will generate less trips than the former use, there is no need for turning movement restrictions at this driveway.

Midblock West of Probert Street
There were a total of 5 accidents at this midblock location. One accident was a Left-Turn accident into the McDonald's property, one was a Rear-End accident in the westbound direction, one was a Right-Angle accident, one was an Overtaking accident, and the remaining accident was a Side-swipe collision between a bus and a vehicle that were both attempting to occupy the center turn lane. There were no clear patterns or problems identified.

XIII. PEDESTRIAN AND RTS BUS CONSIDERATIONS

As part of the original 2004 Traffic Impact Study observations regarding pedestrian volumes, travel patterns, and interactions with motor vehicles and RTS buses were conducted.

RTS Bus Considerations – *This section is as written in the original 2004 TIS Report. Necessary updates are written in italics at the bottom of each section.*

Within the proximity of the site there are three RTS bus stop locations; one is located just east (approximately 100-feet) of the Probert Street and University Avenue intersection on the south side of University Avenue. A second bus stop is located on the west side of North Winton Road, approximately 50-feet south of the North Winton Road and University Avenue intersection; and a third bus stop is located on the north side of East Avenue, approximately 100-feet east of the existing Wegmans access drive.

The following table summarizes the posted Bus routes, bus schedules, and travel patterns for the five bus routes in the vicinity of the Wegmans Food Market site.

Table 6 – Bus Routes

Bus Route	Schedule	Travel Pattern
1 - Park	Approx. 20 min (b/w 5:24 AM and 5:57 PM)	East on East Avenue to Probert Street, Probert Street to N. Winton Road, N. Winton Road to East Avenue
17 – East	Approx. 30 Min	Bus operates along East Avenue (both directions) in front of Wegmans Food Market.
18 – University 19 – Plymouth (operate as same route)	Approx. 20 Min (b/w 5:25 AM and 5:21 PM)	Bus operates along University Avenue and N. Winton Road (both directions).
21 – Fairport	Approx. 2.0 Hrs	Bus operates along East Avenue (both directions) in front of Wegmans Food Market.
22 – Penfield	Approx. 30 Min – 1.5 Hrs.	Bus travels south along N. Winton Road to East Avenue and then west on East Avenue.

As presented in the table above, buses travel in the vicinity of the site on a regular basis throughout the course of the average weekday. Currently there no concerns with the East Avenue bus stop location or the North Winton Road bus stop location, however there has been concern expressed by MCDOT in the past regarding the bus stop at the southeast corner of University Avenue and Probert Street.

University Avenue Bus Stop: MCDOT conducted a field investigation in early 2002, related to pedestrian safety, at this location in response to a request by Harris Corporation, which was located on the north side of University Avenue between North Winton Road and Probert Street. In their review of potential pedestrian conflicts at this location, MCDOT staff noted that buses stopped at this location had a tendency to "block the visibility of the pedestrian crossing sign for eastbound traffic and create a sight distance restriction for pedestrians crossing University Avenue from the south side to the north side".

To address this concern MCDOT requested that RTS discontinue the practice of allowing buses to layover at this bus stop, which significantly reduces the amount of time a bus is stopped at this location and thus reduces the potential for visibility constraints on motorists traveling eastbound on University Avenue. RTS has since complied with this request and currently allows vehicles to layover on East Avenue at the East Avenue bus stop location, where there are far fewer issues with visibility because of the midblock location.

There were still concerns with the bus stop location along University Avenue, primarily because of the proximity to the Probert Street intersection and the lack of a clear pull-off and loading/unloading area.

To address this concern, we recommended relocating this bus stop further east, approximately even with the front of the Wegmans Food Market building and creating a well-defined bus stop for clearer delineation for pedestrians and motorists.

As of October 2009, according to a site visit and verified by RGRTA, there is no longer a bus stop on University Avenue near the Wegmans site. Therefore there is no further concern with buses along University Avenue.

North Winton Road Bus Stop: This bus stop is located approximately 50-feet north of the North Winton Road and University Avenue intersection on the west side of the street. This bus stop is projected to operate at the same location and in the same manner as it does today. Therefore, no recommendations are provided for this location.

East Avenue Bus Stop: This bus stop is located on the north side of East Avenue, approximately 100-feet east of the Wegmans driveway onto East Avenue. This is perhaps the busiest of the three bus stops and quite frequently serves as a layover point for buses headed in the westbound direction. While there are no concerns with this location with the current Wegmans Food Market, there is potential for conflict with the development of the proposed Wegmans Food Market.

The new Wegmans Food Market is proposing a second floor eatery, which will likely have a balcony with "open-air" seating overlooking East Avenue. The noise and fumes associated with buses laying over at this location would not be desirable or accommodating for Wegmans patrons utilizing the eatery. In response to this concern, we have contacted RTS to discuss the possibility of relocating the bus stop further west on East Avenue. RTS personnel was understanding and was agreeable to visiting the East Avenue location to identify a better location for the bus stop.

It is recommended that Wegmans contact RTS once approval of the project is apparent in order to facilitate the relocation of the bus stop.

Pedestrian Considerations

Due to the urban location, proximity to bus stops and major employers, such as Harris Corporation, there is a higher than normal volume of pedestrian traffic at this location. A majority of the pedestrian volumes are located along East Avenue and are traveling to and from the bus stop on East Avenue and between the bus stop and the Wegmans Food Market. See **Figures 24 – 27** for pedestrian counts conducted in 2004 during each of the four peak hours investigated.

Despite the fact that the majority of the pedestrian volumes are located on East Avenue there have been no concerns expressed regarding the volumes or potential for conflicts with motor vehicles. However, concerns have been identified along University Avenue, specifically related to pedestrians crossing the street between the Wegmans Food Market site and Harris Corporation.

There is an Audible Pedestrian Signal at the crossing of the west leg of the intersection of East Avenue and Probert Street. If the signal is relocated, the audible device must also be relocated.

As indicated previously, MCDOT conducted a field investigation into these concerns and provided the following five specific recommendations (See complete letter and findings in **Appendix 'F'**):

- Stripe a white edgeline as described in the MCDOT discussion.
- Remove the crosswalk on the west leg of the intersection of University Avenue and Probert Street.
- Restripe the remaining three crosswalks for use by Harris employers with "ladder" type cross hatching.
- Recommend to RTS that they discontinue using the bus stop just west of Wegmans easterly driveway on the south side of University Avenue as a layover point.
- Notify the City Engineer of the need for wheelchair ramps at the crosswalk just west of Probert Street.

Of these five recommendations, all appear to have been implemented as recommended.

As of October 2009, MCDOT has determined that a signal is warranted for pedestrian crossing of University Avenue, as there is a high pedestrian volume from Harris Corporation to Wegmans. The county has agreed to work with Wegmans to place the signal at the proposed Wegmans Driveway on University Avenue.

Additionally, the proposed Wegmans Food Market development will be making pedestrian-friendly improvements to the entire site and adjacent rights-of-way including the following:

- Installing new sidewalks along the east side of Probert Street,
- Providing new sidewalks along all four streets immediately adjacent to the proposed development,
- Providing a combination of streetscape and hardscape amenities along all for streets, immediately adjacent to the proposed development, and
- Relocating the driveways on East Avenue and University Avenue further from the Wegmans Food Market entrance, in order to reduce the likelihood of vehicle/pedestrian conflicts.

XIV. SUMMARY AND CONCLUSIONS

The following is a summary of recommendations to mitigate the anticipated traffic from the proposed development:

- Relocate the existing Wegmans driveways on East Avenue and University Avenue as shown in the site plan. Eliminate all access to Probert Street; reducing the overall number of curb cuts from 10 full access points to 3 full-access driveways and 3 limited-access driveways.
- Install a three-phase traffic signal at the intersection of East Avenue and the Wegmans driveway.
- Remove the existing traffic signal at the intersection of East Avenue and Probert Street.
- Install a westbound left-turn lane into the Wegmans Food Market site on University Avenue.

- Providing streetscape improvements and pedestrian accommodations along East Avenue, Probert Street, University Avenue and North Winton Road; including textured/painted crosswalks at all intersections and driveway locations within the vicinity of the project site.

Although the proposed Wegmans Driveway on East Avenue would warrant a traffic signal and the anticipated volumes would be substantially greater than the traffic at the Probert Street/McDonald's 'EXIT' Drive on East Avenue, for the future condition, relocation of the traffic signal would need to be discussed with the City of Rochester, MCDOT, and McDonalds.

Relocating the existing traffic signal would shift the existing East Avenue eastbound queue to the new signal and allow for better access into the McDonalds entrance driveway. The gap analysis indicated that with the relocation of the traffic signal, gaps would be available a majority of the time for traffic exiting the McDonalds driveway. However, during the times of peak traffic volumes on East Avenue, the exiting traffic may not have adequate gaps. If possible, cross access for the McDonalds site to the adjacent property to the east should be a consideration in the discussion with the City of Rochester, MCDOT and McDonalds to have indirect access to the relocated traffic signal.

REFERENCES

1. American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Washington, D.C., 2001.

2. Federal Highway Administration, Highway Capacity Manual, Special Report 209, Washington, D.C., 2000.

3. Trafficware, SYNCHRO, Version 7, Build 761, Albany, California, 2007.

4. Institute of Transportation Engineers, Trip Generation, 8th Edition, Washington, D.C., 2008.

5. New York State Department of Transportation, 2001 Highway Sufficiency Ratings, Albany, New York, 2001.

6. Monroe County Department of Transportation, 2008 Traffic Volume Report.

7. Sear Brown, "Wegmans Food Markets, Inc. Trip Generation Patterns and Travel Characteristics", January 30, 1998.

Appendix A

Site Plan


Probert Street
Existing Wegmans Store
East Avenue
University Avenue
Proposed Building Location
North Winton Road
F|R|A
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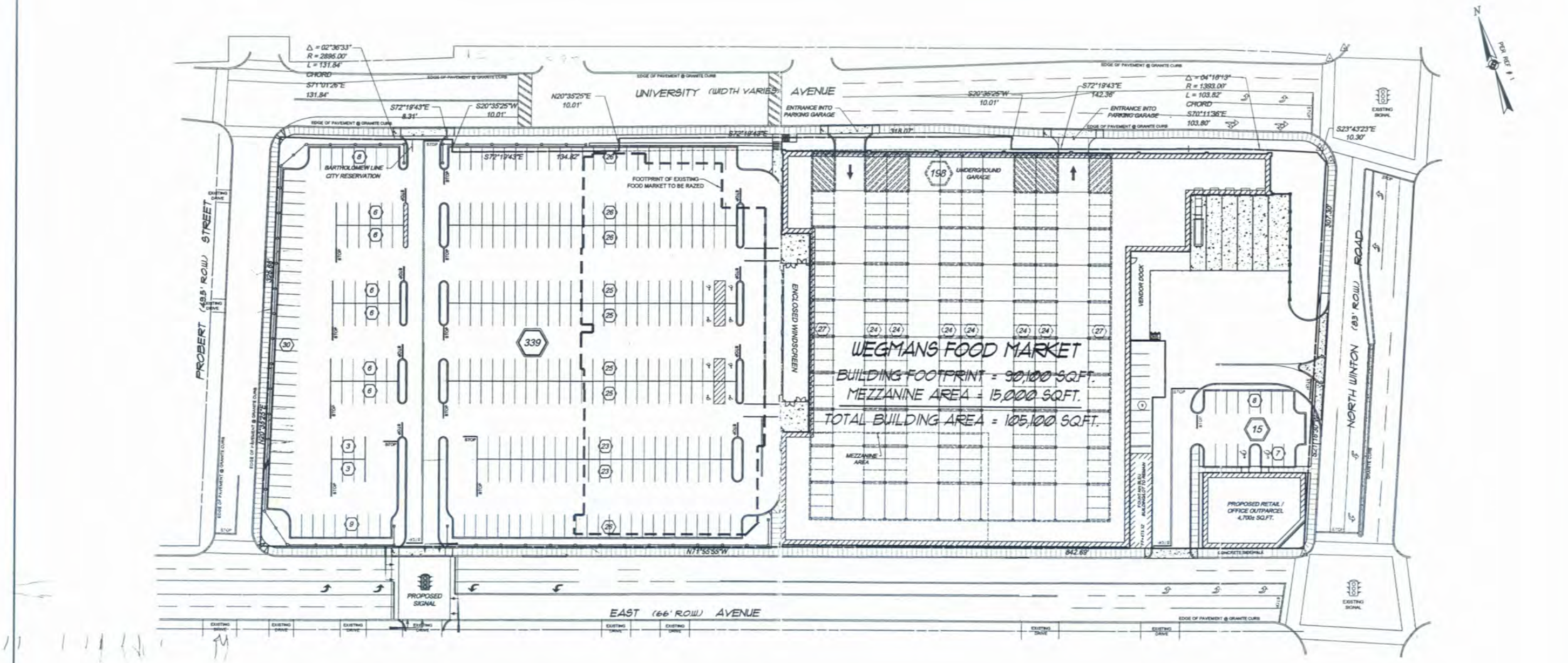


GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

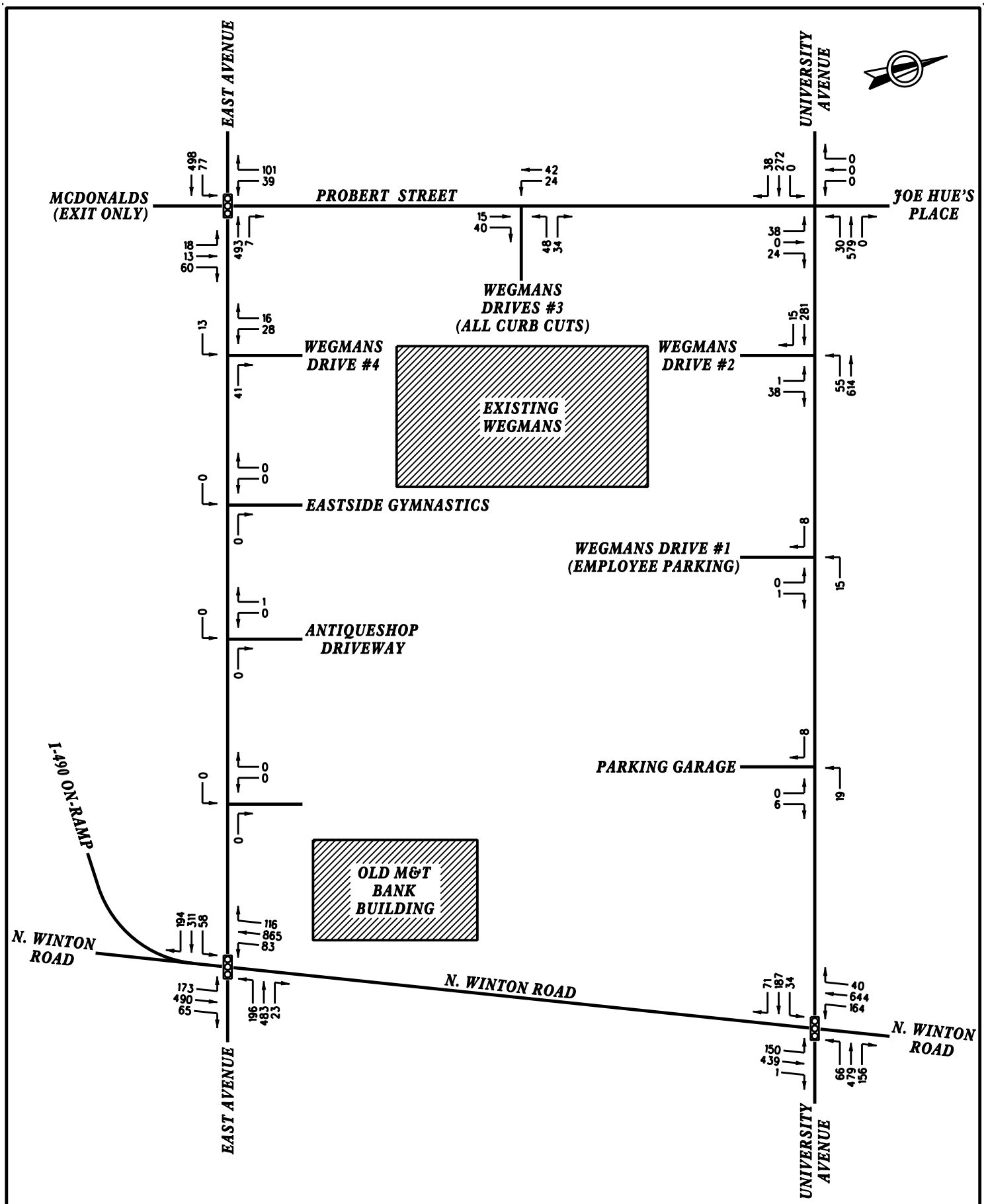
WEGMANS FOOD MARKET
EAST AVENUE

SCHEMATIC SITE LAYOUT "C"

DATED: 7/01/09 CE#2781-PH7

Appendix B

Traffic Volume Figures



LEGEND

XX - WEEKDAY MORNING PEAK HOUR VOLUME

F|R|A

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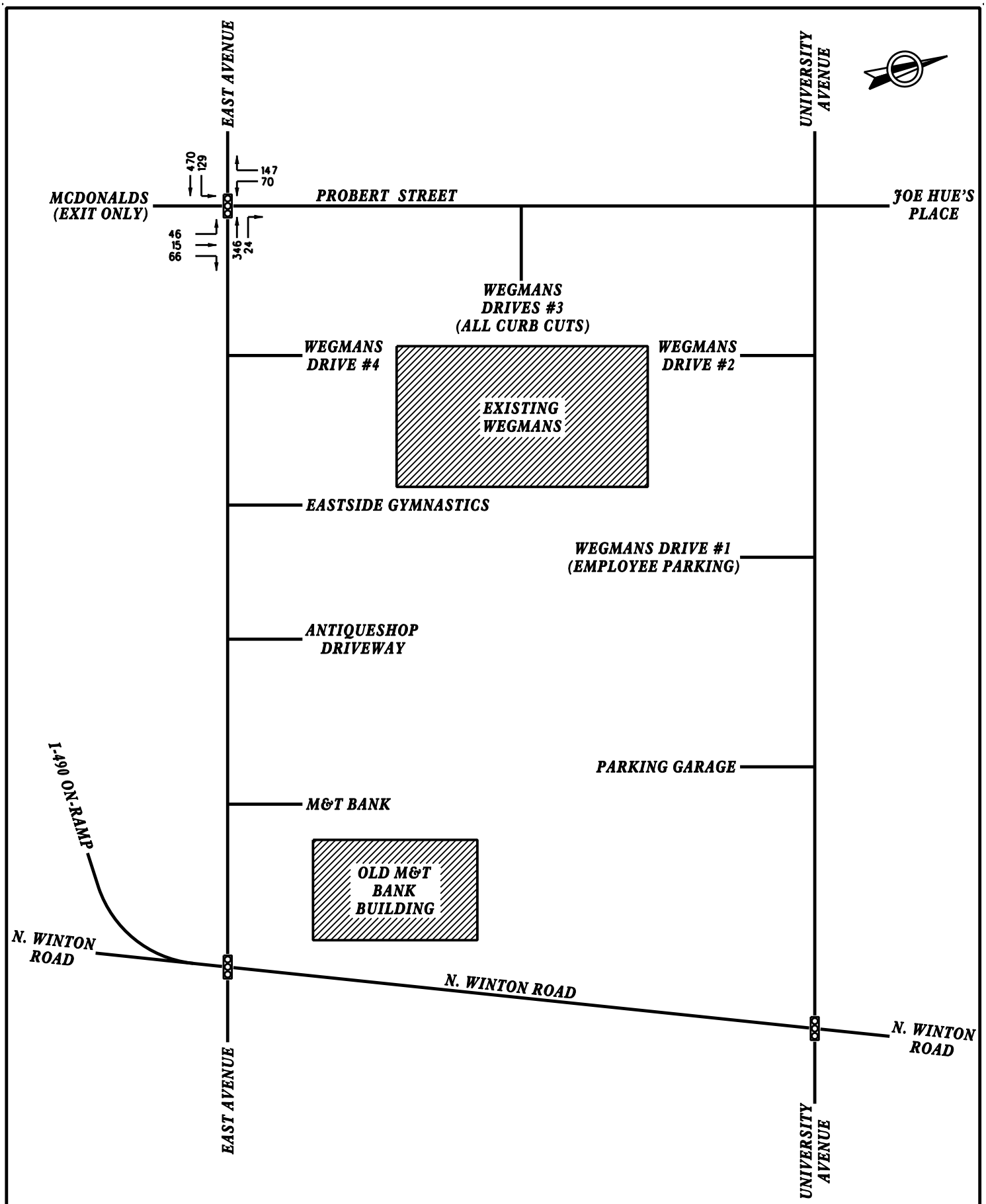
FIGURE 1

EXISTING TRAFFIC VOLUMES (2009)
WEEKDAY MORNING PEAK HOUR
7:45 AM - 8:45 AM



LEGEND

XX - WEEKDAY MIDDAY VOLUME

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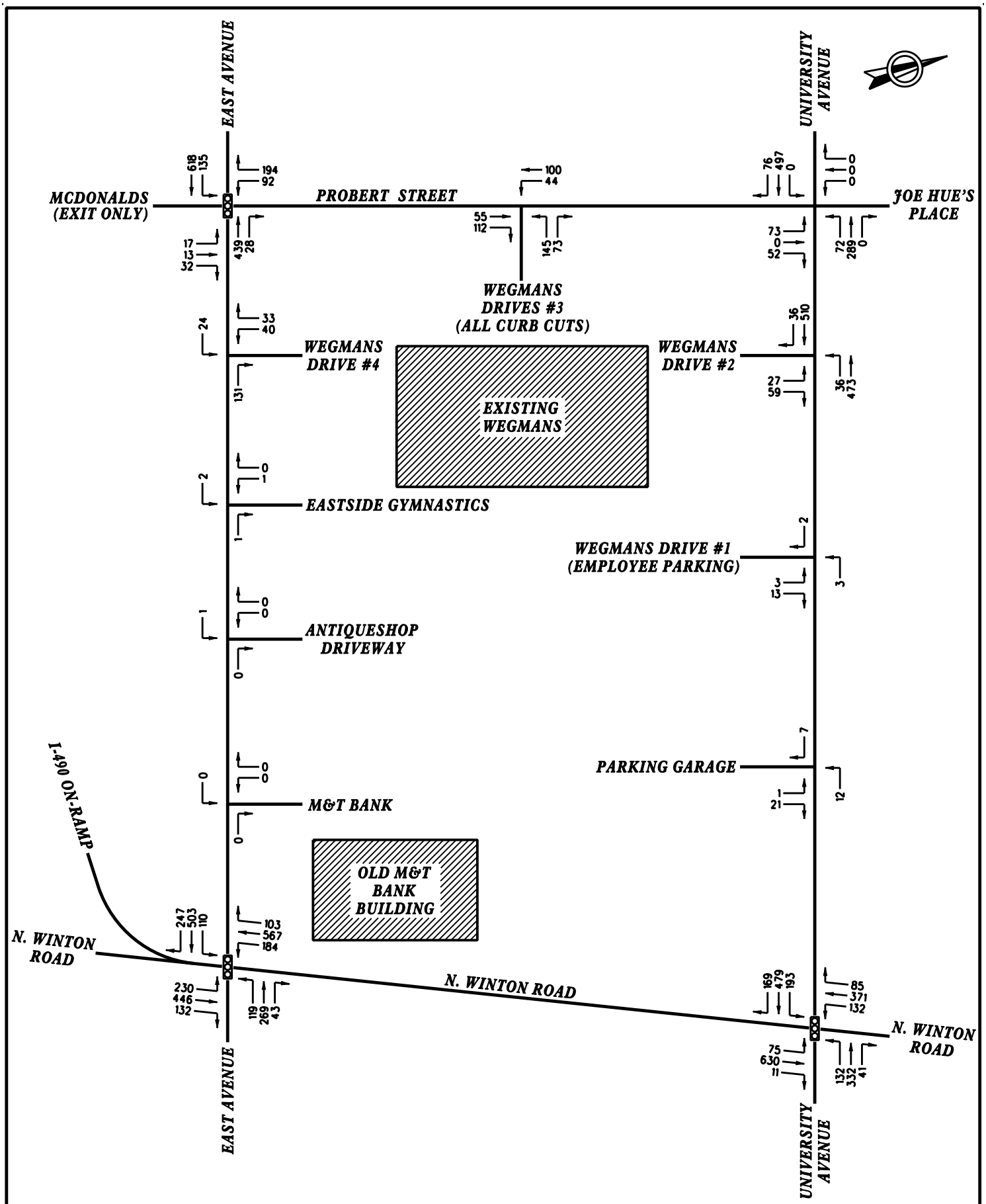
FIGURE 2

EXISTING TRAFFIC VOLUMES (2009)
WEEKDAY MIDDAY PEAK HOUR
12:00 PM - 1:00 PM



LEGEND

XX - WEEKDAY EVENING PEAK HOUR VOLUME

F|R|A

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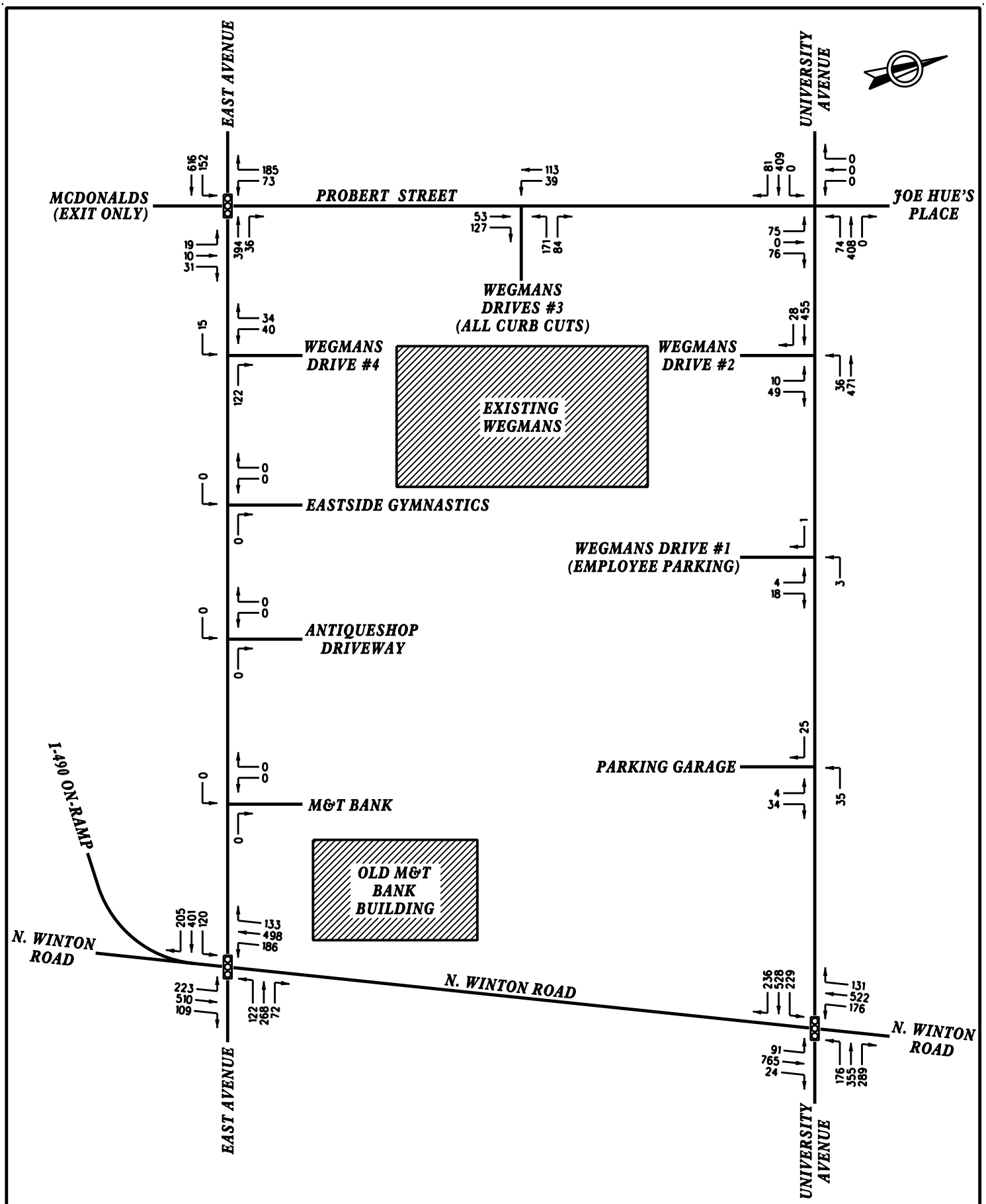
FIGURE 3

EXISTING TRAFFIC VOLUMES (2009)
WEEKDAY EVENING PEAK HOUR
5:00 PM - 6:00 PM



LEGEND

XX - FRIDAY EVENING PEAK HOUR VOLUME

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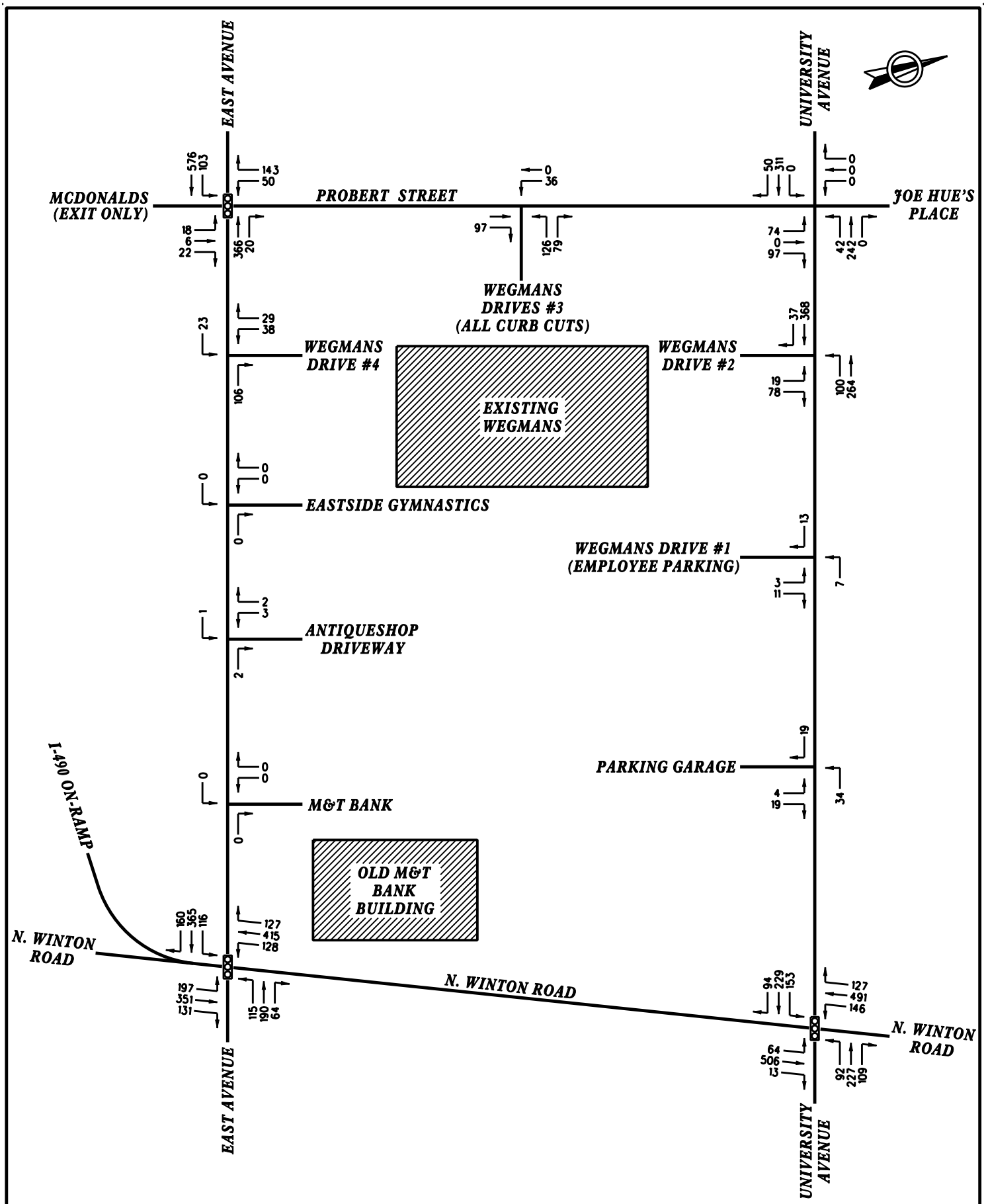
FIGURE 4

EXISTING TRAFFIC VOLUMES (2009)
FRIDAY EVENING PEAK HOUR
4:45 PM - 5:45 PM



LEGEND

XX - SATURDAY MIDDAY PEAK HOUR VOLUME

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FIGURE 5

EXISTING TRAFFIC VOLUMES (2009)
SATURDAY MIDDAY PEAK HOUR
12:00 PM - 1:00 PM

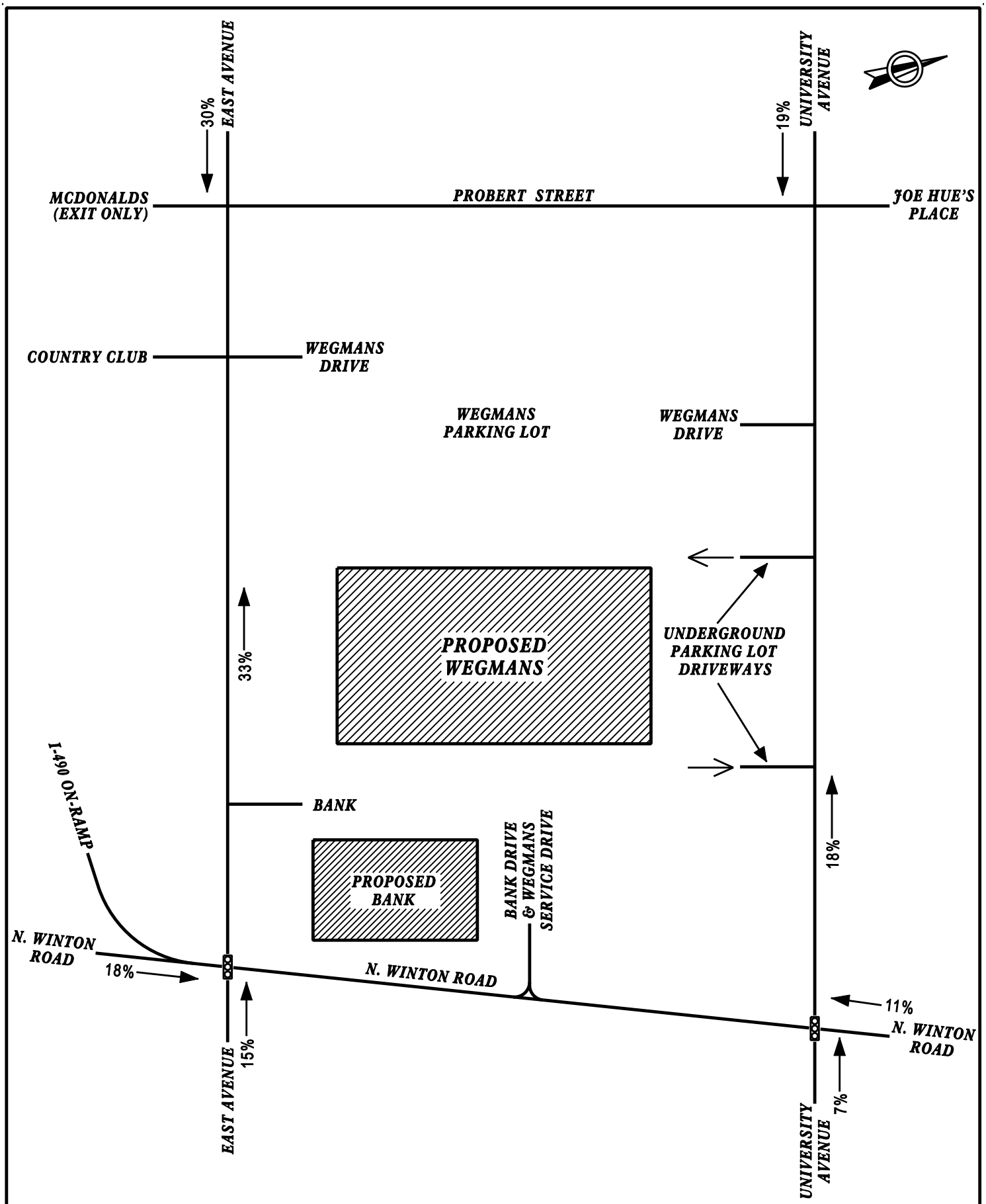

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FIGURE 6

PROJECTED PERCENTAGE DISTRIBUTION OF WEGMANS EXPANSION TRAFFIC

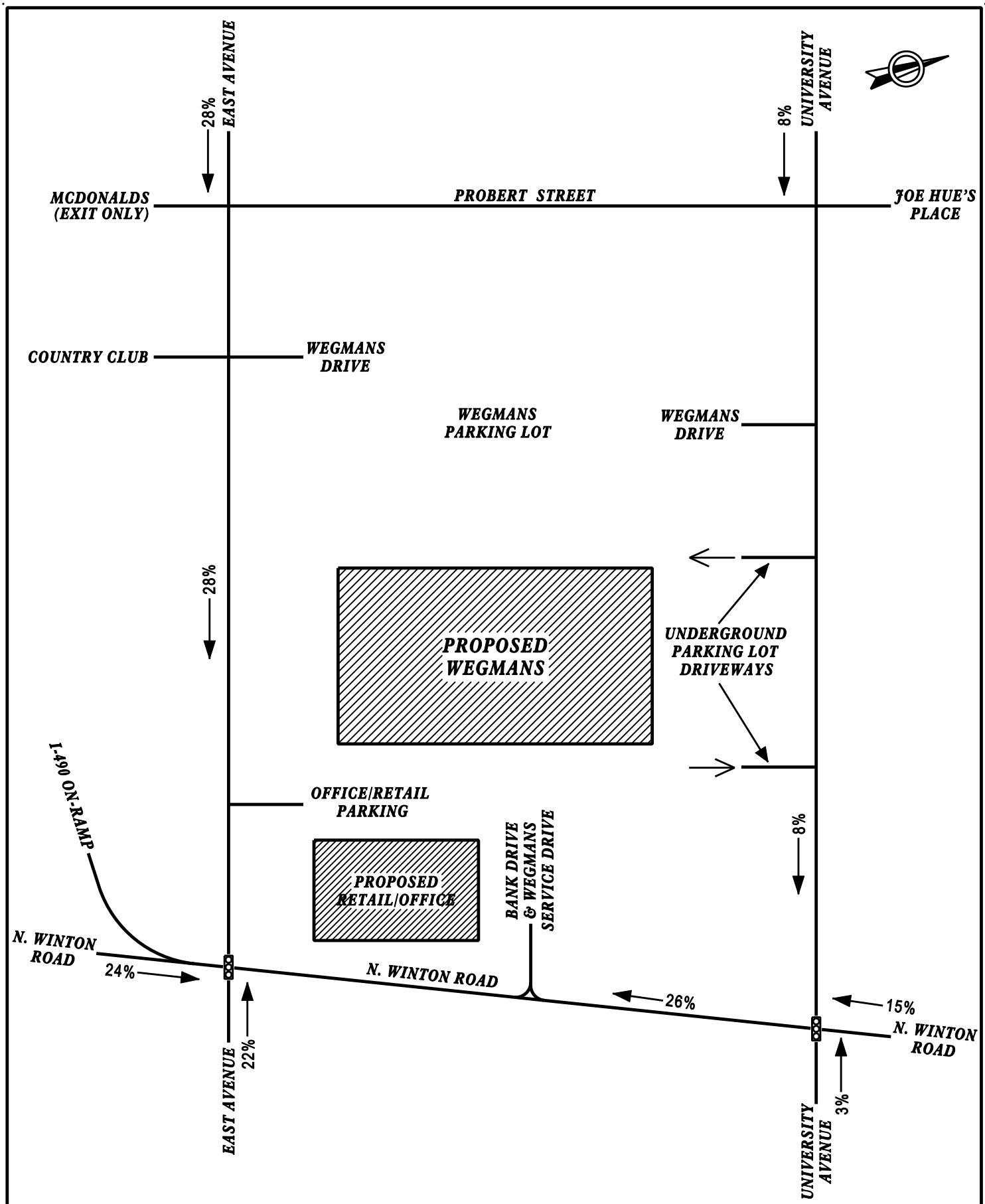

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FIGURE 7

PROJECTED PERCENTAGE DISTRIBUTION OF OFFICE/RETAIL TRAFFIC

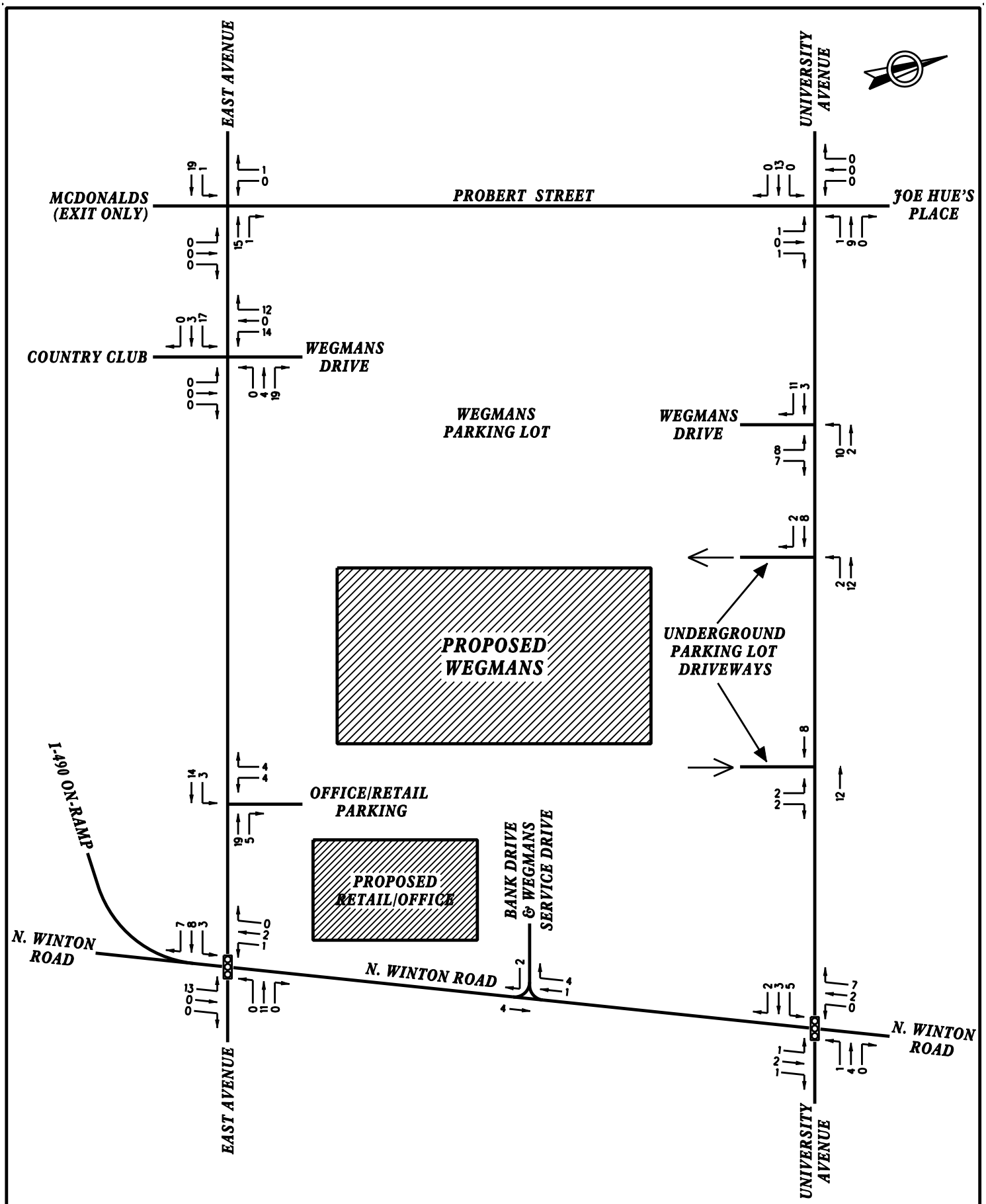

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FIGURE 8

PROJECTED TRAFFIC VOLUME DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL
(excluding pass-by trips)

WEEKDAY AM PEAK HOUR

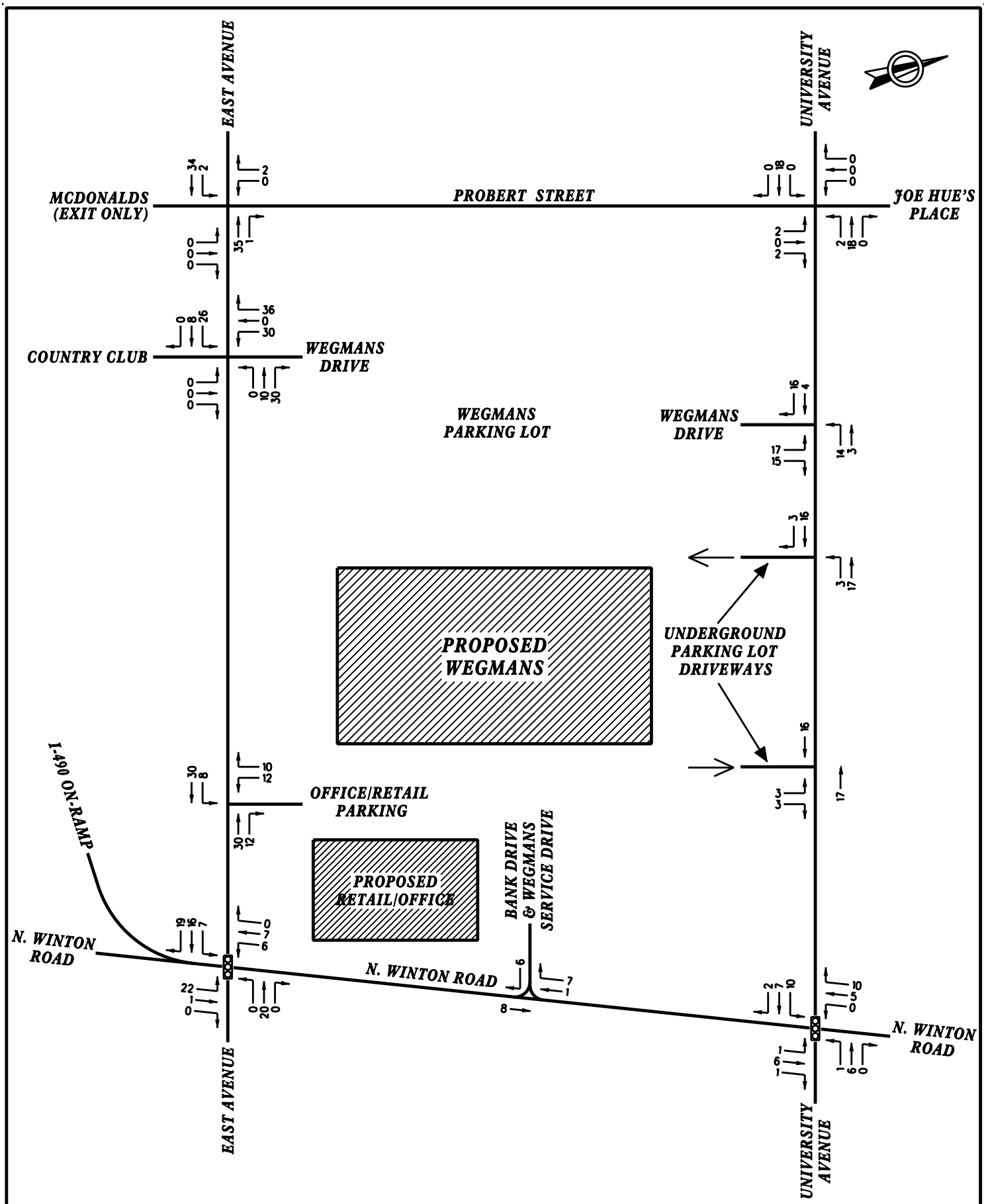

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FIGURE 9

PROJECTED TRAFFIC VOLUME DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL
(excluding pass-by trips)

WEEKDAY PM PEAK HOUR

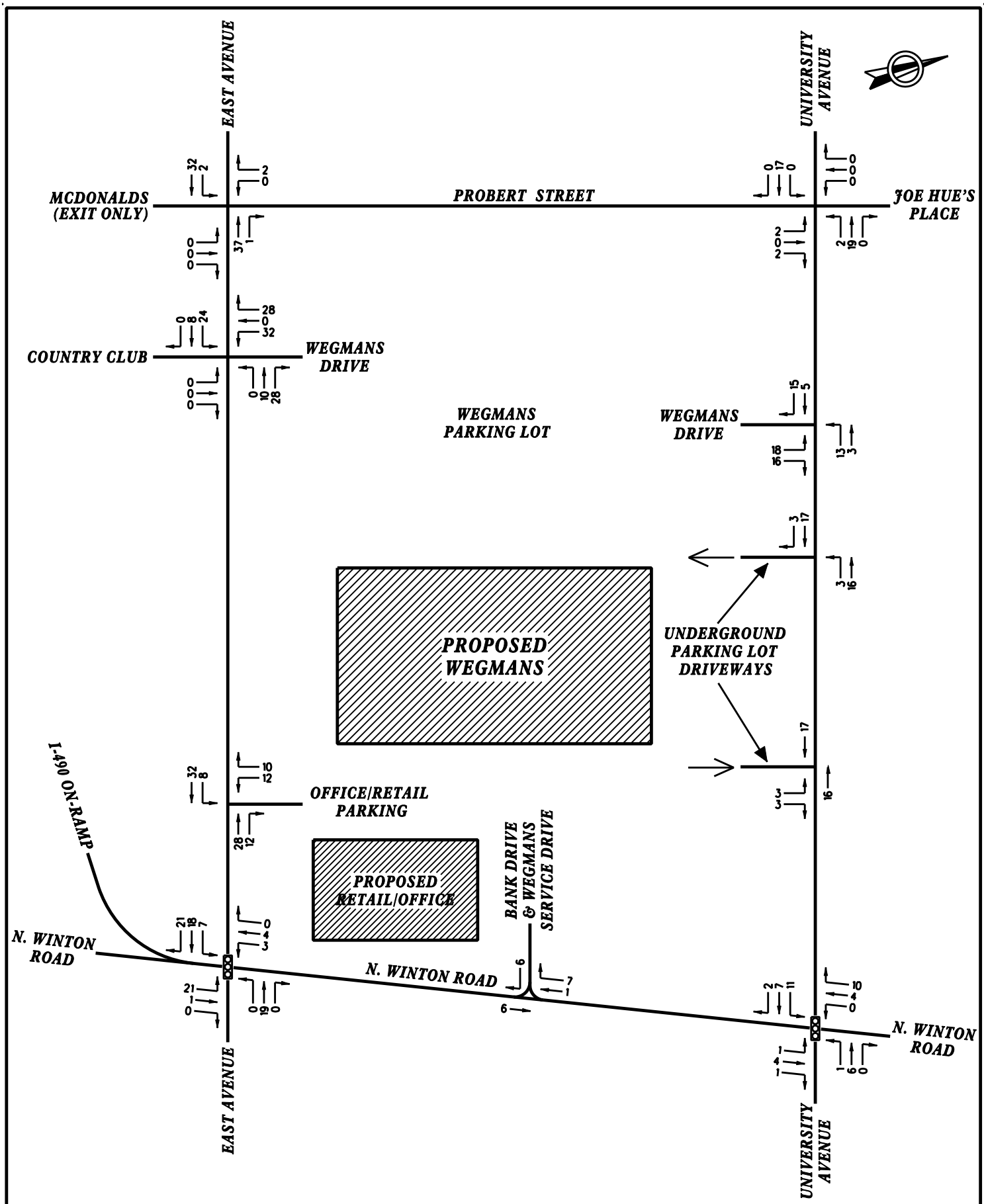

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FIGURE 10

PROJECTED TRAFFIC VOLUME DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL
(excluding pass-by trips)

FRIDAY PM PEAK HOUR

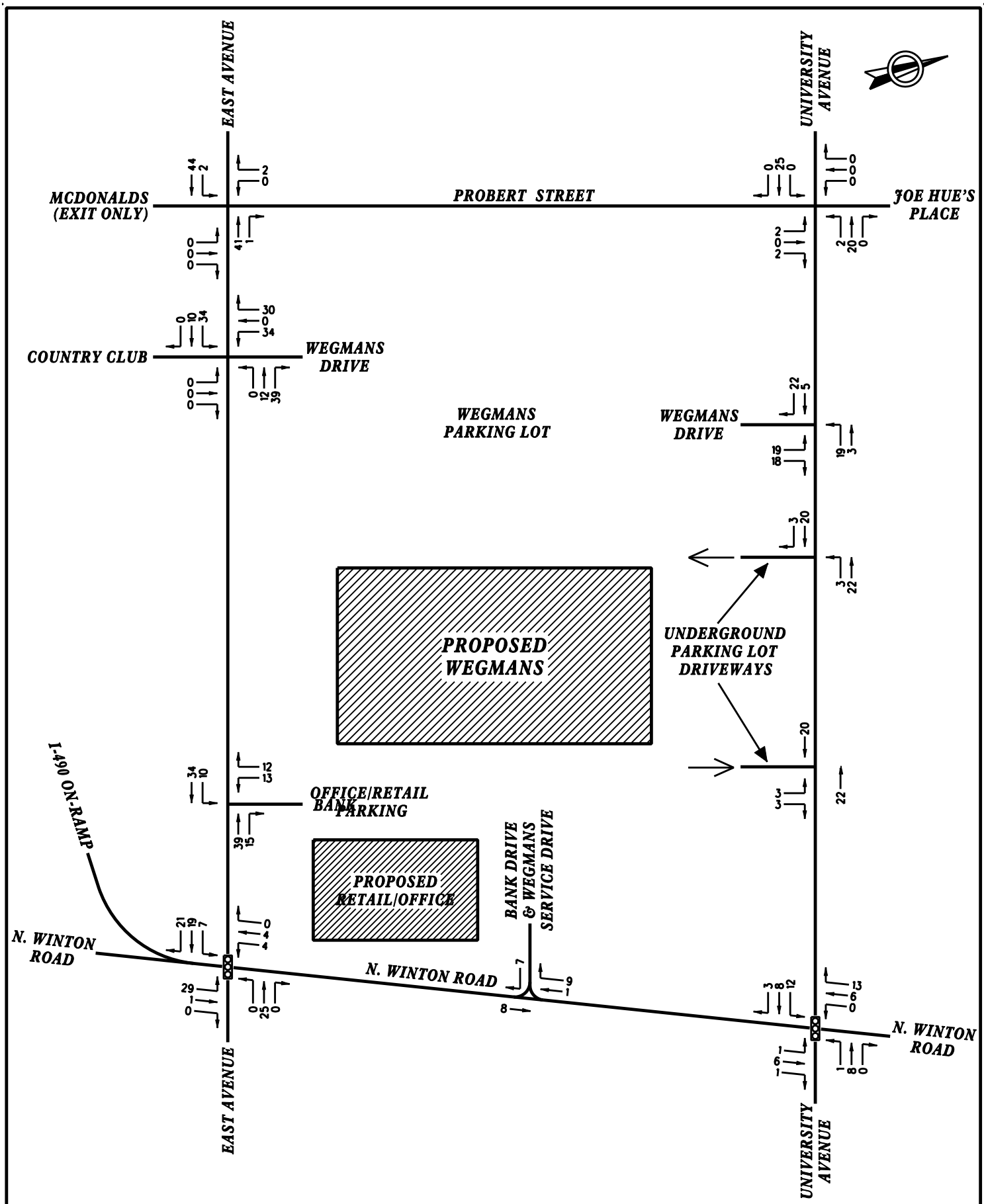

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FIGURE 11

PROJECTED TRAFFIC VOLUME DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL
(excluding pass-by trips)

SATURDAY MIDDAY PEAK HOUR

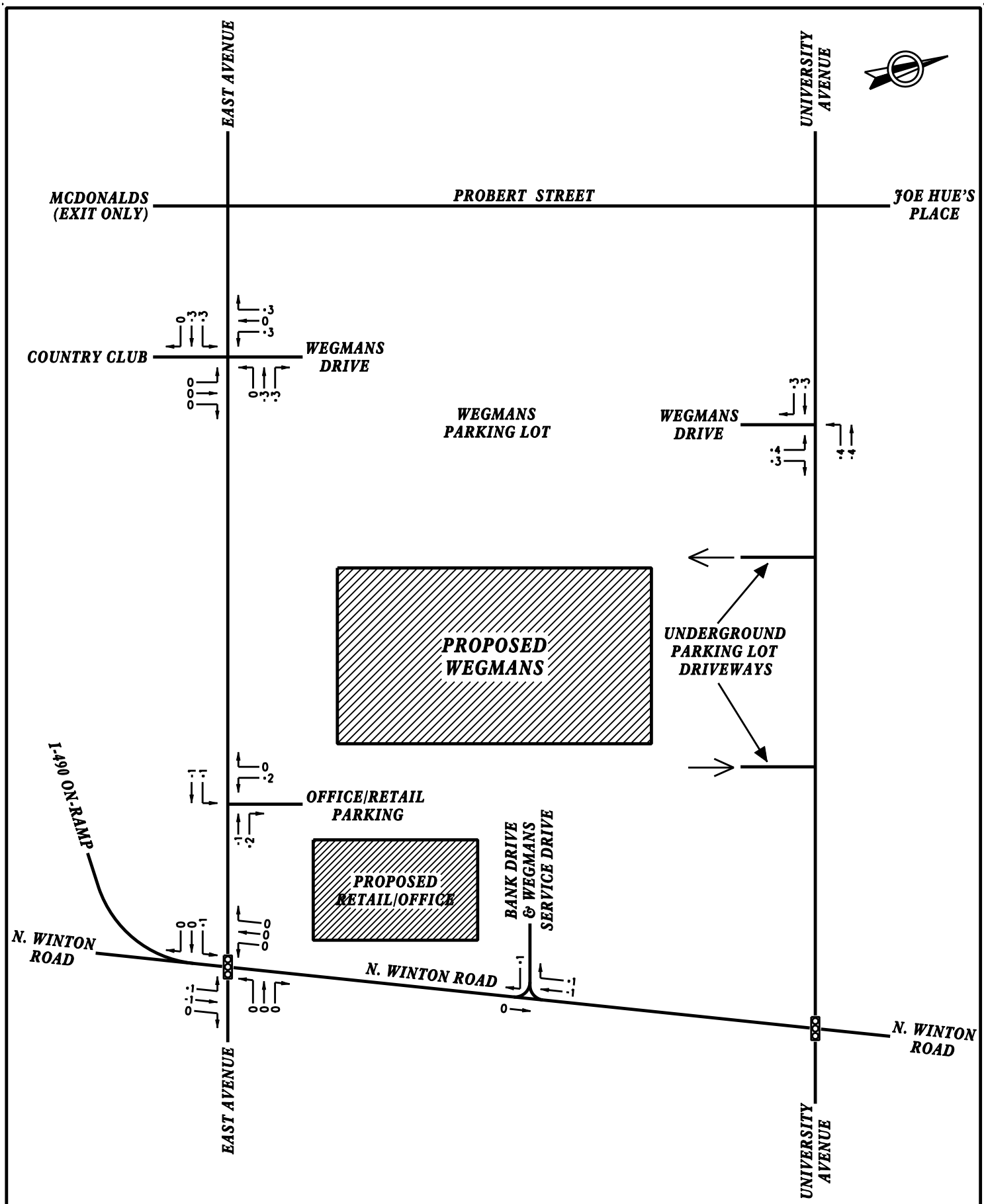

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FIGURE 12

PROJECTED PASS-BY TRAFFIC DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL

WEEKDAY AM PEAK HOUR

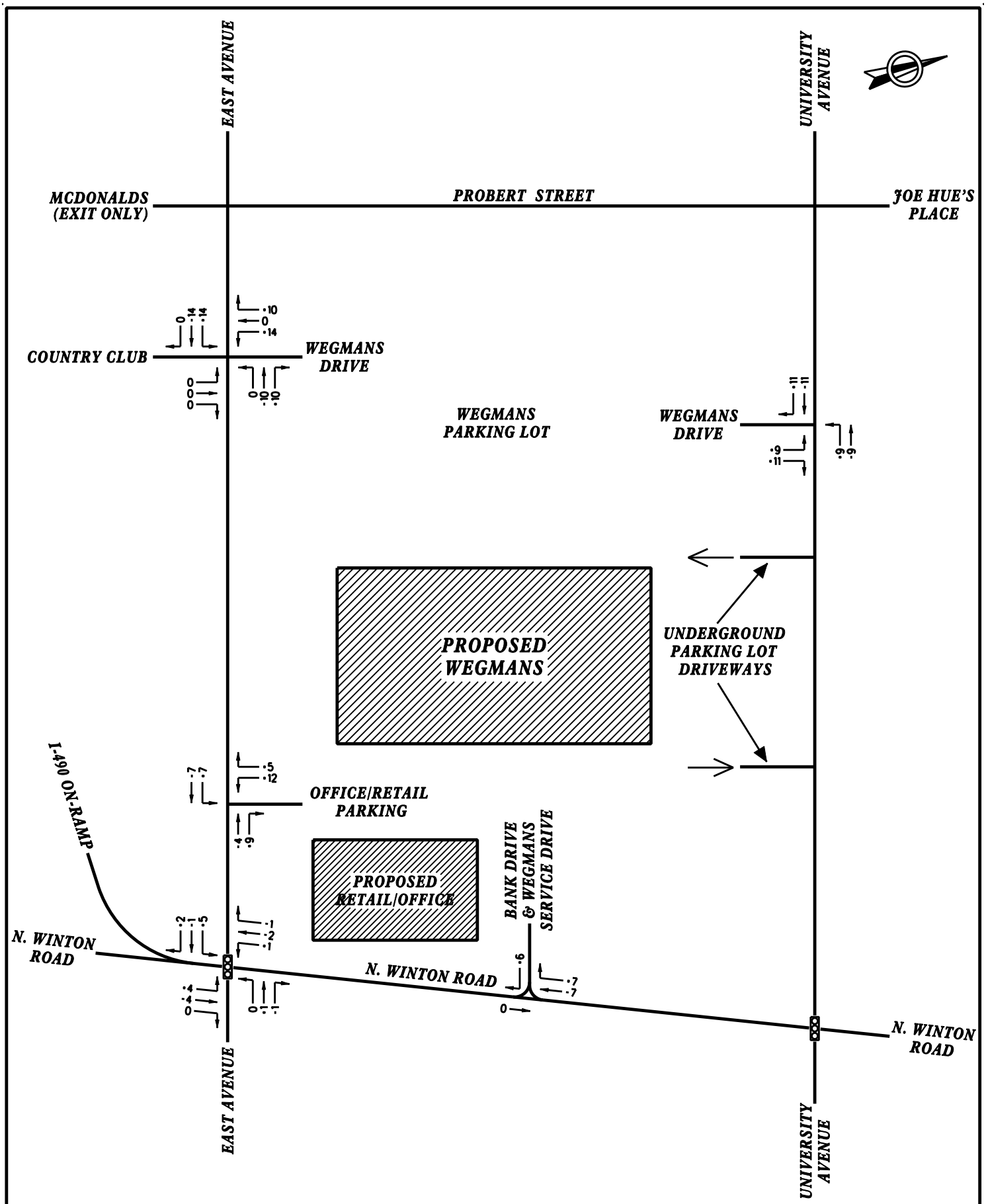

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FIGURE 13

PROJECTED PASS-BY TRAFFIC DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL

WEEKDAY PM PEAK HOUR

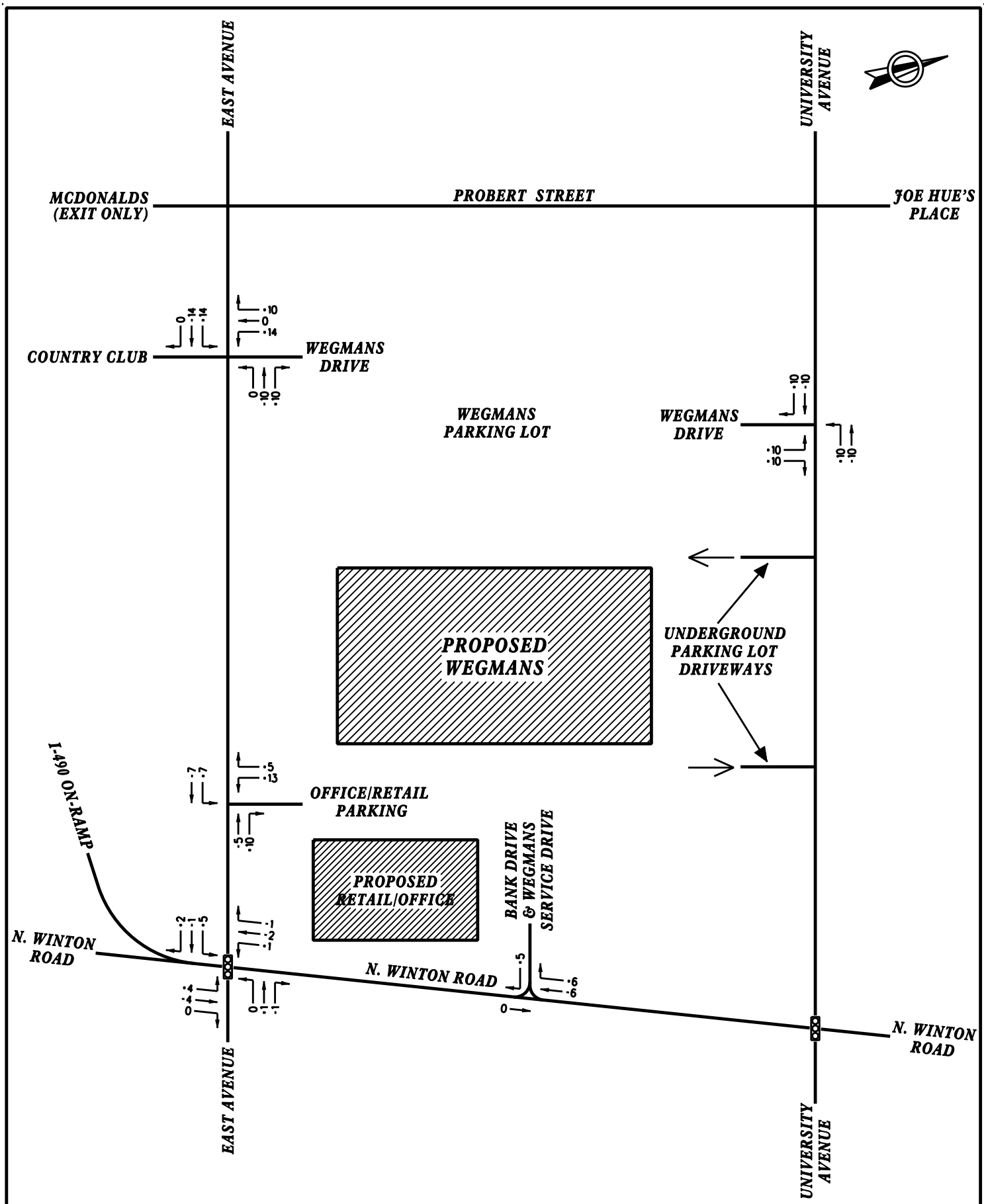

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FIGURE 14

PROJECTED PASS-BY TRAFFIC DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL

FRIDAY PM PEAK HOUR

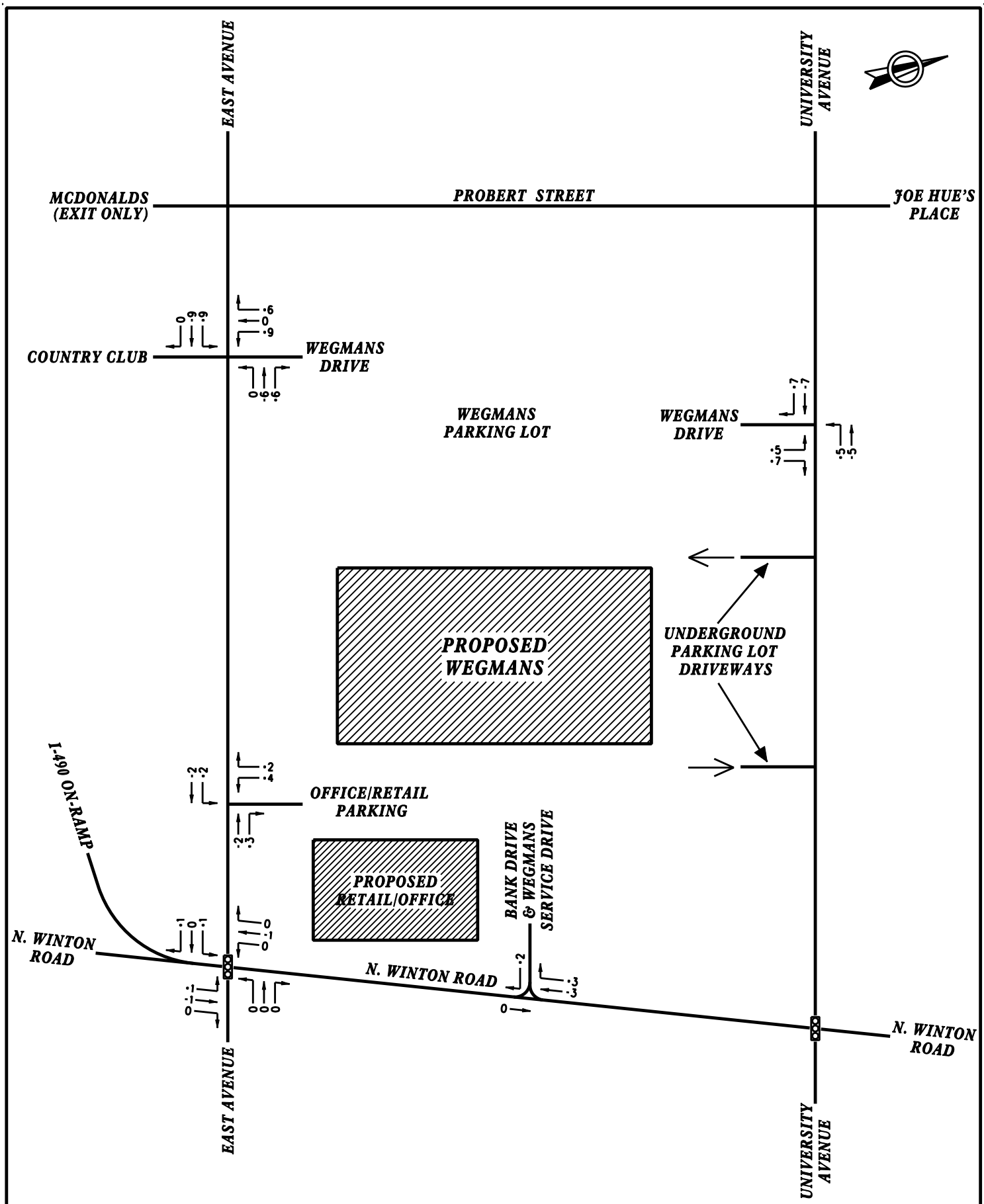

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FIGURE 15

PROJECTED PASS-BY TRAFFIC DISTRIBUTION FOR WEGMANS EXPANSION & OFFICE/RETAIL

SATURDAY MIDDAY PEAK HOUR

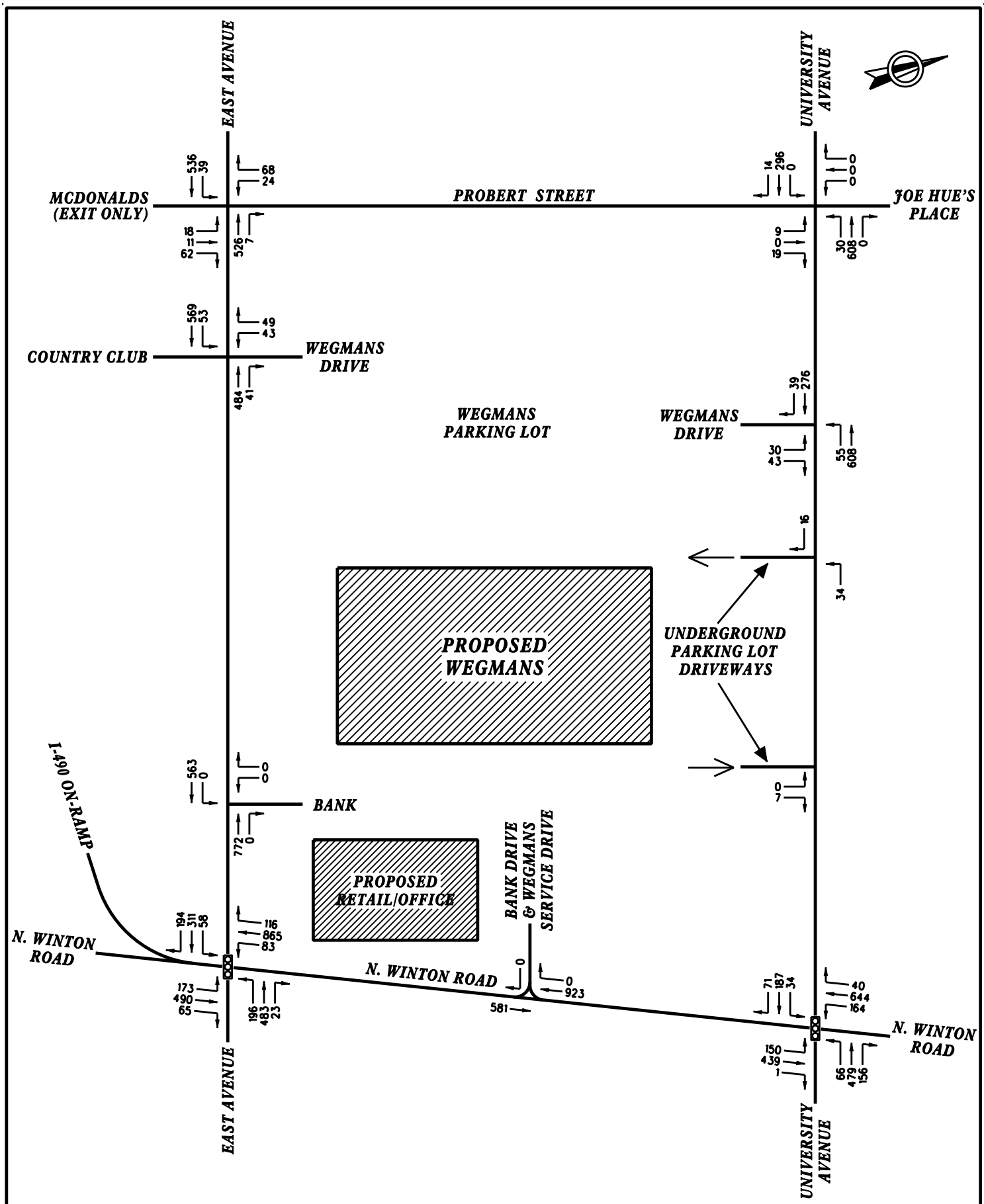

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FIGURE 16

REDISTRIBUTED EXISTING TRAFFIC

WEEKDAY AM PEAK HOUR

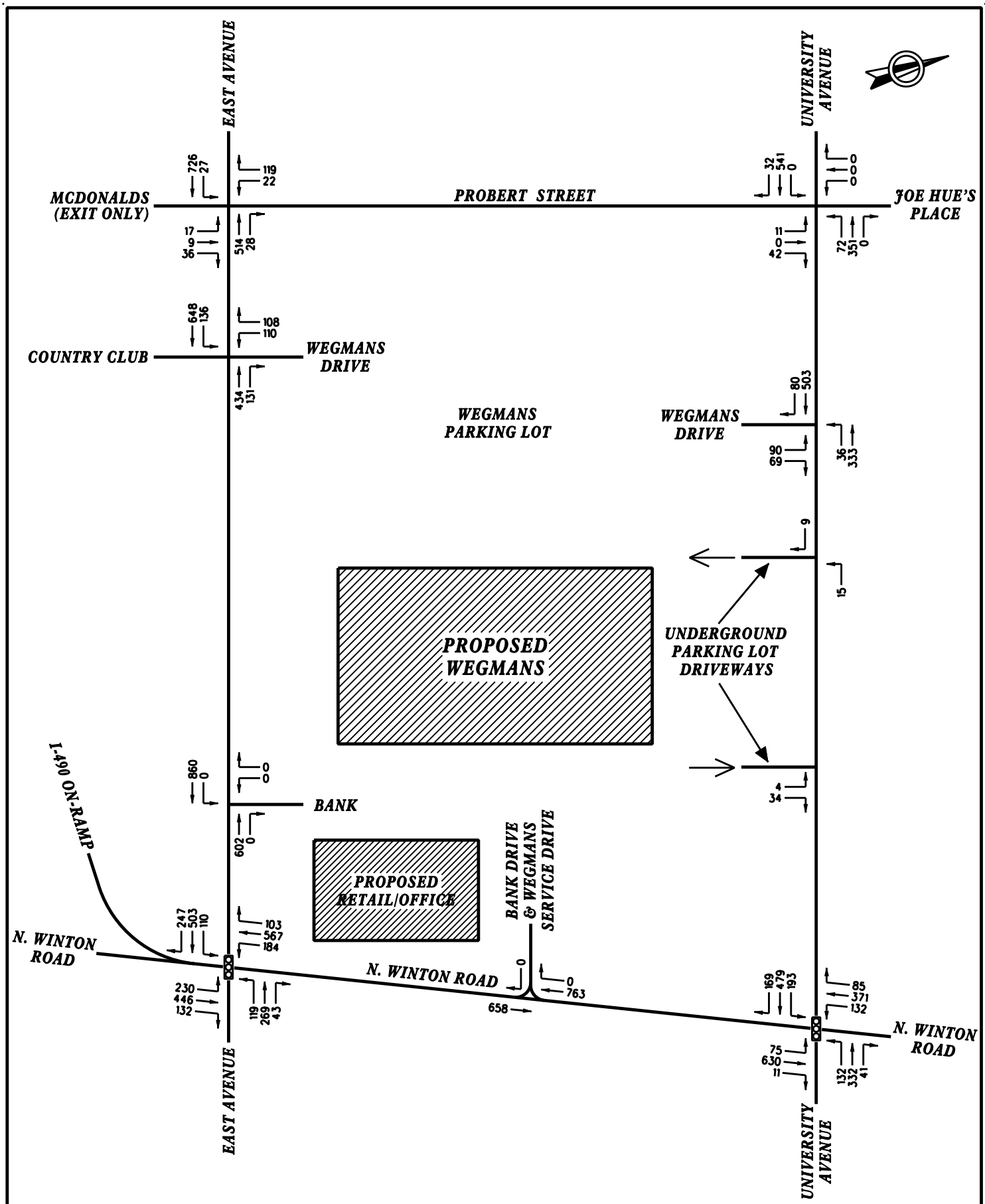

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FIGURE 17

REDISTRIBUTED EXISTING TRAFFIC

WEEKDAY PM PEAK HOUR

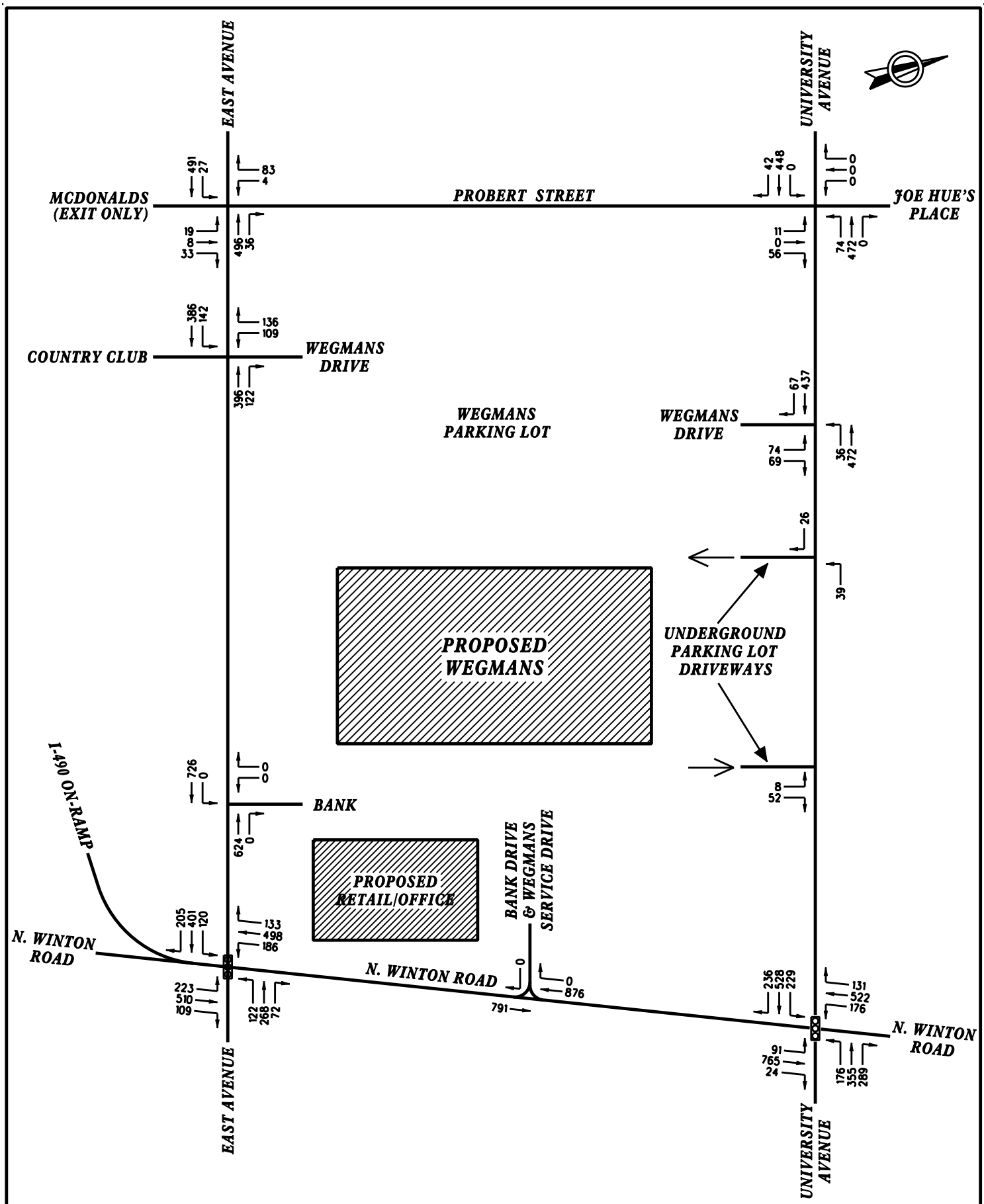

FIGURE 18

REDISTRIBUTED EXISTING TRAFFIC

FRIDAY PM PEAK HOUR

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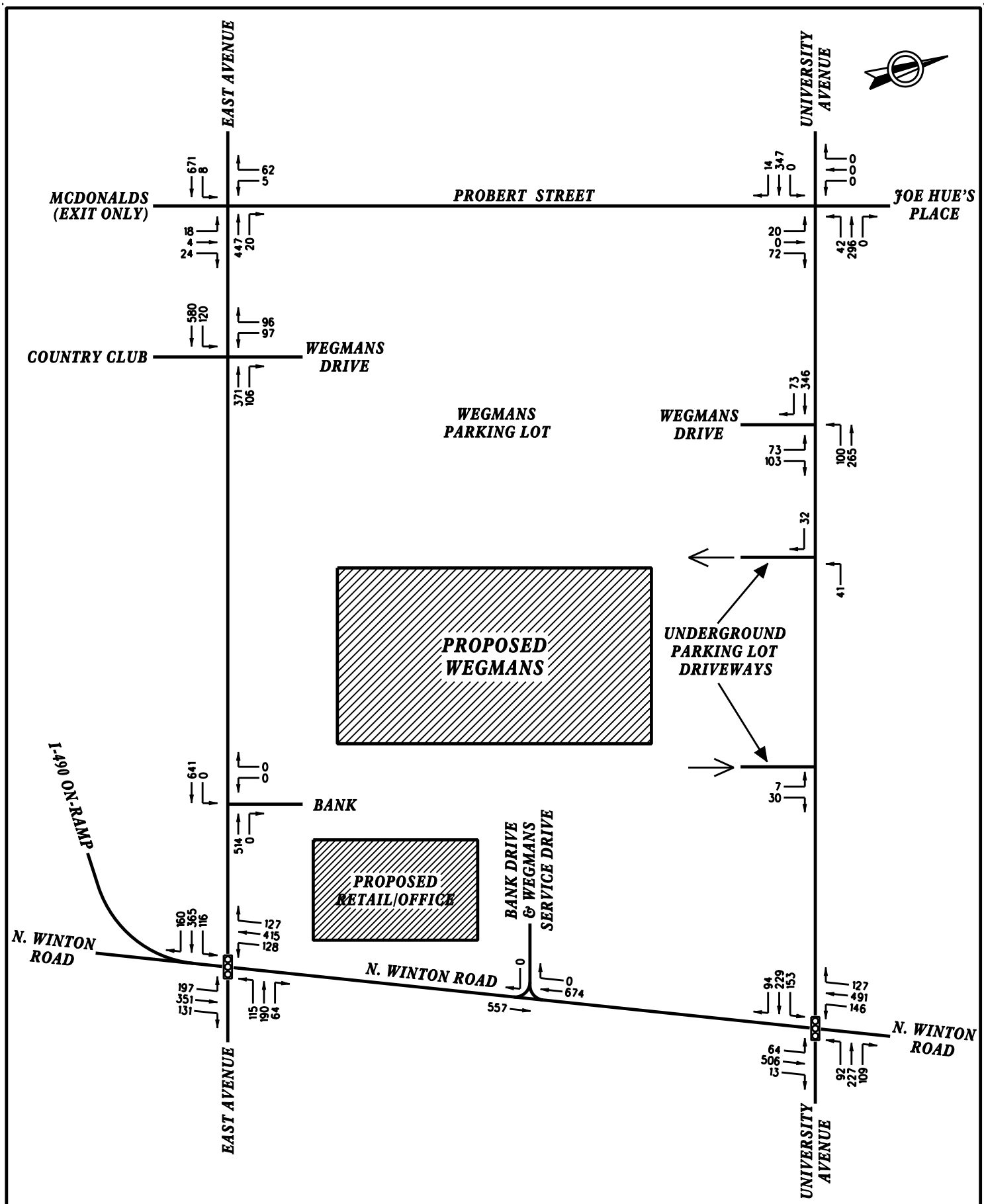

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FIGURE 19

REDISTRIBUTED EXISTING TRAFFIC

SATURDAY MIDDAY PEAK HOUR

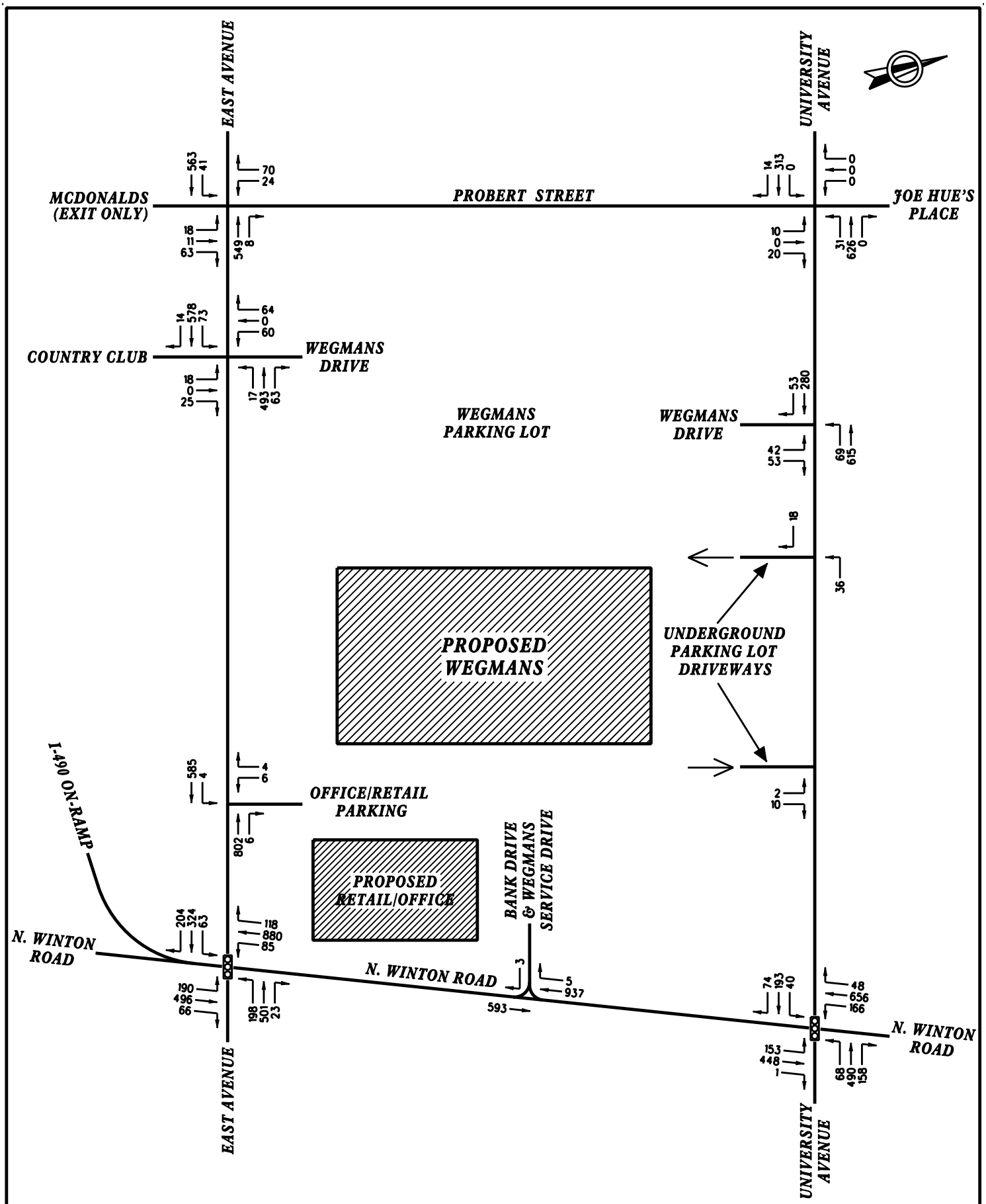

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FIGURE 20

TOTAL TRAFFIC AFTER COMPLETION OF WEGMANS EXPANSION & OFFICE/RETAIL

WEEKDAY AM PEAK HOUR

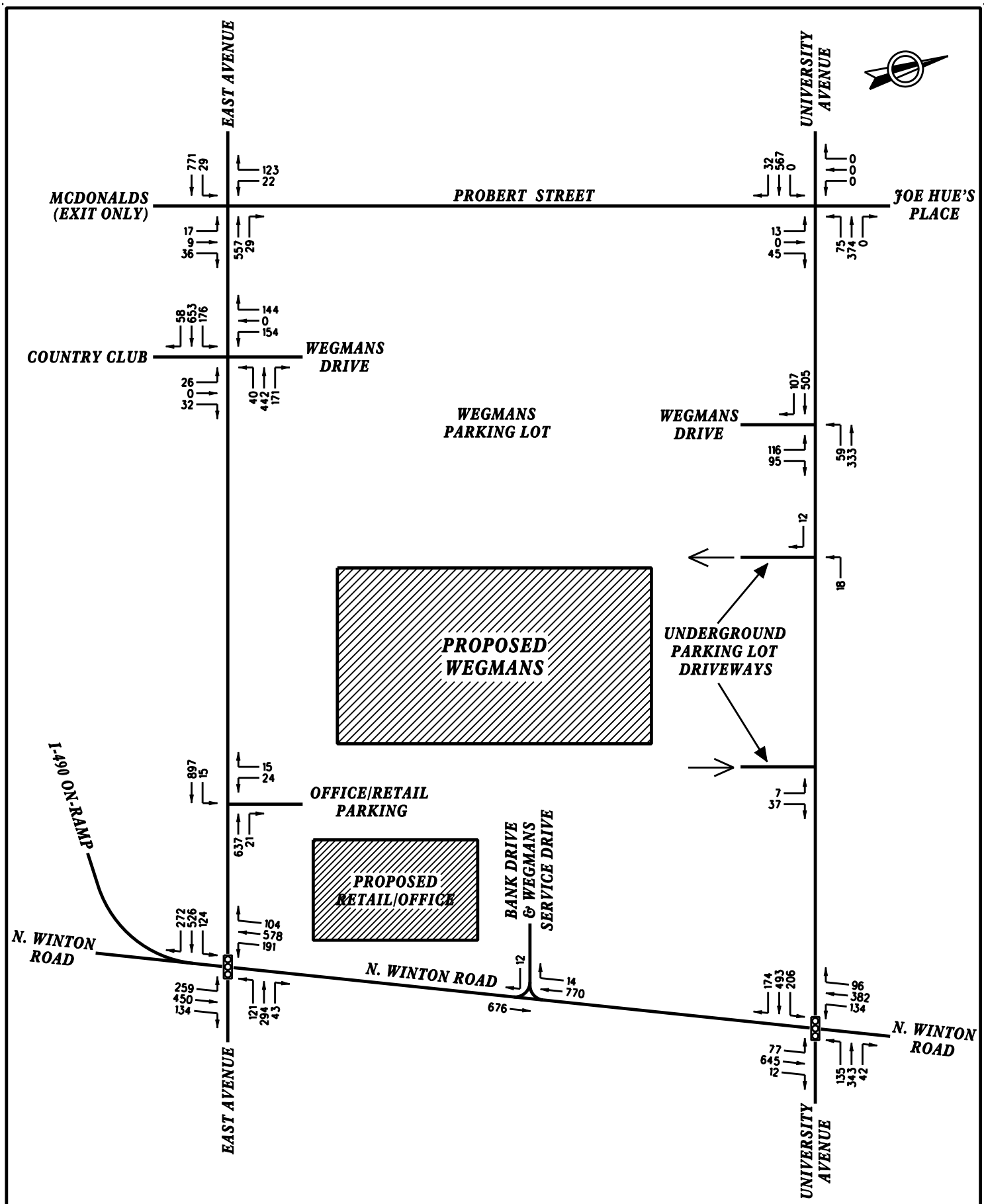

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FIGURE 21

TOTAL TRAFFIC AFTER COMPLETION OF WEGMANS EXPANSION & OFFICE/RETAIL

WEEKDAY PM PEAK HOUR

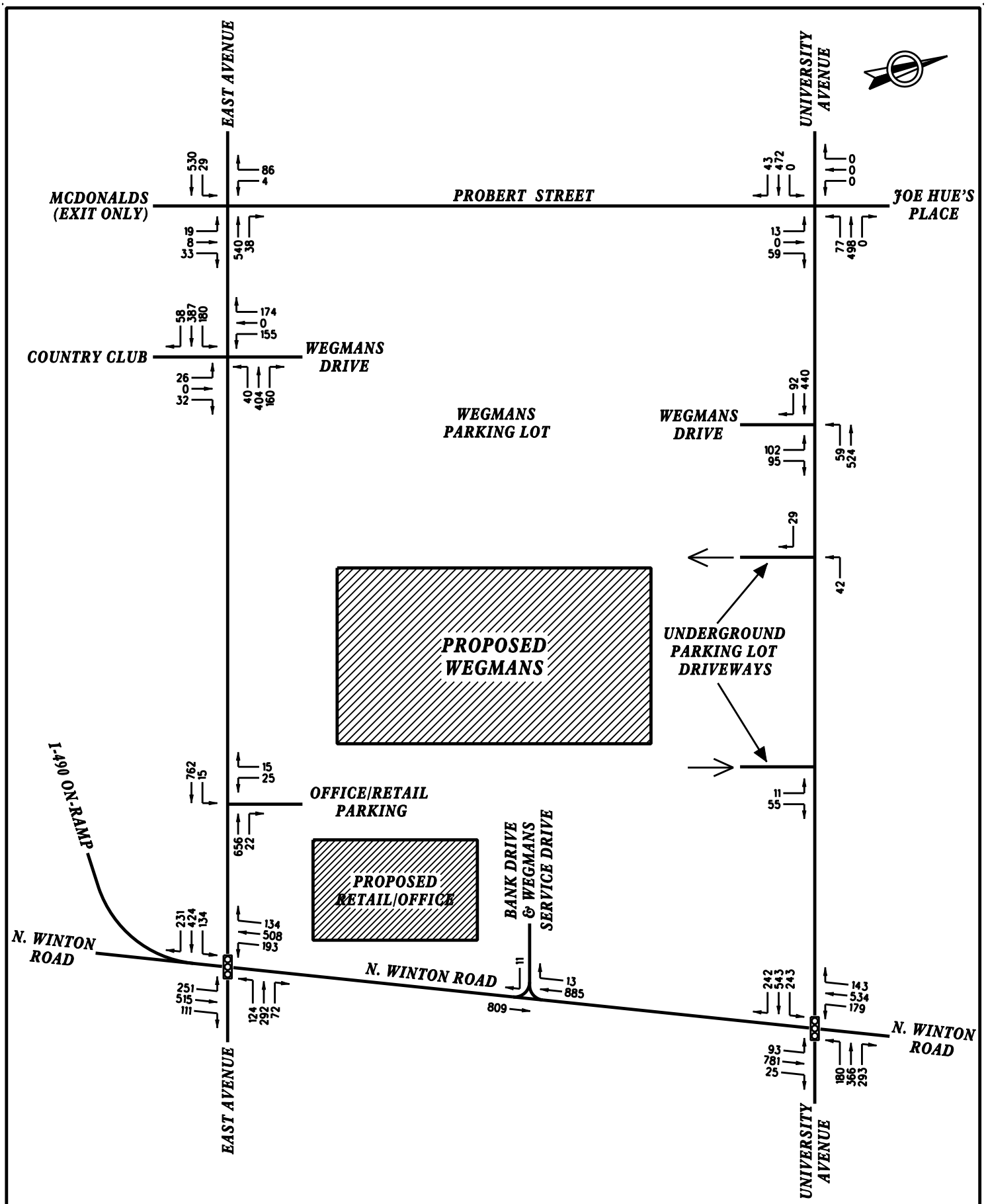

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FIGURE 22

TOTAL TRAFFIC AFTER COMPLETION OF WEGMANS EXPANSION & OFFICE/RETAIL

FRIDAY PM PEAK HOUR

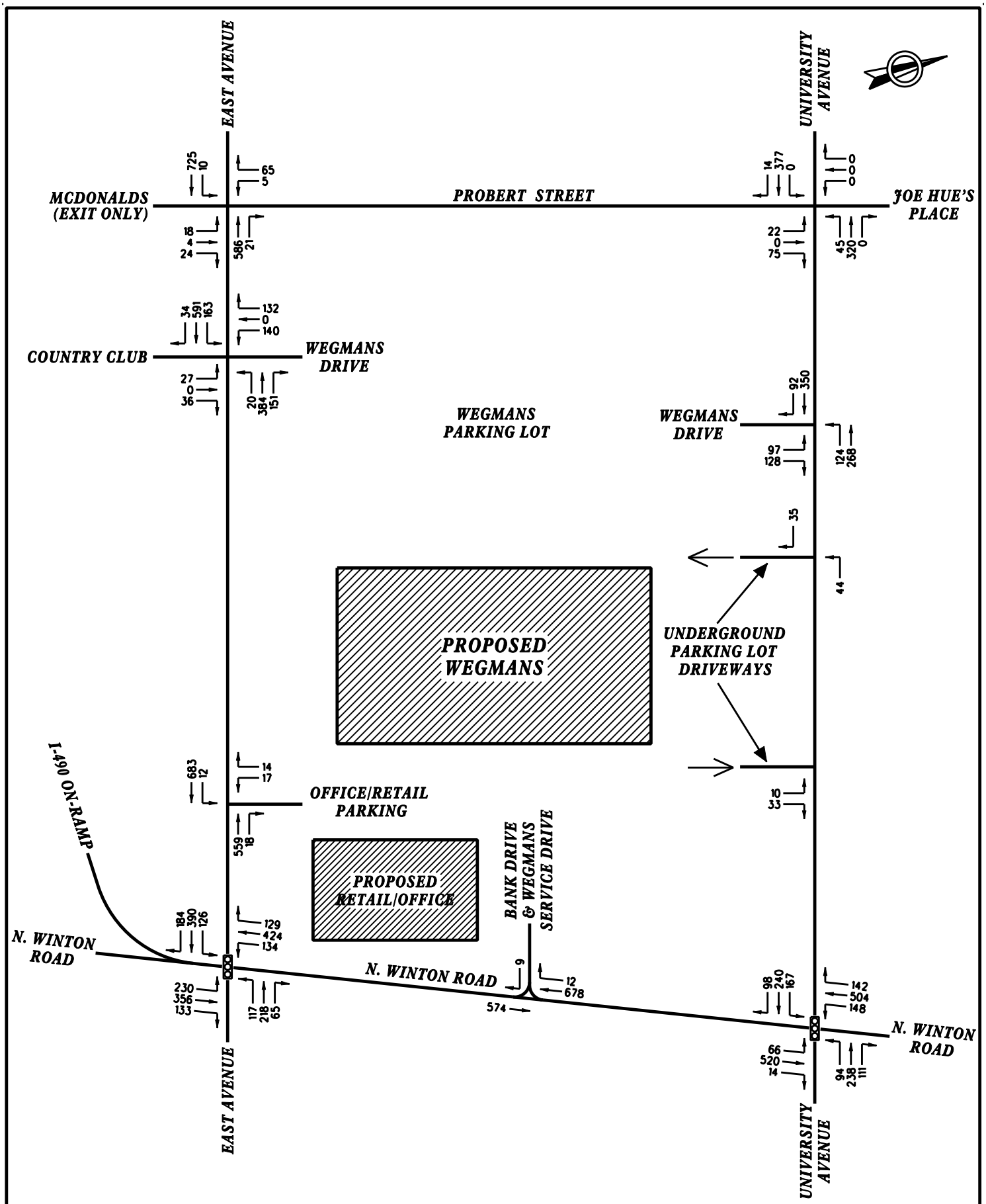

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FIGURE 23

TOTAL TRAFFIC AFTER COMPLETION OF WEGMANS EXPANSION & OFFICE/RETAIL

SATURDAY MIDDAY PEAK HOUR

Appendix C

Level of Service Definitions

DEFINITIONS OF LEVEL OF SERVICE FOR TWSC UNSIGNALIZED INTERSECTIONS

Level of Service	Average Control Delay (S/Veh)
A	0 -10.0
B	>10.0 -15.0
C	>15.0 - 25.0
D	>25.0 - 35.0
E	>35.0 - 50.0
F	>50.0

Level of Service for two-way stopped-control unsignalized intersections describes the quality of traffic operation in terms of average control delay. LOS is defined for each minor movement, not for the intersection as a whole. Levels range from A to F, with A describing traffic operations with little or no delays. Level of Service analysis for TWSC unsignalized intersections considers the left-turn out of the minor road, the right-turn out of the minor road, and the left-turn entering the minor road. The average control delay is defined as the total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. This includes the time required for the vehicle to travel from the “last-in-queue” position to the "first-in-queue" position, including deceleration of vehicles from free-flow speed to the speed of vehicles in queue.

Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation. Because different transportation facilities cause different driver perceptions, the LOS criteria for TWSC intersections are different from the criteria for signalized intersections.

DEFINITIONS OF LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service describes the quality of operation in terms of delay to the driving public. Levels range from A to F describing traffic operation with very little delay. Definitions for levels of Service follow. The Level of Service analysis provides a basis for assessing the potential impact of traffic; both in terms of how traffic conditions would change and whether the existing transportation system would be adequate for the additional traffic.

Level of Service for signalized intersections is defined in terms of control delay. Control delay is a component of delay that results when a control signal causes a lane group to reduce speed or stop. It is measured by comparison with the uncontrolled condition. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Specifically, level-of-service criteria are stated in terms of control delay per vehicle for a 15-minute analysis period. The criteria are given in the following table:

Level of Service	Stopped Delay Per Vehicle (seconds)
A	0 - 10.0
B	>10.0 - 20.0
C	>20.0 - 35.0
D	>35.0 - 55.0
E	>55.0 - 80.0
F	>80.0

Control delay is a complex measure and is dependent on a number of variables including: the quality of traffic progression, the cycle length, and the relative amount of green time for the lane group or approach in question.

Level-of-Service A describes operations with very low control delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level-of-Service B describes operations with control delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level A, causing higher levels of average delay.

Level-of Service C describes vehicles with control delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-Service D describes operations with control delay in the range of 35.1 to 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression or long cycle lengths. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level-of-Service E describes operations with control delay in the range of 55.1 to 80.0 per vehicle. This is considered the limit of acceptable delay. These high delay values generally indicate poor progression and long cycle lengths. Individual cycle failures are frequent occurrences.

Level-of-Service F describes operations with control delay in excess of 80.0 seconds per vehicle. This is considered unacceptable by most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Appendix D

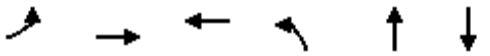
Intersection Capacity Analysis Printouts

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	77	498	493	18	13	39	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	5.0		7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.0		22.0	25.0	25.0	25.0	25.0
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	None		C-Max	None	None	None	None
Act Effct Green (s)	42.9	46.5	34.8	10.4	10.4		10.4
Actuated g/C Ratio	0.72	0.78	0.58	0.17	0.17		0.17
v/c Ratio	0.15	0.23	0.27	0.14	0.28		0.42
Control Delay	4.0	3.0	10.3	21.7	9.9		9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	4.0	3.0	10.3	21.7	9.9		9.1
LOS	A	A	B	C	A		A
Approach Delay		3.2	10.3		12.2		9.1
Approach LOS		A	B		B		A

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 7.0 — Intersection LOS: A
Intersection Capacity Utilization 43.2% — ICU Level of Service A
Analysis Period (min) 15

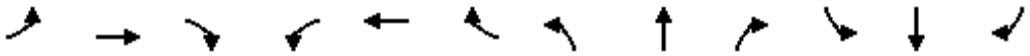
Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	94	607	531	22	91	162
v/c Ratio	0.15	0.23	0.27	0.14	0.28	0.42
Control Delay	4.0	3.0	10.3	21.7	9.9	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	3.0	10.3	21.7	9.9	9.1
Queue Length 50th (ft)	7	26	75	7	5	12
Queue Length 95th (ft)	20	50	m140	20	28	m35
Internal Link Dist (ft)		374	833		232	304
Turn Bay Length (ft)	60					
Base Capacity (vph)	681	2700	1942	343	603	682
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.22	0.27	0.06	0.15	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	498	0	0	493	7	18	13	60	39	0	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			1.00		1.00	0.88			0.90	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1586	3388			3345		1685	1517			1860	
Flt Permitted	0.43	1.00			1.00		0.53	1.00			0.88	
Satd. Flow (perm)	718	3388			3345		935	1517			1657	
Peak-hour factor, PHF	0.82	0.82	0.82	0.94	0.94	0.94	0.80	0.80	0.80	0.86	0.86	0.86
Adj. Flow (vph)	94	607	0	0	524	7	22	16	75	45	0	117
RTOR Reduction (vph)	0	0	0	0	1	0	0	64	0	0	99	0
Lane Group Flow (vph)	94	607	0	0	530	0	22	28	0	0	63	0
Heavy Vehicles (%)	10%	3%	0%	0%	4%	13%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	36.8	42.3			31.2		6.7	6.7			6.7	
Effective Green, g (s)	41.8	44.8			33.7		9.2	9.2			9.2	
Actuated g/C Ratio	0.70	0.75			0.56		0.15	0.15			0.15	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	2.0				2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	617	2530			1879		143	233			254	
v/s Ratio Prot	0.02	c0.18			c0.16			0.02				
v/s Ratio Perm	0.09						0.02				c0.04	
v/c Ratio	0.15	0.24			0.28		0.15	0.12			0.25	
Uniform Delay, d1	3.8	2.3			6.8		22.0	21.9			22.4	
Progression Factor	1.00	1.00			1.36		1.00	1.00			0.86	
Incremental Delay, d2	0.0	0.0			0.3		0.5	0.2			0.5	
Delay (s)	3.9	2.4			9.6		22.5	22.1			19.8	
Level of Service	A	A			A		C	C			B	
Approach Delay (s)		2.6			9.6			22.2			19.8	
Approach LOS		A			A			C			B	

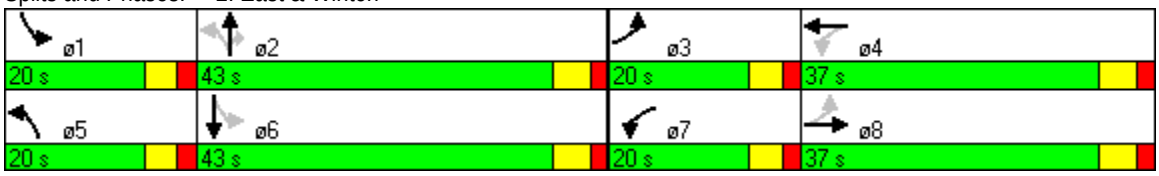
Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	58	311	196	483	173	490	65	83	865
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	41.6	31.3	50.4	39.2	63.3	49.8	49.8	57.4	46.5
Actuated g/C Ratio	0.35	0.26	0.42	0.33	0.53	0.42	0.42	0.48	0.39
v/c Ratio	0.23	0.71	0.67	0.50	0.72	0.38	0.10	0.24	0.92
Control Delay	21.0	35.2	33.5	34.4	40.3	26.5	6.1	10.5	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Total Delay	21.0	35.2	33.5	34.4	40.3	26.5	6.1	10.5	37.2
LOS	C	D	C	C	D	C	A	B	D
Approach Delay		33.8		34.2		28.0			35.1
Approach LOS		C		C		C			D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 33.0 — Intersection LOS: C
Intersection Capacity Utilization 76.2% — ICU Level of Service D
Analysis Period (min) 15

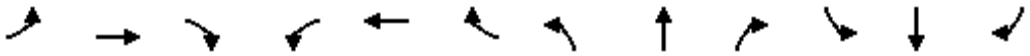
Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	74	648	215	556	190	538	71	99	1168
v/c Ratio	0.23	0.71	0.67	0.50	0.72	0.38	0.10	0.24	0.92
Control Delay	21.0	35.2	33.5	34.4	40.3	26.5	6.1	10.5	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Total Delay	21.0	35.2	33.5	34.4	40.3	26.5	6.1	10.5	37.2
Queue Length 50th (ft)	34	168	108	184	90	150	0	22	459
Queue Length 95th (ft)	53	180	159	238	174	217	31	38	#588
Internal Link Dist (ft)		833		432		405			257
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	412	987	333	1119	304	1406	727	491	1268
Starvation Cap Reductn	0	0	0	0	0	0	0	0	24
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.66	0.65	0.50	0.63	0.38	0.10	0.20	0.94

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	311	194	196	483	23	173	490	65	83	865	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1711	3197		1745	3417		1728	3389	1652	1677	3250	
Flt Permitted	0.36	1.00		0.17	1.00		0.08	1.00	1.00	0.38	1.00	
Satd. Flow (perm)	652	3197		308	3417		152	3389	1652	671	3250	
Peak-hour factor, PHF	0.78	0.78	0.78	0.91	0.91	0.91	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	74	399	249	215	531	25	190	538	71	99	1030	138
RTOR Reduction (vph)	0	82	0	0	3	0	0	0	42	0	8	0
Lane Group Flow (vph)	74	566	0	215	553	0	190	538	29	99	1160	0
Heavy Vehicles (%)	2%	4%	1%	0%	1%	11%	2%	4%	2%	3%	3%	15%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	36.1	29.4		48.4	36.2		57.3	45.7	45.7	50.9	42.5	
Effective Green, g (s)	41.1	32.4		50.9	39.2		62.1	48.7	48.7	55.9	45.5	
Actuated g/C Ratio	0.34	0.27		0.42	0.33		0.52	0.41	0.41	0.47	0.38	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	305	863		322	1116		264	1375	670	404	1232	
v/s Ratio Prot	0.02	0.18		c0.09	0.16		c0.08	0.16		0.02	c0.36	
v/s Ratio Perm	0.06			c0.19			0.29		0.02	0.09		
v/c Ratio	0.24	0.66		0.67	0.50		0.72	0.39	0.04	0.25	0.94	
Uniform Delay, d1	27.3	38.8		25.1	32.5		29.1	25.2	21.6	18.4	36.0	
Progression Factor	0.93	0.94		1.00	1.00		1.00	1.00	1.00	0.60	0.62	
Incremental Delay, d2	0.1	2.0		4.0	0.5		7.6	0.8	0.1	0.1	14.4	
Delay (s)	25.6	38.4		29.2	32.9		36.7	26.0	21.7	11.2	36.8	
Level of Service	C	D		C	C		D	C	C	B	D	
Approach Delay (s)		37.1			31.9			28.2			34.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

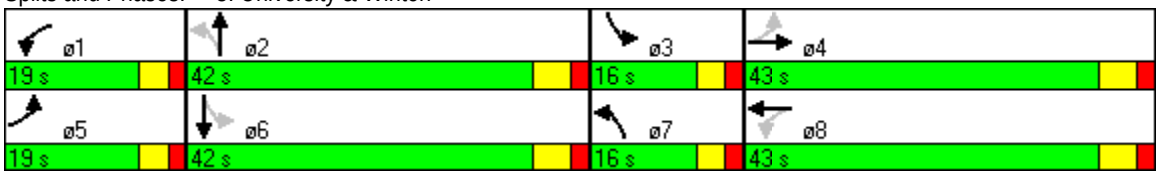
c Critical Lane Group

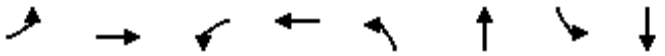
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	34	187	66	479	150	439	164	644
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	48.9	42.0	48.9	42.0	61.1	50.1	61.1	50.1
Actuated g/C Ratio	0.41	0.35	0.41	0.35	0.51	0.42	0.51	0.42
v/c Ratio	0.22	0.28	0.21	0.70	0.55	0.38	0.46	0.58
Control Delay	29.3	24.7	24.2	36.2	19.0	13.2	24.0	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.5
Total Delay	29.3	24.7	24.2	36.2	19.0	13.4	24.0	30.8
LOS	C	C	C	D	B	B	C	C
Approach Delay		25.3		35.1		14.8		29.5
Approach LOS		C		D		B		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 27.2 — Intersection LOS: C
Intersection Capacity Utilization 62.3% — ICU Level of Service B
Analysis Period (min) 15

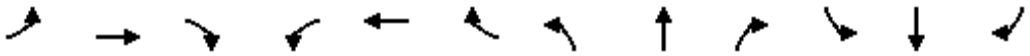
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	319	86	825	181	530	186	777
v/c Ratio	0.22	0.28	0.21	0.70	0.55	0.38	0.46	0.58
Control Delay	29.3	24.7	24.2	36.2	19.0	13.2	24.0	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.5
Total Delay	29.3	24.7	24.2	36.2	19.0	13.4	24.0	30.8
Queue Length 50th (ft)	19	78	40	280	33	59	74	245
Queue Length 95th (ft)	38	103	63	287	75	68	113	302
Internal Link Dist (ft)		587		787		257		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	316	1130	532	1172	358	1389	435	1342
Starvation Cap Reductn	0	0	0	0	0	270	0	0
Spillback Cap Reductn	0	2	9	0	0	0	0	358
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.28	0.16	0.70	0.51	0.47	0.43	0.79

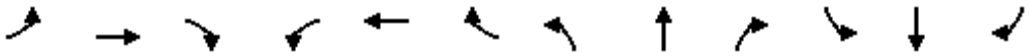
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	187	71	66	479	156	150	439	1	164	644	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	3130		1694	3271		1728	3324		1630	3208	
Flt Permitted	0.16	1.00		0.49	1.00		0.22	1.00		0.36	1.00	
Satd. Flow (perm)	277	3130		874	3271		409	3324		618	3208	
Peak-hour factor, PHF	0.81	0.81	0.81	0.77	0.77	0.77	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	42	231	88	86	622	203	181	529	1	186	732	45
RTOR Reduction (vph)	0	33	0	0	26	0	0	0	0	0	3	0
Lane Group Flow (vph)	42	287	0	86	799	0	181	530	0	186	774	0
Heavy Vehicles (%)	6%	3%	17%	3%	3%	2%	2%	6%	0%	6%	7%	3%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.9	39.0		42.9	39.0		55.1	46.1		55.1	46.1	
Effective Green, g (s)	46.9	42.0		46.9	42.0		59.1	49.1		59.1	49.1	
Actuated g/C Ratio	0.39	0.35		0.39	0.35		0.49	0.41		0.49	0.41	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	176	1096		382	1145		322	1360		397	1313	
v/s Ratio Prot	c0.01	0.09		0.01	c0.24		c0.05	0.16		0.04	c0.24	
v/s Ratio Perm	0.08			0.08			0.23			0.19		
v/c Ratio	0.24	0.26		0.23	0.70		0.56	0.39		0.47	0.59	
Uniform Delay, d1	40.4	27.9		27.8	33.5		35.9	24.9		27.5	27.6	
Progression Factor	1.00	1.00		1.00	1.00		0.48	0.50		1.00	1.00	
Incremental Delay, d2	0.3	0.6		0.1	3.5		1.3	0.8		0.3	1.9	
Delay (s)	40.7	28.5		27.9	37.1		18.6	13.2		27.8	29.6	
Level of Service	D	C		C	D		B	B		C	C	
Approach Delay (s)		29.9			36.2			14.6			29.2	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	272	38	30	579	0	38	0	24	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.85	0.85	0.85	0.65	0.65	0.65	0.25	0.25	0.25
Hourly flow rate (vph)	0	328	46	35	681	0	58	0	37	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					913							
pX, platoon unblocked	0.75						0.75	0.75		0.75	0.75	0.75
vC, conflicting volume	681			373			1102	1102	351	1139	1125	681
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	407			373			969	969	351	1018	1000	407
tC, single (s)	4.1			4.1			7.1	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			97			66	100	94	100	100	100
cM capacity (veh/h)	863			1196			172	184	648	149	177	483

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	373	716	95	0
Volume Left	0	35	58	0
Volume Right	46	0	37	0
cSH	863	1196	240	1700
Volume to Capacity	0.00	0.03	0.40	0.00
Queue Length 95th (ft)	0	2	45	0
Control Delay (s)	0.0	0.8	29.5	0.0
Lane LOS		A	D	A
Approach Delay (s)	0.0	0.8	29.5	0.0
Approach LOS			D	A

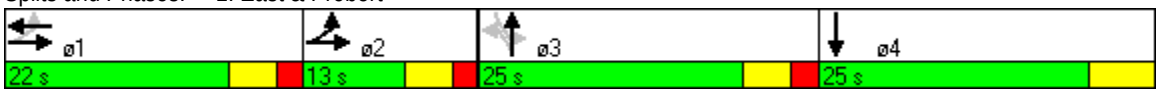
Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

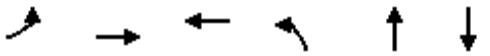
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	135	618	439	17	13	92	0
Turn Type	pm+pt			Perm		D.Pm	
Protected Phases	2	1 2	1		3		4
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	4
Switch Phase							
Minimum Initial (s)	5.0		7.0	6.0	6.0	6.0	3.0
Minimum Split (s)	13.0		22.0	25.0	25.0	25.0	25.0
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	15.3%	41.2%	25.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5
Lead/Lag	Lag		Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?							
Recall Mode	None		C-Max	None	None	None	None
Act Effct Green (s)	46.1	49.1	37.0	11.4	11.4		18.3
Actuated g/C Ratio	0.54	0.58	0.44	0.13	0.13		0.22
v/c Ratio	0.33	0.35	0.38	0.22	0.23		0.70
Control Delay	17.5	12.6	20.4	36.8	16.7		26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	17.5	12.6	20.4	36.8	16.7		26.3
LOS	B	B	C	D	B		C
Approach Delay		13.5	20.4		22.1		26.3
Approach LOS		B	C		C		C

Intersection Summary

Cycle Length: 85
Actuated Cycle Length: 85
Offset: 44 (52%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 18.2 — Intersection LOS: B
Intersection Capacity Utilization 54.2% — ICU Level of Service A
Analysis Period (min) 15

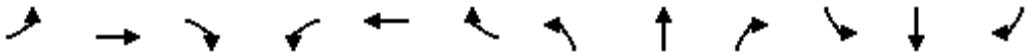
Splits and Phases: 1: East & Probert





Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	153	702	563	20	55	318
v/c Ratio	0.33	0.35	0.38	0.22	0.23	0.70
Control Delay	17.5	12.6	20.4	36.8	16.7	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	12.6	20.4	36.8	16.7	26.3
Queue Length 50th (ft)	37	101	108	10	8	96
Queue Length 95th (ft)	91	187	175	27	33	164
Internal Link Dist (ft)		374	844		232	310
Turn Bay Length (ft)	60					
Base Capacity (vph)	487	2052	1481	180	428	543
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.34	0.38	0.11	0.13	0.59

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	618	0	0	439	28	17	13	32	92	0	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			2.5	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.89			0.91	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1728	3490			3394		1685	1540			1868	
Flt Permitted	0.36	1.00			1.00		0.39	1.00			0.88	
Satd. Flow (perm)	652	3490			3394		695	1540			1669	
Peak-hour factor, PHF	0.88	0.88	0.88	0.83	0.83	0.83	0.83	0.83	0.83	0.90	0.90	0.90
Adj. Flow (vph)	153	702	0	0	529	34	20	16	39	102	0	216
RTOR Reduction (vph)	0	0	0	0	4	0	0	34	0	0	96	0
Lane Group Flow (vph)	153	702	0	0	559	0	20	21	0	0	222	0
Heavy Vehicles (%)	1%	0%	0%	0%	2%	0%	0%	5%	2%	0%	0%	0%
Turn Type	pm+pt						Perm			D.Pm		
Protected Phases	2	1 2			1			3			4	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	40.0	45.5			33.4		7.7	7.7			15.8	
Effective Green, g (s)	45.0	48.0			35.9		10.2	10.2			18.3	
Actuated g/C Ratio	0.53	0.56			0.42		0.12	0.12			0.22	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.0	
Vehicle Extension (s)	2.0				2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	460	1971			1433		83	185			359	
v/s Ratio Prot	0.04	c0.20			c0.16			0.01				
v/s Ratio Perm	0.14						c0.03				c0.13	
v/c Ratio	0.33	0.36			0.39		0.24	0.11			0.62	
Uniform Delay, d1	15.8	10.1			17.0		33.9	33.4			30.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.2	0.0			0.8		1.5	0.3			3.2	
Delay (s)	16.0	10.1			17.8		35.4	33.6			33.4	
Level of Service	B	B			B		D	C			C	
Approach Delay (s)		11.2			17.8			34.1			33.4	
Approach LOS		B			B			C			C	

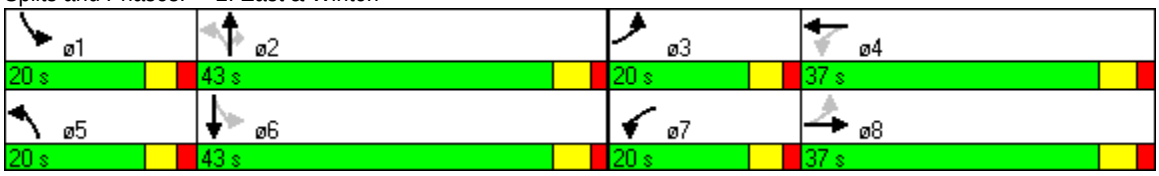
Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	110	503	119	269	230	446	132	184	567
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	48.4	35.7	50.8	36.9	59.1	43.8	43.8	57.7	43.1
Actuated g/C Ratio	0.40	0.30	0.42	0.31	0.49	0.36	0.36	0.48	0.36
v/c Ratio	0.31	0.87	0.56	0.37	0.67	0.37	0.20	0.44	0.62
Control Delay	22.3	47.4	30.5	32.5	27.1	30.0	5.3	15.0	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	22.3	47.4	30.5	32.5	27.1	30.0	5.3	15.0	28.6
LOS	C	D	C	C	C	C	A	B	C
Approach Delay		44.2		31.9		25.2			25.7
Approach LOS		D		C		C			C

Intersection Summary

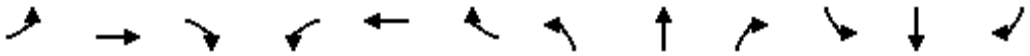
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 32.2 — Intersection LOS: C
Intersection Capacity Utilization 73.4% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	131	893	147	385	242	469	139	204	744
v/c Ratio	0.31	0.87	0.56	0.37	0.67	0.37	0.20	0.44	0.62
Control Delay	22.3	47.4	30.5	32.5	27.1	30.0	5.3	15.0	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	22.3	47.4	30.5	32.5	27.1	30.0	5.3	15.0	28.6
Queue Length 50th (ft)	59	316	67	115	106	143	0	76	280
Queue Length 95th (ft)	93	375	103	147	161	195	44	102	281
Internal Link Dist (ft)		844		429		405			257
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	470	1024	306	1045	383	1260	704	495	1206
Starvation Cap Reductn	0	0	0	0	0	0	0	0	218
Spillback Cap Reductn	0	0	0	0	0	57	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.87	0.48	0.37	0.63	0.39	0.20	0.41	0.75

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	503	247	119	269	43	230	446	132	184	567	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3274		1745	3365		1745	3455	1686	1727	3327	
Flt Permitted	0.43	1.00		0.11	1.00		0.21	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	781	3274		202	3365		379	3455	1686	705	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	131	599	294	147	332	53	242	469	139	204	630	114
RTOR Reduction (vph)	0	49	0	0	10	0	0	0	88	0	12	0
Lane Group Flow (vph)	131	844	0	147	375	0	242	469	51	204	732	0
Heavy Vehicles (%)	1%	1%	2%	0%	1%	5%	1%	2%	0%	0%	1%	4%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	42.9	32.7		45.3	33.9		53.6	40.8	40.8	52.2	40.1	
Effective Green, g (s)	47.9	35.7		50.3	36.9		58.6	43.8	43.8	57.2	43.1	
Actuated g/C Ratio	0.40	0.30		0.42	0.31		0.49	0.36	0.36	0.48	0.36	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	412	974		263	1035		359	1261	615	460	1195	
v/s Ratio Prot	0.03	c0.26		c0.06	0.11		c0.09	0.14		0.05	0.22	
v/s Ratio Perm	0.09			0.17			c0.24		0.03	0.16		
v/c Ratio	0.32	0.87		0.56	0.36		0.67	0.37	0.08	0.44	0.61	
Uniform Delay, d1	23.6	39.9		26.0	32.4		20.6	28.0	24.9	19.0	31.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.72	0.80	
Incremental Delay, d2	0.2	8.4		1.5	0.3		3.9	0.8	0.3	0.2	2.2	
Delay (s)	23.8	48.3		27.5	32.7		24.5	28.8	25.2	13.9	27.4	
Level of Service	C	D		C	C		C	C	C	B	C	
Approach Delay (s)		45.2			31.2			27.0			24.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

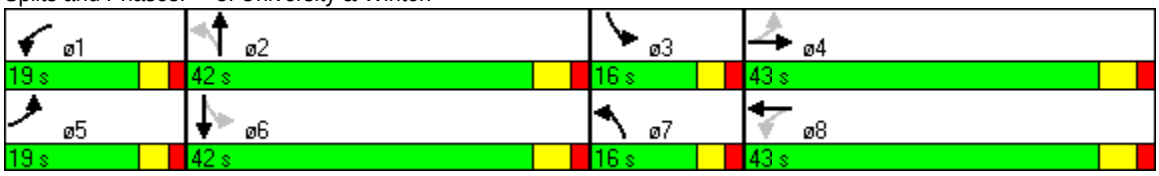
c Critical Lane Group

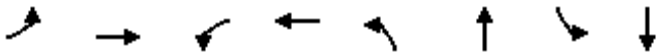
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	193	479	132	332	75	630	132	371
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	53.6	43.0	53.6	43.0	54.4	44.3	54.4	44.3
Actuated g/C Ratio	0.45	0.36	0.45	0.36	0.45	0.37	0.45	0.37
v/c Ratio	0.54	0.63	0.55	0.36	0.24	0.60	0.53	0.41
Control Delay	30.5	33.2	38.2	29.2	14.5	24.4	37.4	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2
Total Delay	30.5	33.2	38.2	29.2	14.5	24.8	37.4	28.8
LOS	C	C	D	C	B	C	D	C
Approach Delay		32.6		31.5		23.8		30.8
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 64.4% ICU Level of Service C
Analysis Period (min) 15

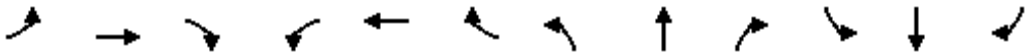
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	227	763	155	439	90	772	147	506
v/c Ratio	0.54	0.63	0.55	0.36	0.24	0.60	0.53	0.41
Control Delay	30.5	33.2	38.2	29.2	14.5	24.4	37.4	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2
Total Delay	30.5	33.2	38.2	29.2	14.5	24.8	37.4	28.8
Queue Length 50th (ft)	106	241	69	127	23	140	62	142
Queue Length 95th (ft)	143	297	100	167	35	159	109	207
Internal Link Dist (ft)		583		792		257		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	495	1211	362	1203	423	1287	319	1236
Starvation Cap Reductn	0	0	0	0	0	163	0	0
Spillback Cap Reductn	0	2	0	0	0	0	0	230
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.63	0.43	0.36	0.21	0.69	0.46	0.50

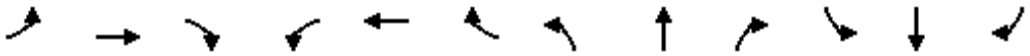
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	479	169	132	332	41	75	630	11	132	371	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.98		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3303		1745	3336		1711	3481		1710	3305	
Flt Permitted	0.40	1.00		0.20	1.00		0.36	1.00		0.20	1.00	
Satd. Flow (perm)	732	3303		363	3336		643	3481		362	3305	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.83	0.83	0.83	0.90	0.90	0.90
Adj. Flow (vph)	227	564	199	155	391	48	90	759	13	147	412	94
RTOR Reduction (vph)	0	28	0	0	8	0	0	1	0	0	15	0
Lane Group Flow (vph)	227	735	0	155	431	0	90	771	0	147	491	0
Heavy Vehicles (%)	0%	1%	3%	0%	3%	2%	3%	1%	0%	1%	2%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.7	40.0		48.7	40.0		49.3	41.3		49.3	41.3	
Effective Green, g (s)	52.7	43.0		52.7	43.0		53.3	44.3		53.3	44.3	
Actuated g/C Ratio	0.44	0.36		0.44	0.36		0.44	0.37		0.44	0.37	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	412	1184		283	1195		375	1285		273	1220	
v/s Ratio Prot	c0.05	c0.22		0.05	0.13		0.02	c0.22		c0.04	0.15	
v/s Ratio Perm	0.19			0.19			0.09			0.19		
v/c Ratio	0.55	0.62		0.55	0.36		0.24	0.60		0.54	0.40	
Uniform Delay, d1	31.7	31.8		39.5	28.4		27.6	30.7		39.4	28.0	
Progression Factor	1.00	1.00		1.00	1.00		0.64	0.71		1.00	1.00	
Incremental Delay, d2	0.9	2.5		1.2	0.8		0.1	2.0		1.0	1.0	
Delay (s)	32.6	34.2		40.7	29.2		17.8	23.8		40.4	29.0	
Level of Service	C	C		D	C		B	C		D	C	
Approach Delay (s)		33.9			32.2			23.1			31.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	497	76	72	289	0	73	0	52	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	558	85	77	311	0	81	0	58	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					912							
pX, platoon unblocked	0.91						0.91	0.91		0.91	0.91	0.91
vC, conflicting volume	311			644			1067	1067	601	1124	1109	311
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	195			644			1025	1025	601	1088	1071	195
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			56	100	89	100	100	100
cM capacity (veh/h)	1267			951			184	198	504	148	186	776

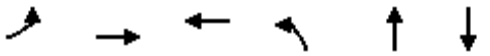
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	644	388	139	0
Volume Left	0	77	81	0
Volume Right	85	0	58	0
cSH	1267	951	250	1700
Volume to Capacity	0.00	0.08	0.56	0.00
Queue Length 95th (ft)	0	7	77	0
Control Delay (s)	0.0	2.5	36.0	0.0
Lane LOS		A	E	A
Approach Delay (s)	0.0	2.5	36.0	0.0
Approach LOS			E	A

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	152	616	394	19	10	73	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	5.0		7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.0		22.0	25.0	25.0	25.0	25.0
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	None		C-Max	None	None	None	None
Act Effct Green (s)	39.1	42.1	30.1	11.9	11.9		11.9
Actuated g/C Ratio	0.65	0.70	0.50	0.20	0.20		0.20
v/c Ratio	0.30	0.33	0.29	0.15	0.14		0.56
Control Delay	6.3	4.5	11.6	20.2	9.4		11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	6.3	4.5	11.6	20.2	9.4		11.3
LOS	A	A	B	C	A		B
Approach Delay		4.8	11.6		12.8		11.3
Approach LOS		A	B		B		B

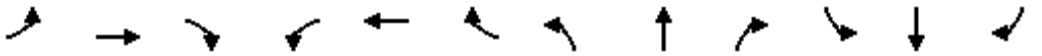
Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 44 (73%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 52.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	197	800	478	22	48	272
v/c Ratio	0.30	0.33	0.29	0.15	0.14	0.56
Control Delay	6.3	4.5	11.6	20.2	9.4	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	4.5	11.6	20.2	9.4	11.3
Queue Length 50th (ft)	17	41	75	7	4	26
Queue Length 95th (ft)	44	79	102	20	21	50
Internal Link Dist (ft)		374	831		232	301
Turn Bay Length (ft)	60					
Base Capacity (vph)	691	2482	1661	265	600	741
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.32	0.29	0.08	0.08	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	616	0	0	394	36	19	10	31	73	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.89			0.90	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1711	3455			3295		1685	1574			1861	
Flt Permitted	0.45	1.00			1.00		0.41	1.00			0.89	
Satd. Flow (perm)	809	3455			3295		724	1574			1683	
Peak-hour factor, PHF	0.77	0.77	0.77	0.90	0.90	0.90	0.86	0.86	0.86	0.95	0.95	0.95
Adj. Flow (vph)	197	800	0	0	438	40	22	12	36	77	0	195
RTOR Reduction (vph)	0	0	0	0	8	0	0	29	0	0	156	0
Lane Group Flow (vph)	197	800	0	0	470	0	22	19	0	0	116	0
Heavy Vehicles (%)	2%	1%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	34.1	39.6			27.6		9.4	9.4			9.4	
Effective Green, g (s)	39.1	42.1			30.1		11.9	11.9			11.9	
Actuated g/C Ratio	0.65	0.70			0.50		0.20	0.20			0.20	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	2.0				2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	662	2424			1653		144	312			334	
v/s Ratio Prot	0.04	c0.23			0.14			0.01				
v/s Ratio Perm	0.15						0.03				c0.07	
v/c Ratio	0.30	0.33			0.28		0.15	0.06			0.35	
Uniform Delay, d1	5.6	3.5			8.7		19.9	19.5			20.7	
Progression Factor	1.00	1.00			1.21		1.00	1.00			1.16	
Incremental Delay, d2	0.1	0.0			0.4		0.5	0.1			0.6	
Delay (s)	5.7	3.5			10.9		20.4	19.6			24.6	
Level of Service	A	A			B		C	B			C	
Approach Delay (s)		3.9			10.9			19.8			24.6	
Approach LOS		A			B			B			C	

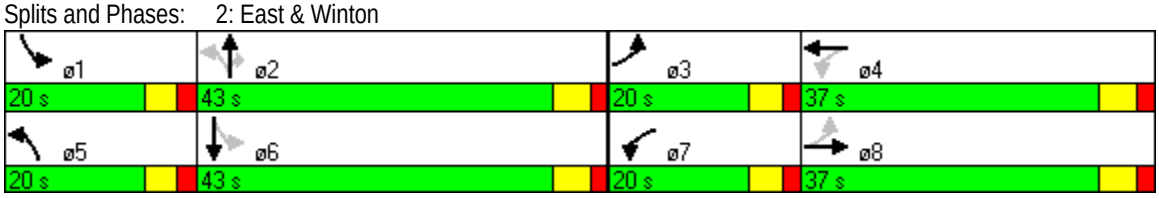
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	120	401	122	268	223	510	109	186	498
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	45.1	32.0	45.9	32.5	62.7	48.0	48.0	62.3	47.8
Actuated g/C Ratio	0.38	0.27	0.38	0.27	0.52	0.40	0.40	0.52	0.40
v/c Ratio	0.34	0.73	0.50	0.41	0.60	0.39	0.16	0.46	0.56
Control Delay	22.8	37.2	28.7	34.2	22.2	28.2	5.6	9.3	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	22.8	37.2	28.7	34.2	22.2	28.4	5.6	9.3	16.6
LOS	C	D	C	C	C	C	A	A	B
Approach Delay		34.8		32.7		23.8			14.9
Approach LOS		C		C		C			B

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 25.4 — Intersection LOS: C
Intersection Capacity Utilization 68.1% — ICU Level of Service C
Analysis Period (min) 15

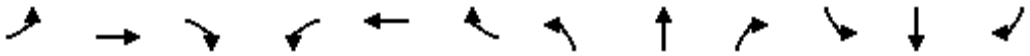
Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	133	674	136	378	235	537	115	214	725
v/c Ratio	0.34	0.73	0.50	0.41	0.60	0.39	0.16	0.46	0.56
Control Delay	22.8	37.2	28.7	34.2	22.2	28.2	5.6	9.3	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	22.8	37.2	28.7	34.2	22.2	28.4	5.6	9.3	16.6
Queue Length 50th (ft)	65	217	67	116	92	154	0	51	109
Queue Length 95th (ft)	98	292	103	159	156	225	41	m70	130
Internal Link Dist (ft)		831		439		405			303
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	437	985	319	979	424	1382	729	492	1303
Starvation Cap Reductn	0	0	0	0	0	0	0	0	215
Spillback Cap Reductn	0	0	0	1	0	284	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.68	0.43	0.39	0.55	0.49	0.16	0.43	0.67

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	401	205	122	268	72	223	510	109	186	498	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3258		1728	3326		1745	3455	1652	1710	3228	
Flt Permitted	0.40	1.00		0.16	1.00		0.24	1.00	1.00	0.35	1.00	
Satd. Flow (perm)	742	3258		290	3326		449	3455	1652	638	3228	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.87	0.87	0.87
Adj. Flow (vph)	133	446	228	136	298	80	235	537	115	214	572	153
RTOR Reduction (vph)	0	55	0	0	20	0	0	0	69	0	18	0
Lane Group Flow (vph)	133	619	0	136	358	0	235	537	46	214	707	0
Heavy Vehicles (%)	0%	2%	1%	1%	2%	0%	1%	2%	2%	1%	3%	6%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	39.5	29.0		40.5	29.5		57.2	45.0	45.0	56.8	44.8	
Effective Green, g (s)	44.5	32.0		45.5	32.5		62.2	48.0	48.0	61.8	47.8	
Actuated g/C Ratio	0.37	0.27		0.38	0.27		0.52	0.40	0.40	0.51	0.40	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	384	869		272	901		391	1382	661	458	1286	
v/s Ratio Prot	0.04	c0.19		c0.06	0.11		c0.07	0.16		0.06	0.22	
v/s Ratio Perm	0.09			0.13			c0.24		0.03	0.18		
v/c Ratio	0.35	0.71		0.50	0.40		0.60	0.39	0.07	0.47	0.55	
Uniform Delay, d1	26.0	39.8		27.0	35.7		17.8	25.6	22.2	16.7	27.8	
Progression Factor	0.92	0.92		1.00	1.00		1.00	1.00	1.00	0.45	0.53	
Incremental Delay, d2	0.2	2.9		0.5	0.4		1.8	0.8	0.2	0.2	1.2	
Delay (s)	24.1	39.4		27.5	36.1		19.6	26.4	22.4	7.7	15.8	
Level of Service	C	D		C	D		B	C	C	A	B	
Approach Delay (s)		36.9			33.9			24.1			13.9	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

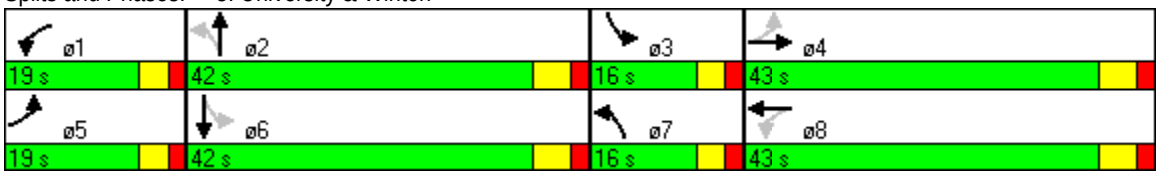
c Critical Lane Group

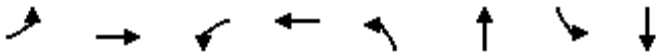
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	229	528	176	355	91	765	176	522
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	56.4	40.7	56.4	40.7	51.6	39.3	51.6	39.3
Actuated g/C Ratio	0.47	0.34	0.47	0.34	0.43	0.33	0.43	0.33
v/c Ratio	0.91	0.82	0.79	0.69	0.34	0.79	0.81	0.64
Control Delay	74.0	41.2	62.7	30.0	22.5	33.9	69.4	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	74.0	41.2	62.7	30.0	22.5	34.8	69.4	36.3
LOS	E	D	E	C	C	C	E	D
Approach Delay		48.7		37.0		33.6		43.3
Approach LOS		D		D		C		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 41.0 — Intersection LOS: D
Intersection Capacity Utilization 76.9% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: University & Winton

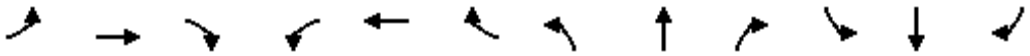




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	286	955	229	836	103	896	191	709
v/c Ratio	0.91	0.82	0.79	0.69	0.34	0.79	0.81	0.64
Control Delay	74.0	41.2	62.7	30.0	22.5	33.9	69.4	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	74.0	41.2	62.7	30.0	22.5	34.8	69.4	36.3
Queue Length 50th (ft)	145	337	121	233	25	345	94	237
Queue Length 95th (ft)	#235	354	167	237	45	272	#211	304
Internal Link Dist (ft)		587		799		303		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	320	1159	293	1209	310	1140	245	1102
Starvation Cap Reductn	0	0	0	0	0	80	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.82	0.78	0.69	0.33	0.85	0.78	0.64

Intersection Summary

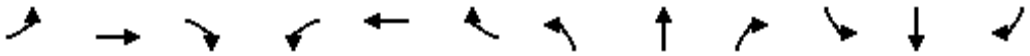
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	528	236	176	355	289	91	765	24	176	522	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	3295		1728	3208		1745	3475		1694	3311	
Flt Permitted	0.14	1.00		0.10	1.00		0.20	1.00		0.10	1.00	
Satd. Flow (perm)	263	3295		183	3208		370	3475		187	3311	
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	286	660	295	229	461	375	103	869	27	191	567	142
RTOR Reduction (vph)	0	42	0	0	121	0	0	2	0	0	18	0
Lane Group Flow (vph)	286	913	0	229	715	0	103	894	0	191	691	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	2%	1%	1%	0%	2%	1%	2%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.4	37.7		51.4	37.7		46.6	36.3		46.6	36.3	
Effective Green, g (s)	55.4	40.7		55.4	40.7		50.6	39.3		50.6	39.3	
Actuated g/C Ratio	0.46	0.34		0.46	0.34		0.42	0.33		0.42	0.33	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	313	1118		287	1088		297	1138		233	1084	
v/s Ratio Prot	c0.12	0.28		0.10	0.22		0.04	0.26		c0.08	0.21	
v/s Ratio Perm	c0.30			0.26			0.11			c0.26		
v/c Ratio	0.91	0.82		0.80	0.66		0.35	0.79		0.82	0.64	
Uniform Delay, d1	41.8	36.2		43.5	33.7		37.4	36.5		45.3	34.3	
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.77		1.00	1.00	
Incremental Delay, d2	29.2	6.6		13.4	3.1		0.3	5.3		18.8	2.9	
Delay (s)	70.9	42.9		56.9	36.8		26.9	33.5		64.1	37.2	
Level of Service	E	D		E	D		C	C		E	D	
Approach Delay (s)		49.3			41.1			32.9			42.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	42.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	409	81	74	408	0	75	0	76	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90
Hourly flow rate (vph)	0	476	94	77	425	0	77	0	78	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					904							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	425			570			1102	1102	523	1180	1149	425
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	237			570			1032	1032	523	1124	1088	237
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			55	100	86	100	100	100
cM capacity (veh/h)	1142			1013			171	185	558	127	171	687

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	570	502	156	0
Volume Left	0	77	77	0
Volume Right	94	0	78	0
cSH	1142	1013	262	1700
Volume to Capacity	0.00	0.08	0.59	0.00
Queue Length 95th (ft)	0	6	87	0
Control Delay (s)	0.0	2.1	37.0	0.0
Lane LOS		A	E	A
Approach Delay (s)	0.0	2.1	37.0	0.0
Approach LOS			E	A

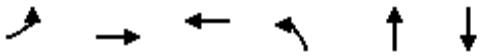
Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	103	576	366	18	6	50	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	5.0		7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.0		22.0	25.0	25.0	25.0	25.0
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	None		C-Max	None	None	None	None
Act Effct Green (s)	40.1	43.1	32.0	10.9	10.9		10.9
Actuated g/C Ratio	0.67	0.72	0.53	0.18	0.18		0.18
v/c Ratio	0.16	0.25	0.22	0.17	0.12		0.49
Control Delay	4.2	3.6	7.6	22.1	10.2		9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	4.2	3.6	7.6	22.1	10.2		9.4
LOS	A	A	A	C	B		A
Approach Delay		3.7	7.6		14.9		9.4
Approach LOS		A	A		B		A

Intersection Summary

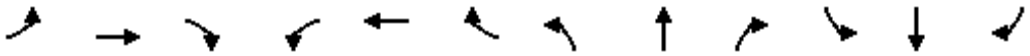
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 2 (3%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 6.2 — Intersection LOS: A
Intersection Capacity Utilization 44.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	111	619	410	25	38	219
v/c Ratio	0.16	0.25	0.22	0.17	0.12	0.49
Control Delay	4.2	3.6	7.6	22.1	10.2	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	3.6	7.6	22.1	10.2	9.4
Queue Length 50th (ft)	8	27	29	8	2	20
Queue Length 95th (ft)	27	63	68	19	15	49
Internal Link Dist (ft)		374	843		232	304
Turn Bay Length (ft)	75					
Base Capacity (vph)	771	2591	1833	292	592	727
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.24	0.22	0.09	0.06	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	576	0	0	366	20	18	6	22	50	0	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.88			0.90	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1728	3455			3430		1685	1563			1857	
Flt Permitted	0.50	1.00			1.00		0.45	1.00			0.90	
Satd. Flow (perm)	906	3455			3430		797	1563			1702	
Peak-hour factor, PHF	0.93	0.93	0.93	0.94	0.94	0.94	0.73	0.73	0.73	0.88	0.88	0.88
Adj. Flow (vph)	111	619	0	0	389	21	25	8	30	57	0	162
RTOR Reduction (vph)	0	0	0	0	4	0	0	25	0	0	133	0
Lane Group Flow (vph)	111	619	0	0	406	0	25	13	0	0	86	0
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	35.1	40.6			29.5		8.4	8.4			8.4	
Effective Green, g (s)	40.1	43.1			32.0		10.9	10.9			10.9	
Actuated g/C Ratio	0.67	0.72			0.53		0.18	0.18			0.18	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	2.0				2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	716	2482			1829		145	284			309	
v/s Ratio Prot	0.02	c0.18			0.12			0.01				
v/s Ratio Perm	0.08						0.03				c0.05	
v/c Ratio	0.16	0.25			0.22		0.17	0.05			0.28	
Uniform Delay, d1	4.1	2.9			7.4		20.7	20.3			21.2	
Progression Factor	1.00	1.00			0.93		1.00	1.00			0.91	
Incremental Delay, d2	0.0	0.0			0.3		0.6	0.1			0.5	
Delay (s)	4.1	2.9			7.2		21.3	20.3			19.8	
Level of Service	A	A			A		C	C			B	
Approach Delay (s)		3.1			7.2			20.7			19.8	
Approach LOS		A			A			C			B	

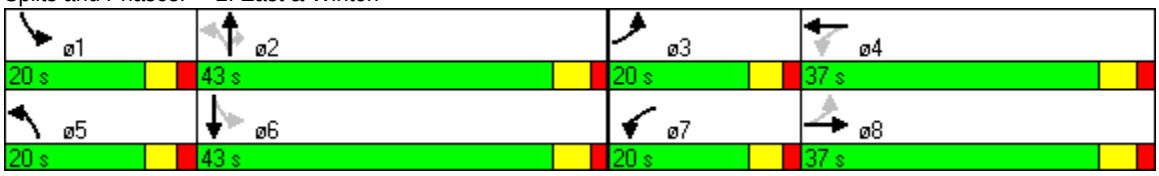
Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	116	365	115	190	197	351	131	128	415
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	43.5	30.6	43.8	30.7	66.2	52.0	52.0	62.4	50.1
Actuated g/C Ratio	0.36	0.26	0.36	0.26	0.55	0.43	0.43	0.52	0.42
v/c Ratio	0.31	0.66	0.44	0.32	0.50	0.26	0.18	0.27	0.45
Control Delay	23.7	37.0	28.2	31.7	18.3	23.7	4.7	10.4	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	23.7	37.0	28.2	31.7	18.3	23.7	4.7	10.4	16.7
LOS	C	D	C	C	B	C	A	B	B
Approach Delay		34.6		30.6		18.5			15.5
Approach LOS		C		C		B			B

Intersection Summary

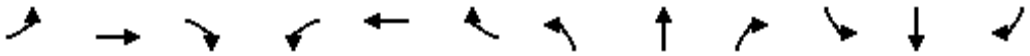
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 23.8 Intersection LOS: C
Intersection Capacity Utilization 61.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	129	584	128	282	224	399	149	147	623
v/c Ratio	0.31	0.66	0.44	0.32	0.50	0.26	0.18	0.27	0.45
Control Delay	23.7	37.0	28.2	31.7	18.3	23.7	4.7	10.4	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	23.7	37.0	28.2	31.7	18.3	23.7	4.7	10.4	16.7
Queue Length 50th (ft)	67	179	66	81	81	98	0	36	87
Queue Length 95th (ft)	98	211	98	114	145	160	42	60	176
Internal Link Dist (ft)		843		439		405			258
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	462	986	341	970	480	1529	816	597	1385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	251
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.59	0.38	0.29	0.47	0.26	0.18	0.25	0.55

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	365	160	115	190	64	197	351	131	128	415	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3330		1745	3308		1762	3525	1686	1727	3268	
Flt Permitted	0.48	1.00		0.21	1.00		0.30	1.00	1.00	0.47	1.00	
Satd. Flow (perm)	889	3330		386	3308		554	3525	1686	863	3268	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.88	0.88	0.88	0.87	0.87	0.87
Adj. Flow (vph)	129	406	178	128	211	71	224	399	149	147	477	146
RTOR Reduction (vph)	0	43	0	0	29	0	0	0	84	0	21	0
Lane Group Flow (vph)	129	541	0	128	253	0	224	399	65	147	602	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	2%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	38.1	27.6		38.3	27.7		60.7	49.0	49.0	56.9	47.1	
Effective Green, g (s)	43.1	30.6		43.3	30.7		65.7	52.0	52.0	61.9	50.1	
Actuated g/C Ratio	0.36	0.26		0.36	0.26		0.55	0.43	0.43	0.52	0.42	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	412	849		288	846		446	1528	731	534	1364	
v/s Ratio Prot	0.03	c0.16		c0.05	0.08		c0.06	0.11		0.03	0.18	
v/s Ratio Perm	0.08			0.11			c0.22		0.04	0.11		
v/c Ratio	0.31	0.64		0.44	0.30		0.50	0.26	0.09	0.28	0.44	
Uniform Delay, d1	26.7	39.8		27.6	36.0		15.3	21.7	20.0	15.5	25.0	
Progression Factor	0.93	0.93		1.00	1.00		1.00	1.00	1.00	0.66	0.62	
Incremental Delay, d2	0.2	1.7		0.4	0.3		0.3	0.4	0.2	0.1	1.0	
Delay (s)	25.1	38.8		28.0	36.3		15.6	22.1	20.3	10.3	16.4	
Level of Service	C	D		C	D		B	C	C	B	B	
Approach Delay (s)		36.3			33.7			19.9			15.2	
Approach LOS		D			C			B			B	

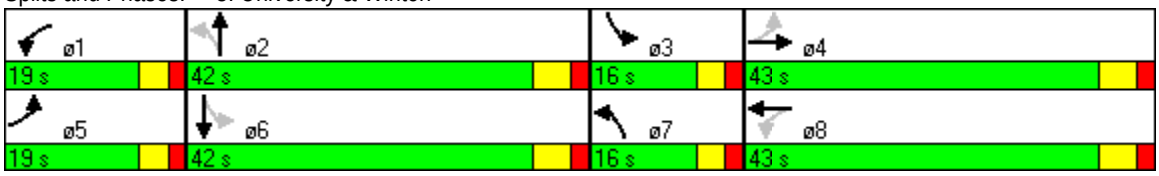
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

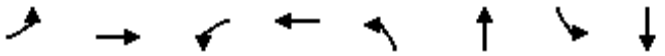
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	153	229	92	227	64	506	146	491
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	52.0	44.9	52.0	44.9	55.9	47.9	56.0	47.9
Actuated g/C Ratio	0.43	0.37	0.43	0.37	0.47	0.40	0.47	0.40
v/c Ratio	0.48	0.33	0.26	0.29	0.22	0.42	0.43	0.49
Control Delay	28.6	24.2	23.3	22.0	16.0	21.8	25.9	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	28.6	24.2	23.3	22.0	16.0	22.3	25.9	27.2
LOS	C	C	C	C	B	C	C	C
Approach Delay		25.6		22.3		21.6		27.0
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

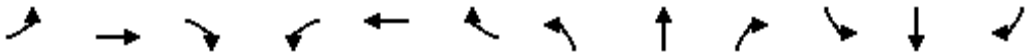
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	199	419	102	373	72	584	152	643
v/c Ratio	0.48	0.33	0.26	0.29	0.22	0.42	0.43	0.49
Control Delay	28.6	24.2	23.3	22.0	16.0	21.8	25.9	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	28.6	24.2	23.3	22.0	16.0	22.3	25.9	27.2
Queue Length 50th (ft)	90	102	44	82	20	101	65	184
Queue Length 95th (ft)	126	125	83	129	32	124	100	242
Internal Link Dist (ft)		582		799		258		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	546	1271	512	1272	405	1389	421	1322
Starvation Cap Reductn	0	0	0	0	0	381	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	37
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.33	0.20	0.29	0.18	0.58	0.36	0.50

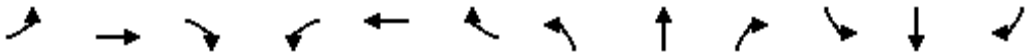
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	153	229	94	92	227	109	64	506	13	146	491	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3304		1711	3277		1762	3477		1727	3270	
Flt Permitted	0.46	1.00		0.42	1.00		0.29	1.00		0.32	1.00	
Satd. Flow (perm)	836	3304		757	3277		535	3477		587	3270	
Peak-hour factor, PHF	0.77	0.77	0.77	0.90	0.90	0.90	0.89	0.89	0.89	0.96	0.96	0.96
Adj. Flow (vph)	199	297	122	102	252	121	72	569	15	152	511	132
RTOR Reduction (vph)	0	34	0	0	46	0	0	1	0	0	17	0
Lane Group Flow (vph)	199	385	0	102	327	0	72	583	0	152	626	0
Heavy Vehicles (%)	0%	1%	1%	2%	0%	4%	0%	1%	0%	0%	3%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.0	41.9		47.0	41.9		51.0	44.9		51.0	44.9	
Effective Green, g (s)	51.0	44.9		51.0	44.9		55.0	47.9		55.0	47.9	
Actuated g/C Ratio	0.42	0.37		0.42	0.37		0.46	0.40		0.46	0.40	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	409	1236		378	1226		328	1388		346	1305	
v/s Ratio Prot	c0.03	0.12		0.02	0.10		0.01	0.17		c0.03	c0.19	
v/s Ratio Perm	c0.18			0.10			0.09			0.17		
v/c Ratio	0.49	0.31		0.27	0.27		0.22	0.42		0.44	0.48	
Uniform Delay, d1	29.6	26.6		27.4	26.1		28.5	26.0		30.5	26.8	
Progression Factor	1.00	1.00		1.00	1.00		0.79	0.80		1.00	1.00	
Incremental Delay, d2	0.3	0.7		0.1	0.5		0.1	0.9		0.3	1.3	
Delay (s)	29.9	27.3		27.6	26.6		22.5	21.6		30.8	28.1	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		28.1			26.8			21.7			28.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	311	50	42	242	0	74	0	97	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.95	0.95	0.95	0.87	0.87	0.87	0.25	0.25	0.25
Hourly flow rate (vph)	0	375	60	44	255	0	85	0	111	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					912							
pX, platoon unblocked	0.99						0.99	0.99		0.99	0.99	0.99
vC, conflicting volume	255			435			748	748	405	859	778	255
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	247			435			743	743	405	855	774	247
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			74	100	83	100	100	100
cM capacity (veh/h)	1322			1136			322	330	648	224	317	792

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	435	299	197	0
Volume Left	0	44	85	0
Volume Right	60	0	111	0
cSH	1322	1136	450	1700
Volume to Capacity	0.00	0.04	0.44	0.00
Queue Length 95th (ft)	0	3	54	0
Control Delay (s)	0.0	1.6	19.0	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	1.6	19.0	0.0
Approach LOS			C	A

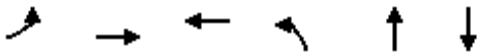
Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	54.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	41	563	549	18	11	24	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5		21.5	24.5	24.5	24.5	24.5
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	Min		C-Max	None	None	None	None
Act Effct Green (s)	43.6	47.2	34.4	9.6	9.6		9.6
Actuated g/C Ratio	0.73	0.79	0.57	0.16	0.16		0.16
v/c Ratio	0.08	0.24	0.32	0.11	0.27		0.33
Control Delay	3.1	2.7	5.9	21.8	10.3		8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	3.1	2.7	5.9	21.8	10.3		8.2
LOS	A	A	A	C	B		A
Approach Delay		2.8	5.9		12.6		8.2
Approach LOS		A	A		B		A

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 5 (8%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 5.1 — Intersection LOS: A
Intersection Capacity Utilization 41.1% — ICU Level of Service A
Analysis Period (min) 15

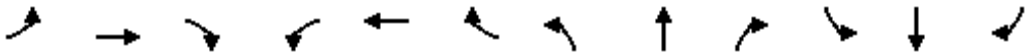
Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	47	647	619	20	82	110
v/c Ratio	0.08	0.24	0.32	0.11	0.27	0.33
Control Delay	3.1	2.7	5.9	21.8	10.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	2.7	5.9	21.8	10.3	8.2
Queue Length 50th (ft)	3	26	56	6	4	9
Queue Length 95th (ft)	11	51	m105	21	33	29
Internal Link Dist (ft)		374	70		232	301
Turn Bay Length (ft)	75					
Base Capacity (vph)	629	2675	1917	425	597	668
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.24	0.32	0.05	0.14	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	563	0	0	549	8	18	11	63	24	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			1.00		1.00	0.87			0.90	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1586	3388			3344		1685	1508			1856	
Flt Permitted	0.38	1.00			1.00		0.65	1.00			0.89	
Satd. Flow (perm)	635	3388			3344		1159	1508			1680	
Peak-hour factor, PHF	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	47	647	0	0	610	9	20	12	70	28	0	82
RTOR Reduction (vph)	0	0	0	0	1	0	0	60	0	0	70	0
Lane Group Flow (vph)	47	647	0	0	618	0	20	22	0	0	40	0
Heavy Vehicles (%)	10%	3%	0%	0%	4%	13%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	37.5	43.0			30.7		6.0	6.0			6.0	
Effective Green, g (s)	42.5	45.5			33.2		8.5	8.5			8.5	
Actuated g/C Ratio	0.71	0.76			0.55		0.14	0.14			0.14	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	3.0				3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	597	2569			1850		164	214			238	
v/s Ratio Prot	0.01	c0.19			c0.18			0.01				
v/s Ratio Perm	0.04						0.02				c0.02	
v/c Ratio	0.08	0.25			0.33		0.12	0.10			0.17	
Uniform Delay, d1	3.7	2.2			7.3		22.5	22.4			22.6	
Progression Factor	1.00	1.00			0.72		1.00	1.00			0.80	
Incremental Delay, d2	0.1	0.1			0.4		0.3	0.2			0.3	
Delay (s)	3.8	2.2			5.7		22.8	22.6			18.4	
Level of Service	A	A			A		C	C			B	
Approach Delay (s)		2.3			5.7			22.7			18.4	
Approach LOS		A			A			C			B	

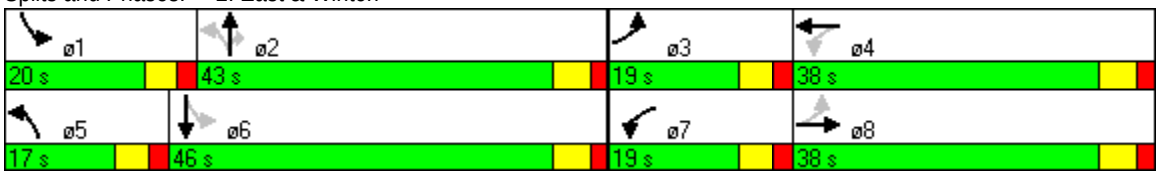
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	63	324	198	501	190	496	66	85	880
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	32.0	12.0	32.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	19.0	38.0	19.0	38.0	17.0	43.0	43.0	20.0	46.0
Total Split (%)	15.8%	31.7%	15.8%	31.7%	14.2%	35.8%	35.8%	16.7%	38.3%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Min	None	Min	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	41.4	30.8	49.4	38.0	63.8	50.7	50.7	58.7	47.8
Actuated g/C Ratio	0.34	0.26	0.41	0.32	0.53	0.42	0.42	0.49	0.40
v/c Ratio	0.27	0.75	0.72	0.53	0.80	0.38	0.10	0.24	0.91
Control Delay	22.2	37.6	38.8	35.7	51.1	26.2	6.1	11.4	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	22.2	37.6	38.8	35.7	51.1	26.2	6.1	11.4	34.2
LOS	C	D	D	D	D	C	A	B	C
Approach Delay		36.0		36.5		30.7			32.4
Approach LOS		D		D		C			C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 78.4% ICU Level of Service D
Analysis Period (min) 15

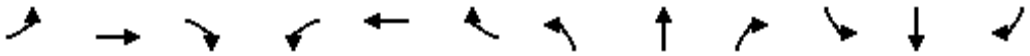
Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	81	677	218	576	209	545	73	101	1188
v/c Ratio	0.27	0.75	0.72	0.53	0.80	0.38	0.10	0.24	0.91
Control Delay	22.2	37.6	38.8	35.7	51.1	26.2	6.1	11.4	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	22.2	37.6	38.8	35.7	51.1	26.2	6.1	11.4	34.2
Queue Length 50th (ft)	38	206	110	194	106	152	0	25	481
Queue Length 95th (ft)	59	213	177	249	#244	221	32	43	#548
Internal Link Dist (ft)		691		432		405			264
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	381	1016	307	1084	270	1431	740	498	1301
Starvation Cap Reductn	0	0	0	0	0	0	0	0	29
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.67	0.71	0.53	0.77	0.38	0.10	0.20	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	324	204	198	501	23	190	496	66	85	880	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1711	3196		1745	3418		1728	3389	1652	1677	3250	
Flt Permitted	0.33	1.00		0.15	1.00		0.08	1.00	1.00	0.38	1.00	
Satd. Flow (perm)	596	3196		266	3418		148	3389	1652	664	3250	
Peak-hour factor, PHF	0.78	0.78	0.78	0.91	0.91	0.91	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	81	415	262	218	551	25	209	545	73	101	1048	140
RTOR Reduction (vph)	0	87	0	0	3	0	0	0	43	0	8	0
Lane Group Flow (vph)	81	590	0	218	573	0	209	545	30	101	1180	0
Heavy Vehicles (%)	2%	4%	1%	0%	1%	11%	2%	4%	2%	3%	3%	15%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	35.9	28.9		47.5	35.0		57.9	46.6	46.6	52.1	43.7	
Effective Green, g (s)	40.9	31.9		50.0	38.0		62.9	49.6	49.6	57.1	46.7	
Actuated g/C Ratio	0.34	0.27		0.42	0.32		0.52	0.41	0.41	0.48	0.39	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	291	850		303	1082		259	1401	683	408	1265	
v/s Ratio Prot	0.02	0.18		c0.09	0.17		c0.09	0.16		0.02	c0.36	
v/s Ratio Perm	0.07			c0.21			0.33		0.02	0.10		
v/c Ratio	0.28	0.69		0.72	0.53		0.81	0.39	0.04	0.25	0.93	
Uniform Delay, d1	27.6	39.7		26.2	33.7		31.9	24.6	21.0	17.8	35.1	
Progression Factor	0.96	0.97		1.00	1.00		1.00	1.00	1.00	0.67	0.59	
Incremental Delay, d2	0.2	2.6		6.7	0.6		15.7	0.8	0.1	0.1	13.0	
Delay (s)	26.7	41.1		32.8	34.3		47.6	25.4	21.2	12.0	33.7	
Level of Service	C	D		C	C		D	C	C	B	C	
Approach Delay (s)		39.6			33.9			30.7			32.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

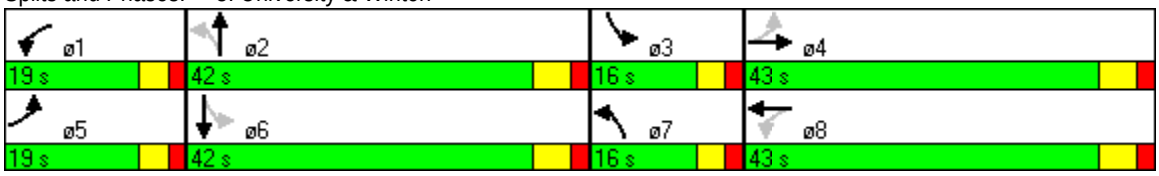
c Critical Lane Group

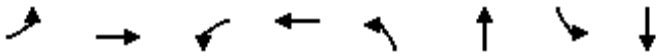
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	193	68	490	153	448	166	656
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	48.7	41.7	48.7	41.7	59.3	48.0	59.3	48.0
Actuated g/C Ratio	0.41	0.35	0.41	0.35	0.49	0.40	0.49	0.40
v/c Ratio	0.26	0.29	0.22	0.72	0.59	0.41	0.48	0.62
Control Delay	29.4	23.5	24.3	37.1	25.9	13.5	25.7	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.9
Total Delay	29.4	23.5	24.3	37.1	25.9	13.7	25.7	32.0
LOS	C	C	C	D	C	B	C	C
Approach Delay		24.3		35.9		16.8		30.8
Approach LOS		C		D		B		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 28.2 Intersection LOS: C
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15

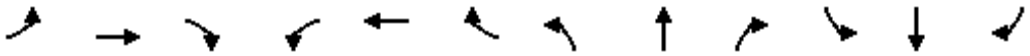
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	329	88	841	184	541	189	800
v/c Ratio	0.26	0.29	0.22	0.72	0.59	0.41	0.48	0.62
Control Delay	29.4	23.5	24.3	37.1	25.9	13.5	25.7	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.9
Total Delay	29.4	23.5	24.3	37.1	25.9	13.7	25.7	32.0
Queue Length 50th (ft)	22	81	41	291	66	50	74	253
Queue Length 95th (ft)	42	102	63	294	96	57	117	316
Internal Link Dist (ft)		583		787		264		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	310	1121	524	1162	338	1330	416	1286
Starvation Cap Reductn	0	0	0	0	0	261	0	0
Spillback Cap Reductn	0	1	39	0	0	0	0	227
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.29	0.18	0.72	0.54	0.51	0.45	0.76

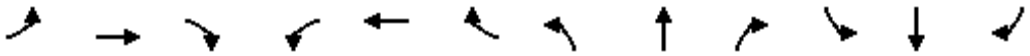
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	193	74	68	490	158	153	448	1	166	656	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	3130		1694	3272		1728	3324		1630	3204	
Flt Permitted	0.15	1.00		0.48	1.00		0.21	1.00		0.35	1.00	
Satd. Flow (perm)	259	3130		857	3272		379	3324		599	3204	
Peak-hour factor, PHF	0.81	0.81	0.81	0.77	0.77	0.77	0.83	0.83	0.83	0.88	0.88	0.88
Adj. Flow (vph)	49	238	91	88	636	205	184	540	1	189	745	55
RTOR Reduction (vph)	0	33	0	0	25	0	0	0	0	0	4	0
Lane Group Flow (vph)	49	296	0	88	816	0	184	541	0	189	796	0
Heavy Vehicles (%)	6%	3%	17%	3%	3%	2%	2%	6%	0%	6%	7%	3%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.7	38.7		43.7	38.7		54.3	45.0		54.3	45.0	
Effective Green, g (s)	47.7	41.7		47.7	41.7		58.3	48.0		58.3	48.0	
Actuated g/C Ratio	0.40	0.35		0.40	0.35		0.49	0.40		0.49	0.40	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	184	1088		389	1137		311	1330		388	1282	
v/s Ratio Prot	c0.02	0.09		0.01	c0.25		c0.06	0.16		0.05	c0.25	
v/s Ratio Perm	0.09			0.08			0.23			0.19		
v/c Ratio	0.27	0.27		0.23	0.72		0.59	0.41		0.49	0.62	
Uniform Delay, d1	40.9	28.2		27.6	34.0		36.7	25.8		28.8	28.7	
Progression Factor	0.92	0.93		1.00	1.00		0.64	0.48		1.00	1.00	
Incremental Delay, d2	0.3	0.6		0.1	3.9		1.9	0.9		0.4	2.3	
Delay (s)	38.0	26.9		27.7	37.9		25.6	13.4		29.1	31.0	
Level of Service	D	C		C	D		C	B		C	C	
Approach Delay (s)		28.4			37.0			16.5			30.6	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

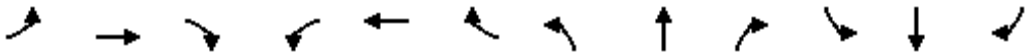
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	313	14	31	626	0	10	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.85	0.85	0.85	0.65	0.65	0.65	0.25	0.25	0.25
Hourly flow rate (vph)	0	377	17	36	736	0	15	0	31	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					139							
pX, platoon unblocked	0.82						0.82	0.82		0.82	0.82	0.82
vC, conflicting volume	736			394			1195	1195	386	1226	1203	736
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	565			394			1127	1127	386	1164	1137	565
tC, single (s)	5.1			4.1			7.1	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			97			89	100	95	100	100	100
cM capacity (veh/h)	538			1176			146	163	618	131	161	431

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	394	773	46	0
Volume Left	0	36	15	0
Volume Right	17	0	31	0
cSH	538	1176	298	1700
Volume to Capacity	0.00	0.03	0.15	0.00
Queue Length 95th (ft)	0	2	14	0
Control Delay (s)	0.0	0.8	19.3	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	0.8	19.3	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	578	14	17	493	63	18	3	25	60	3	64
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	81	642	16	19	548	70	20	3	28	67	3	71
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		150			771							
pX, platoon unblocked	0.98			0.96			0.97	0.97	0.96	0.97	0.97	0.98
vC, conflicting volume	618			658			1197	1468	329	1133	1441	309
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	558			566			1037	1315	224	972	1287	242
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			98			87	98	96	62	98	90
cM capacity (veh/h)	984			964			148	137	750	176	143	740

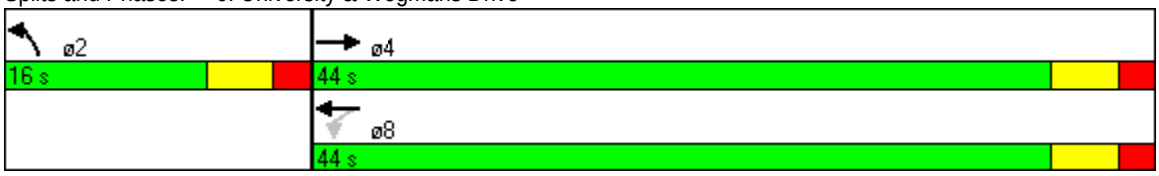
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	81	428	230	19	365	253	51	141
Volume Left	81	0	0	19	0	0	20	67
Volume Right	0	0	16	0	0	70	28	71
cSH	984	1700	1700	964	1700	1700	260	283
Volume to Capacity	0.08	0.25	0.14	0.02	0.21	0.15	0.20	0.50
Queue Length 95th (ft)	7	0	0	1	0	0	18	65
Control Delay (s)	9.0	0.0	0.0	8.8	0.0	0.0	22.2	29.7
Lane LOS	A			A			C	D
Approach Delay (s)	1.0			0.3			22.2	29.7
Approach LOS							C	D

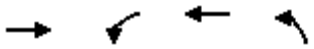
Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	280	69	615	42
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	15.0	15.0
Total Split (s)	44.0	44.0	44.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	42.5	42.5	42.5	8.5
Actuated g/C Ratio	0.71	0.71	0.71	0.14
v/c Ratio	0.28	0.11	0.52	0.37
Control Delay	3.8	2.2	3.7	15.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.8	2.2	3.7	15.7
LOS	A	A	A	B
Approach Delay	3.8		3.6	15.7
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 4.7	Intersection LOS: A
Intersection Capacity Utilization 45.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegmans Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	370	77	683	106
v/c Ratio	0.28	0.11	0.52	0.37
Control Delay	3.8	2.2	3.7	15.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.8	2.2	3.7	15.7
Queue Length 50th (ft)	32	4	32	15
Queue Length 95th (ft)	73	m12	90	50
Internal Link Dist (ft)	59		30	47
Turn Bay Length (ft)		100		
Base Capacity (vph)	1344	715	1321	371
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.11	0.52	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	280	53	69	615	42	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1883		1770	1863	1685	
Flt Permitted	1.00		0.54	1.00	0.98	
Satd. Flow (perm)	1883		1007	1863	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	311	59	77	683	47	59
RTOR Reduction (vph)	10	0	0	0	51	0
Lane Group Flow (vph)	360	0	77	683	55	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	41.5		41.5	41.5	7.5	
Effective Green, g (s)	42.5		42.5	42.5	8.5	
Actuated g/C Ratio	0.71		0.71	0.71	0.14	
Clearance Time (s)	5.5		5.5	5.5	5.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1334		713	1320	239	
v/s Ratio Prot	0.19			c0.37	c0.03	
v/s Ratio Perm			0.08			
v/c Ratio	0.27		0.11	0.52	0.23	
Uniform Delay, d1	3.2		2.8	4.0	22.9	
Progression Factor	1.00		0.62	0.61	1.00	
Incremental Delay, d2	0.5		0.2	1.1	0.5	
Delay (s)	3.7		1.9	3.5	23.4	
Level of Service	A		A	A	C	
Approach Delay (s)	3.7			3.3	23.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

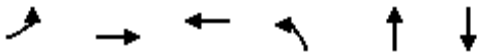
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	29	771	557	17	9	22	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.0		21.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	Min		C-Max	None	None	None	None
Act Effct Green (s)	43.9	47.5	34.2	9.2	9.2		9.2
Actuated g/C Ratio	0.73	0.79	0.57	0.15	0.15		0.15
v/c Ratio	0.06	0.35	0.38	0.16	0.21		0.41
Control Delay	3.0	3.1	10.1	23.8	11.3		7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	3.0	3.1	10.1	23.8	11.3		7.9
LOS	A	A	B	C	B		A
Approach Delay		3.1	10.1		14.7		7.9
Approach LOS		A	B		B		A

Intersection Summary

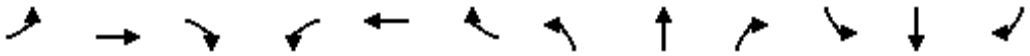
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 45 (75%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 6.6 — Intersection LOS: A
Intersection Capacity Utilization 45.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	35	940	714	22	58	154
v/c Ratio	0.06	0.35	0.38	0.16	0.21	0.41
Control Delay	3.0	3.1	10.1	23.8	11.3	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	3.1	10.1	23.8	11.3	7.9
Queue Length 50th (ft)	2	40	112	7	4	1
Queue Length 95th (ft)	8	74	135	20	23	26
Internal Link Dist (ft)		374	70		232	307
Turn Bay Length (ft)	75					
Base Capacity (vph)	582	2663	1893	321	589	722
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.35	0.38	0.07	0.10	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	771	0	0	557	29	17	9	36	22	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.88			0.89	
Flt Protected	0.95	1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1586	3388			3317		1685	1526			1836	
Flt Permitted	0.33	1.00			1.00		0.49	1.00			0.94	
Satd. Flow (perm)	557	3388			3317		876	1526			1742	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.78	0.78	0.78	0.94	0.94	0.94
Adj. Flow (vph)	35	940	0	0	679	35	22	12	46	23	0	131
RTOR Reduction (vph)	0	0	0	0	4	0	0	40	0	0	113	0
Lane Group Flow (vph)	35	940	0	0	710	0	22	18	0	0	41	0
Heavy Vehicles (%)	10%	3%	0%	0%	4%	13%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	38.9	43.9			31.2		6.1	6.1			6.1	
Effective Green, g (s)	42.9	45.9			33.2		8.1	8.1			8.1	
Actuated g/C Ratio	0.71	0.76			0.55		0.13	0.13			0.13	
Clearance Time (s)	5.0				5.0		5.0	5.0			5.0	
Vehicle Extension (s)	3.0				3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	565	2592			1835		118	206			235	
v/s Ratio Prot	0.01	c0.28			c0.21			0.01				
v/s Ratio Perm	0.03						c0.03				0.02	
v/c Ratio	0.06	0.36			0.39		0.19	0.09			0.17	
Uniform Delay, d1	4.0	2.3			7.6		23.0	22.7			23.0	
Progression Factor	1.00	1.00			1.20		1.00	1.00			0.91	
Incremental Delay, d2	0.0	0.1			0.6		0.8	0.2			0.4	
Delay (s)	4.0	2.4			9.8		23.8	22.9			21.4	
Level of Service	A	A			A		C	C			C	
Approach Delay (s)		2.4			9.8			23.1			21.4	
Approach LOS		A			A			C			C	

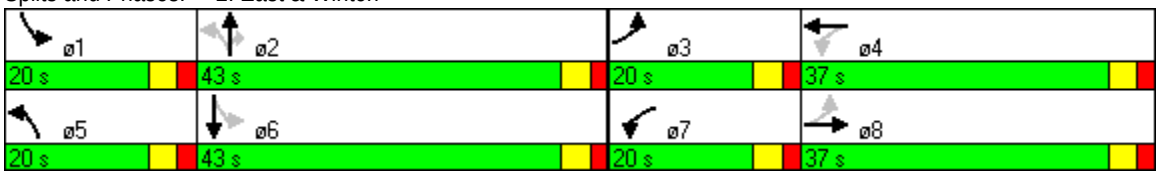
Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	124	526	121	294	259	450	134	191	578
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	31.0	12.0	31.0	10.0	24.0	24.0	10.0	24.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	49.6	36.6	50.9	37.3	59.1	43.2	43.2	56.4	41.8
Actuated g/C Ratio	0.41	0.30	0.42	0.31	0.49	0.36	0.36	0.47	0.35
v/c Ratio	0.36	0.90	0.58	0.39	0.76	0.38	0.20	0.46	0.65
Control Delay	22.0	48.4	31.6	33.1	34.2	30.3	5.3	15.3	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	22.0	48.4	31.6	33.1	34.2	30.4	5.3	15.3	29.9
LOS	C	D	C	C	C	C	A	B	C
Approach Delay		44.8		32.7		27.6			26.7
Approach LOS		D		C		C			C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 76.9% ICU Level of Service D
Analysis Period (min) 15

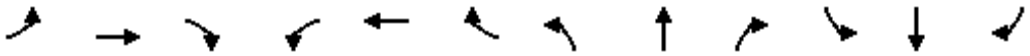
Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	148	950	149	416	273	474	141	212	758
v/c Ratio	0.36	0.90	0.58	0.39	0.76	0.38	0.20	0.46	0.65
Control Delay	22.0	48.4	31.6	33.1	34.2	30.3	5.3	15.3	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	22.0	48.4	31.6	33.1	34.2	30.4	5.3	15.3	29.9
Queue Length 50th (ft)	68	343	68	127	121	144	0	78	287
Queue Length 95th (ft)	103	#436	108	161	#223	197	44	103	286
Internal Link Dist (ft)		692		432		405			259
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	459	1051	306	1057	370	1244	697	489	1172
Starvation Cap Reductn	0	0	0	0	0	0	0	0	209
Spillback Cap Reductn	0	0	0	0	0	62	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.90	0.49	0.39	0.74	0.40	0.20	0.43	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	526	272	121	294	43	259	450	134	191	578	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3267		1745	3372		1745	3455	1686	1727	3327	
Flt Permitted	0.40	1.00		0.11	1.00		0.19	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	727	3267		197	3372		349	3455	1686	708	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	148	626	324	149	363	53	273	474	141	212	642	116
RTOR Reduction (vph)	0	53	0	0	9	0	0	0	90	0	12	0
Lane Group Flow (vph)	148	897	0	149	407	0	273	474	51	212	746	0
Heavy Vehicles (%)	1%	1%	2%	0%	1%	5%	1%	2%	0%	0%	1%	4%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	45.7	34.7		46.9	35.3		55.1	41.2	41.2	52.3	39.8	
Effective Green, g (s)	49.7	36.7		50.9	37.3		59.1	43.2	43.2	56.3	41.8	
Actuated g/C Ratio	0.41	0.31		0.42	0.31		0.49	0.36	0.36	0.47	0.35	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	410	999		259	1048		357	1244	607	455	1159	
v/s Ratio Prot	0.04	c0.27		c0.07	0.12		c0.10	0.14		0.06	0.22	
v/s Ratio Perm	0.11			0.18			c0.28		0.03	0.16		
v/c Ratio	0.36	0.90		0.58	0.39		0.76	0.38	0.08	0.47	0.64	
Uniform Delay, d1	22.8	39.8		26.1	32.4		21.3	28.5	25.3	19.6	32.8	
Progression Factor	0.96	0.96		1.00	1.00		1.00	1.00	1.00	0.70	0.79	
Incremental Delay, d2	0.2	10.7		1.9	0.3		8.5	0.9	0.3	0.3	2.6	
Delay (s)	22.0	49.1		28.0	32.7		29.8	29.4	25.6	14.1	28.6	
Level of Service	C	D		C	C		C	C	C	B	C	
Approach Delay (s)		45.4			31.5			28.9			25.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

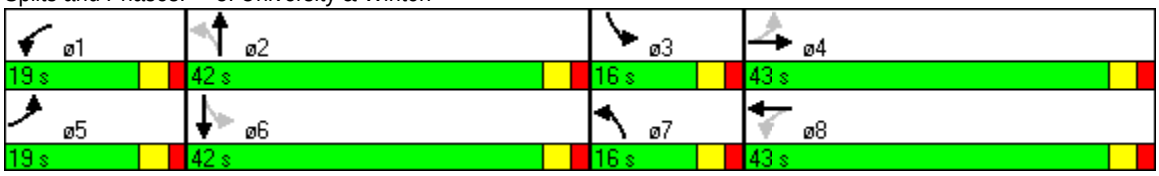
c Critical Lane Group

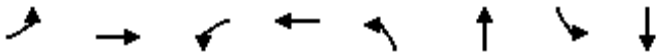
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	206	493	135	343	77	645	134	382
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	31.0	10.0	28.0	11.0	28.0	11.0	28.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	53.3	42.8	53.3	42.8	54.7	44.5	54.7	44.5
Actuated g/C Ratio	0.44	0.36	0.44	0.36	0.46	0.37	0.46	0.37
v/c Ratio	0.59	0.65	0.58	0.38	0.24	0.61	0.54	0.43
Control Delay	30.9	32.1	40.7	29.5	15.1	24.7	37.9	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3
Total Delay	30.9	32.1	40.7	29.5	15.1	25.1	37.9	28.9
LOS	C	C	D	C	B	C	D	C
Approach Delay		31.8		32.4		24.0		30.9
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 65.6% ICU Level of Service C
Analysis Period (min) 15

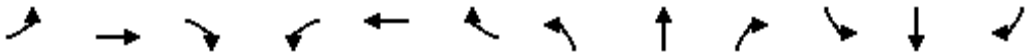
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	242	785	159	453	93	791	149	531
v/c Ratio	0.59	0.65	0.58	0.38	0.24	0.61	0.54	0.43
Control Delay	30.9	32.1	40.7	29.5	15.1	24.7	37.9	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3
Total Delay	30.9	32.1	40.7	29.5	15.1	25.1	37.9	28.9
Queue Length 50th (ft)	110	233	71	133	24	146	63	150
Queue Length 95th (ft)	146	287	102	173	38	166	111	217
Internal Link Dist (ft)		583		787		259		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	488	1206	356	1198	423	1304	316	1241
Starvation Cap Reductn	0	0	0	0	0	168	0	0
Spillback Cap Reductn	0	2	0	0	0	0	0	245
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.65	0.45	0.38	0.22	0.70	0.47	0.53

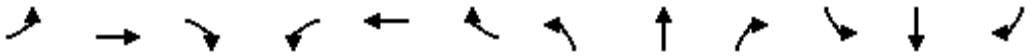
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	493	174	135	343	42	77	645	12	134	382	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.98		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3303		1745	3337		1745	3515		1710	3298	
Flt Permitted	0.39	1.00		0.19	1.00		0.34	1.00		0.20	1.00	
Satd. Flow (perm)	716	3303		347	3337		631	3515		353	3298	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.83	0.83	0.83	0.90	0.90	0.90
Adj. Flow (vph)	242	580	205	159	404	49	93	777	14	149	424	107
RTOR Reduction (vph)	0	28	0	0	8	0	0	1	0	0	18	0
Lane Group Flow (vph)	242	757	0	159	445	0	93	790	0	149	513	0
Heavy Vehicles (%)	0%	1%	3%	0%	3%	2%	1%	0%	1%	1%	2%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.3	40.8		49.3	40.8		50.7	42.5		50.7	42.5	
Effective Green, g (s)	53.3	42.8		53.3	42.8		54.7	44.5		54.7	44.5	
Actuated g/C Ratio	0.44	0.36		0.44	0.36		0.46	0.37		0.46	0.37	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	408	1178		276	1190		382	1303		276	1223	
v/s Ratio Prot	c0.05	c0.23		0.05	0.13		0.02	c0.22		c0.05	0.16	
v/s Ratio Perm	0.21			0.21			0.09			0.20		
v/c Ratio	0.59	0.64		0.58	0.37		0.24	0.61		0.54	0.42	
Uniform Delay, d1	32.5	32.2		39.8	28.7		27.2	30.6		39.0	28.1	
Progression Factor	0.92	0.95		1.00	1.00		0.67	0.72		1.00	1.00	
Incremental Delay, d2	1.5	2.6		1.8	0.9		0.1	2.0		1.0	1.1	
Delay (s)	31.4	33.0		41.6	29.6		18.3	24.0		40.0	29.2	
Level of Service	C	C		D	C		B	C		D	C	
Approach Delay (s)		32.7			32.7			23.4			31.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

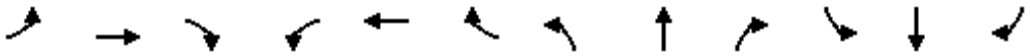
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	567	32	75	374	0	13	0	45	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	637	36	81	402	0	14	0	50	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					140							
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	402			673			1218	1218	655	1268	1236	402
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	305			673			1193	1193	655	1248	1213	305
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			90	100	89	100	100	100
cM capacity (veh/h)	1164			927			142	158	470	116	154	680

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	673	483	64	0
Volume Left	0	81	14	0
Volume Right	36	0	50	0
cSH	1164	927	309	1700
Volume to Capacity	0.00	0.09	0.21	0.00
Queue Length 95th (ft)	0	7	19	0
Control Delay (s)	0.0	2.4	19.7	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.4	19.7	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	176	653	58	40	442	171	26	3	32	154	3	144
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	196	726	64	44	491	190	29	3	36	171	3	160
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		150			772							
pX, platoon unblocked	0.97			0.94			0.95	0.95	0.94	0.95	0.95	0.97
vC, conflicting volume	681			790			1645	1919	395	1466	1856	341
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	607			641			1431	1719	220	1243	1653	256
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			95			47	95	95	0	95	78
cM capacity (veh/h)	937			880			55	64	735	92	70	721

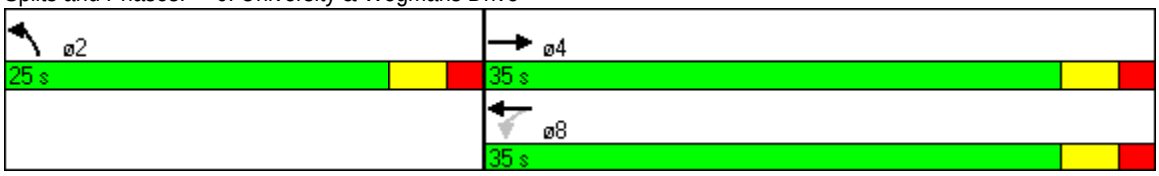
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	196	484	306	44	327	354	68	334
Volume Left	196	0	0	44	0	0	29	171
Volume Right	0	0	64	0	0	190	36	160
cSH	937	1700	1700	880	1700	1700	108	157
Volume to Capacity	0.21	0.28	0.18	0.05	0.19	0.21	0.63	2.13
Queue Length 95th (ft)	20	0	0	4	0	0	78	671
Control Delay (s)	9.9	0.0	0.0	9.3	0.0	0.0	82.8	575.3
Lane LOS	A			A			F	F
Approach Delay (s)	2.0			0.6			82.8	575.3
Approach LOS							F	F

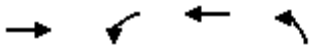
Intersection Summary				
Average Delay	94.8			
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	505	59	333	116
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	39.9	39.9	39.9	12.1
Actuated g/C Ratio	0.66	0.66	0.66	0.20
v/c Ratio	0.54	0.17	0.30	0.58
Control Delay	8.0	3.2	2.7	19.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	3.2	2.7	19.5
LOS	A	A	A	B
Approach Delay	8.0		2.8	19.5
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegmans Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	680	66	370	235
v/c Ratio	0.54	0.17	0.30	0.58
Control Delay	8.0	3.2	2.7	19.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	3.2	2.7	19.5
Queue Length 50th (ft)	99	5	28	51
Queue Length 95th (ft)	232	11	41	98
Internal Link Dist (ft)	60		31	37
Turn Bay Length (ft)		100		
Base Capacity (vph)	1257	400	1238	645
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.17	0.30	0.36

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	505	107	59	333	116	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	1879		1770	1863	1703	
Flt Permitted	1.00		0.32	1.00	0.97	
Satd. Flow (perm)	1879		601	1863	1703	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	561	119	66	370	129	106
RTOR Reduction (vph)	9	0	0	0	61	0
Lane Group Flow (vph)	671	0	66	370	174	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	38.9		38.9	38.9	11.1	
Effective Green, g (s)	39.9		39.9	39.9	12.1	
Actuated g/C Ratio	0.66		0.66	0.66	0.20	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1250		400	1239	343	
v/s Ratio Prot	c0.36			0.20	c0.10	
v/s Ratio Perm			0.11			
v/c Ratio	0.54		0.17	0.30	0.51	
Uniform Delay, d1	5.2		3.8	4.2	21.3	
Progression Factor	1.00		0.46	0.43	1.00	
Incremental Delay, d2	1.7		0.8	0.6	1.2	
Delay (s)	6.9		2.6	2.4	22.5	
Level of Service	A		A	A	C	
Approach Delay (s)	6.9			2.4	22.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

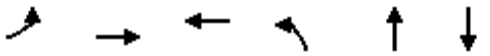
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	29	530	540	19	8	4	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5		21.5	24.5	24.5	24.5	24.5
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	Min		C-Max	None	None	None	None
Act Effct Green (s)	43.6	47.2	34.4	9.6	9.6		9.6
Actuated g/C Ratio	0.73	0.79	0.57	0.16	0.16		0.16
v/c Ratio	0.05	0.22	0.35	0.15	0.21		0.32
Control Delay	2.9	2.6	9.5	22.6	11.0		12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	2.9	2.6	9.5	22.6	11.0		12.5
LOS	A	A	A	C	B		B
Approach Delay		2.7	9.5		14.6		12.5
Approach LOS		A	A		B		B

Intersection Summary

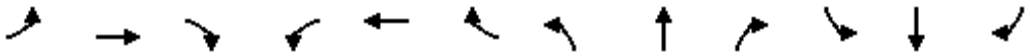
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 17 (28%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 7.1 — Intersection LOS: A
Intersection Capacity Utilization 38.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	32	589	657	28	61	97
v/c Ratio	0.05	0.22	0.35	0.15	0.21	0.32
Control Delay	2.9	2.6	9.5	22.6	11.0	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	2.6	9.5	22.6	11.0	12.5
Queue Length 50th (ft)	2	24	92	9	4	12
Queue Length 95th (ft)	9	47	122	20	18	34
Internal Link Dist (ft)		161	75		215	324
Turn Bay Length (ft)	75					
Base Capacity (vph)	659	2730	1899	443	603	577
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.35	0.06	0.10	0.17

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	530	0	0	540	38	19	8	33	4	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	8	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.88			0.87	
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1711	3455			3301		1685	1560			1431	
Flt Permitted	0.36	1.00			1.00		0.68	1.00			0.99	
Satd. Flow (perm)	651	3455			3301		1210	1560			1413	
Peak-hour factor, PHF	0.90	0.90	0.90	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92
Adj. Flow (vph)	32	589	0	0	614	43	28	12	49	4	0	93
RTOR Reduction (vph)	0	0	0	0	5	0	0	42	0	0	80	0
Lane Group Flow (vph)	32	589	0	0	652	0	28	19	0	0	17	0
Heavy Vehicles (%)	2%	1%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	37.5	43.0			30.8		6.0	6.0			6.0	
Effective Green, g (s)	42.5	45.5			33.3		8.5	8.5			8.5	
Actuated g/C Ratio	0.71	0.76			0.55		0.14	0.14			0.14	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	3.0				3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	624	2620			1832		171	221			200	
v/s Ratio Prot	0.01	c0.17			c0.20			0.01				
v/s Ratio Perm	0.03						c0.02				0.01	
v/c Ratio	0.05	0.22			0.36		0.16	0.09			0.09	
Uniform Delay, d1	3.8	2.1			7.4		22.6	22.4			22.4	
Progression Factor	1.00	1.00			1.18		1.00	1.00			2.15	
Incremental Delay, d2	0.0	0.0			0.5		0.5	0.2			0.2	
Delay (s)	3.8	2.2			9.2		23.1	22.5			48.3	
Level of Service	A	A			A		C	C			D	
Approach Delay (s)		2.2			9.2			22.7			48.3	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	134	424	124	292	251	515	111	193	508
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	12.0	36.0	16.0	40.0	26.0	50.0	50.0	18.0	42.0
Total Split (%)	10.0%	30.0%	13.3%	33.3%	21.7%	41.7%	41.7%	15.0%	35.0%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Min	None	Min	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	40.1	31.1	46.1	34.5	66.6	50.8	50.8	61.1	47.3
Actuated g/C Ratio	0.33	0.26	0.38	0.29	0.56	0.42	0.42	0.51	0.39
v/c Ratio	0.43	0.77	0.57	0.41	0.65	0.38	0.15	0.48	0.57
Control Delay	27.8	41.4	33.4	33.2	21.9	25.6	4.6	9.1	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	27.8	41.4	33.4	33.2	21.9	25.9	4.6	9.1	17.6
LOS	C	D	C	C	C	C	A	A	B
Approach Delay		39.1		33.2		22.0			15.6
Approach LOS		D		C		C			B

Intersection Summary

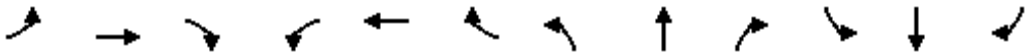
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 88 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 26.4 Intersection LOS: C
Intersection Capacity Utilization 71.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: East & Winton

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	143	697	138	404	270	554	119	222	738
v/c Ratio	0.43	0.77	0.57	0.41	0.65	0.38	0.15	0.48	0.57
Control Delay	27.8	41.4	33.4	33.2	21.9	25.6	4.6	9.1	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	27.8	41.4	33.4	33.2	21.9	25.9	4.6	9.1	17.6
Queue Length 50th (ft)	70	228	68	120	109	161	0	57	154
Queue Length 95th (ft)	114	302	114	166	163	210	37	m67	m202
Internal Link Dist (ft)		685		417		371			323
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	335	955	250	1045	486	1462	768	482	1292
Starvation Cap Reductn	0	0	0	0	0	0	0	0	203
Spillback Cap Reductn	0	0	0	1	0	339	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.73	0.55	0.39	0.56	0.49	0.15	0.46	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	424	231	124	292	72	251	515	111	193	508	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3251		1728	3333		1745	3455	1652	1710	3230	
Flt Permitted	0.43	1.00		0.12	1.00		0.22	1.00	1.00	0.38	1.00	
Satd. Flow (perm)	789	3251		227	3333		408	3455	1652	683	3230	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.93	0.93	0.93	0.87	0.87	0.87
Adj. Flow (vph)	143	451	246	138	324	80	270	554	119	222	584	154
RTOR Reduction (vph)	0	62	0	0	19	0	0	0	69	0	18	0
Lane Group Flow (vph)	143	635	0	138	385	0	270	554	50	222	720	0
Heavy Vehicles (%)	0%	2%	1%	1%	2%	0%	1%	2%	2%	1%	3%	6%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	34.6	28.1		41.4	31.5		62.5	47.8	47.8	55.5	44.3	
Effective Green, g (s)	39.6	31.1		46.0	34.5		67.0	50.8	50.8	60.5	47.3	
Actuated g/C Ratio	0.33	0.26		0.38	0.29		0.56	0.42	0.42	0.50	0.39	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	332	843		242	958		419	1463	699	462	1273	
v/s Ratio Prot	0.03	c0.20		c0.06	0.12		c0.09	0.16		0.05	0.22	
v/s Ratio Perm	0.11			0.16			c0.27		0.03	0.19		
v/c Ratio	0.43	0.75		0.57	0.40		0.64	0.38	0.07	0.48	0.57	
Uniform Delay, d1	29.5	40.9		27.5	34.4		16.6	23.8	20.6	17.2	28.3	
Progression Factor	0.97	0.98		1.00	1.00		1.00	1.00	1.00	0.47	0.55	
Incremental Delay, d2	0.3	4.1		2.0	0.4		2.5	0.7	0.2	0.2	1.2	
Delay (s)	28.9	44.0		29.5	34.8		19.2	24.5	20.8	8.3	16.7	
Level of Service	C	D		C	C		B	C	C	A	B	
Approach Delay (s)		41.4			33.5			22.5			14.8	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

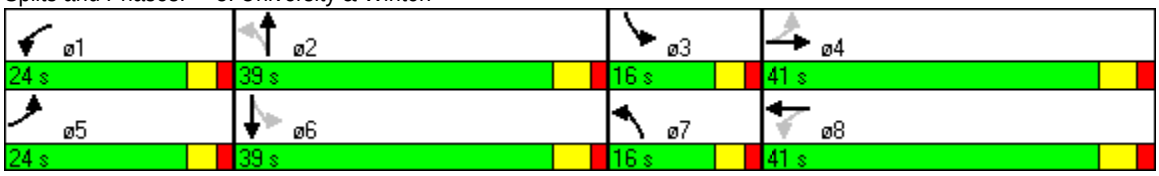
c Critical Lane Group

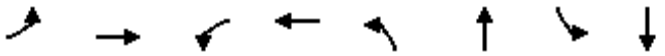
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	243	543	180	366	93	781	179	534
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	24.0	41.0	24.0	41.0	16.0	39.0	16.0	39.0
Total Split (%)	20.0%	34.2%	20.0%	34.2%	13.3%	32.5%	13.3%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	58.4	38.6	58.4	38.6	49.6	37.2	49.6	37.2
Actuated g/C Ratio	0.49	0.32	0.49	0.32	0.41	0.31	0.41	0.31
v/c Ratio	0.86	0.89	0.67	0.74	0.38	0.85	0.83	0.70
Control Delay	63.4	48.6	49.3	33.2	31.4	40.1	71.8	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
Total Delay	63.4	48.6	49.3	33.2	31.4	42.1	71.8	39.7
LOS	E	D	D	C	C	D	E	D
Approach Delay		52.1		36.7		41.0		46.5
Approach LOS		D		D		D		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 44.4 Intersection LOS: D
Intersection Capacity Utilization 78.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: University & Winton

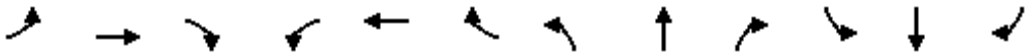




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	304	981	234	856	106	916	195	735
v/c Ratio	0.86	0.89	0.67	0.74	0.38	0.85	0.83	0.70
Control Delay	63.4	48.6	49.3	33.2	31.4	40.1	71.8	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
Total Delay	63.4	48.6	49.3	33.2	31.4	42.1	71.8	39.7
Queue Length 50th (ft)	155	371	116	252	30	366	95	257
Queue Length 95th (ft)	218	388	160	255	70	#436	#223	330
Internal Link Dist (ft)		514		307		323		283
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	371	1102	365	1151	286	1079	244	1045
Starvation Cap Reductn	0	0	0	0	0	68	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	8
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.89	0.64	0.74	0.37	0.91	0.80	0.71

Intersection Summary

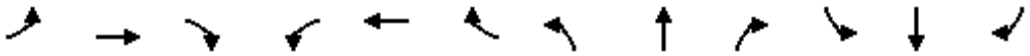
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	543	242	180	366	293	93	781	25	179	534	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	3296		1728	3210		1745	3475		1694	3305	
Flt Permitted	0.12	1.00		0.11	1.00		0.17	1.00		0.11	1.00	
Satd. Flow (perm)	215	3296		193	3210		312	3475		197	3305	
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	304	679	302	234	475	381	106	888	28	195	580	155
RTOR Reduction (vph)	0	42	0	0	119	0	0	2	0	0	20	0
Lane Group Flow (vph)	304	939	0	234	737	0	106	914	0	195	715	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	2%	1%	1%	0%	2%	1%	2%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.4	35.6		53.4	35.6		44.6	34.2		44.6	34.2	
Effective Green, g (s)	57.4	38.6		57.4	38.6		48.6	37.2		48.6	37.2	
Actuated g/C Ratio	0.48	0.32		0.48	0.32		0.41	0.31		0.41	0.31	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	352	1060		346	1033		274	1077		234	1025	
v/s Ratio Prot	c0.14	c0.28		0.11	0.23		0.04	c0.26		c0.09	0.22	
v/s Ratio Perm	0.27			0.21			0.12			0.25		
v/c Ratio	0.86	0.89		0.68	0.71		0.39	0.85		0.83	0.70	
Uniform Delay, d1	41.1	38.6		41.7	35.8		40.9	38.8		47.0	36.4	
Progression Factor	0.97	1.03		1.00	1.00		0.86	0.81		1.00	1.00	
Incremental Delay, d2	18.4	10.8		4.1	4.2		0.3	8.1		20.9	3.9	
Delay (s)	58.5	50.6		45.8	40.0		35.6	39.4		67.9	40.4	
Level of Service	E	D		D	D		D	D		E	D	
Approach Delay (s)		52.5			41.3			39.0			46.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

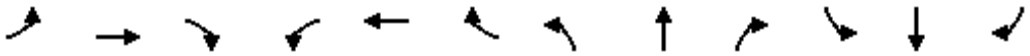
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	472	43	77	498	0	13	0	59	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90
Hourly flow rate (vph)	0	549	50	80	519	0	13	0	61	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					157							
pX, platoon unblocked	0.86						0.86	0.86		0.86	0.86	0.86
vC, conflicting volume	519			599			1253	1253	574	1314	1278	519
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	356			599			1212	1212	574	1283	1241	356
tC, single (s)	4.1			4.1			7.1	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			92			90	100	87	100	100	100
cM capacity (veh/h)	1041			988			129	145	481	101	139	594

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	599	599	74	0
Volume Left	0	80	13	0
Volume Right	50	0	61	0
cSH	1041	988	322	1700
Volume to Capacity	0.00	0.08	0.23	0.00
Queue Length 95th (ft)	0	7	22	0
Control Delay (s)	0.0	2.1	19.5	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.1	19.5	0.0
Approach LOS			C	A

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	72.3%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	387	58	40	404	160	26	5	32	155	5	174
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	200	430	64	44	449	178	29	6	36	172	6	193
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		155			765							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	627			494			1372	1578	247	1280	1521	313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	627			480			1362	1570	232	1270	1513	313
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			96			51	93	95	0	94	72
cM capacity (veh/h)	951			1072			59	83	766	91	89	682

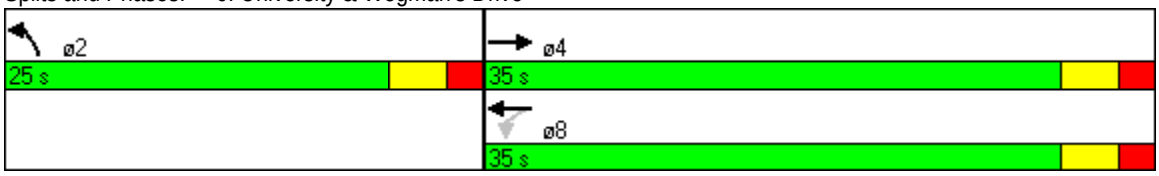
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	200	287	208	44	299	327	70	371
Volume Left	200	0	0	44	0	0	29	172
Volume Right	0	0	64	0	0	178	36	193
cSH	951	1700	1700	1072	1700	1700	116	167
Volume to Capacity	0.21	0.17	0.12	0.04	0.18	0.19	0.60	2.23
Queue Length 95th (ft)	20	0	0	3	0	0	75	754
Control Delay (s)	9.8	0.0	0.0	8.5	0.0	0.0	74.8	616.0
Lane LOS	A			A			F	F
Approach Delay (s)	2.8			0.6			74.8	616.0
Approach LOS							F	F

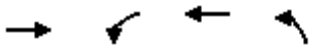
Intersection Summary				
Average Delay	130.7			
Intersection Capacity Utilization	62.4%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	440	59	524	102
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	35.0	35.0	35.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	40.5	40.5	40.5	11.5
Actuated g/C Ratio	0.68	0.68	0.68	0.19
v/c Ratio	0.46	0.14	0.46	0.55
Control Delay	6.6	4.2	7.8	18.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.6	4.2	7.8	18.0
LOS	A	A	A	B
Approach Delay	6.6		7.4	18.0
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegman's Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	591	66	582	219
v/c Ratio	0.46	0.14	0.46	0.55
Control Delay	6.6	4.2	7.8	18.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.6	4.2	7.8	18.0
Queue Length 50th (ft)	75	10	241	42
Queue Length 95th (ft)	178	m21	350	88
Internal Link Dist (ft)	77		91	37
Turn Bay Length (ft)		100		
Base Capacity (vph)	1279	480	1259	651
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.14	0.46	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	440	92	59	524	102	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	1880		1770	1863	1697	
Flt Permitted	1.00		0.38	1.00	0.97	
Satd. Flow (perm)	1880		710	1863	1697	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	489	102	66	582	113	106
RTOR Reduction (vph)	8	0	0	0	70	0
Lane Group Flow (vph)	583	0	66	582	149	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	39.5		39.5	39.5	10.5	
Effective Green, g (s)	40.5		40.5	40.5	11.5	
Actuated g/C Ratio	0.68		0.68	0.68	0.19	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1269		479	1258	325	
v/s Ratio Prot	0.31			c0.31	c0.09	
v/s Ratio Perm			0.09			
v/c Ratio	0.46		0.14	0.46	0.46	
Uniform Delay, d1	4.6		3.5	4.6	21.5	
Progression Factor	1.00		0.82	1.29	1.00	
Incremental Delay, d2	1.2		0.4	0.9	1.0	
Delay (s)	5.8		3.3	6.8	22.5	
Level of Service	A		A	A	C	
Approach Delay (s)	5.8			6.5	22.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

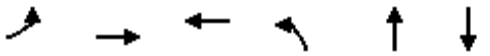
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	10	725	586	18	4	5	0
Turn Type	pm+pt			Perm		Perm	
Protected Phases	2	1 2	1		3		3
Permitted Phases	1 2			3		3	
Detector Phase	2	1 2	1	3	3	3	3
Switch Phase							
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5		21.5	24.5	24.5	24.5	24.5
Total Split (s)	13.0	35.0	22.0	25.0	25.0	25.0	25.0
Total Split (%)	21.7%	58.3%	36.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?							
Recall Mode	Min		C-Max	None	None	None	None
Act Effct Green (s)	44.1	47.7	34.5	9.1	9.1		9.1
Actuated g/C Ratio	0.74	0.80	0.58	0.15	0.15		0.15
v/c Ratio	0.02	0.28	0.35	0.10	0.12		0.24
Control Delay	2.5	2.7	6.5	22.3	11.5		7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	2.5	2.7	6.5	22.3	11.5		7.6
LOS	A	A	A	C	B		A
Approach Delay		2.7	6.5		15.7		7.6
Approach LOS		A	A		B		A

Intersection Summary

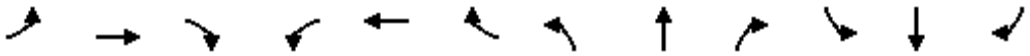
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 7 (12%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 5.0 — Intersection LOS: A
Intersection Capacity Utilization 35.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: East & Probert



Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	11	780	690	20	31	82
v/c Ratio	0.02	0.28	0.35	0.10	0.12	0.24
Control Delay	2.5	2.7	6.5	22.3	11.5	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	2.7	6.5	22.3	11.5	7.6
Queue Length 50th (ft)	1	32	73	6	1	5
Queue Length 95th (ft)	4	59	73	22	20	24
Internal Link Dist (ft)		374	70		232	307
Turn Bay Length (ft)	75					
Base Capacity (vph)	649	2734	1979	484	582	703
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	0.35	0.04	0.05	0.12

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	725	0	0	586	21	18	4	24	5	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	8	15	8
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00			1.00	
Frt	1.00	1.00			0.99		1.00	0.87			0.87	
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1728	3455			3438		1685	1542			1822	
Flt Permitted	0.35	1.00			1.00		0.75	1.00			0.98	
Satd. Flow (perm)	629	3455			3438		1322	1542			1784	
Peak-hour factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	11	780	0	0	666	24	20	4	27	6	0	76
RTOR Reduction (vph)	0	0	0	0	3	0	0	23	0	0	66	0
Lane Group Flow (vph)	11	780	0	0	687	0	20	8	0	0	16	0
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt						Perm			Perm		
Protected Phases	2	1 2			1			3			3	
Permitted Phases	1 2						3			3		
Actuated Green, G (s)	38.0	43.5			30.9		5.5	5.5			5.5	
Effective Green, g (s)	43.0	46.0			33.4		8.0	8.0			8.0	
Actuated g/C Ratio	0.72	0.77			0.56		0.13	0.13			0.13	
Clearance Time (s)	5.5				5.5		5.5	5.5			5.5	
Vehicle Extension (s)	3.0				3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	627	2649			1914		176	206			238	
v/s Ratio Prot	0.00	c0.23			c0.20			0.00				
v/s Ratio Perm	0.01						c0.02				0.01	
v/c Ratio	0.02	0.29			0.36		0.11	0.04			0.07	
Uniform Delay, d1	3.6	2.1			7.4		22.9	22.6			22.7	
Progression Factor	1.00	1.00			0.79		1.00	1.00			1.06	
Incremental Delay, d2	0.0	0.1			0.5		0.3	0.1			0.1	
Delay (s)	3.6	2.2			6.3		23.2	22.7			24.3	
Level of Service	A	A			A		C	C			C	
Approach Delay (s)		2.2			6.3			22.9			24.3	
Approach LOS		A			A			C			C	

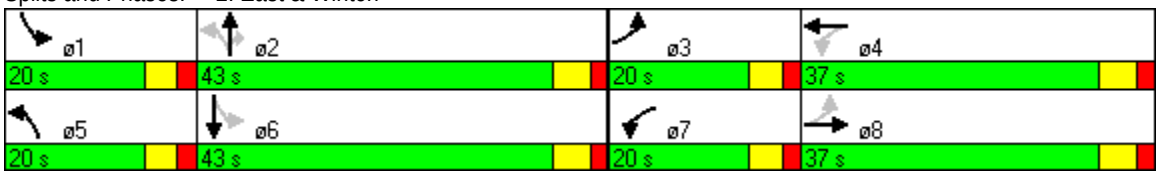
Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	126	390	117	218	230	356	133	134	424
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Min	None	Min	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	44.4	30.7	45.6	31.3	65.0	50.3	50.3	60.9	48.2
Actuated g/C Ratio	0.37	0.26	0.38	0.26	0.54	0.42	0.42	0.51	0.40
v/c Ratio	0.36	0.73	0.51	0.39	0.56	0.26	0.18	0.28	0.47
Control Delay	24.4	40.9	28.9	33.8	20.6	25.1	5.0	10.9	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	24.4	40.9	28.9	33.8	20.6	25.1	5.0	10.9	17.2
LOS	C	D	C	C	C	C	A	B	B
Approach Delay		38.0		32.3		20.0			16.0
Approach LOS		D		C		B			B

Intersection Summary

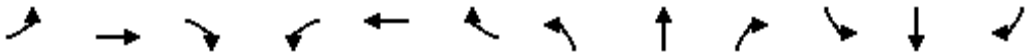
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 48 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 26.1 Intersection LOS: C
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	145	659	144	349	245	379	141	152	629
v/c Ratio	0.36	0.73	0.51	0.39	0.56	0.26	0.18	0.28	0.47
Control Delay	24.4	40.9	28.9	33.8	20.6	25.1	5.0	10.9	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	24.4	40.9	28.9	33.8	20.6	25.1	5.0	10.9	17.2
Queue Length 50th (ft)	71	219	71	104	97	100	0	41	96
Queue Length 95th (ft)	105	254	96	128	162	156	44	63	119
Internal Link Dist (ft)		693		432		405			256
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	441	991	319	975	464	1478	789	595	1334
Starvation Cap Reductn	0	0	0	0	0	0	0	0	215
Spillback Cap Reductn	0	0	0	0	0	15	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.66	0.45	0.36	0.53	0.26	0.18	0.26	0.56

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	390	184	117	218	65	230	356	133	134	424	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3322		1745	3319		1762	3525	1686	1727	3268	
Flt Permitted	0.43	1.00		0.15	1.00		0.29	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	783	3322		284	3319		531	3525	1686	886	3268	
Peak-hour factor, PHF	0.87	0.87	0.87	0.81	0.81	0.81	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	145	448	211	144	269	80	245	379	141	152	482	147
RTOR Reduction (vph)	0	48	0	0	24	0	0	0	82	0	22	0
Lane Group Flow (vph)	145	611	0	144	325	0	245	379	59	152	607	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	2%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	38.9	27.7		40.1	28.3		59.6	47.3	47.3	55.4	45.2	
Effective Green, g (s)	43.9	30.7		45.1	31.3		64.6	50.3	50.3	60.4	48.2	
Actuated g/C Ratio	0.37	0.26		0.38	0.26		0.54	0.42	0.42	0.50	0.40	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	396	850		281	866		438	1478	707	535	1313	
v/s Ratio Prot	0.04	c0.18		c0.06	0.10		c0.07	0.11		0.03	0.19	
v/s Ratio Perm	0.09			0.13			c0.23		0.04	0.11		
v/c Ratio	0.37	0.72		0.51	0.38		0.56	0.26	0.08	0.28	0.46	
Uniform Delay, d1	26.5	40.7		27.3	36.3		16.3	22.7	21.0	16.3	26.4	
Progression Factor	0.97	0.98		1.00	1.00		1.00	1.00	1.00	0.64	0.59	
Incremental Delay, d2	0.2	3.1		0.7	0.4		0.9	0.4	0.2	0.1	1.1	
Delay (s)	26.0	43.1		28.0	36.7		17.2	23.1	21.2	10.6	16.7	
Level of Service	C	D		C	D		B	C	C	B	B	
Approach Delay (s)		40.0			34.2			20.9			15.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

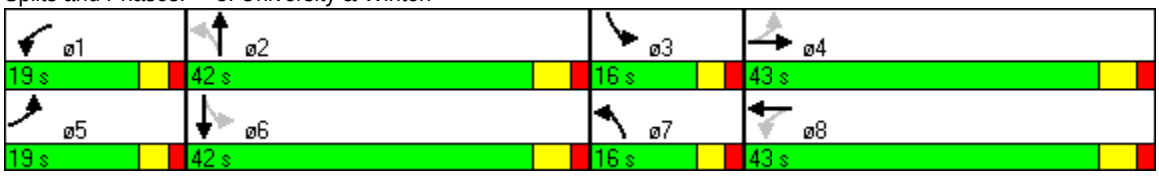
c Critical Lane Group

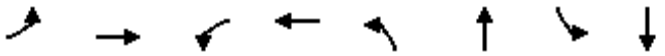
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	167	240	94	238	66	520	148	504
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	6.5	4.0	6.5	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	52.4	44.7	52.4	44.7	55.6	47.3	55.6	47.3
Actuated g/C Ratio	0.44	0.37	0.44	0.37	0.46	0.39	0.46	0.39
v/c Ratio	0.52	0.35	0.27	0.31	0.23	0.44	0.45	0.52
Control Delay	28.4	23.1	23.3	22.8	14.5	24.7	27.2	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	28.4	23.1	23.3	22.8	14.5	25.2	27.2	28.1
LOS	C	C	C	C	B	C	C	C
Approach Delay		24.9		22.9		24.0		27.9
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 25.2 — Intersection LOS: C
Intersection Capacity Utilization 55.7% — ICU Level of Service B
Analysis Period (min) 15

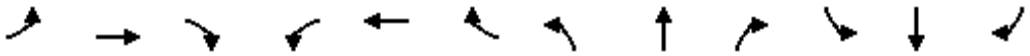
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	217	439	104	387	74	600	154	673
v/c Ratio	0.52	0.35	0.27	0.31	0.23	0.44	0.45	0.52
Control Delay	28.4	23.1	23.3	22.8	14.5	24.7	27.2	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	28.4	23.1	23.3	22.8	14.5	25.2	27.2	28.1
Queue Length 50th (ft)	98	105	44	87	19	138	66	194
Queue Length 95th (ft)	125	121	82	137	29	133	104	263
Internal Link Dist (ft)		583		787		256		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	536	1266	500	1265	388	1372	410	1306
Starvation Cap Reductn	0	0	0	0	0	366	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.35	0.21	0.31	0.19	0.60	0.38	0.52

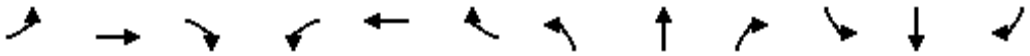
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	240	98	94	238	111	66	520	14	148	504	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3305		1711	3282		1762	3477		1727	3264	
Flt Permitted	0.44	1.00		0.41	1.00		0.27	1.00		0.31	1.00	
Satd. Flow (perm)	815	3305		730	3282		499	3477		565	3264	
Peak-hour factor, PHF	0.77	0.77	0.77	0.90	0.90	0.90	0.89	0.89	0.89	0.96	0.96	0.96
Adj. Flow (vph)	217	312	127	104	264	123	74	584	16	154	525	148
RTOR Reduction (vph)	0	35	0	0	43	0	0	1	0	0	19	0
Lane Group Flow (vph)	217	404	0	104	344	0	74	599	0	154	654	0
Heavy Vehicles (%)	0%	1%	1%	2%	0%	4%	0%	1%	0%	0%	3%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.4	41.7		47.4	41.7		50.6	44.3		50.6	44.3	
Effective Green, g (s)	51.4	44.7		51.4	44.7		54.6	47.3		54.6	47.3	
Actuated g/C Ratio	0.43	0.37		0.43	0.37		0.46	0.39		0.46	0.39	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	409	1231		376	1223		314	1371		337	1287	
v/s Ratio Prot	c0.03	0.12		0.02	0.10		0.02	0.17		c0.03	c0.20	
v/s Ratio Perm	c0.19			0.10			0.09			0.18		
v/c Ratio	0.53	0.33		0.28	0.28		0.24	0.44		0.46	0.51	
Uniform Delay, d1	30.4	26.9		27.7	26.4		29.8	26.6		31.5	27.5	
Progression Factor	0.95	0.93		1.00	1.00		0.66	0.88		1.00	1.00	
Incremental Delay, d2	0.6	0.7		0.1	0.6		0.1	1.0		0.4	1.4	
Delay (s)	29.4	25.8		27.9	27.0		19.9	24.4		31.9	29.0	
Level of Service	C	C		C	C		B	C		C	C	
Approach Delay (s)		27.0			27.2			23.9			29.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

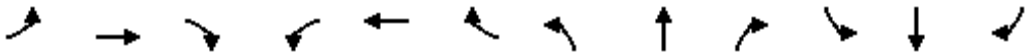
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	377	14	45	320	0	22	0	75	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.95	0.95	0.95	0.87	0.87	0.87	0.25	0.25	0.25
Hourly flow rate (vph)	0	454	17	47	337	0	25	0	86	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					140							
pX, platoon unblocked	0.94						0.94	0.94		0.94	0.94	0.94
vC, conflicting volume	337			471			894	894	463	980	903	337
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268			471			858	858	463	950	867	268
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			90	100	86	100	100	100
cM capacity (veh/h)	1234			1101			255	268	601	189	265	732

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	471	384	111	0
Volume Left	0	47	25	0
Volume Right	17	0	86	0
cSH	1234	1101	460	1700
Volume to Capacity	0.00	0.04	0.24	0.00
Queue Length 95th (ft)	0	3	24	0
Control Delay (s)	0.0	1.4	15.3	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	1.4	15.3	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	163	591	34	20	384	151	27	5	36	140	5	132
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	181	657	38	22	427	168	30	6	40	156	6	147
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		150			773							
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	594			694			1445	1677	347	1288	1612	297
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	594			593			1377	1618	230	1213	1551	297
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			98			53	93	95	0	94	79
cM capacity (veh/h)	978			938			63	78	739	100	86	699

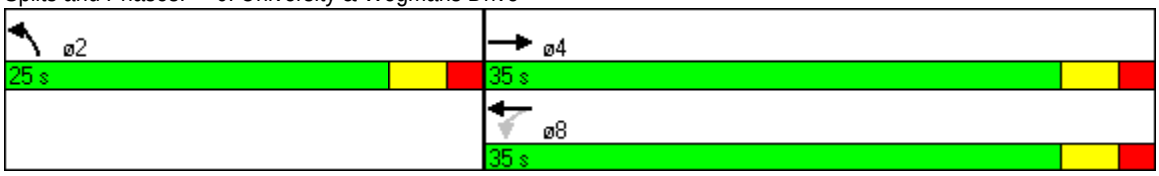
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	181	438	257	22	284	310	76	308
Volume Left	181	0	0	22	0	0	30	156
Volume Right	0	0	38	0	0	168	40	147
cSH	978	1700	1700	938	1700	1700	126	168
Volume to Capacity	0.19	0.26	0.15	0.02	0.17	0.18	0.60	1.84
Queue Length 95th (ft)	17	0	0	2	0	0	76	566
Control Delay (s)	9.5	0.0	0.0	8.9	0.0	0.0	69.3	445.4
Lane LOS	A			A			F	F
Approach Delay (s)	2.0			0.3			69.3	445.4
Approach LOS							F	F

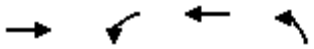
Intersection Summary				
Average Delay	76.9			
Intersection Capacity Utilization	57.2%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	350	124	268	97
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	15.0	15.0
Total Split (s)	35.0	35.0	35.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	40.4	40.4	40.4	11.6
Actuated g/C Ratio	0.67	0.67	0.67	0.19
v/c Ratio	0.39	0.25	0.24	0.59
Control Delay	5.9	3.1	2.4	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.9	3.1	2.4	16.7
LOS	A	A	A	B
Approach Delay	5.9		2.6	16.7
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegmans Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	491	138	298	250
v/c Ratio	0.39	0.25	0.24	0.59
Control Delay	5.9	3.1	2.4	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.9	3.1	2.4	16.7
Queue Length 50th (ft)	57	8	17	41
Queue Length 95th (ft)	139	16	29	89
Internal Link Dist (ft)	60		30	40
Turn Bay Length (ft)		100		
Base Capacity (vph)	1270	557	1254	668
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.25	0.24	0.37

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	350	92	124	268	97	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1871		1770	1863	1684	
Flt Permitted	1.00		0.44	1.00	0.98	
Satd. Flow (perm)	1871		827	1863	1684	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	389	102	138	298	108	142
RTOR Reduction (vph)	11	0	0	0	98	0
Lane Group Flow (vph)	480	0	138	298	152	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	39.4		39.4	39.4	10.6	
Effective Green, g (s)	40.4		40.4	40.4	11.6	
Actuated g/C Ratio	0.67		0.67	0.67	0.19	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1260		557	1254	326	
v/s Ratio Prot	c0.26			0.16	c0.09	
v/s Ratio Perm			0.17			
v/c Ratio	0.38		0.25	0.24	0.47	
Uniform Delay, d1	4.3		3.8	3.8	21.5	
Progression Factor	1.00		0.43	0.44	1.00	
Incremental Delay, d2	0.9		1.0	0.4	1.1	
Delay (s)	5.2		2.7	2.1	22.5	
Level of Service	A		A	A	C	
Approach Delay (s)	5.2			2.3	22.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

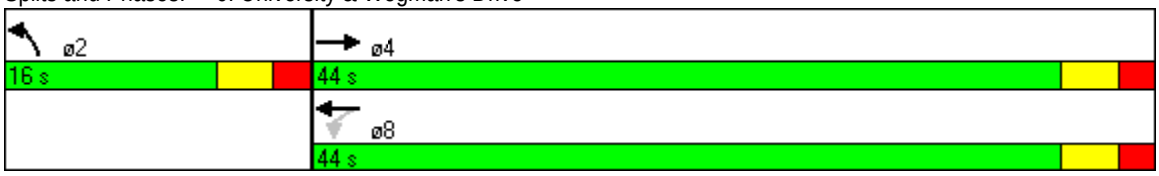
c Critical Lane Group

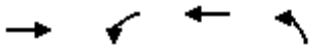
Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	280	69	615	42
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	15.0	15.0
Total Split (s)	44.0	44.0	44.0	16.0
Total Split (%)	73.3%	73.3%	73.3%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	43.5	43.5	43.5	8.5
Actuated g/C Ratio	0.72	0.72	0.72	0.14
v/c Ratio	0.27	0.11	0.51	0.37
Control Delay	3.4	2.0	3.4	15.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	2.0	3.4	15.6
LOS	A	A	A	B
Approach Delay	3.4		3.2	15.6
Approach LOS	A		A	B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 4.4 — Intersection LOS: A
Intersection Capacity Utilization 44.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: University & Wegman's Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	370	77	683	106
v/c Ratio	0.27	0.11	0.51	0.37
Control Delay	3.4	2.0	3.4	15.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	2.0	3.4	15.6
Queue Length 50th (ft)	29	3	30	15
Queue Length 95th (ft)	68	m11	82	50
Internal Link Dist (ft)	60		30	47
Turn Bay Length (ft)		100		
Base Capacity (vph)	1374	726	1351	384
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.11	0.51	0.28

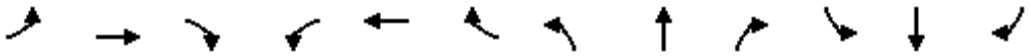
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	280	53	69	615	42	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1883		1770	1863	1685	
Flt Permitted	1.00		0.54	1.00	0.98	
Satd. Flow (perm)	1883		1002	1863	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	311	59	77	683	47	59
RTOR Reduction (vph)	9	0	0	0	51	0
Lane Group Flow (vph)	361	0	77	683	55	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	42.5		42.5	42.5	7.5	
Effective Green, g (s)	43.5		43.5	43.5	8.5	
Actuated g/C Ratio	0.72		0.72	0.72	0.14	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1365		726	1351	239	
v/s Ratio Prot	0.19			c0.37	c0.03	
v/s Ratio Perm			0.08			
v/c Ratio	0.26		0.11	0.51	0.23	
Uniform Delay, d1	2.8		2.5	3.6	22.9	
Progression Factor	1.00		0.61	0.60	1.00	
Incremental Delay, d2	0.5		0.2	1.0	0.5	
Delay (s)	3.3		1.7	3.1	23.4	
Level of Service	A		A	A	C	
Approach Delay (s)	3.3			3.0	23.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	771	0	0	557	29	17	9	36	22	0	123
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.78	0.78	0.78	0.94	0.94	0.94
Hourly flow rate (vph)	35	940	0	0	679	35	22	12	46	23	0	131
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					149							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	715			940			1481	1726	470	1290	1708	357
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	466			940			1316	1587	470	1104	1567	70
tC, single (s)	4.3			4.1			7.5	6.5	7.0	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			75	88	91	81	100	85
cM capacity (veh/h)	936			737			88	95	537	122	97	889

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	349	627	453	262	22	58	154
Volume Left	35	0	0	0	22	0	23
Volume Right	0	0	0	35	0	46	131
cSH	936	1700	1700	1700	88	278	455
Volume to Capacity	0.04	0.37	0.27	0.15	0.25	0.21	0.34
Queue Length 95th (ft)	3	0	0	0	22	19	37
Control Delay (s)	1.3	0.0	0.0	0.0	59.1	21.3	16.9
Lane LOS	A				F	C	C
Approach Delay (s)	0.5		0.0		31.7		16.9
Approach LOS					D		C

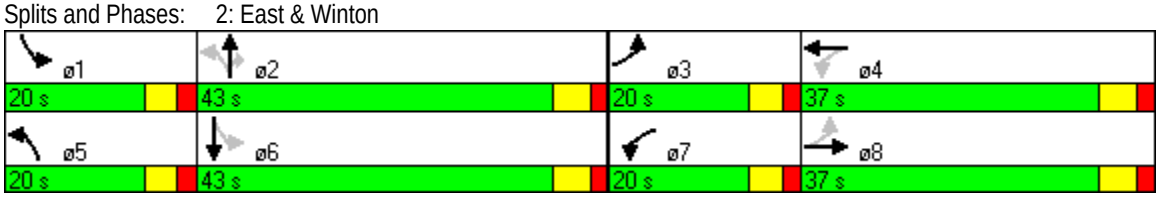
Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	64.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	124	526	121	294	259	450	134	191	578
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	33.0	33.0	10.0	33.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Ped	None	Ped	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	50.0	36.6	51.1	37.2	58.7	42.6	42.6	56.2	41.3
Actuated g/C Ratio	0.42	0.30	0.43	0.31	0.49	0.36	0.36	0.47	0.34
v/c Ratio	0.36	0.90	0.56	0.39	0.77	0.39	0.20	0.47	0.65
Control Delay	19.8	42.2	30.9	33.2	34.9	30.7	5.3	15.4	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Total Delay	19.8	42.2	30.9	33.2	34.9	30.7	5.3	15.4	30.3
LOS	B	D	C	C	C	C	A	B	C
Approach Delay		39.2		32.6		28.0			27.0
Approach LOS		D		C		C			C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 32.0 — Intersection LOS: C
Intersection Capacity Utilization 76.9% — ICU Level of Service D
Analysis Period (min) 15

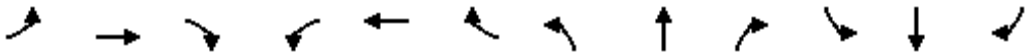
Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	148	950	149	416	273	474	141	212	758
v/c Ratio	0.36	0.90	0.56	0.39	0.77	0.39	0.20	0.47	0.65
Control Delay	19.8	42.2	30.9	33.2	34.9	30.7	5.3	15.4	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Total Delay	19.8	42.2	30.9	33.2	34.9	30.7	5.3	15.4	30.3
Queue Length 50th (ft)	57	251	68	127	121	145	0	77	287
Queue Length 95th (ft)	m86	#414	107	161	#228	197	44	102	286
Internal Link Dist (ft)		694		432		405			258
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	458	1050	307	1054	366	1227	689	484	1158
Starvation Cap Reductn	0	0	0	0	0	0	0	0	208
Spillback Cap Reductn	0	0	0	0	0	62	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.90	0.49	0.39	0.75	0.41	0.20	0.44	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	526	272	121	294	43	259	450	134	191	578	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3267		1745	3372		1745	3455	1686	1727	3327	
Flt Permitted	0.40	1.00		0.11	1.00		0.19	1.00	1.00	0.38	1.00	
Satd. Flow (perm)	721	3267		200	3372		341	3455	1686	697	3327	
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	148	626	324	149	363	53	273	474	141	212	642	116
RTOR Reduction (vph)	0	53	0	0	9	0	0	0	91	0	12	0
Lane Group Flow (vph)	148	897	0	149	407	0	273	474	50	212	746	0
Heavy Vehicles (%)	1%	1%	2%	0%	1%	5%	1%	2%	0%	0%	1%	4%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	44.6	33.7		45.6	34.2		53.1	39.5	39.5	50.7	38.3	
Effective Green, g (s)	49.6	36.7		50.6	37.2		58.1	42.5	42.5	55.7	41.3	
Actuated g/C Ratio	0.41	0.31		0.42	0.31		0.48	0.35	0.35	0.46	0.34	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	410	999		263	1045		353	1224	597	451	1145	
v/s Ratio Prot	0.04	c0.27		c0.07	0.12		c0.10	0.14		0.06	0.22	
v/s Ratio Perm	0.11			0.17			c0.27		0.03	0.16		
v/c Ratio	0.36	0.90		0.57	0.39		0.77	0.39	0.08	0.47	0.65	
Uniform Delay, d1	22.9	39.8		26.2	32.5		21.9	29.0	25.8	20.0	33.3	
Progression Factor	0.86	0.79		1.00	1.00		1.00	1.00	1.00	0.70	0.79	
Incremental Delay, d2	0.2	10.4		1.7	0.3		9.3	0.9	0.3	0.3	2.7	
Delay (s)	19.9	41.9		27.9	32.8		31.2	29.9	26.1	14.3	29.1	
Level of Service	B	D		C	C		C	C	C	B	C	
Approach Delay (s)		38.9			31.5			29.7			25.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

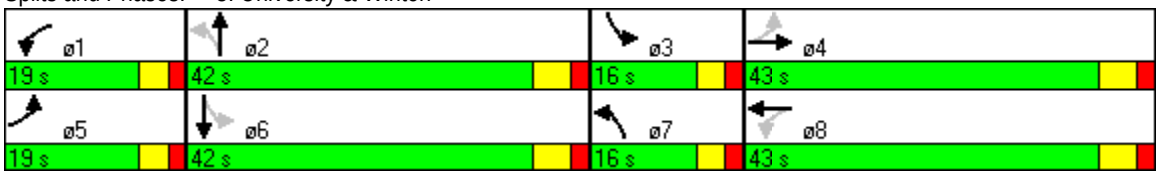
c Critical Lane Group

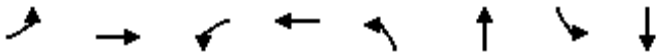
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	206	493	135	343	77	645	134	382
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	53.3	42.7	53.3	42.7	54.7	44.4	54.7	44.4
Actuated g/C Ratio	0.44	0.36	0.44	0.36	0.46	0.37	0.46	0.37
v/c Ratio	0.59	0.65	0.58	0.38	0.24	0.61	0.54	0.43
Control Delay	31.5	32.0	41.3	29.6	14.1	23.8	38.3	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3
Total Delay	31.5	32.0	41.3	29.6	14.1	24.2	38.3	29.0
LOS	C	C	D	C	B	C	D	C
Approach Delay		31.9		32.6		23.1		31.0
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization 65.6% ICU Level of Service C
Analysis Period (min) 15

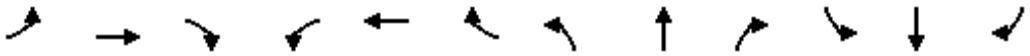
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	242	785	159	453	93	791	149	531
v/c Ratio	0.59	0.65	0.58	0.38	0.24	0.61	0.54	0.43
Control Delay	31.5	32.0	41.3	29.6	14.1	23.8	38.3	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3
Total Delay	31.5	32.0	41.3	29.6	14.1	24.2	38.3	29.0
Queue Length 50th (ft)	110	230	71	133	24	146	63	150
Queue Length 95th (ft)	149	280	102	173	38	166	111	217
Internal Link Dist (ft)		585		787		258		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	486	1203	353	1194	421	1301	313	1238
Starvation Cap Reductn	0	0	0	0	0	163	0	0
Spillback Cap Reductn	0	2	0	0	0	0	0	242
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.65	0.45	0.38	0.22	0.70	0.48	0.53

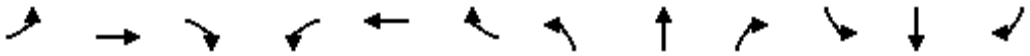
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	493	174	135	343	42	77	645	12	134	382	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.98		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3303		1745	3337		1745	3515		1710	3298	
Flt Permitted	0.39	1.00		0.18	1.00		0.34	1.00		0.19	1.00	
Satd. Flow (perm)	711	3303		338	3337		625	3515		346	3298	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.83	0.83	0.83	0.90	0.90	0.90
Adj. Flow (vph)	242	580	205	159	404	49	93	777	14	149	424	107
RTOR Reduction (vph)	0	28	0	0	8	0	0	1	0	0	18	0
Lane Group Flow (vph)	242	757	0	159	445	0	93	790	0	149	513	0
Heavy Vehicles (%)	0%	1%	3%	0%	3%	2%	1%	0%	1%	1%	2%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.3	39.7		48.3	39.7		49.7	41.4		49.7	41.4	
Effective Green, g (s)	52.3	42.7		52.3	42.7		53.7	44.4		53.7	44.4	
Actuated g/C Ratio	0.44	0.36		0.44	0.36		0.45	0.37		0.45	0.37	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	401	1175		272	1187		376	1301		272	1220	
v/s Ratio Prot	c0.05	c0.23		0.05	0.13		0.02	c0.22		c0.05	0.16	
v/s Ratio Perm	0.21			0.20			0.09			0.20		
v/c Ratio	0.60	0.64		0.58	0.38		0.25	0.61		0.55	0.42	
Uniform Delay, d1	33.3	32.3		40.3	28.7		27.9	30.7		39.5	28.2	
Progression Factor	0.94	0.94		1.00	1.00		0.62	0.69		1.00	1.00	
Incremental Delay, d2	1.7	2.6		2.1	0.9		0.1	2.1		1.2	1.1	
Delay (s)	33.0	32.9		42.3	29.6		17.5	23.1		40.7	29.3	
Level of Service	C	C		D	C		B	C		D	C	
Approach Delay (s)		32.9			32.9			22.5			31.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	567	32	75	374	0	13	0	45	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	637	36	81	402	0	14	0	50	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					139							
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	402			673			1218	1218	655	1268	1236	402
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	304			673			1193	1193	655	1248	1213	304
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			90	100	89	100	100	100
cM capacity (veh/h)	1164			927			142	158	470	116	154	680

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	673	483	64	0
Volume Left	0	81	14	0
Volume Right	36	0	50	0
cSH	1164	927	309	1700
Volume to Capacity	0.00	0.09	0.21	0.00
Queue Length 95th (ft)	0	7	19	0
Control Delay (s)	0.0	2.4	19.7	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.4	19.7	0.0
Approach LOS			C	A

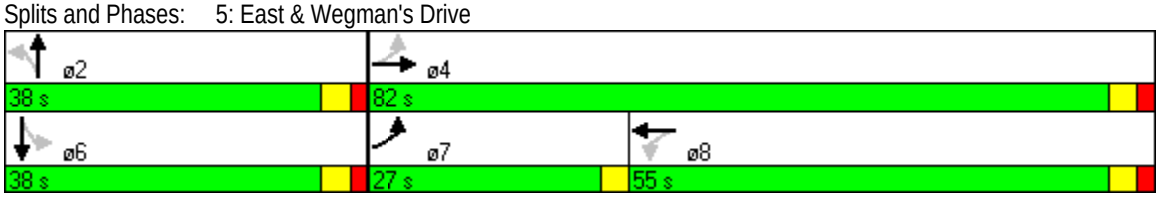
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	176	653	40	442	26	3	154	3
Turn Type	pm+pt		Perm		Perm		Perm	
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.0	22.0	22.0	22.0	24.0	24.0	24.0	24.0
Total Split (s)	27.0	82.0	55.0	55.0	38.0	38.0	38.0	38.0
Total Split (%)	22.5%	68.3%	45.8%	45.8%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	79.0	79.0	65.1	65.1		35.0		35.0
Actuated g/C Ratio	0.66	0.66	0.54	0.54		0.29		0.29
v/c Ratio	0.41	0.35	0.13	0.38		0.16		0.76
Control Delay	10.7	9.5	10.8	10.7		18.1		47.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	10.7	9.5	10.8	10.7		18.1		47.0
LOS	B	A	B	B		B		D
Approach Delay		9.7		10.7		18.1		47.0
Approach LOS		A		B		B		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 25 (21%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15

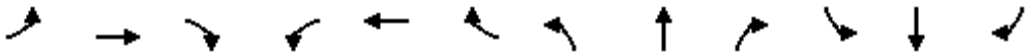
Splits and Phases: 5: East & Wegman's Drive



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	196	790	44	681	68	334
v/c Ratio	0.41	0.35	0.13	0.38	0.16	0.76
Control Delay	10.7	9.5	10.8	10.7	18.1	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	9.5	10.8	10.7	18.1	47.0
Queue Length 50th (ft)	54	128	8	81	18	210
Queue Length 95th (ft)	85	163	m14	107	54	#349
Internal Link Dist (ft)		69		694	43	60
Turn Bay Length (ft)	140		150			
Base Capacity (vph)	600	2231	345	1807	435	437
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.35	0.13	0.38	0.16	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	653	58	40	442	171	26	3	32	154	3	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	12	10	10	12	12
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.96			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1711	3380		1711	3278			1694			1699	
Flt Permitted	0.31	1.00		0.35	1.00			0.81			0.80	
Satd. Flow (perm)	561	3380		635	3278			1403			1402	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	196	726	64	44	491	190	29	3	36	171	3	160
RTOR Reduction (vph)	0	5	0	0	27	0	0	26	0	0	28	0
Lane Group Flow (vph)	196	785	0	44	654	0	0	43	0	0	306	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	77.0	77.0		63.1	63.1			33.0			33.0	
Effective Green, g (s)	77.0	79.0		65.1	65.1			35.0			35.0	
Actuated g/C Ratio	0.64	0.66		0.54	0.54			0.29			0.29	
Clearance Time (s)	3.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	464	2225		344	1778			409			409	
v/s Ratio Prot	c0.04	0.23			0.20							
v/s Ratio Perm	c0.23			0.07				0.03			c0.22	
v/c Ratio	0.42	0.35		0.13	0.37			0.10			0.75	
Uniform Delay, d1	9.8	9.1		13.5	15.7			31.0			38.5	
Progression Factor	1.00	1.00		0.68	0.70			1.00			1.00	
Incremental Delay, d2	0.6	0.4		0.6	0.5			0.5			11.9	
Delay (s)	10.4	9.6		9.9	11.4			31.6			50.4	
Level of Service	B	A		A	B			C			D	
Approach Delay (s)		9.7			11.3			31.6			50.4	
Approach LOS		A			B			C			D	

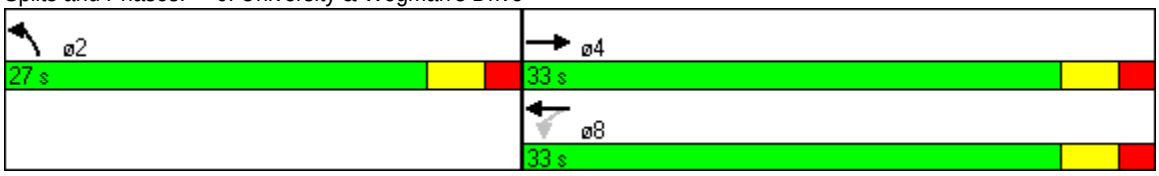
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

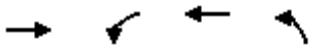
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	505	59	333	116
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	20.0	20.0	20.0	20.0
Total Split (s)	33.0	33.0	33.0	27.0
Total Split (%)	55.0%	55.0%	55.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	39.8	39.8	39.8	12.2
Actuated g/C Ratio	0.66	0.66	0.66	0.20
v/c Ratio	0.54	0.17	0.30	0.57
Control Delay	8.1	3.5	3.0	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.1	3.5	3.0	18.8
LOS	A	A	A	B
Approach Delay	8.1		3.0	18.8
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegman's Drive





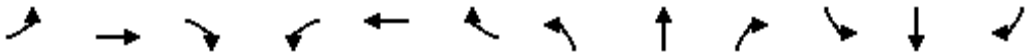
Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	680	66	370	235
v/c Ratio	0.54	0.17	0.30	0.57
Control Delay	8.1	3.5	3.0	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.1	3.5	3.0	18.8
Queue Length 50th (ft)	100	5	29	50
Queue Length 95th (ft)	234	12	46	96
Internal Link Dist (ft)	59		30	37
Turn Bay Length (ft)		100		
Base Capacity (vph)	1256	398	1236	702
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.17	0.30	0.33

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	505	107	59	333	116	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	1879		1770	1863	1703	
Flt Permitted	1.00		0.32	1.00	0.97	
Satd. Flow (perm)	1879		600	1863	1703	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	561	119	66	370	129	106
RTOR Reduction (vph)	8	0	0	0	64	0
Lane Group Flow (vph)	672	0	66	370	171	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	38.8		38.8	38.8	11.2	
Effective Green, g (s)	39.8		39.8	39.8	12.2	
Actuated g/C Ratio	0.66		0.66	0.66	0.20	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1246		398	1236	346	
v/s Ratio Prot	c0.36			0.20	c0.10	
v/s Ratio Perm			0.11			
v/c Ratio	0.54		0.17	0.30	0.49	
Uniform Delay, d1	5.3		3.8	4.2	21.2	
Progression Factor	1.00		0.51	0.48	1.00	
Incremental Delay, d2	1.7		0.9	0.6	1.1	
Delay (s)	7.0		2.8	2.6	22.3	
Level of Service	A		A	A	C	
Approach Delay (s)	7.0			2.7	22.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	530	0	0	540	38	19	8	33	4	0	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92
Hourly flow rate (vph)	32	589	0	0	614	43	28	12	49	4	0	93
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					163							
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	657			589			1054	1310	294	1049	1289	328
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459			589			890	1168	294	885	1144	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			85	93	93	98	100	89
cM capacity (veh/h)	1013			996			193	174	708	193	180	865

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	229	393	409	248	28	61	98
Volume Left	32	0	0	0	28	0	4
Volume Right	0	0	0	43	0	49	93
cSH	1013	1700	1700	1700	193	443	749
Volume to Capacity	0.03	0.23	0.24	0.15	0.15	0.14	0.13
Queue Length 95th (ft)	2	0	0	0	13	12	11
Control Delay (s)	1.5	0.0	0.0	0.0	26.8	14.4	10.5
Lane LOS	A				D	B	B
Approach Delay (s)	0.5		0.0		18.3		10.5
Approach LOS					C		B

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	134	424	124	292	251	515	111	193	508
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	33.0	12.0	33.0	10.0	25.0	25.0	10.0	25.0
Total Split (s)	12.0	36.0	16.0	40.0	20.0	50.0	50.0	18.0	48.0
Total Split (%)	10.0%	30.0%	13.3%	33.3%	16.7%	41.7%	41.7%	15.0%	40.0%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Min	None	Min	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	40.1	31.1	46.1	34.5	66.2	50.8	50.8	62.9	49.1
Actuated g/C Ratio	0.33	0.26	0.38	0.29	0.55	0.42	0.42	0.52	0.41
v/c Ratio	0.43	0.77	0.57	0.41	0.66	0.38	0.15	0.48	0.55
Control Delay	23.4	35.9	33.4	33.2	22.6	25.6	4.6	9.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	23.4	35.9	33.4	33.2	22.6	25.8	4.6	9.1	16.8
LOS	C	D	C	C	C	C	A	A	B
Approach Delay		33.7		33.2		22.2			15.0
Approach LOS		C		C		C			B

Intersection Summary

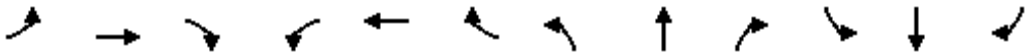
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 24.9 — Intersection LOS: C
Intersection Capacity Utilization 71.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: East & Winton

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	143	697	138	404	270	554	119	222	738
v/c Ratio	0.43	0.77	0.57	0.41	0.66	0.38	0.15	0.48	0.55
Control Delay	23.4	35.9	33.4	33.2	22.6	25.6	4.6	9.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
Total Delay	23.4	35.9	33.4	33.2	22.6	25.8	4.6	9.1	16.8
Queue Length 50th (ft)	53	196	68	120	109	161	0	58	149
Queue Length 95th (ft)	86	250	114	166	163	210	37	m72	m172
Internal Link Dist (ft)		670		427		217			304
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	335	955	250	1045	428	1462	768	482	1342
Starvation Cap Reductn	0	0	0	0	0	0	0	0	233
Spillback Cap Reductn	0	0	0	1	0	262	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.73	0.55	0.39	0.63	0.46	0.15	0.46	0.67

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	424	231	124	292	72	251	515	111	193	508	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3251		1728	3333		1745	3455	1652	1710	3230	
Flt Permitted	0.43	1.00		0.12	1.00		0.24	1.00	1.00	0.37	1.00	
Satd. Flow (perm)	789	3251		227	3333		435	3455	1652	658	3230	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.93	0.93	0.93	0.87	0.87	0.87
Adj. Flow (vph)	143	451	246	138	324	80	270	554	119	222	584	154
RTOR Reduction (vph)	0	62	0	0	19	0	0	0	69	0	19	0
Lane Group Flow (vph)	143	635	0	138	385	0	270	554	50	222	719	0
Heavy Vehicles (%)	0%	2%	1%	1%	2%	0%	1%	2%	2%	1%	3%	6%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	34.6	28.1		41.4	31.5		60.7	47.8	47.8	57.3	46.1	
Effective Green, g (s)	39.6	31.1		46.0	34.5		65.7	50.8	50.8	62.3	49.1	
Actuated g/C Ratio	0.33	0.26		0.38	0.29		0.55	0.42	0.42	0.52	0.41	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	332	843		242	958		406	1463	699	462	1322	
v/s Ratio Prot	0.03	c0.20		c0.06	0.12		c0.09	0.16		0.05	0.22	
v/s Ratio Perm	0.11			0.16			c0.28		0.03	0.19		
v/c Ratio	0.43	0.75		0.57	0.40		0.67	0.38	0.07	0.48	0.54	
Uniform Delay, d1	29.5	40.9		27.5	34.4		16.8	23.8	20.6	16.4	26.9	
Progression Factor	0.79	0.82		1.00	1.00		1.00	1.00	1.00	0.48	0.57	
Incremental Delay, d2	0.3	4.0		2.0	0.4		3.2	0.7	0.2	0.2	1.1	
Delay (s)	23.7	37.7		29.5	34.8		20.0	24.5	20.8	8.0	16.3	
Level of Service	C	D		C	C		B	C	C	A	B	
Approach Delay (s)		35.3			33.5			22.7			14.4	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

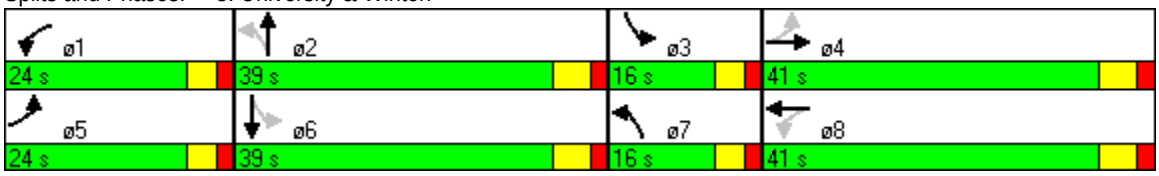
c Critical Lane Group

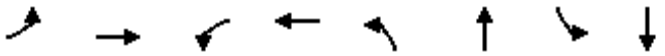
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	243	543	180	366	93	781	179	534
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	24.0	41.0	24.0	41.0	16.0	39.0	16.0	39.0
Total Split (%)	20.0%	34.2%	20.0%	34.2%	13.3%	32.5%	13.3%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	58.4	38.6	58.4	38.6	49.6	37.2	49.6	37.2
Actuated g/C Ratio	0.49	0.32	0.49	0.32	0.41	0.31	0.41	0.31
v/c Ratio	0.86	0.89	0.67	0.74	0.38	0.85	0.83	0.70
Control Delay	62.9	49.2	49.3	33.2	29.4	39.1	71.8	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
Total Delay	62.9	49.2	49.3	33.2	29.4	41.0	71.8	39.7
LOS	E	D	D	C	C	D	E	D
Approach Delay		52.4		36.7		39.8		46.4
Approach LOS		D		D		D		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 44.2 Intersection LOS: D
Intersection Capacity Utilization 78.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: University & Winton

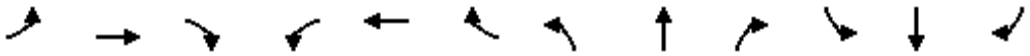




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	304	981	234	856	106	916	195	735
v/c Ratio	0.86	0.89	0.67	0.74	0.38	0.85	0.83	0.70
Control Delay	62.9	49.2	49.3	33.2	29.4	39.1	71.8	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
Total Delay	62.9	49.2	49.3	33.2	29.4	41.0	71.8	39.7
Queue Length 50th (ft)	171	361	116	252	31	366	95	257
Queue Length 95th (ft)	225	399	160	255	62	#436	#223	330
Internal Link Dist (ft)		538		428		304		206
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	371	1102	365	1151	286	1079	244	1045
Starvation Cap Reductn	0	0	0	0	0	68	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.89	0.64	0.74	0.37	0.91	0.80	0.70

Intersection Summary

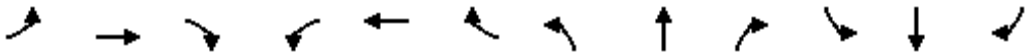
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	543	242	180	366	293	93	781	25	179	534	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	3296		1728	3210		1745	3475		1694	3305	
Flt Permitted	0.12	1.00		0.11	1.00		0.17	1.00		0.11	1.00	
Satd. Flow (perm)	215	3296		193	3210		312	3475		197	3305	
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	304	679	302	234	475	381	106	888	28	195	580	155
RTOR Reduction (vph)	0	42	0	0	119	0	0	2	0	0	20	0
Lane Group Flow (vph)	304	939	0	234	737	0	106	914	0	195	715	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	2%	1%	1%	0%	2%	1%	2%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.4	35.6		53.4	35.6		44.6	34.2		44.6	34.2	
Effective Green, g (s)	57.4	38.6		57.4	38.6		48.6	37.2		48.6	37.2	
Actuated g/C Ratio	0.48	0.32		0.48	0.32		0.41	0.31		0.41	0.31	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	352	1060		346	1033		274	1077		234	1025	
v/s Ratio Prot	c0.14	c0.28		0.11	0.23		0.04	c0.26		c0.09	0.22	
v/s Ratio Perm	0.27			0.21			0.12			0.25		
v/c Ratio	0.86	0.89		0.68	0.71		0.39	0.85		0.83	0.70	
Uniform Delay, d1	41.1	38.6		41.7	35.8		40.9	38.8		47.0	36.4	
Progression Factor	0.96	1.05		1.00	1.00		0.80	0.78		1.00	1.00	
Incremental Delay, d2	18.4	10.8		4.1	4.2		0.3	8.1		20.9	3.9	
Delay (s)	58.0	51.2		45.8	40.0		33.1	38.3		67.9	40.4	
Level of Service	E	D		D	D		C	D		E	D	
Approach Delay (s)		52.8			41.3			37.8			46.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	472	43	77	498	0	13	0	59	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90
Hourly flow rate (vph)	0	549	50	80	519	0	13	0	61	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					147							
pX, platoon unblocked	0.86						0.86	0.86		0.86	0.86	0.86
vC, conflicting volume	519			599			1253	1253	574	1314	1278	519
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	354			599			1212	1212	574	1283	1241	354
tC, single (s)	4.1			4.1			7.1	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			92			90	100	87	100	100	100
cM capacity (veh/h)	1041			988			129	145	481	101	139	594

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	599	599	74	0
Volume Left	0	80	13	0
Volume Right	50	0	61	0
cSH	1041	988	322	1700
Volume to Capacity	0.00	0.08	0.23	0.00
Queue Length 95th (ft)	0	7	22	0
Control Delay (s)	0.0	2.1	19.5	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.1	19.5	0.0
Approach LOS			C	A

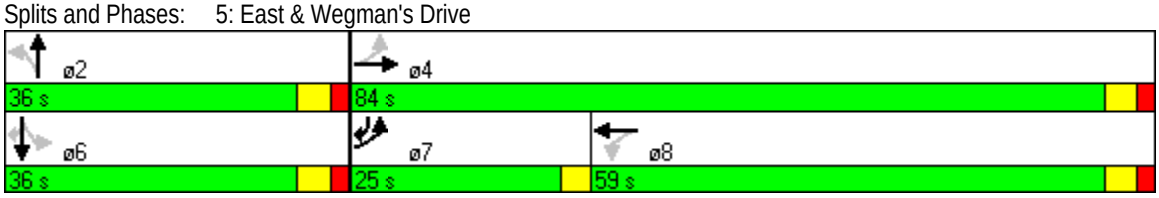
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

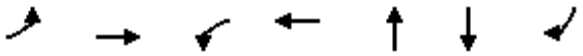
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Volume (vph)	180	387	40	404	26	5	155	5	174
Turn Type	pm+pt		Perm		Perm		Perm		pm+ov
Protected Phases	7	4		8		2		6	7
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	8	8	2	2	6	6	7
Switch Phase									
Minimum Initial (s)	3.0	7.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.0	27.0	27.0	27.0	24.5	24.5	24.5	24.5	8.0
Total Split (s)	25.0	84.0	59.0	59.0	36.0	36.0	36.0	36.0	25.0
Total Split (%)	20.8%	70.0%	49.2%	49.2%	30.0%	30.0%	30.0%	30.0%	20.8%
Yellow Time (s)	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	0.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead		Lag	Lag					Lead
Lead-Lag Optimize?			Yes	Yes					
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max	None
Act Effct Green (s)	81.0	81.0	67.3	67.3		33.0		33.0	46.7
Actuated g/C Ratio	0.68	0.68	0.56	0.56		0.28		0.28	0.39
v/c Ratio	0.39	0.22	0.09	0.34		0.16		0.51	0.26
Control Delay	9.5	7.2	10.8	10.4		19.4		42.9	4.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	9.5	7.2	10.8	10.4		19.4		42.9	4.0
LOS	A	A	B	B		B		D	A
Approach Delay		7.9		10.4		19.4		22.7	
Approach LOS		A		B		B		C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 95 (79%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 12.3 Intersection LOS: B
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: East & Wegman's Drive

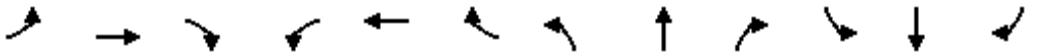




Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	200	494	44	627	71	178	193
v/c Ratio	0.39	0.22	0.09	0.34	0.16	0.51	0.26
Control Delay	9.5	7.2	10.8	10.4	19.4	42.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	7.2	10.8	10.4	19.4	42.9	4.0
Queue Length 50th (ft)	52	65	10	131	20	117	0
Queue Length 95th (ft)	81	87	m28	180	58	191	44
Internal Link Dist (ft)		83		670	30	39	
Turn Bay Length (ft)	140		150				
Base Capacity (vph)	617	2275	476	1866	433	348	865
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.22	0.09	0.34	0.16	0.51	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	387	58	40	404	160	26	5	32	155	5	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	12	10	10	12	12
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.98		1.00	0.96			0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1711	3355		1711	3276			1701			1777	1583
Flt Permitted	0.34	1.00		0.47	1.00			0.85			0.68	1.00
Satd. Flow (perm)	615	3355		849	3276			1480			1264	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	430	64	44	449	178	29	6	36	172	6	193
RTOR Reduction (vph)	0	10	0	0	29	0	0	26	0	0	0	127
Lane Group Flow (vph)	200	484	0	44	598	0	0	45	0	0	178	66
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	78.5	78.5		64.8	64.8			30.5			30.5	41.2
Effective Green, g (s)	78.5	81.0		67.3	67.3			33.0			33.0	41.2
Actuated g/C Ratio	0.65	0.68		0.56	0.56			0.28			0.28	0.34
Clearance Time (s)	3.0	5.5		5.5	5.5			5.5			5.5	3.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	500	2265		476	1837			407			348	543
v/s Ratio Prot	c0.04	0.14			0.18							0.01
v/s Ratio Perm	c0.23			0.05				0.03			c0.14	0.03
v/c Ratio	0.40	0.21		0.09	0.33			0.11			0.51	0.12
Uniform Delay, d1	8.9	7.4		12.2	14.2			32.5			36.7	27.0
Progression Factor	1.00	1.00		0.79	0.77			1.00			1.00	1.00
Incremental Delay, d2	0.5	0.2		0.3	0.4			0.5			5.3	0.1
Delay (s)	9.5	7.6		10.0	11.3			33.1			42.0	27.1
Level of Service	A	A		A	B			C			D	C
Approach Delay (s)		8.1			11.3			33.1			34.2	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

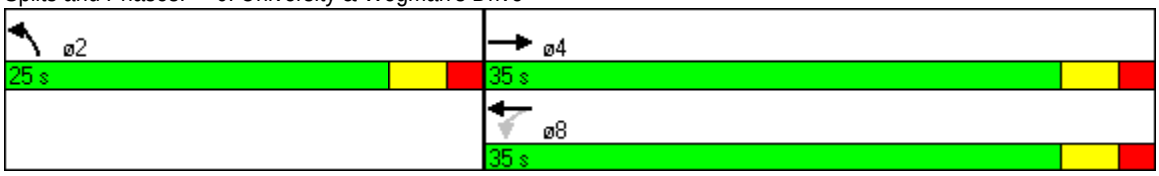
c Critical Lane Group

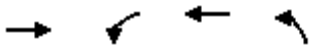
Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	440	59	524	102
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	35.0	35.0	35.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	40.4	40.4	40.4	11.6
Actuated g/C Ratio	0.67	0.67	0.67	0.19
v/c Ratio	0.46	0.14	0.46	0.55
Control Delay	6.7	2.0	3.1	17.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.7	2.0	3.1	17.8
LOS	A	A	A	B
Approach Delay	6.7		3.0	17.8
Approach LOS	A		A	B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 21 (35%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.7 — Intersection LOS: A
Intersection Capacity Utilization 53.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: University & Wegman's Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	591	66	582	219
v/c Ratio	0.46	0.14	0.46	0.55
Control Delay	6.7	2.0	3.1	17.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.7	2.0	3.1	17.8
Queue Length 50th (ft)	76	2	17	42
Queue Length 95th (ft)	178	m8	181	88
Internal Link Dist (ft)	67		49	32
Turn Bay Length (ft)		100		
Base Capacity (vph)	1276	477	1256	651
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.14	0.46	0.34

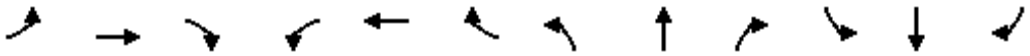
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	440	92	59	524	102	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.98		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	1880		1770	1863	1697	
Flt Permitted	1.00		0.38	1.00	0.97	
Satd. Flow (perm)	1880		709	1863	1697	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	489	102	66	582	113	106
RTOR Reduction (vph)	8	0	0	0	70	0
Lane Group Flow (vph)	583	0	66	582	149	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	39.4		39.4	39.4	10.6	
Effective Green, g (s)	40.4		40.4	40.4	11.6	
Actuated g/C Ratio	0.67		0.67	0.67	0.19	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1266		477	1254	328	
v/s Ratio Prot	0.31			c0.31	c0.09	
v/s Ratio Perm			0.09			
v/c Ratio	0.46		0.14	0.46	0.45	
Uniform Delay, d1	4.6		3.5	4.7	21.4	
Progression Factor	1.00		0.34	0.41	1.00	
Incremental Delay, d2	1.2		0.4	0.9	1.0	
Delay (s)	5.8		1.6	2.8	22.4	
Level of Service	A		A	A	C	
Approach Delay (s)	5.8			2.7	22.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	725	0	0	586	21	18	4	24	5	0	65
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.90	0.90	0.90	0.85	0.85	0.85
Hourly flow rate (vph)	11	780	0	0	666	24	20	4	27	6	0	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					150							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	690			780			1211	1491	390	1118	1479	345
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	511			780			1072	1374	390	972	1361	139
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			87	97	96	97	100	91
cM capacity (veh/h)	982			847			148	135	615	180	137	826

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	271	520	444	246	20	31	82
Volume Left	11	0	0	0	20	0	6
Volume Right	0	0	0	24	0	27	76
cSH	982	1700	1700	1700	148	407	657
Volume to Capacity	0.01	0.31	0.26	0.14	0.13	0.08	0.13
Queue Length 95th (ft)	1	0	0	0	11	6	11
Control Delay (s)	0.5	0.0	0.0	0.0	33.0	14.6	11.3
Lane LOS	A				D	B	B
Approach Delay (s)	0.2		0.0		21.8		11.3
Approach LOS					C		B

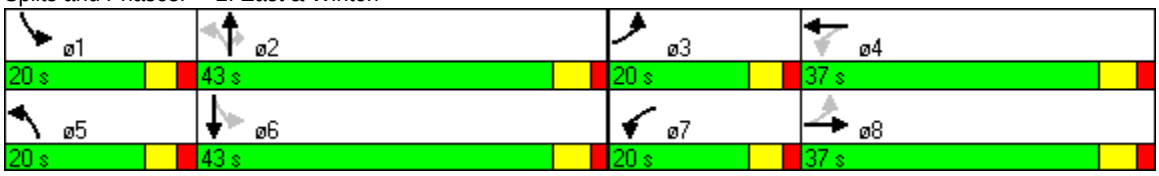
Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	42.5%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	126	390	117	218	230	356	133	134	424
Turn Type	pm+pt		pm+pt		pm+pt		Perm	pm+pt	
Protected Phases	3	8	7	4	5	2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	3	8	7	4	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	10.0	4.0	10.0	4.0	7.0	7.0	4.0	7.0
Minimum Split (s)	12.0	32.0	12.0	32.0	10.0	28.0	28.0	10.0	28.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	43.0	43.0	20.0	43.0
Total Split (%)	16.7%	30.8%	16.7%	30.8%	16.7%	35.8%	35.8%	16.7%	35.8%
Yellow Time (s)	3.5	4.0	3.5	4.0	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.5	-3.0	-2.5	-3.0	-2.5	-3.0	-3.0	-2.5	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Min	None	Min	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	44.4	30.7	45.6	31.3	65.0	50.3	50.3	60.9	48.2
Actuated g/C Ratio	0.37	0.26	0.38	0.26	0.54	0.42	0.42	0.51	0.40
v/c Ratio	0.36	0.73	0.51	0.39	0.56	0.26	0.18	0.28	0.47
Control Delay	26.2	39.6	28.9	33.8	20.6	25.1	5.0	11.8	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	26.2	39.6	28.9	33.8	20.6	25.1	5.0	11.8	20.4
LOS	C	D	C	C	C	C	A	B	C
Approach Delay		37.2		32.3		20.0			18.7
Approach LOS		D		C		B			B

Intersection Summary

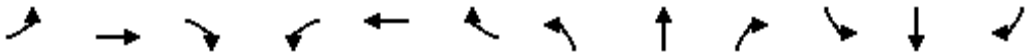
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 62 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 26.7 — Intersection LOS: C
Intersection Capacity Utilization 65.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: East & Winton



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	145	659	144	349	245	379	141	152	629
v/c Ratio	0.36	0.73	0.51	0.39	0.56	0.26	0.18	0.28	0.47
Control Delay	26.2	39.6	28.9	33.8	20.6	25.1	5.0	11.8	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	26.2	39.6	28.9	33.8	20.6	25.1	5.0	11.8	20.4
Queue Length 50th (ft)	58	173	71	104	97	100	0	37	185
Queue Length 95th (ft)	123	239	96	128	162	156	44	58	261
Internal Link Dist (ft)		688		432		405			258
Turn Bay Length (ft)	180		140		150		150	150	
Base Capacity (vph)	441	991	319	975	464	1478	789	595	1334
Starvation Cap Reductn	0	0	0	0	0	0	0	0	254
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.66	0.45	0.36	0.53	0.26	0.18	0.26	0.58

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	390	184	117	218	65	230	356	133	134	424	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	13	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1745	3322		1745	3319		1762	3525	1686	1727	3268	
Flt Permitted	0.43	1.00		0.15	1.00		0.29	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	783	3322		284	3319		531	3525	1686	886	3268	
Peak-hour factor, PHF	0.87	0.87	0.87	0.81	0.81	0.81	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	145	448	211	144	269	80	245	379	141	152	482	147
RTOR Reduction (vph)	0	48	0	0	24	0	0	0	82	0	22	0
Lane Group Flow (vph)	145	611	0	144	325	0	245	379	59	152	607	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	2%
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	38.9	27.7		40.1	28.3		59.6	47.3	47.3	55.4	45.2	
Effective Green, g (s)	43.9	30.7		45.1	31.3		64.6	50.3	50.3	60.4	48.2	
Actuated g/C Ratio	0.37	0.26		0.38	0.26		0.54	0.42	0.42	0.50	0.40	
Clearance Time (s)	5.5	6.0		5.5	6.0		5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	396	850		281	866		438	1478	707	535	1313	
v/s Ratio Prot	0.04	c0.18		c0.06	0.10		c0.07	0.11		0.03	0.19	
v/s Ratio Perm	0.09			0.13			c0.23		0.04	0.11		
v/c Ratio	0.37	0.72		0.51	0.38		0.56	0.26	0.08	0.28	0.46	
Uniform Delay, d1	26.5	40.7		27.3	36.3		16.3	22.7	21.0	16.3	26.4	
Progression Factor	1.06	0.95		1.00	1.00		1.00	1.00	1.00	0.71	0.71	
Incremental Delay, d2	0.2	3.0		0.7	0.4		0.9	0.4	0.2	0.1	1.1	
Delay (s)	28.3	41.7		28.0	36.7		17.2	23.1	21.2	11.6	19.8	
Level of Service	C	D		C	D		B	C	C	B	B	
Approach Delay (s)		39.2			34.2			20.9			18.2	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

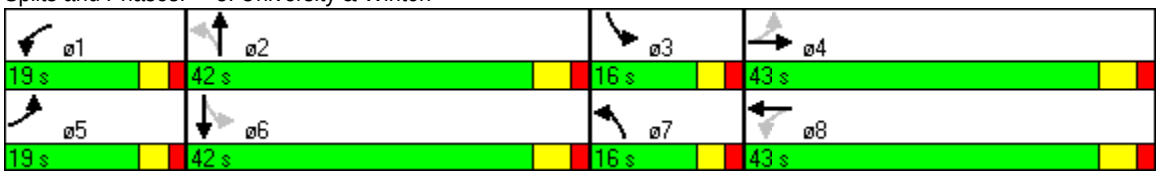
c Critical Lane Group

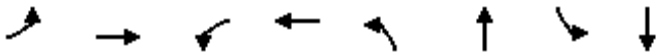
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	167	240	94	238	66	520	148	504
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	5	4	1	8	7	2	3	6
Permitted Phases	4		8		2		6	
Detector Phase	5	4	1	8	7	2	3	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	7.0	4.0	7.0	4.0	6.0
Minimum Split (s)	10.0	29.0	10.0	29.0	11.0	29.0	11.0	29.0
Total Split (s)	19.0	43.0	19.0	43.0	16.0	42.0	16.0	42.0
Total Split (%)	15.8%	35.8%	15.8%	35.8%	13.3%	35.0%	13.3%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0	-2.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	Max	None	Max	None	C-Max	None	C-Max
Act Effct Green (s)	52.4	44.7	52.4	44.7	55.6	47.3	55.6	47.3
Actuated g/C Ratio	0.44	0.37	0.44	0.37	0.46	0.39	0.46	0.39
v/c Ratio	0.52	0.35	0.27	0.31	0.23	0.44	0.45	0.52
Control Delay	30.1	27.3	23.3	22.8	17.6	22.2	27.2	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.1
Total Delay	30.1	27.3	23.3	22.8	17.6	22.7	27.2	28.2
LOS	C	C	C	C	B	C	C	C
Approach Delay		28.2		22.9		22.2		28.0
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 25.6 Intersection LOS: C
Intersection Capacity Utilization 55.7% ICU Level of Service B
Analysis Period (min) 15

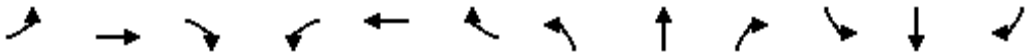
Splits and Phases: 3: University & Winton





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	217	439	104	387	74	600	154	673
v/c Ratio	0.52	0.35	0.27	0.31	0.23	0.44	0.45	0.52
Control Delay	30.1	27.3	23.3	22.8	17.6	22.2	27.2	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.1
Total Delay	30.1	27.3	23.3	22.8	17.6	22.7	27.2	28.2
Queue Length 50th (ft)	98	122	44	87	25	125	66	194
Queue Length 95th (ft)	147	146	82	137	42	155	104	263
Internal Link Dist (ft)		583		787		258		404
Turn Bay Length (ft)	100		75		75		70	
Base Capacity (vph)	536	1266	500	1265	388	1372	410	1306
Starvation Cap Reductn	0	0	0	0	0	375	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	77
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.35	0.21	0.31	0.19	0.60	0.38	0.55

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	240	98	94	238	111	66	520	14	148	504	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			-2%			2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	3305		1711	3282		1762	3477		1727	3264	
Flt Permitted	0.44	1.00		0.41	1.00		0.27	1.00		0.31	1.00	
Satd. Flow (perm)	815	3305		730	3282		499	3477		565	3264	
Peak-hour factor, PHF	0.77	0.77	0.77	0.90	0.90	0.90	0.89	0.89	0.89	0.96	0.96	0.96
Adj. Flow (vph)	217	312	127	104	264	123	74	584	16	154	525	148
RTOR Reduction (vph)	0	35	0	0	43	0	0	1	0	0	19	0
Lane Group Flow (vph)	217	404	0	104	344	0	74	599	0	154	654	0
Heavy Vehicles (%)	0%	1%	1%	2%	0%	4%	0%	1%	0%	0%	3%	0%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	4		1	8		7	2		3	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.4	41.7		47.4	41.7		50.6	44.3		50.6	44.3	
Effective Green, g (s)	51.4	44.7		51.4	44.7		54.6	47.3		54.6	47.3	
Actuated g/C Ratio	0.43	0.37		0.43	0.37		0.46	0.39		0.46	0.39	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	409	1231		376	1223		314	1371		337	1287	
v/s Ratio Prot	c0.03	0.12		0.02	0.10		0.02	0.17		c0.03	c0.20	
v/s Ratio Perm	c0.19			0.10			0.09			0.18		
v/c Ratio	0.53	0.33		0.28	0.28		0.24	0.44		0.46	0.51	
Uniform Delay, d1	30.4	26.9		27.7	26.4		29.8	26.6		31.5	27.5	
Progression Factor	1.01	1.10		1.00	1.00		0.82	0.79		1.00	1.00	
Incremental Delay, d2	0.6	0.7		0.1	0.6		0.1	1.0		0.4	1.4	
Delay (s)	31.5	30.4		27.9	27.0		24.7	22.0		31.9	29.0	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		30.8			27.2			22.3			29.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	377	14	45	320	0	22	0	75	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.95	0.95	0.95	0.87	0.87	0.87	0.25	0.25	0.25
Hourly flow rate (vph)	0	454	17	47	337	0	25	0	86	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					140							
pX, platoon unblocked	0.94						0.94	0.94		0.94	0.94	0.94
vC, conflicting volume	337			471			894	894	463	980	903	337
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268			471			859	859	463	950	867	268
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			90	100	86	100	100	100
cM capacity (veh/h)	1234			1101			255	268	601	189	265	732

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	471	384	111	0
Volume Left	0	47	25	0
Volume Right	17	0	86	0
cSH	1234	1101	460	1700
Volume to Capacity	0.00	0.04	0.24	0.00
Queue Length 95th (ft)	0	3	24	0
Control Delay (s)	0.0	1.4	15.3	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	1.4	15.3	0.0
Approach LOS			C	A

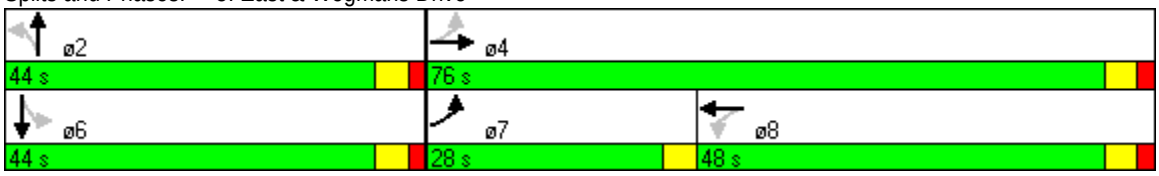
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	163	591	20	384	27	5	140	5
Turn Type	pm+pt		Perm		Perm		Perm	
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
Total Split (s)	28.0	76.0	48.0	48.0	44.0	44.0	44.0	44.0
Total Split (%)	23.3%	63.3%	40.0%	40.0%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-0.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min	Min	Min
Act Effct Green (s)	82.8	82.8	69.0	69.0		31.2		31.2
Actuated g/C Ratio	0.69	0.69	0.58	0.58		0.26		0.26
v/c Ratio	0.33	0.30	0.05	0.31		0.19		0.79
Control Delay	9.4	8.4	12.2	9.9		17.4		49.7
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	9.4	8.4	12.2	9.9		17.4		49.7
LOS	A	A	B	A		B		D
Approach Delay		8.6		10.0		17.4		49.7
Approach LOS		A		A		B		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 57.2% ICU Level of Service B
Analysis Period (min) 15

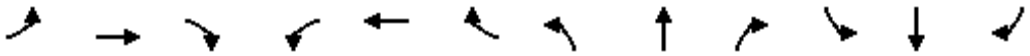
Splits and Phases: 5: East & Wegmans Drive



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	181	695	22	595	76	309
v/c Ratio	0.33	0.30	0.05	0.31	0.19	0.79
Control Delay	9.4	8.4	12.2	9.9	17.4	49.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	8.4	12.2	9.9	17.4	49.7
Queue Length 50th (ft)	44	99	3	32	21	196
Queue Length 95th (ft)	92	165	m20	176	55	273
Internal Link Dist (ft)		70		688	43	60
Turn Bay Length (ft)	140		150			
Base Capacity (vph)	671	2344	401	1909	508	500
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.30	0.05	0.31	0.15	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	591	34	20	384	151	27	5	36	140	5	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	12	10	10	12	12
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.96			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1711	3393		1711	3276			1697			1700	
Flt Permitted	0.36	1.00		0.39	1.00			0.81			0.79	
Satd. Flow (perm)	651	3393		698	3276			1410			1384	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	181	657	38	22	427	168	30	6	40	156	6	147
RTOR Reduction (vph)	0	3	0	0	24	0	0	30	0	0	30	0
Lane Group Flow (vph)	181	692	0	22	571	0	0	46	0	0	279	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	80.3	80.3		66.5	66.5			28.7			28.7	
Effective Green, g (s)	80.8	82.8		69.0	69.0			31.2			31.2	
Actuated g/C Ratio	0.67	0.69		0.58	0.58			0.26			0.26	
Clearance Time (s)	3.5	5.5		5.5	5.5			5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	534	2341		401	1884			367			360	
v/s Ratio Prot	c0.03	0.20			0.17							
v/s Ratio Perm	c0.20			0.03				0.03			c0.20	
v/c Ratio	0.34	0.30		0.05	0.30			0.13			0.77	
Uniform Delay, d1	7.8	7.2		11.2	13.1			34.0			41.1	
Progression Factor	1.00	1.00		0.78	0.71			1.00			1.00	
Incremental Delay, d2	0.4	0.3		0.2	0.4			0.2			10.0	
Delay (s)	8.2	7.6		9.0	9.6			34.1			51.1	
Level of Service	A	A		A	A			C			D	
Approach Delay (s)		7.7			9.6			34.1			51.1	
Approach LOS		A			A			C			D	

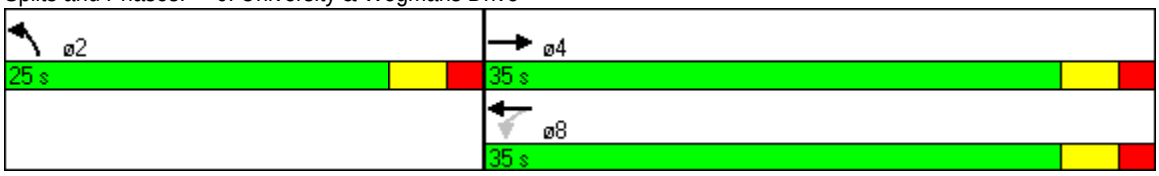
Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

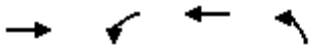
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations				
Volume (vph)	350	124	268	97
Turn Type		Perm		
Protected Phases	4		8	2
Permitted Phases		8		
Detector Phase	4	8	8	2
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	15.0	15.0
Total Split (s)	35.0	35.0	35.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	40.5	40.5	40.5	11.5
Actuated g/C Ratio	0.68	0.68	0.68	0.19
v/c Ratio	0.39	0.25	0.24	0.60
Control Delay	5.8	8.5	7.4	16.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.8	8.5	7.4	16.9
LOS	A	A	A	B
Approach Delay	5.8		7.8	16.9
Approach LOS	A		A	B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 25 (42%), Referenced to phase 4:EBT and 8:WBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: University & Wegmans Drive





Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	491	138	298	250
v/c Ratio	0.39	0.25	0.24	0.60
Control Delay	5.8	8.5	7.4	16.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.8	8.5	7.4	16.9
Queue Length 50th (ft)	56	40	86	41
Queue Length 95th (ft)	138	78	140	90
Internal Link Dist (ft)	60		30	40
Turn Bay Length (ft)		100		
Base Capacity (vph)	1274	559	1258	668
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.25	0.24	0.37

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	350	92	124	268	97	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1871		1770	1863	1684	
Flt Permitted	1.00		0.44	1.00	0.98	
Satd. Flow (perm)	1871		828	1863	1684	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	389	102	138	298	108	142
RTOR Reduction (vph)	11	0	0	0	98	0
Lane Group Flow (vph)	480	0	138	298	152	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	39.5		39.5	39.5	10.5	
Effective Green, g (s)	40.5		40.5	40.5	11.5	
Actuated g/C Ratio	0.68		0.68	0.68	0.19	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1263		559	1258	323	
v/s Ratio Prot	c0.26			0.16	c0.09	
v/s Ratio Perm			0.17			
v/c Ratio	0.38		0.25	0.24	0.47	
Uniform Delay, d1	4.3		3.8	3.8	21.5	
Progression Factor	1.00		1.56	1.58	1.00	
Incremental Delay, d2	0.9		1.0	0.4	1.1	
Delay (s)	5.1		6.9	6.4	22.6	
Level of Service	A		A	A	C	
Approach Delay (s)	5.1			6.6	22.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Appendix E

Signal Warrant Analysis

SIGNAL WARRANT #1A & B

(Minimum Vehicular Volume & Interruption of Continuous Traffic)

EAST AVENUE AT PROBERT STREET & McDONALD'S DRIVEWAY

HOUR	EXISTING TRAFFIC					PROJECTED TRAFFIC				
	EAST AVE TWO-WAY VOLUME	PROBERT ST. SOUTHBOUND VOLUME	MCDONALD'S OUTBOUND VOLUME	HOURS WARRANT #1A MET	HOURS WARRANT #1B MET	EAST AVE (TWO-WAY) VOLUME	PROBERT ST (SB)	McDONALD'S' (OUT)	HOURS WARRANT #1A MET	HOURS WARRANT #1B MET
				100% 80%	100% 80%				100% 80%	100% 80%
AM										
7:00-8:00	690	81	45	NO NO	NO NO	784	41	45	NO NO	NO NO
8:00-9:00	893	110	72	NO NO	NO YES	1015	56	72	NO NO	NO NO
9:00-10:00	743	120	56	NO YES	NO YES	844	61	56	NO NO	NO YES
10:00-11:00	775	125	61	NO YES	NO YES	880	64	61	NO NO	NO YES
11:00-12:00	696	108	69	NO NO	NO NO	791	55	69	NO NO	NO NO
PM										
12:00 - 1:00	1160	267	147	YES YES	YES YES	1317	135	147	NO YES	YES YES
1:00 - 2:00	826	157	103	YES YES	NO YES	938	79	103	NO NO	YES YES
2:00 - 3:00	854	169	75	YES YES	NO YES	971	86	75	NO NO	YES YES
3:00 - 4:00	895	181	66	YES YES	NO YES	1017	92	66	NO NO	YES YES
4:00 - 5:00	949	204	62	YES YES	YES YES	1078	103	62	NO NO	YES YES
5:00 - 6:00	1220	286	62	YES YES	YES YES	1386	145	75	NO YES	YES YES
6:00 - 7:00	802	164	73	YES YES	NO YES	911	83	73	NO NO	YES YES
7:00 - 8:00	710	127	58	YES YES	NO NO	806	65	58	NO NO	NO YES
WARRANT MET	---	---	---	NO YES	NO YES	---	---	---	NO NO	NO YES

VOLUME WARRANT KEY

WARRANT NUMBER	HOURLY VOLUME REQUIRED FOR 8 HOURS					
	EAST AVE (TWO-WAY) VOLUME		PROBERT ST (SB)		McDONALD'S' (OUT)	
	100%	80%	100%	80%	100%	80%
#1A	600	480	150	120	200	160
#1B	900	720	75	60	100	80

WARRANT #1A - Minimum Vehicle Volume.

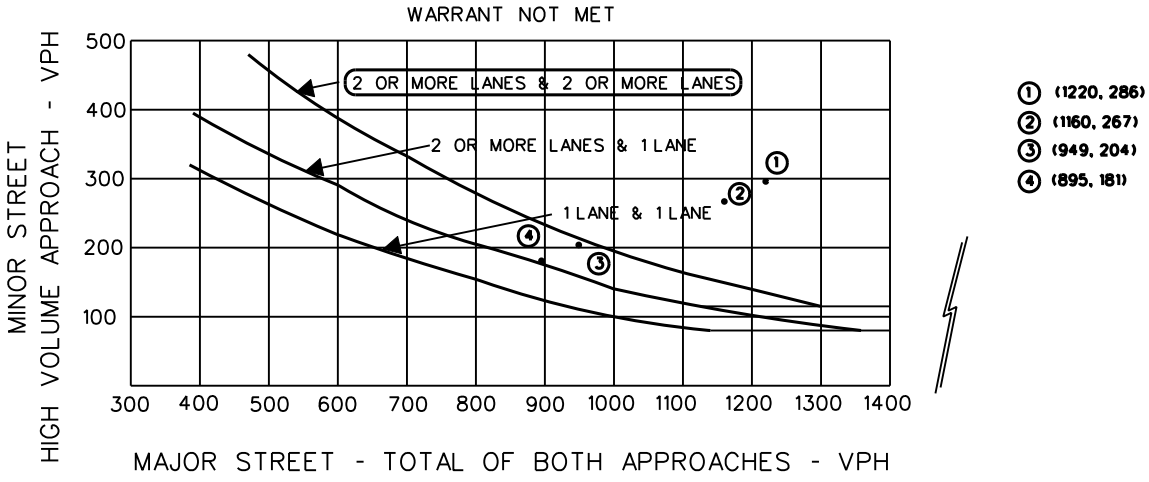
WARRANT #1B - Interruption of Continuous Traffic.

Note: * If 100% of warrants #1A **or** #1B are met than warrant #1 is met

If 80% of warrants #1A **and** #1B are met than warrant #1 is met

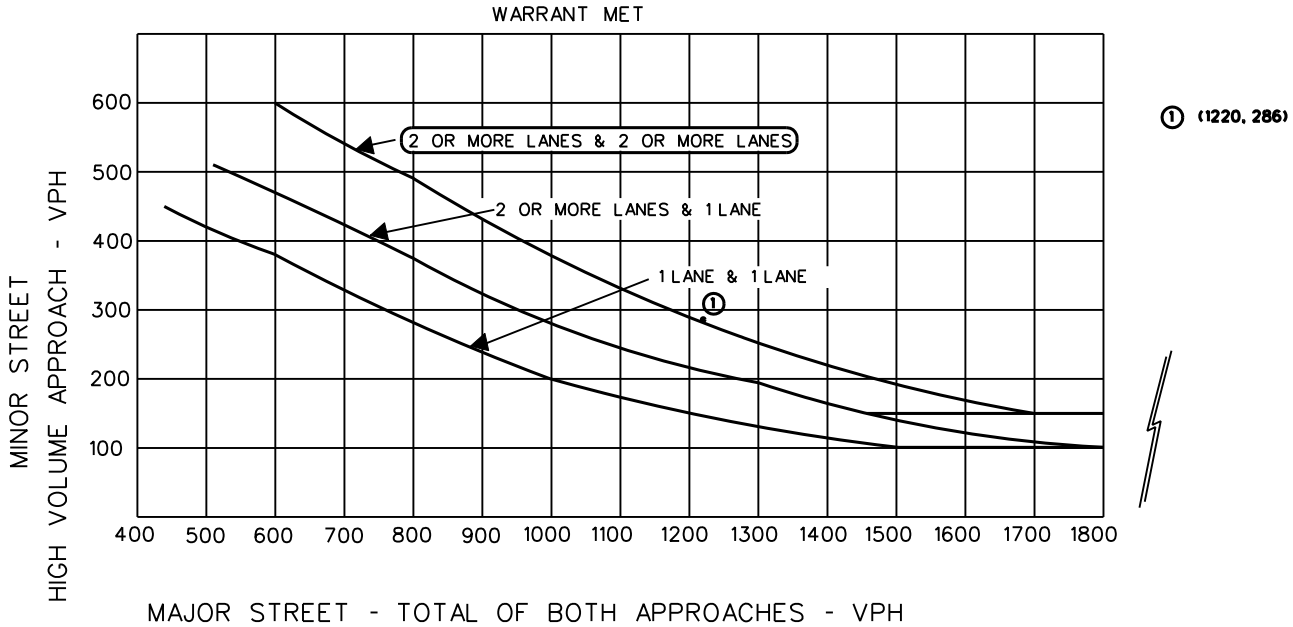
EAST AVE @ PROBERT STREET & McDONALD'S DRIVEWAY EXISTING TRAFFIC

WARRANT * 2 - FOUR HOUR VOLUME WARRANT



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

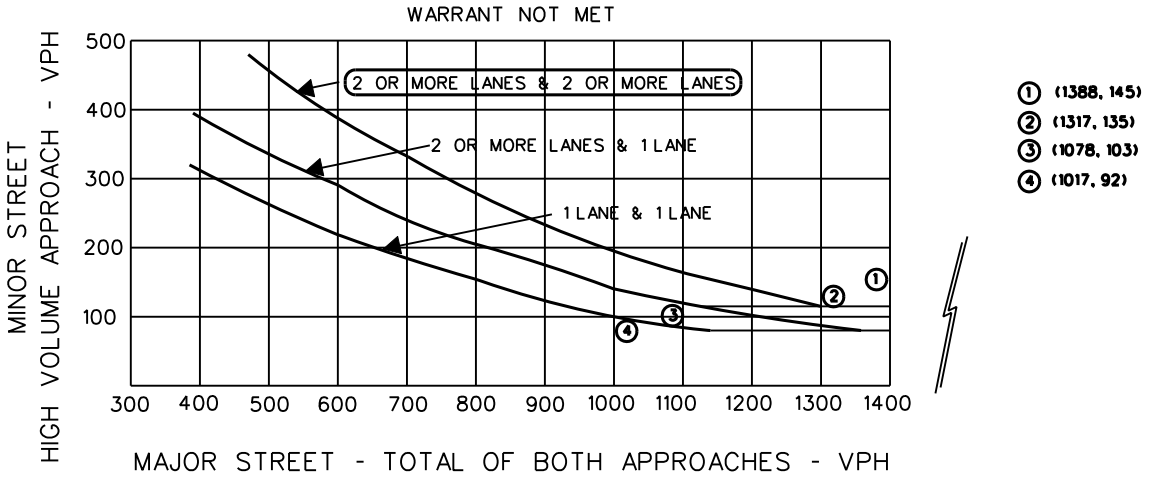
WARRANT * 3 - PEAK HOUR VOLUME WARRANT



* NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

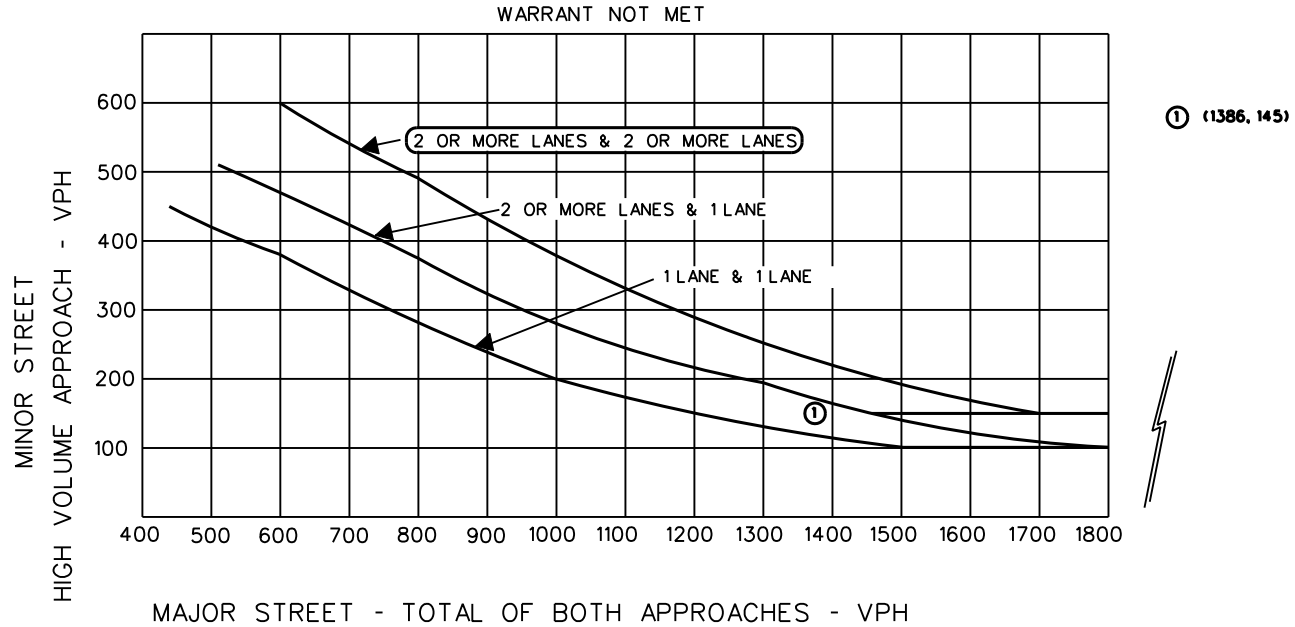
EAST AVE @ PROBERT STREET & McDONALD'S DRIVEWAY FUTURE TRAFFIC

WARRANT * 2 - FOUR HOUR VOLUME WARRANT



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

WARRANT * 3 - PEAK HOUR VOLUME WARRANT



* NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SIGNAL WARRANT #1A & B

(Minimum Vehicular Volume & Interruption of Continuous Traffic)

EAST AVENUE AT NEW WEGMANS DRIVEWAY & COUNTRY CLUB DINER

HOUR	PROJECTED TRAFFIC				
	EAST AVE TWO-WAY VOLUME	WEGMANS DRIVEWAY OUTBOUND VOLUME	COUNTRY CLUB DRIVEWAY OUTBOUND VOLUME	HOURS WARRANT #1A MET	HOURS WARRANT #1B MET
AM					
7:00-8:00	775	115	30	NO	NO
8:00-9:00	1013	126	43	NO	YES
9:00-10:00	875	147	31	NO	NO
10:00-11:00	927	173	25	YES	YES
11:00-12:00	864	193	37	YES	NO
PM					
12:00 - 1:00	1405	233	59	YES	YES
1:00 - 2:00	1034	222	60	YES	YES
2:00 - 3:00	1086	245	42	YES	YES
3:00 - 4:00	1141	263	37	YES	YES
4:00 - 5:00	1213	291	40	YES	YES
5:00 - 6:00	1540	298	58	YES	YES
6:00 - 7:00	1026	269	58	YES	YES
7:00 - 8:00	916	208	50	YES	YES
WARRANT MET	---	---	---	YES	YES

VOLUME WARRANT KEY

WARRANT NUMBER	HOURLY VOLUME REQUIRED FOR 8 HOURS		
	EAST AVE TWO-WAY	WEGMANS DRIVEWAY OUTBOUND	COUNTRY CLUB OUTBOUND
	100%	100%	100%
#1A	600	150	150
#1B	900	75	75

WARRANT #1A - Minimum Vehicle Volume.

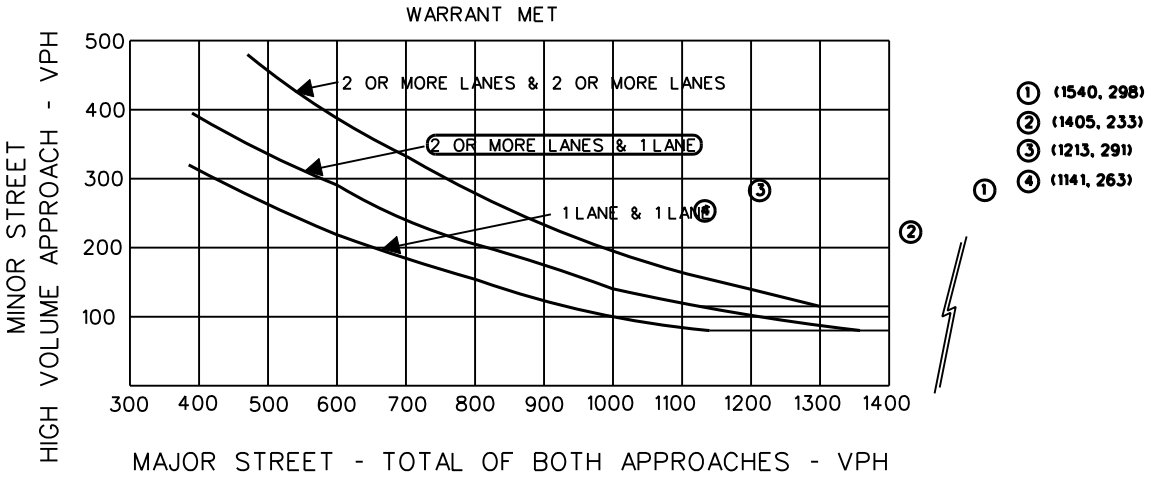
WARRANT #1B - Interruption of Continuous Traffic.

Note: * If 100% of warrants #1A or #1B are met than warrant #1 is met

If 80% of warrants #1A and #1B are met than warrant #1 is met

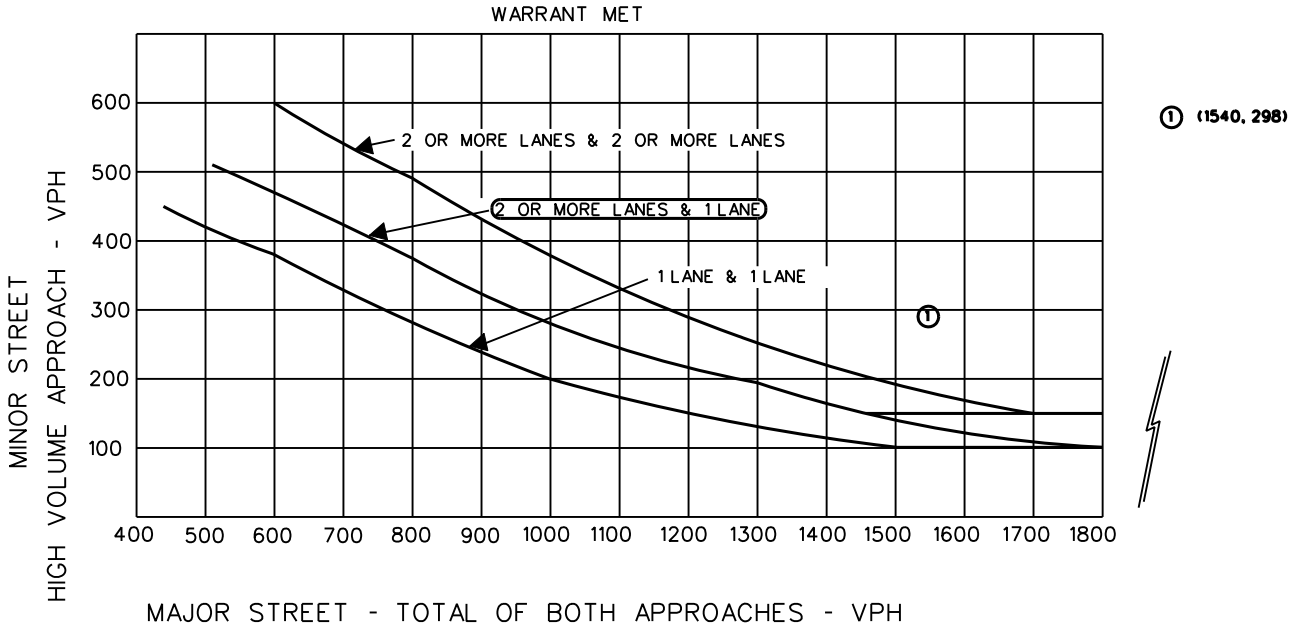
EAST AVE @ PROPOSED WEGMANS DRIVEWAY & COUNTRY CLUB DINER
FUTURE TRAFFIC

WARRANT * 2 - FOUR HOUR VOLUME WARRANT



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

WARRANT * 3 - PEAK HOUR VOLUME WARRANT



* NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Appendix F

MCDOT Pedestrian Investigation

file

MONROE COUNTY

Department of Transportation

Jack Doyle
County Executive

Terrence J. Rice, P.E.
Director of Transportion

May 15, 2002

Mr. Paul Marinucci
Harris Corporation, R F Communications
1680 University Avenue
Rochester, New York 14610

RE: UNIVERSITY AVENUE – CROSSWALKS AT HARRIS CORPORATION

Dear Mr. Marinucci:

In response to your telephoned concern of January 14, 2002 stating that an employee had been struck crossing University Avenue, the Department of Transportation reviewed traffic conditions at the subject location to determine if additional traffic control devices are needed. We conducted on-site reviews during daylight and dark hours to identify existing conditions and check the quality of illumination and the visibility of existing traffic signs and crosswalks. Also, we reviewed the accident history on University Avenue for the three year one month period ending January 17, 2002.

Our field review revealed that there are three midblock crosswalks and one intersection crosswalk that can be used to cross University Avenue in the vicinity of Harris Corporation. Advance pedestrian warning signs with flashers exist on University Avenue for both directions of traffic entering the area. Each of the three midblock crosswalks is signed with pedestrian crossing warning signs. All pedestrian-related warning signs utilize conspicuous strong yellow/green reflective material. Overhead lighting was observed to be adequate along University Avenue in the area.

The accident history, which is obtained from police files, did not contain a report of the recent pedestrian accident of your concern. One other pedestrian accident occurred on January 20, 2000 at 7:30 a.m. in the crosswalk adjacent to Wegmans. These incidents are not indicative of an accident pattern relating to pedestrians.

Appendix G

Traffic Count Summary Sheets

A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : SAT_N Winton & East
Site Code : 00000000
Start Date : 9/19/2009
Page No : 1

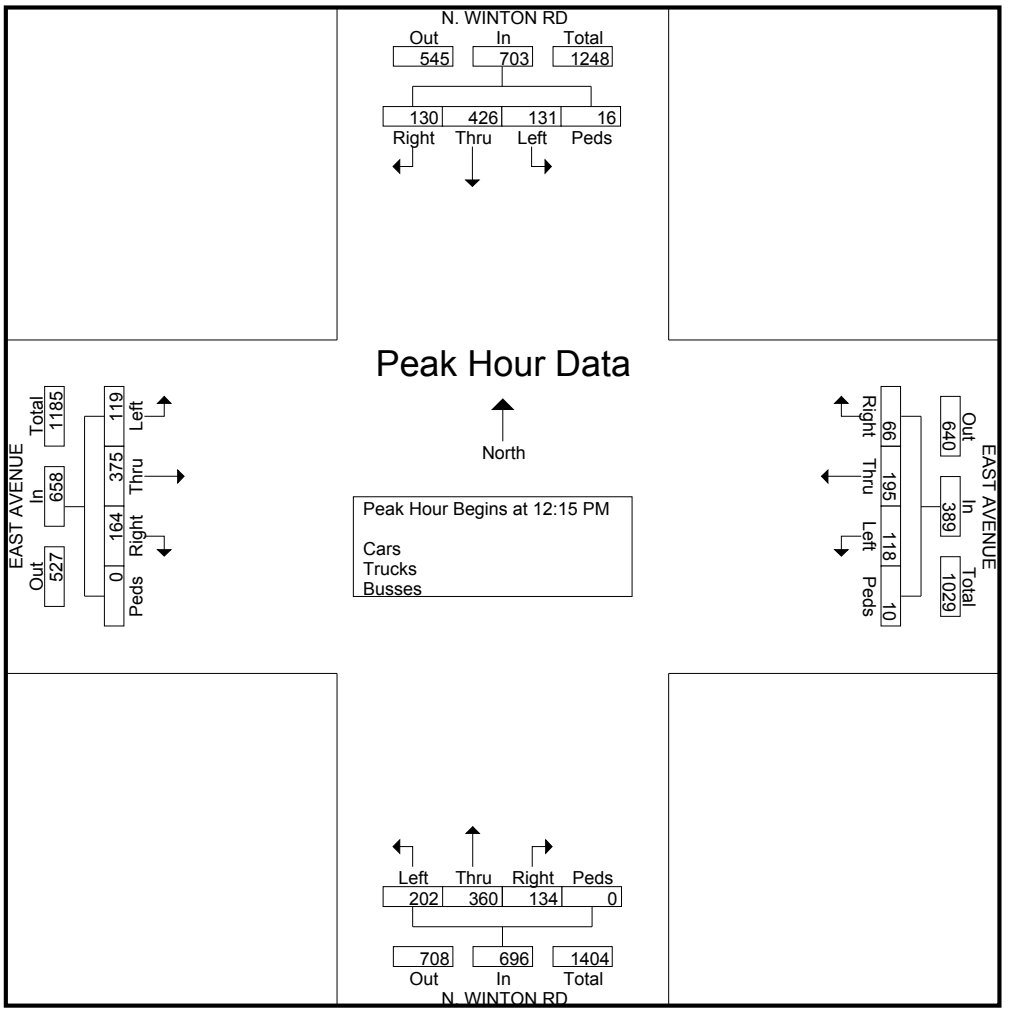
Groups Printed- Cars - Trucks - Busses

	N. WINTON RD Southbound					EAST AVENUE Westbound					N. WINTON RD Northbound					EAST AVENUE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	33	104	24	4	165	10	49	30	3	92	18	70	30	0	118	47	85	33	0	165	540
11:15 AM	37	97	41	7	182	17	52	20	3	92	14	99	43	0	156	38	82	36	0	156	586
11:30 AM	43	87	36	0	166	16	46	31	4	97	0	0	0	0	0	0	0	0	0	0	263
11:45 AM	40	90	33	3	166	9	43	32	2	86	27	85	44	0	156	49	100	37	0	186	594
Total	153	378	134	14	679	52	190	113	12	367	59	254	117	0	430	134	267	106	0	507	1983
12:00 PM	33	76	47	3	159	19	69	31	1	120	25	92	44	0	161	51	80	30	0	161	601
12:15 PM	43	104	22	4	173	18	42	28	4	92	30	79	51	0	160	52	96	41	0	189	614
12:30 PM	44	114	34	3	195	16	51	30	4	101	30	76	50	0	156	33	101	24	0	158	610
12:45 PM	26	101	37	6	170	20	61	25	2	108	29	102	51	0	182	32	84	28	0	144	604
Total	146	395	140	16	697	73	223	114	11	421	114	349	196	0	659	168	361	123	0	652	2429
01:00 PM	17	107	38	3	165	12	41	35	0	88	45	103	50	0	198	47	94	26	0	167	618
01:15 PM	18	96	37	2	153	12	34	37	2	85	24	80	44	0	148	65	67	38	0	170	556
01:30 PM	33	95	29	5	162	10	56	22	1	89	28	66	35	0	129	45	94	27	0	166	546
01:45 PM	16	89	24	0	129	13	55	22	0	90	21	72	43	0	136	35	72	32	0	139	494
Total	84	387	128	10	609	47	186	116	3	352	118	321	172	0	611	192	327	123	0	642	2214
Grand Total	383	1160	402	40	1985	172	599	343	26	1140	291	924	485	0	1700	494	955	352	0	1801	6626
Apprch %	19.3	58.4	20.3	2		15.1	52.5	30.1	2.3		17.1	54.4	28.5	0		27.4	53	19.5	0		
Total %	5.8	17.5	6.1	0.6	30	2.6	9	5.2	0.4	17.2	4.4	13.9	7.3	0	25.7	7.5	14.4	5.3	0	27.2	
Cars	377	1142	400	39	1958	172	595	341	26	1134	288	916	481	0	1685	493	951	350	0	1794	6571
% Cars	98.4	98.4	99.5	97.5	98.6	100	99.3	99.4	100	99.5	99	99.1	99.2	0	99.1	99.8	99.6	99.4	0	99.6	99.2
Trucks	3	12	2	0	17	0	1	2	0	3	3	8	4	0	15	1	4	2	0	7	42
% Trucks	0.8	1	0.5	0	0.9	0	0.2	0.6	0	0.3	1	0.9	0.8	0	0.9	0.2	0.4	0.6	0	0.4	0.6
Busses	3	6	0	1	10	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	13
% Busses	0.8	0.5	0	2.5	0.5	0	0.5	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.2

A T·Y·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : SAT_N Winton & East
Site Code : 00000000
Start Date : 9/19/2009
Page No : 2

	N. WINTON RD Southbound					EAST AVENUE Westbound					N. WINTON RD Northbound					EAST AVENUE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	43	104	22	4	173	18	42	28	**4**	92	30	79	**51**	0	160	**52**	96	**41**	0	**189**	614
12:30 PM	**44**	**114**	34	3	**195**	16	51	30	4	101	30	76	50	0	156	33	**101**	24	0	158	610
12:45 PM	26	101	37	**6**	170	**20**	**61**	25	2	**108**	29	102	51	0	182	32	84	28	0	144	604
01:00 PM	17	107	**38**	3	165	12	41	**35**	0	88	**45**	**103**	50	0	**198**	47	94	26	0	167	**618**
Total Volume	130	426	131	16	703	66	195	118	10	389	134	360	202	0	696	164	375	119	0	658	2446
% App. Total	18.5	60.6	18.6	2.3		17	50.1	30.3	2.6		19.3	51.7	29	0		24.9	57	18.1	0		
PHF	.739	.934	.862	.667	.901	.825	.799	.843	.625	.900	.744	.874	.990	.000	.879	.788	.928	.726	.000	.870	.989



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : FRI PM_N Winton & East
Site Code : 00000000
Start Date : 9/18/2009
Page No : 1

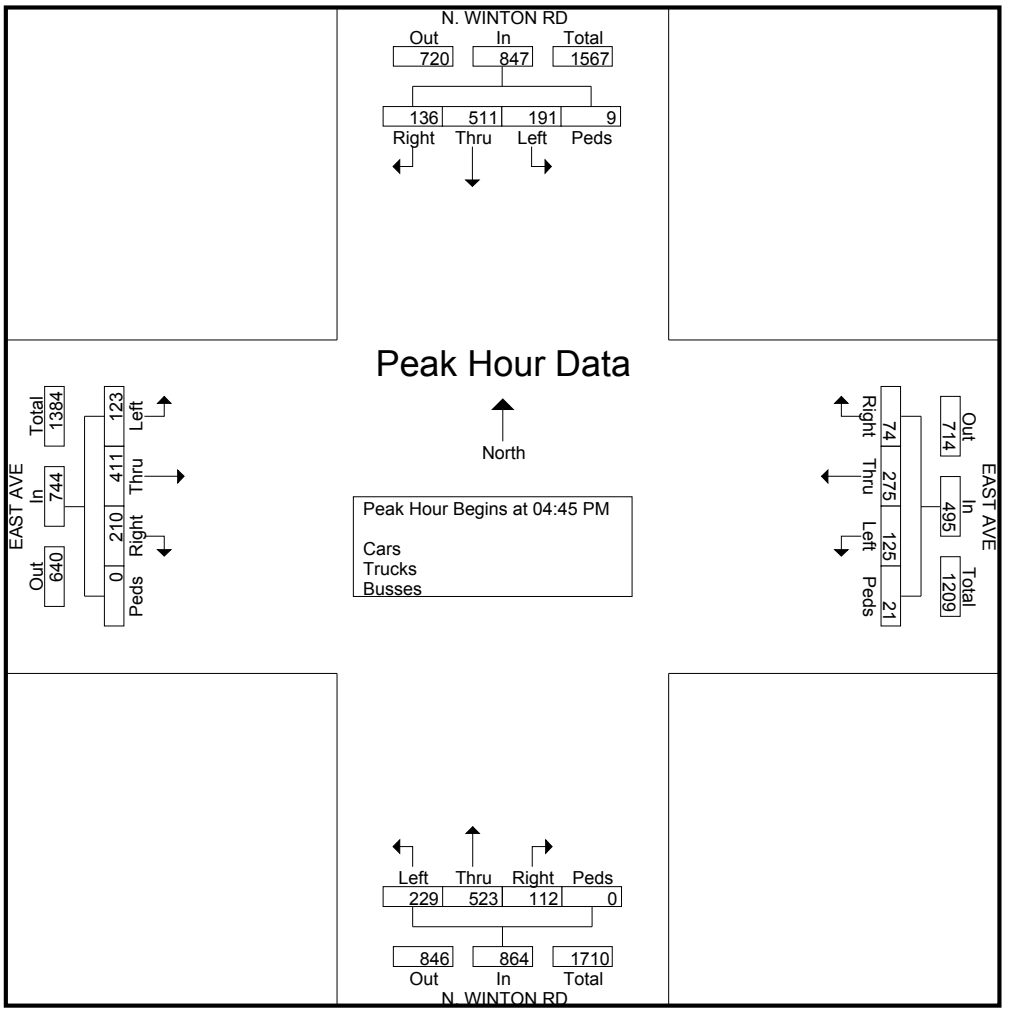
Groups Printed- Cars - Trucks - Busses

	N. WINTON RD Southbound					EAST AVE Westbound					N. WINTON RD Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	27	132	38	0	197	13	83	30	4	130	38	128	57	0	223	48	120	36	0	204	754
04:15 PM	23	133	39	1	196	14	47	25	0	86	31	141	59	0	231	51	89	39	0	179	692
04:30 PM	32	128	34	2	196	15	32	26	3	76	29	116	61	0	206	48	110	29	0	187	665
04:45 PM	42	137	47	4	230	12	52	28	3	95	28	128	55	0	211	61	121	32	0	214	750
Total	124	530	158	7	819	54	214	109	10	387	126	513	232	0	871	208	440	136	0	784	2861
05:00 PM	23	122	55	4	204	19	76	35	4	134	32	118	62	0	212	45	102	30	0	177	727
05:15 PM	38	145	52	0	235	16	77	34	10	137	26	147	41	0	214	61	100	29	0	190	776
05:30 PM	33	107	37	1	178	27	70	28	4	129	26	130	71	0	227	43	88	32	0	163	697
05:45 PM	34	128	24	3	189	18	59	41	0	118	23	109	56	0	188	32	76	29	0	137	632
Total	128	502	168	8	806	80	282	138	18	518	107	504	230	0	841	181	366	120	0	667	2832
Grand Total	252	1032	326	15	1625	134	496	247	28	905	233	1017	462	0	1712	389	806	256	0	1451	5693
Apprch %	15.5	63.5	20.1	0.9		14.8	54.8	27.3	3.1		13.6	59.4	27	0		26.8	55.5	17.6	0		
Total %	4.4	18.1	5.7	0.3	28.5	2.4	8.7	4.3	0.5	15.9	4.1	17.9	8.1	0	30.1	6.8	14.2	4.5	0	25.5	
Cars	244	1014	325	15	1598	134	492	245	28	899	230	1009	461	0	1700	386	799	255	0	1440	5637
% Cars	96.8	98.3	99.7	100	98.3	100	99.2	99.2	100	99.3	98.7	99.2	99.8	0	99.3	99.2	99.1	99.6	0	99.2	99
Trucks	3	6	0	0	9	0	1	2	0	3	3	8	1	0	12	3	7	1	0	11	35
% Trucks	1.2	0.6	0	0	0.6	0	0.2	0.8	0	0.3	1.3	0.8	0.2	0	0.7	0.8	0.9	0.4	0	0.8	0.6
Busses	5	12	1	0	18	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	21
% Busses	2	1.2	0.3	0	1.1	0	0.6	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.4

A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : FRI PM_N Winton & East
Site Code : 00000000
Start Date : 9/18/2009
Page No : 2

	N. WINTON RD Southbound					EAST AVE Westbound					N. WINTON RD Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**42**	137	47	**4**	230	12	52	28	3	95	28	128	55	0	211	**61**	**121**	**32**	0	**214**	750
05:00 PM	23	122	**55**	4	204	19	76	**35**	4	134	**32**	118	62	0	212	45	102	30	0	177	727
05:15 PM	38	**145**	52	0	**235**	16	**77**	34	**10**	**137**	26	**147**	41	0	214	61	100	29	0	190	**776**
05:30 PM	33	107	37	1	178	**27**	70	28	4	129	26	130	**71**	0	**227**	43	88	32	0	163	697
Total Volume	136	511	191	9	847	74	275	125	21	495	112	523	229	0	864	210	411	123	0	744	2950
% App. Total	16.1	60.3	22.6	1.1		14.9	55.6	25.3	4.2		13	60.5	26.5	0		28.2	55.2	16.5	0		
PHF	.810	.881	.868	.563	.901	.685	.893	.893	.525	.903	.875	.889	.806	.000	.952	.861	.849	.961	.000	.869	.950



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : East & Probert_WEEKDAY
Site Code : 00000000
Start Date : 9/17/2009
Page No : 1

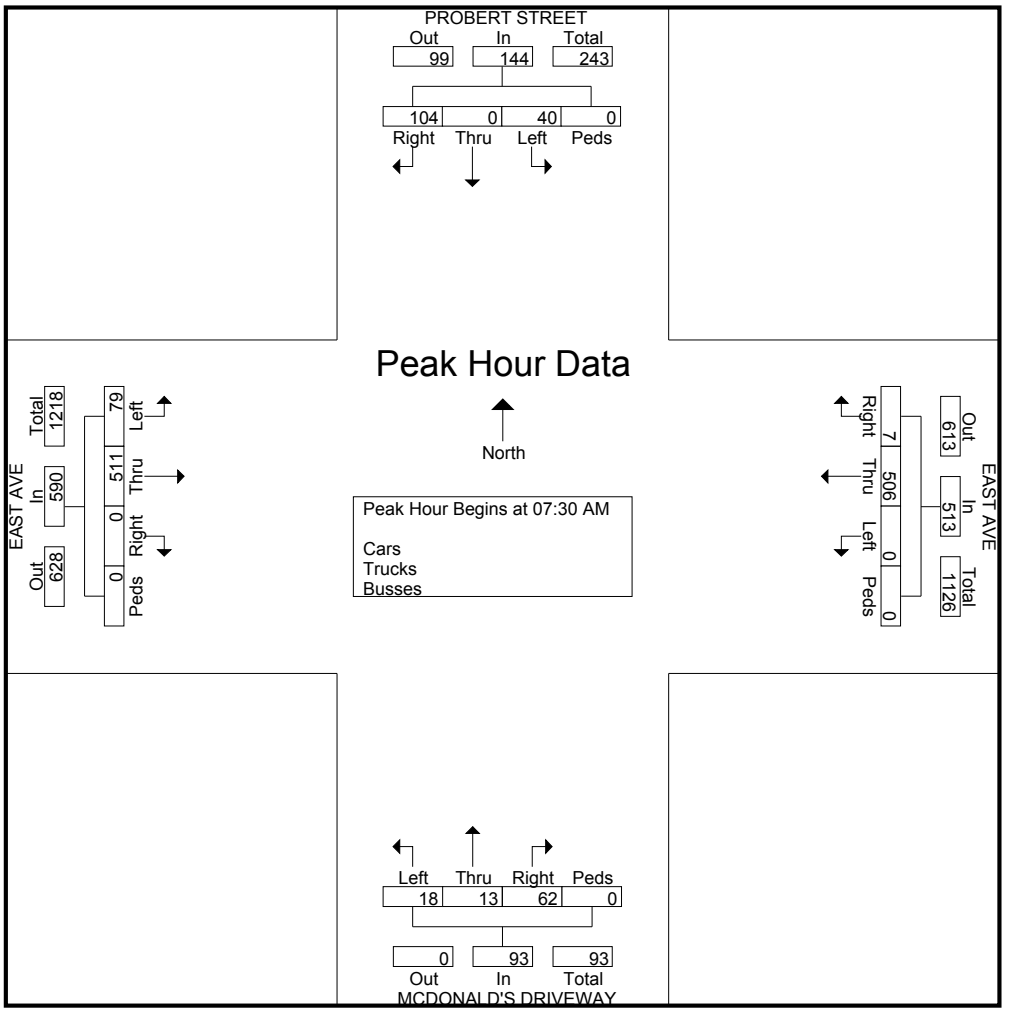
Groups Printed- Cars - Trucks - Busses

	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	21	0	4	0	25	0	81	0	0	81	13	0	2	0	15	0	73	17	0	90	211
07:15 AM	28	0	10	0	38	0	102	0	0	102	19	1	2	0	22	0	88	9	0	97	259
07:30 AM	23	0	8	0	31	2	129	0	0	131	22	1	4	0	27	0	140	17	0	157	346
07:45 AM	23	0	12	0	35	1	135	0	0	136	5	7	5	0	17	0	145	26	0	171	359
Total	95	0	34	0	129	3	447	0	0	450	59	9	13	0	81	0	446	69	0	515	1175
08:00 AM	32	0	12	0	44	2	134	0	0	136	20	3	6	0	29	0	109	17	0	126	335
08:15 AM	26	0	8	0	34	2	108	0	0	110	15	2	3	0	20	0	117	19	0	136	300
08:30 AM	27	0	2	0	29	5	112	0	0	117	15	5	4	0	24	0	103	21	0	124	294
08:45 AM	23	0	7	0	30	5	104	0	0	109	14	3	9	0	26	0	119	21	0	140	305
Total	108	0	29	0	137	14	458	0	0	472	64	13	22	0	99	0	448	78	0	526	1234
*** BREAK ***																					
12:00 PM	40	0	14	0	54	5	104	0	0	109	16	5	10	1	32	0	125	30	0	155	350
12:15 PM	31	0	20	0	51	5	83	0	0	88	15	1	10	0	26	0	128	34	0	162	327
12:30 PM	37	0	19	0	56	10	76	0	0	86	18	5	17	0	40	0	115	29	0	144	326
12:45 PM	43	0	19	0	62	5	92	0	0	97	19	4	10	0	33	0	114	39	0	153	345
Total	151	0	72	0	223	25	355	0	0	380	68	15	47	1	131	0	482	132	0	614	1348
*** BREAK ***																					
04:00 PM	36	0	14	0	50	9	92	0	0	101	8	1	0	0	9	0	134	29	0	163	323
04:15 PM	34	0	19	0	53	7	89	0	0	96	9	2	2	0	13	0	130	30	0	160	322
04:30 PM	43	0	18	0	61	1	112	0	0	113	6	4	3	0	13	0	160	31	0	191	378
04:45 PM	39	0	21	0	60	6	88	0	0	94	8	3	2	0	13	0	142	27	0	169	336
Total	152	0	72	0	224	23	381	0	0	404	31	10	7	0	48	0	566	117	0	683	1359
05:00 PM	50	0	25	0	75	7	95	0	2	104	10	2	7	0	19	0	155	38	0	193	391
05:15 PM	53	0	30	0	83	7	138	0	0	145	11	4	3	0	18	0	170	45	0	215	461
05:30 PM	48	0	20	0	68	10	124	0	0	134	6	2	4	0	12	0	158	27	0	185	399
05:45 PM	48	0	19	0	67	5	93	0	0	98	6	5	3	0	14	0	151	29	0	180	359
Total	199	0	94	0	293	29	450	0	2	481	33	13	17	0	63	0	634	139	0	773	1610
Grand Total	705	0	301	0	1006	94	2091	0	2	2187	255	60	106	1	422	0	2576	535	0	3111	6726
Apprch %	70.1	0	29.9	0		4.3	95.6	0	0.1		60.4	14.2	25.1	0.2		0	82.8	17.2	0		
Total %	10.5	0	4.5	0	15	1.4	31.1	0	0	32.5	3.8	0.9	1.6	0	6.3	0	38.3	8	0	46.3	
Cars	704	0	300	0	1004	92	2081	0	2	2175	254	60	106	1	421	0	2568	528	0	3096	6696
% Cars	99.9	0	99.7	0	99.8	97.9	99.5	0	100	99.5	99.6	100	100	100	99.8	0	99.7	98.7	0	99.5	99.6
Trucks	1	0	1	0	2	1	1	0	0	2	1	0	0	0	1	0	4	1	0	5	10
% Trucks	0.1	0	0.3	0	0.2	1.1	0	0	0	0.1	0.4	0	0	0	0.2	0	0.2	0.2	0	0.2	0.1
Busses	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	0	4	6	0	10	20
% Busses	0	0	0	0	0	1.1	0.4	0	0	0.5	0	0	0	0	0	0	0.2	1.1	0	0.3	0.3

A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : East & Probert_WEEKDAY
Site Code : 00000000
Start Date : 9/17/2009
Page No : 2

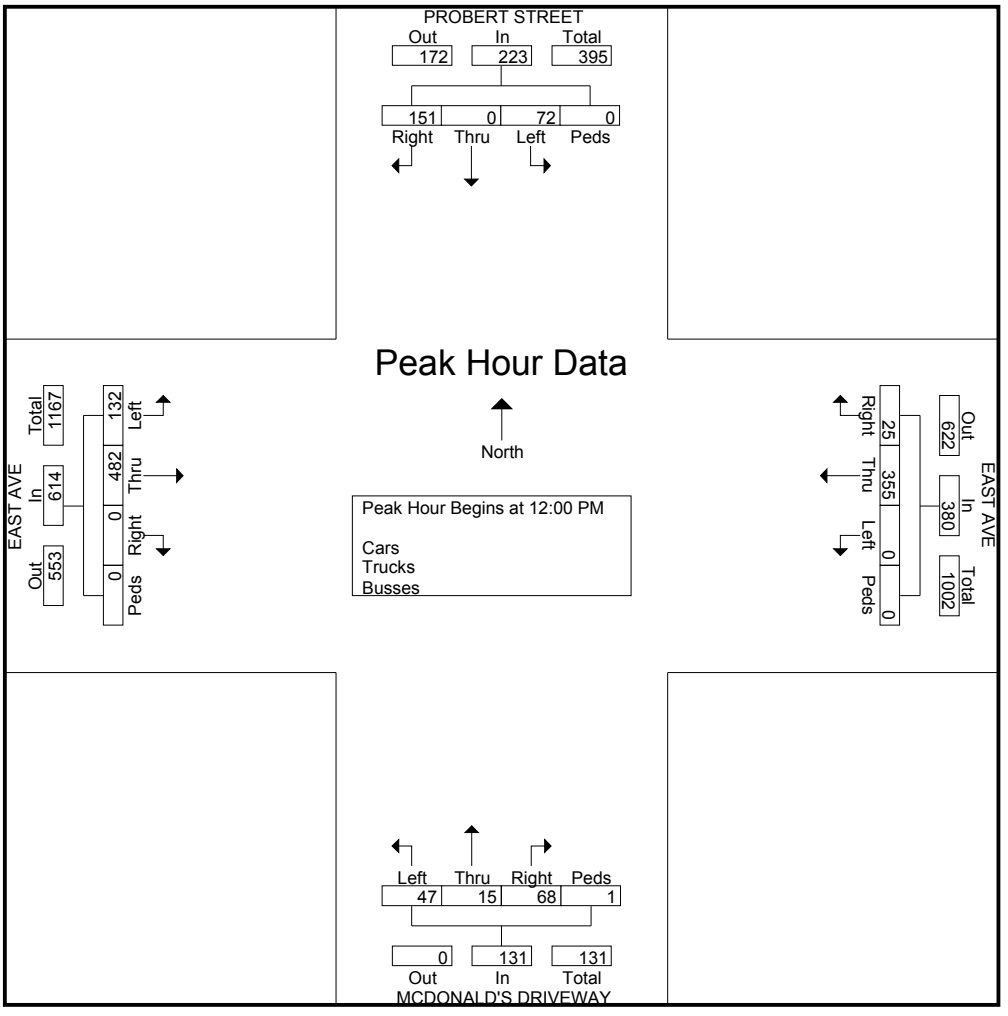
	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	23	0	8	0	31	**2**	129	0	0	131	**22**	1	4	0	27	0	140	17	0	157	346
07:45 AM	23	0	**12**	0	35	1	**135**	0	0	**136**	5	**7**	5	0	17	0	**145**	**26**	0	**171**	**359**
08:00 AM	**32**	0	12	0	**44**	2	134	0	0	136	20	3	**6**	0	**29**	0	109	17	0	126	335
08:15 AM	26	0	8	0	34	2	108	0	0	110	15	2	3	0	20	0	117	19	0	136	300
Total Volume	104	0	40	0	144	7	506	0	0	513	62	13	18	0	93	0	511	79	0	590	1340
% App. Total	72.2	0	27.8	0		1.4	98.6	0	0		66.7	14	19.4	0		0	86.6	13.4	0		
PHF	.813	.000	.833	.000	.818	.875	.937	.000	.000	.943	.705	.464	.750	.000	.802	.000	.881	.760	.000	.863	.933



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : East & Probert_WEEKDAY
Site Code : 00000000
Start Date : 9/17/2009
Page No : 3

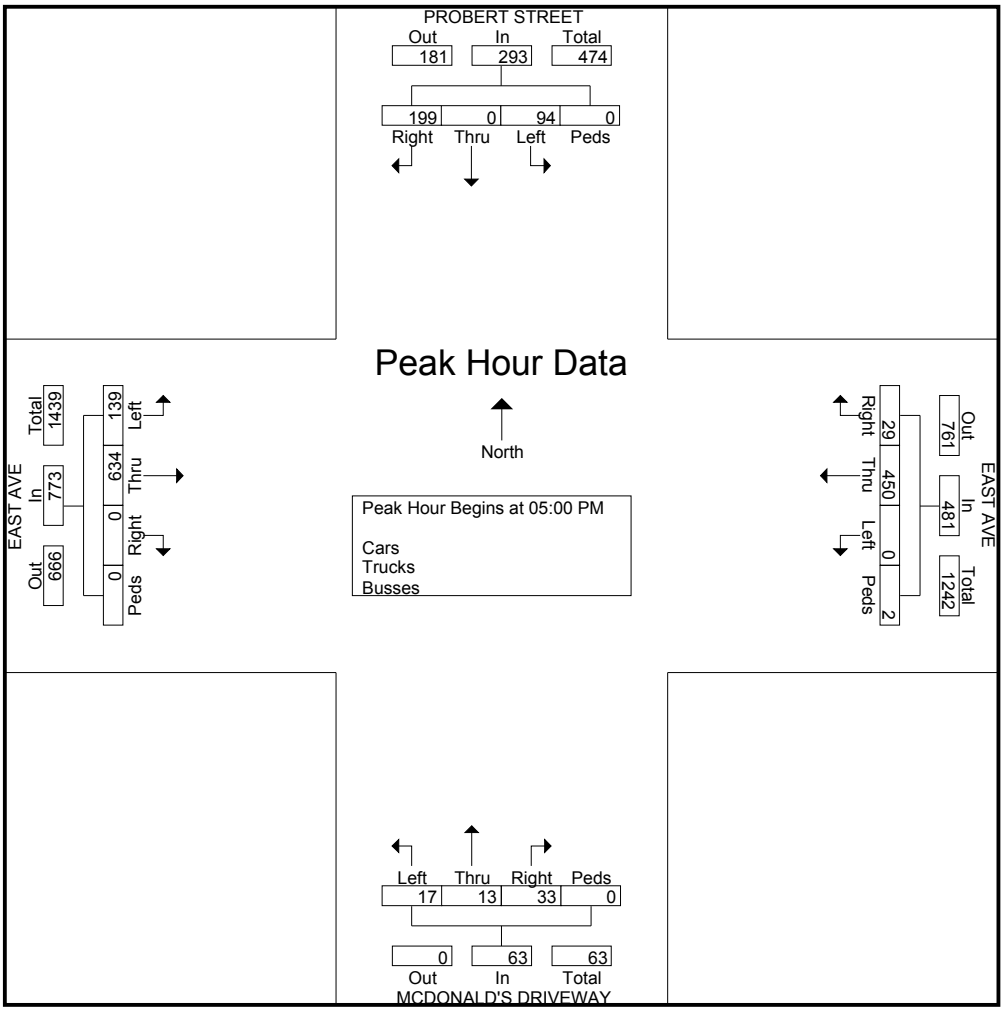
	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	40	0	14	0	54	5	**104**	0	0	**109**	16	**5**	10	**1**	32	0	125	30	0	155	**350**
12:15 PM	31	0	**20**	0	51	5	83	0	0	88	15	1	10	0	26	0	**128**	34	0	**162**	327
12:30 PM	37	0	19	0	56	**10**	76	0	0	86	18	5	**17**	0	**40**	0	115	29	0	144	326
12:45 PM	**43**	0	19	0	**62**	5	92	0	0	97	**19**	4	10	0	33	0	114	**39**	0	153	345
Total Volume	151	0	72	0	223	25	355	0	0	380	68	15	47	1	131	0	482	132	0	614	1348
% App. Total	67.7	0	32.3	0		6.6	93.4	0	0		51.9	11.5	35.9	0.8		0	78.5	21.5	0		
PHF	.878	.000	.900	.000	.899	.625	.853	.000	.000	.872	.895	.750	.691	.250	.819	.000	.941	.846	.000	.948	.963



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : East & Probert_WEEKDAY
Site Code : 00000000
Start Date : 9/17/2009

	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	50	0	25	0	75	7	95	0	**2**	104	10	2	**7**	0	**19**	0	155	38	0	193	391
05:15 PM	**53**	0	**30**	0	**83**	7	**138**	0	0	**145**	**11**	4	3	0	18	0	**170**	**45**	0	**215**	**461**
05:30 PM	48	0	20	0	68	**10**	124	0	0	134	6	2	4	0	12	0	158	27	0	185	399
05:45 PM	48	0	19	0	67	5	93	0	0	98	6	**5**	3	0	14	0	151	29	0	180	359
Total Volume	199	0	94	0	293	29	450	0	2	481	33	13	17	0	63	0	634	139	0	773	1610
% App. Total	67.9	0	32.1	0		6	93.6	0	0.4		52.4	20.6	27	0		0	82	18	0		
PHF	.939	.000	.783	.000	.883	.725	.815	.000	.250	.829	.750	.650	.607	.000	.829	.000	.932	.772	.000	.899	.873



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : SAT_East & Probert
Site Code : 00000000
Start Date : 9/19/2009
Page No : 1

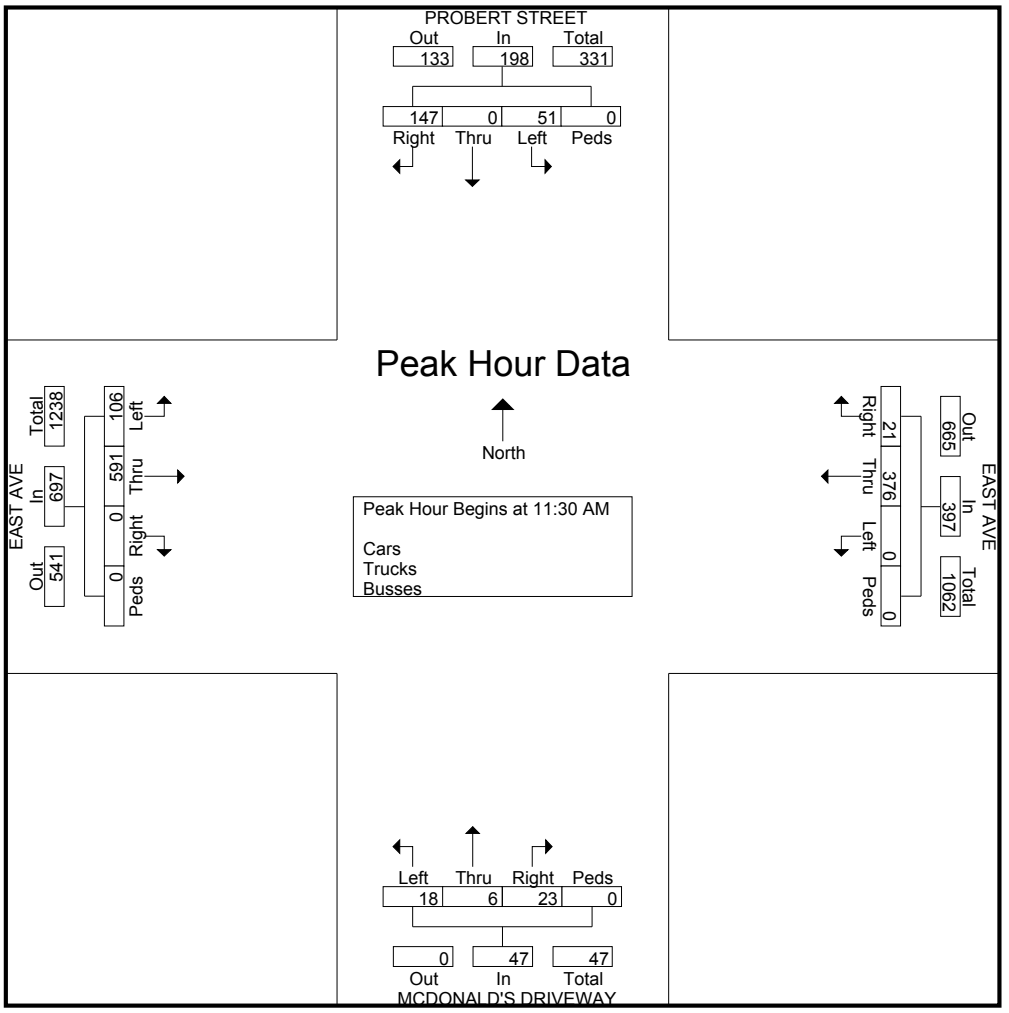
Groups Printed- Cars - Trucks - Busses

	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	35	0	18	0	53	3	77	0	0	80	10	3	8	0	21	0	120	32	0	152	306
11:15 AM	32	0	8	0	40	4	88	0	0	92	7	0	5	0	12	0	130	29	0	159	303
11:30 AM	37	0	15	0	52	8	98	0	0	106	5	2	8	0	15	0	171	28	0	199	372
11:45 AM	36	0	13	0	49	2	93	0	0	95	10	1	5	0	16	0	146	27	0	173	333
Total	140	0	54	0	194	17	356	0	0	373	32	6	26	0	64	0	567	116	0	683	1314
12:00 PM	32	0	12	0	44	7	96	0	0	103	5	3	3	0	11	0	136	21	0	157	315
12:15 PM	42	0	11	0	53	4	89	0	0	93	3	0	2	0	5	0	138	30	0	168	319
12:30 PM	32	0	20	0	52	3	101	0	0	104	13	4	5	0	22	0	122	28	0	150	328
12:45 PM	30	0	16	0	46	3	91	0	0	94	11	3	4	0	18	0	124	30	0	154	312
Total	136	0	59	0	195	17	377	0	0	394	32	10	14	0	56	0	520	109	0	629	1274
01:00 PM	31	0	13	0	44	3	82	0	0	85	10	2	3	0	15	0	128	34	0	162	306
01:15 PM	26	0	23	0	49	6	59	0	0	65	10	2	3	0	15	0	108	31	0	139	268
01:30 PM	36	0	12	0	48	7	98	0	0	105	12	3	5	0	20	0	113	39	0	152	325
01:45 PM	27	0	15	0	42	5	80	0	0	85	12	1	6	0	19	0	111	25	0	136	282
Total	120	0	63	0	183	21	319	0	0	340	44	8	17	0	69	0	460	129	0	589	1181
Grand Total	396	0	176	0	572	55	1052	0	0	1107	108	24	57	0	189	0	1547	354	0	1901	3769
Apprch %	69.2	0	30.8	0		5	95	0	0		57.1	12.7	30.2	0		0	81.4	18.6	0		
Total %	10.5	0	4.7	0	15.2	1.5	27.9	0	0	29.4	2.9	0.6	1.5	0	5	0	41	9.4	0	50.4	
Cars	395	0	175	0	570	55	1039	0	0	1094	106	23	56	0	185	0	1542	350	0	1892	3741
% Cars	99.7	0	99.4	0	99.7	100	98.8	0	0	98.8	98.1	95.8	98.2	0	97.9	0	99.7	98.9	0	99.5	99.3
Trucks	1	0	1	0	2	0	6	0	0	6	1	1	1	0	3	0	2	0	0	2	13
% Trucks	0.3	0	0.6	0	0.3	0	0.6	0	0	0.5	0.9	4.2	1.8	0	1.6	0	0.1	0	0	0.1	0.3
Busses	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	0	3	4	0	7	15
% Busses	0	0	0	0	0	0	0.7	0	0	0.6	0.9	0	0	0	0.5	0	0.2	1.1	0	0.4	0.4

A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : SAT_East & Probert
Site Code : 00000000
Start Date : 9/19/2009
Page No : 2

	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	37	0	**15**	0	52	**8**	**98**	0	0	**106**	5	2	**8**	0	15	0	**171**	28	0	**199**	**372**
11:45 AM	36	0	13	0	49	2	93	0	0	95	**10**	1	5	0	**16**	0	146	27	0	173	333
12:00 PM	32	0	12	0	44	7	96	0	0	103	5	**3**	3	0	11	0	136	21	0	157	315
12:15 PM	**42**	0	11	0	**53**	4	89	0	0	93	3	0	2	0	5	0	138	**30**	0	168	319
Total Volume	147	0	51	0	198	21	376	0	0	397	23	6	18	0	47	0	591	106	0	697	1339
% App. Total	74.2	0	25.8	0		5.3	94.7	0	0		48.9	12.8	38.3	0		0	84.8	15.2	0		
PHF	.875	.000	.850	.000	.934	.656	.959	.000	.000	.936	.575	.500	.563	.000	.734	.000	.864	.883	.000	.876	.900



A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : FRI PM_East & Probert
Site Code : 00000000
Start Date : 9/18/2009

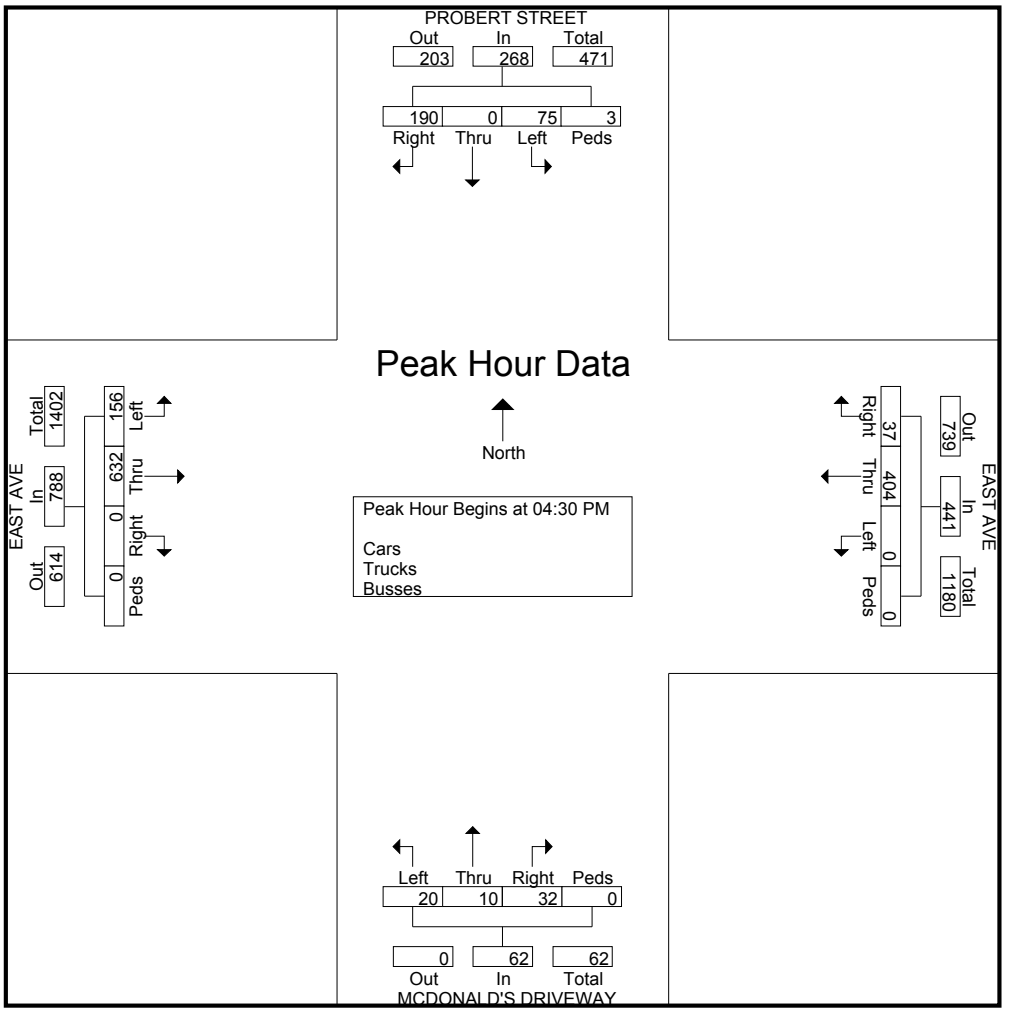
Groups Printed- Cars - Trucks - Busses

	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	37	0	25	0	62	7	107	0	0	114	13	2	2	0	17	0	144	25	0	169	362
04:15 PM	43	0	24	0	67	7	95	0	0	102	4	2	4	0	10	0	157	36	0	193	372
04:30 PM	51	0	18	0	69	13	78	0	0	91	8	4	2	0	14	0	164	37	0	201	375
04:45 PM	44	0	13	0	57	8	101	0	0	109	7	1	8	0	16	0	172	36	0	208	390
Total	175	0	80	0	255	35	381	0	0	416	32	9	16	0	57	0	637	134	0	771	1499
05:00 PM	42	0	13	0	55	9	114	0	0	123	8	3	7	0	18	0	151	37	0	188	384
05:15 PM	53	0	31	3	87	7	111	0	0	118	9	2	3	0	14	0	145	46	0	191	410
05:30 PM	45	0	18	0	63	8	110	0	0	118	1	3	4	0	8	0	131	46	0	177	366
05:45 PM	54	0	20	0	74	4	102	0	0	106	9	2	4	0	15	0	125	35	0	160	355
Total	194	0	82	3	279	28	437	0	0	465	27	10	18	0	55	0	552	164	0	716	1515
Grand Total	369	0	162	3	534	63	818	0	0	881	59	19	34	0	112	0	1189	298	0	1487	3014
Apprch %	69.1	0	30.3	0.6		7.2	92.8	0	0		52.7	17	30.4	0		0	80	20	0		
Total %	12.2	0	5.4	0.1	17.7	2.1	27.1	0	0	29.2	2	0.6	1.1	0	3.7	0	39.4	9.9	0	49.3	
Cars	367	0	162	3	532	62	803	0	0	865	59	19	34	0	112	0	1186	292	0	1478	2987
% Cars	99.5	0	100	100	99.6	98.4	98.2	0	0	98.2	100	100	100	0	100	0	99.7	98	0	99.4	99.1
Trucks	2	0	0	0	2	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	8
% Trucks	0.5	0	0	0	0.4	0	0.5	0	0	0.5	0	0	0	0	0	0	0.2	0	0	0.1	0.3
Busses	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	0	1	6	0	7	19
% Busses	0	0	0	0	0	1.6	1.3	0	0	1.4	0	0	0	0	0	0	0.1	2	0	0.5	0.6

A TY·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : FRI PM_East & Probert
Site Code : 00000000
Start Date : 9/18/2009
Page No : 2

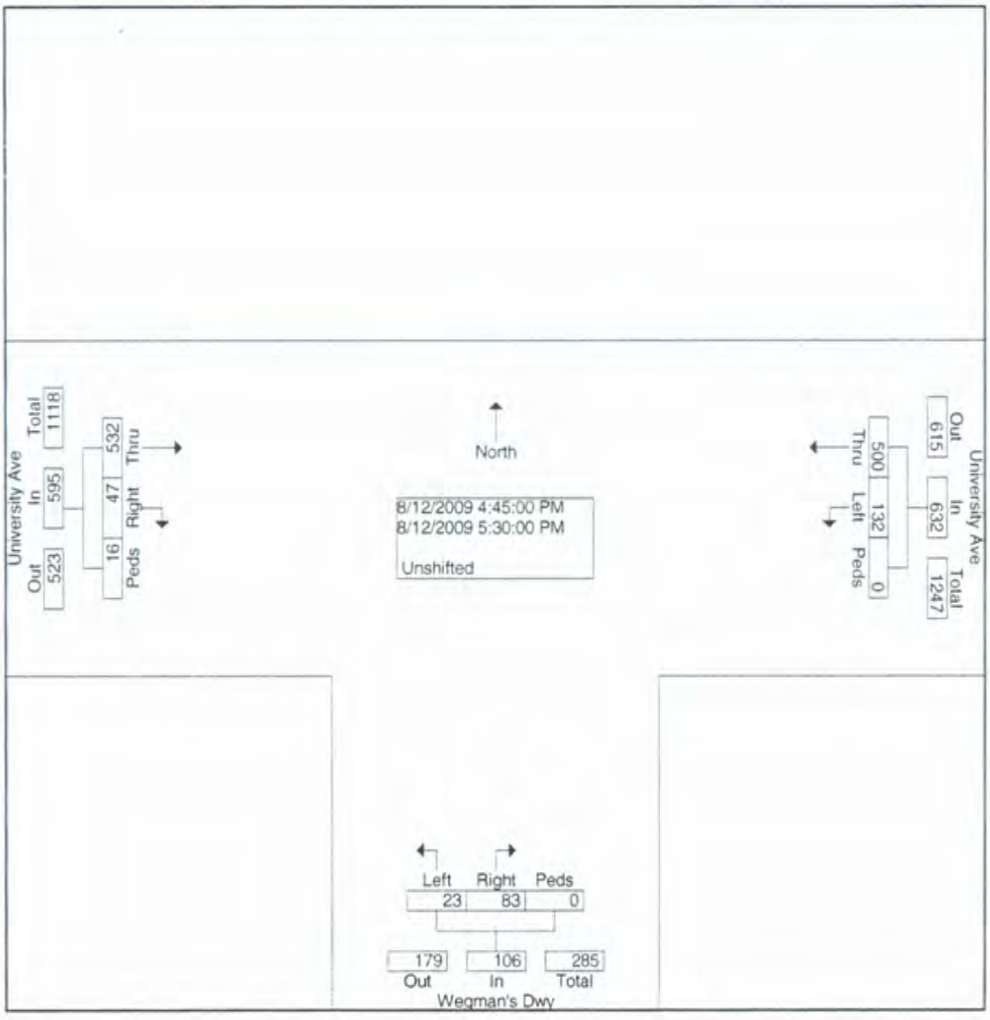
	PROBERT STREET Southbound					EAST AVE Westbound					MCDONALD'S DRIVEWAY Northbound					EAST AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	51	0	18	0	69	**13**	78	0	0	91	8	**4**	2	0	14	0	164	37	0	201	375
04:45 PM	44	0	13	0	57	8	101	0	0	109	7	1	**8**	0	16	0	**172**	36	0	**208**	390
05:00 PM	42	0	13	0	55	9	**114**	0	0	**123**	8	3	7	0	**18**	0	151	37	0	188	384
05:15 PM	**53**	0	**31**	**3**	**87**	7	111	0	0	118	**9**	2	3	0	14	0	145	**46**	0	191	**410**
Total Volume	190	0	75	3	268	37	404	0	0	441	32	10	20	0	62	0	632	156	0	788	1559
% App. Total	70.9	0	28	1.1		8.4	91.6	0	0		51.6	16.1	32.3	0		0	80.2	19.8	0		
PHF	.896	.000	.605	.250	.770	.712	.886	.000	.000	.896	.889	.625	.625	.000	.861	.000	.919	.848	.000	.947	.951



Monroe County
Department of Transportation
Signals Engineering Division
Traffic Studies Unit

File Name : University Ave at Wegmans Dwy
Site Code :
Start Date : 08/12/2009

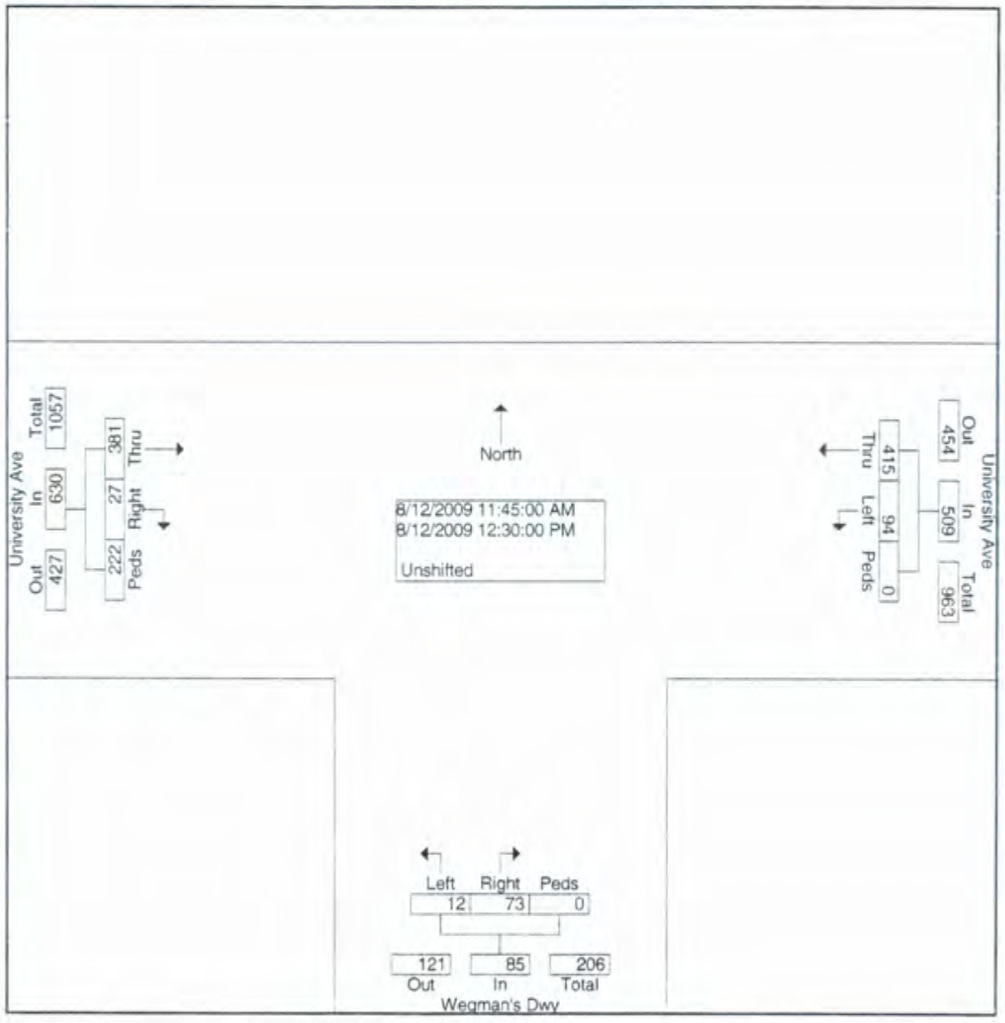
	Wegman's Dwy From North					University Ave From East					Wegman's Dwy From South					University Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 02:00 PM to 05:30 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	0	0	0	0	0	0	500	132	0	632	83	0	23	0	106	47	532	0	16	595	1333
Percent	0.0	0.0	0.0	0.0		0.0	79.1	20.9	0.0		78.3	0.0	21.7	0.0		7.9	89.4	0.0	2.7		
05:15 Volume	0	0	0	0	0	0	149	35	0	184	24	0	12	0	36	12	121	0	5	138	358
Peak Factor																					0.931
High Int.						05:15 PM					05:15 PM					04:45 PM					
Volume	0	0	0	0	0	0	149	35	0	184	24	0	12	0	36	10	155	0	3	168	
Peak Factor										0.859					0.736					0.885	



Monroe County
Department of Transportation
Signals Engineering Division
Traffic Studies Unit

File Name : University Ave at Wegmans Dwy
Site Code :
Start Date : 08/12/2009

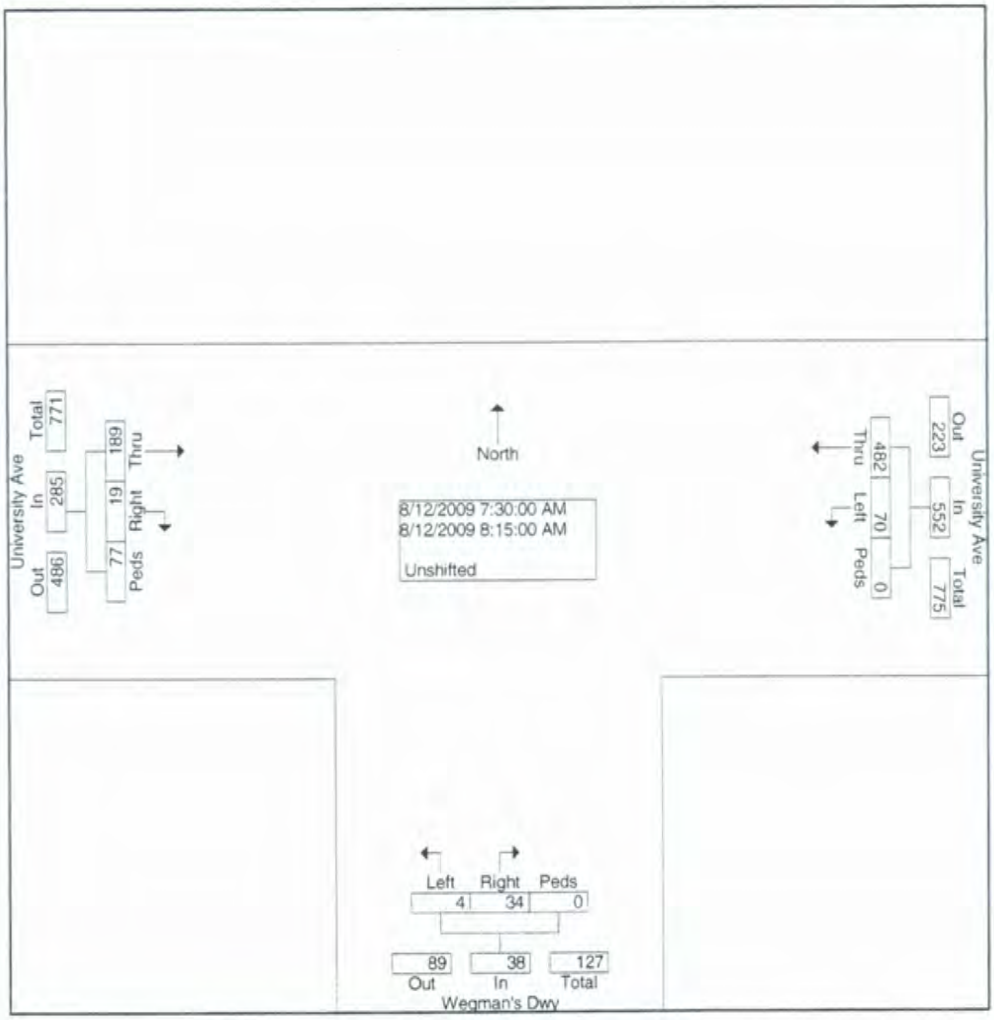
	Wegman's Dwy From North					University Ave From East					Wegman's Dwy From South					University Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Intersection	11:45 AM																				
Volume	0	0	0	1	1	0	415	94	0	509	73	0	12	0	85	27	381	0	222	630	1225
Percent	0.0	0.0	0.0	100.0		0.0	81.5	18.5	0.0		85.9	0.0	14.1	0.0		4.3	60.5	0.0	35.2		
12:00 Volume	0	0	0	0	0	0	97	22	0	119	19	0	5	0	24	3	109	0	73	185	328
Peak Factor																					0.934
High Int.	12:15 PM					11:45 AM					12:15 PM					12:00 PM					
Volume	0	0	0	1	1	0	109	24	0	133	24	0	2	0	26	3	109	0	73	185	
Peak Factor					0.250					0.957					0.817					0.851	



Monroe County
Department of Transportation
Signals Engineering Division
Traffic Studies Unit

File Name : University Ave at Wegmans Dwy
Site Code :
Start Date : 08/12/2009

	Wegman's Dwy From North					University Ave From East					Wegman's Dwy From South					University Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 09:45 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	0	0	0	0	0	482	70	0	552	34	0	4	0	38	19	189	0	77	285	875
Percent	0.0	0.0	0.0	0.0		0.0	87.3	12.7	0.0		89.5	0.0	10.5	0.0		6.7	66.3	0.0	27.0		
07:45 Volume	0	0	0	0	0	0	148	21	0	169	7	0	2	0	9	7	50	0	20	77	255
Peak Factor																					0.858
High Int.	7:15:00 AM					07:45 AM					08:00 AM					07:30 AM					
Volume	0	0	0	0	0	0	148	21	0	169	16	0	1	0	17	4	50	0	37	91	
Peak Factor										0.817					0.559					0.783	



Monroe County
Department of Transportation
Signals Engineering Division
Traffic Studies Unit

Town: City of Rochester
N/S Street: Wegman's Dwy
E/W Street: University Ave
Observer: PBM

File Name : University Ave at Wegmans Dwy
Site Code :
Start Date : 08/12/2009
Page No : 1

Groups Printed- Unshifted

	Wegman's Dwy From North					University Ave From East					Wegman's Dwy From South					University Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	0	0	0	0	0	0	111	14	0	125	7	0	1	0	8	4	50	0	37	91	224
07:45 AM	0	0	0	0	0	0	148	21	0	169	7	0	2	0	9	7	50	0	20	77	255
Total	0	0	0	0	0	0	259	35	0	294	14	0	3	0	17	11	100	0	57	168	479
08:00 AM	0	0	0	0	0	0	112	18	0	130	16	0	1	0	17	4	50	0	10	64	211
08:15 AM	0	0	0	0	0	0	111	17	0	128	4	0	0	0	4	4	39	0	10	53	185
08:30 AM	0	0	0	0	0	0	104	18	1	123	9	0	1	0	10	5	67	0	13	85	218
Total	0	0	0	0	0	0	327	53	1	381	29	0	2	0	31	13	156	0	33	202	614
11:30 AM	0	0	0	0	0	0	70	23	0	93	15	0	3	0	18	11	70	0	25	106	217
11:45 AM	0	0	0	0	0	0	109	24	0	133	14	0	3	0	17	11	83	0	42	136	286
Total	0	0	0	0	0	0	179	47	0	226	29	0	6	0	35	22	153	0	67	242	503
12:00 PM	0	0	0	0	0	0	97	22	0	119	19	0	5	0	24	3	109	0	73	185	328
12:15 PM	0	0	0	1	1	0	101	25	0	126	24	0	2	0	26	6	88	0	65	159	312
12:30 PM	0	0	0	0	0	0	108	23	0	131	16	0	2	0	18	7	101	0	42	150	299
12:45 PM	0	0	0	0	0	0	107	28	0	135	26	0	2	0	28	13	80	0	22	115	278
Total	0	0	0	1	1	0	413	98	0	511	85	0	11	0	96	29	378	0	202	609	1217
01:00 PM	0	0	0	0	0	0	96	20	0	116	24	0	5	0	29	9	80	0	13	102	247
01:15 PM	0	0	0	0	0	0	79	22	0	101	12	0	5	0	17	10	67	0	7	84	202
Total	0	0	0	0	0	0	175	42	0	217	36	0	10	0	46	19	147	0	20	186	449
04:30 PM	0	0	0	0	0	0	93	32	0	125	25	0	5	0	30	6	113	0	3	122	277
04:45 PM	0	0	0	0	0	0	116	31	0	147	20	0	5	0	25	10	155	0	3	168	340
Total	0	0	0	0	0	0	209	63	0	272	45	0	10	0	55	16	268	0	6	290	617
05:00 PM	0	0	0	0	0	0	99	28	0	127	17	0	3	0	20	10	126	0	3	139	286
05:15 PM	0	0	0	0	0	0	149	35	0	184	24	0	12	0	36	12	121	0	5	138	358
05:30 PM	0	0	0	0	0	0	136	38	0	174	22	0	3	0	25	15	130	0	5	150	349
Grand Total	0	0	0	1	1	0	1946	439	1	2386	301	0	60	0	361	147	1579	0	398	2124	4872
Apprch %	0.0	0.0	0.0	100.0		0.0	81.6	18.4	0.0		83.4	0.0	16.6	0.0		6.9	74.3	0.0	18.7		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	39.9	9.0	0.0	49.0	6.2	0.0	1.2	0.0	7.4	3.0	32.4	0.0	8.2	43.6	

Appendix H

Gap Analysis

A T·Y·LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : PM Peak
Site Code : 00000000
Start Date : 10/15/2009
Page No : 1

Plaza Entering

Directions Printed: Eastbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
04:45 PM	4	47	19	11	10	1	4	3	1	2	1	1	1	0	1	2	104	4 - 5
Total	4	47	19	11	10	1	4	3	1	2	1	1	1	0	1	2	104	4 - 5
05:00 PM	7	52	33	10	5	10	6	4	1	0	0	0	0	0	0	1	122	4 - 5
05:15 PM	7	48	18	17	7	6	4	1	3	2	0	0	1	0	1	0	108	4 - 5
05:30 PM	10	47	16	16	3	4	1	2	2	0	3	0	2	1	0	1	98	4 - 5
Grand Total	28	194	86	54	25	21	15	10	7	4	4	1	4	1	2	4	432	4 - 5
Total %		44.9	19.9	12.5	5.8	4.9	3.5	2.3	1.6	0.9	0.9	0.2	0.9	0.2	0.5	0.9		

Plaza Exiting

Directions Printed: Westbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
04:45 PM	6	62	10	9	8	3	5	3	5	2	1	2	1	0	0	0	111	2 - 3
Total	6	62	10	9	8	3	5	3	5	2	1	2	1	0	0	0	111	2 - 3
05:00 PM	6	43	13	6	3	5	5	5	4	3	2	2	0	0	0	1	92	4 - 5
05:15 PM	7	66	14	6	6	3	4	2	1	0	1	0	1	0	1	1	106	2 - 3
05:30 PM	8	50	9	5	7	2	4	5	1	2	1	1	0	2	0	3	92	2 - 3
Grand Total	27	221	46	26	24	13	18	15	11	7	5	5	2	2	1	5	401	2 - 3
Total %		55.1	11.5	6.5	6.0	3.2	4.5	3.7	2.7	1.7	1.2	1.2	0.5	0.5	0.2	1.2		

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
04:45 PM	10	76	25	11	6	0	4	2	0	0	0	1	0	0	0	0	125	2 - 3
Total	10	76	25	11	6	0	4	2	0	0	0	1	0	0	0	0	125	2 - 3
05:00 PM	13	75	30	11	4	2	0	1	0	0	0	0	0	0	0	0	123	2 - 3
05:15 PM	14	84	17	7	3	1	1	0	0	0	0	0	0	0	0	0	113	2 - 3
05:30 PM	18	75	10	9	6	2	0	2	0	1	0	1	0	0	0	0	106	2 - 3
Grand Total	55	310	82	38	19	5	5	5	0	1	0	2	0	0	0	0	467	2 - 3
Total %		66.4	17.6	8.1	4.1	1.1	1.1	1.1	0.0	0.2	0.0	0.4	0.0	0.0	0.0	0.0		

F|R|A
A T-Y-LIN INTERNATIONAL COMPANY
255 East Avenue
Rochester, NY 14604

File Name : Off-Peak
Site Code : 00000000
Start Date : 10/15/2009
Page No : 1

Directions Printed: Eastbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
02:30 PM	0	66	25	13	9	4	1	2	2	2	2	0	0	0	0	2	128	2 - 3
02:45 PM	0	34	20	8	10	7	9	2	1	4	2	0	0	1	0	2	100	4 - 5
Total	0	100	45	21	19	11	10	4	3	6	4	0	0	1	0	4	228	4 - 5
03:00 PM	0	48	24	12	7	4	4	2	3	3	1	1	0	0	1	1	111	4 - 5
03:15 PM	0	42	31	11	12	4	4	3	1	2	0	0	1	1	1	0	113	4 - 5
Grand Total	0	190	100	44	38	19	18	9	7	11	5	1	1	2	2	5	452	4 - 5
Total %		42.0	22.1	9.7	8.4	4.2	4.0	2.0	1.5	2.4	1.1	0.2	0.2	0.4	0.4	1.1		

Directions Printed: Westbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
02:30 PM	0	30	10	8	4	8	5	2	6	1	4	0	1	0	2	3	84	6 - 7
02:45 PM	0	43	14	9	9	4	5	3	0	5	3	2	0	0	1	1	99	4 - 5
Total	0	73	24	17	13	12	10	5	6	6	7	2	1	0	3	4	183	4 - 5
03:00 PM	0	32	13	15	2	9	6	4	4	0	2	2	0	2	2	0	93	6 - 7
03:15 PM	0	43	20	8	9	3	7	4	1	0	2	2	1	1	0	1	102	4 - 5
Grand Total	0	148	57	40	24	24	23	13	11	6	11	6	2	3	5	5	378	4 - 5
Total %		39.2	15.1	10.6	6.3	6.3	6.1	3.4	2.9	1.6	2.9	1.6	0.5	0.8	1.3	1.3		

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
02:30 PM	0	95	20	11	4	6	2	0	2	1	1	0	0	0	0	0	142	2 - 3
02:45 PM	0	71	28	17	9	2	4	2	1	0	0	0	0	1	0	0	135	2 - 3
Total	0	166	48	28	13	8	6	2	3	1	1	0	0	1	0	0	277	2 - 3
03:00 PM	0	71	34	12	6	6	1	1	0	0	0	1	0	0	0	0	132	2 - 3
03:15 PM	0	78	30	8	6	1	2	1	0	0	0	0	0	1	0	0	127	2 - 3
Grand Total	0	315	112	48	25	15	9	4	3	1	1	1	0	2	0	0	536	2 - 3
Total %		58.8	20.9	9.0	4.7	2.8	1.7	0.7	0.6	0.2	0.2	0.2	0.0	0.4	0.0	0.0		

F|R|A
YLIN INTERNATIONAL COMPANY

BY	DATE	CHECKED	DATE 11/05/09
PROJECT #	PROJECT NAME East Ave Ways		SHEET OF

Gap Analysis

* Based on 7.0s minimum & 3.4s followup time

For Lefts out of Wegmans (to Eastbound) & Lefts out of McDonalds (to Westbound)

Time of gap (seconds)	Number of Cars Possible in Gap	Number of Gaps	Total Number of Cars Per gap Period	
			PM PEAK	OFF PEAK
8-11	1	24	40	40
12-15	2	10	13	26
16-17	3	0	3	9
18-21	4	1	2	8
>21	5	2	1	5
	6		2	12
				180

Total Number of opportunities in the PM Peak Hour = 58

For Rights out of Wegmans (Westbound)

* Based on 5.5s min & 2.6s followup

6-7	1	26	26
8-11	2	37	74
12-13	3	18	54
14-15	4	15	60
16-19	5	18	90
20-21	6	5	30
22-23	7	5	35
24-27	8	4	32
28-29	9	1	9
>29	10	5	50
Number of opportunities PM Peak			460

For Rights out of McDonalds (Eastbound)

6-7	1	54	54
8-11	2	46	92
12-13	3	15	45
14-15	4	10	40
16-19	5	11	55
20-21	6	4	24
22-23	7	1	7
24-27	8	5	40
28-29	9	2	18
>29	10	4	40
			415

Appendix I

Accident Analysis

DETAILS OF ACCIDENT HISTORY

PERIOD STUDIED:
FROM: *7/1/2006*
TO: *6/30/2009*
36 MONTHS

ROUTE NUMBER/STREET NAME: *East Avenue*
LOCATION: *Midblock of East Avenue*
MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*
REFERENCE MARKERS / NODES: *Probert St* - *Winton Rd*

CASE No. *433164.04*
FILE: *East Ave_09*
BY: *KMO*
DATE: *12/3/2009*

No.	DATE	TIME	# VEHICLES	SEVERITY	LIGHT COND	ROAD CHAR	SURFACE	WEATHER	CONTRIB. FACTORS	ACC. TYPE	ACCIDENT DESCRIPTION	KEY #
1	10/14/2006	14:12	2	PDO	1	1	2	2	7 69	Ltrn	75' W of Winton - turning left into Parking Lot	4
2	10/3/2006	20:39	2	PDO	4	1	1	2	7	Ltrn	H&R	5
3	10/6/2006	12:42	2	PDO	1	1	1	1	13	Ovtk	In EB right turn lane to turn SB on Winton	7
4	8/27/2006	17:58	2	N/R	1	1	1	1	12 4 4	Ovtk	Outer lane to inner lane	11
5	8/7/2006	9:10	1	N/R	1	1	1	1		Bike		12
6	8/2/2006	8:00	3	INJ	1	1	1	1	4	Rend		14
7	9/23/2006	13:18	1	PDO	1	2	2	2	7	Bike		16
8	9/9/2006	9:45	2	PDO	1	1	1	2	4	Rtrn		18
9	9/13/2006	12:25	2	PDO	1	1	1	2	7	Ltrn		21
10	1/25/2007	13:13	2	PDO	1	1	4	4	7	Rang	Left Turn out of Wegman's Driveway	23
11	1/12/2007		2	PDO	1	1			20	Ovtk		25
12	1/28/2007	21:00	2	PDO	4	1	4	4	9 66	Rend		26
13	1/27/2007	13:44	2	PDO	1	2	2	2	7 68	Rang	Possible traffic signal/power outage issue	28
14	2/5/2007	16:44	2	N/R	1	1	4	2	26 7	Rang	Exiting Parking Lot - Waved out of lot by uninvolved vehicle	29
15	11/16/2006	15:46	2	PDO	4	1	2	3	20	Ovtk		30
16	11/25/2006	14:02	2	PDO	1	1	1	1	4	Rend	Distracted Driver	33
17	11/26/2006	16:06	1	INJ	1	1	1	1	4 7 14	Bike	Bicycle was on sidewalk	36
18	12/21/2006	21:05	2	PDO	4	1	1	2	7 69	Rang	Left turn out of Wegman's Lot	37
19	1/6/2007	10:47	2	PDO	1	1	1	2	9	Rend		38
20	1/9/2007	21:00	3	INJ	4	1	1	1	17 7	Rang		42
21	5/23/2007	13:28	2	PDO	1	1	1	1	7 18	Ltrn	Left turning vehicle was waved thru into parking lot	43

DETAILS OF ACCIDENT HISTORY

PERIOD STUDIED:
FROM: 7/1/2006
TO: 6/30/2009
36 MONTHS

ROUTE NUMBER/STREET NAME: East Avenue
LOCATION: Midblock of East Avenue
MUNICIPALITY: City of Rochester COUNTY: Monroe
REFERENCE MARKERS / NODES: Probert St - Winton Rd

CASE No. 433164.04
FILE: East Ave_09
BY: KMO
DATE: 12/3/2009

No.	DATE	TIME	# VEHICLES	SEVERITY	LIGHT COND	ROAD CHAR	SURFACE	WEATHER	CONTRIB. FACTORS	ACC. TYPE	ACCIDENT DESCRIPTION	KEY #
22	4/5/2007	17:57	2	PDO	1	1	2	2	7 69	Rang	Left out of parking lot was waived thru by uninvolved vehicle	49
23	4/29/2007	3:45	2	INJ	4	2	1	2	17 19	Rang	5 injured. Failure to stop for red light	52
24	8/28/2007	8:20	2	PDO	1	1	1	1	20	Side		54
25	7/26/2007	12:00	2	PDO	1	1	1	2	7	Ltrn	Left turn into parking lot, was waived on by uninvolved vehicle	59
26	7/31/2007	15:53	2	N/R	1	1	1	1	45	Park		60
27	8/6/2007	15:10	2	PDO	1	1	1	1	7	Ltrn	Left turn out of Wegman's Parking Lot	61
29	11/24/2007	11:46	2	PDO	1	1	1	2	7 18	Rang	Left turn out of parking lot, was waived thru by uninvolved veh	73
31	12/1/2007	20:15	2	PDO	4	1	1	2	7 69	Rang	Left turn out of parking lot, view obst by large truck	77
32	12/11/2007	21:07	2	PDO	4	1	2	3	4	Ltrn		78
33	1/8/2008	16:32	2	N/R	1	1	1	2	4	Rend		83
34	1/12/2008	16:38	2	N/R	4	1	1	2	69	Rang	Exiting parking lot	86
35	4/24/2008	12:55	2	INJ	1	1	1	1	7	Ltrn		89
36	3/6/2008	16:53	3	PDO	1	1	1	2	4	Rend		93
37	2/29/2008	7:29	2	PDO	1	1	1	1	62 9	Rend		95
38	4/4/2008	19:54	1	N/R	4	2	2	1		FixO	H&R. Vehicle struck sign in median	98
39	3/30/2008	12:56	2	PDO	1	2	1	1	20	Ovtk		102
40	7/23/2008	12:22	2	N/R	1	1	1	1	7	Rang		108
41	8/15/2008	16:15	2	N/R	1	1	1	1	4	Park		110
42	5/30/2008	15:12	2	N/R	1	1	1	2	7 69	Ltrn	Left turn into parking lot	111
43	5/30/2008	12:21	2	PDO	1	1	1	1	20	Ovtk		112
44	6/18/2008	19:13	2	PDO	1	1	1	2	69	Rang	Left turn out of parking lot. EB car was passing uninvolved veh	113

DETAILS OF ACCIDENT HISTORY

PERIOD STUDIED:
FROM: *7/1/2006*
TO: *6/30/2009*
36 MONTHS

ROUTE NUMBER/STREET NAME: *East Avenue*
LOCATION: *Midblock of East Avenue*
MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*
REFERENCE MARKERS / NODES: *Probert St* - *Winton Rd*

CASE No. *433164.04*
FILE: *East Ave_09*
BY: *KMO*
DATE: *12/3/2009*

No.	DATE	TIME	# VEHICLES	SEVERITY	LIGHT COND	ROAD CHAR	SURFACE	WEATHER	CONTRIB. FACTORS	ACC. TYPE	ACCIDENT DESCRIPTION	KEY #
45	6/25/2008	12:38	2	PDO	1	2	1	2	9	Rend		116
46	7/8/2008	12:40	2	PDO	1	1	1	1	4	Rang	Left turn out of parking lot	119
47	6/28/2008	16:40	2	PDO	1	1	1	1	7 69	Ltrn	left turn into parking lot, waived thru by uninvolved veh	121
48	8/8/2008	7:32	2	PDO	1	1	1	2	27	HdOn	In TWLTL	123
49	1/25/2009	13:37	3	PDO	1	1	2	1	9	Rend		124
50	12/1/2008	17:30	2	N/R	4	2	1	2	60	Rend		126
51	1/10/2009	11:47	2	PDO	1	1	2	2	4 7	Ltrn	Left turn into parking lot	128
52	10/1/2008	15:26	2	PDO	1	3	2	2	4	Rend		134
53	11/15/2008	11:45	2	INJ	1	2	2	3	9	Rend		139
54	1/25/2009	13:37	3	PDO	1	1	2	1	9	Rend		140
55	11/10/2008	22:30	2	N/R	4	1	1	2	20	Ovtk		141
56	2/27/2009	17:30	2	PDO	1	1	2	1	13 7 26	Rang	Left Turn out of parkinglot, waived thru from uninvolved veh	145
57	1/23/2009	2:46	2	PDO	4	1	2	1	17 4	Rang	H&R	147
58	2/3/2009	8:24	2	PDO	1	1	1	2		Ovtk		148
59	1/27/2009	15:30	2	PDO	1	1	1	2	13	Ovtk		149
60	1/28/2009	12:50	3	PDO	2	2	4	4	66 9	Rend		151
61	1/14/2009	21:45	2	PDO	4	1	4	4	17	Ltrn		153
62	5/19/2009	17:20	2	INJ	1	1	1	1	7	Ltrn	Left turn into parking lot, waived thru by uninvolved veh	159
63	3/28/2009	18:35	2	PDO	1	1	1	1	7 69	Rang	Left turn out of Wegman's Parking Lot	161
64	3/28/2009	13:30	2	PDO	1	1	1	1	18	Ovtk	Vehicle attempted RT from center-most lane	162
65	4/11/2009	1:55	2	PDO	4	1	1	1	4 9	Rend		163

DETAILS OF ACCIDENT HISTORY

PERIOD STUDIED:
FROM: *7/1/2006*
TO: *6/30/2009*
36 MONTHS

ROUTE NUMBER/STREET NAME: *East Avenue*
LOCATION: *Midblock of East Avenue*
MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*
REFERENCE MARKERS / NODES: *Probert St* - *Winton Rd*

CASE No. *433164.04*
FILE: *East Ave_09*
BY: *KMO*
DATE: *12/3/2009*

No.	DATE	TIME	# VEHICLES	SEVERITY	LIGHT COND	ROAD CHAR	SURFACE	WEATHER	CONTRIB. FACTORS	ACC. TYPE	ACCIDENT DESCRIPTION	KEY #
66	5/9/2009	16:31	3	INJ	1	1	1	1	2 9	Rend		167
67	5/8/2009	18:23	2	PDO	1	2	1	1	9 4	Rend		169

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

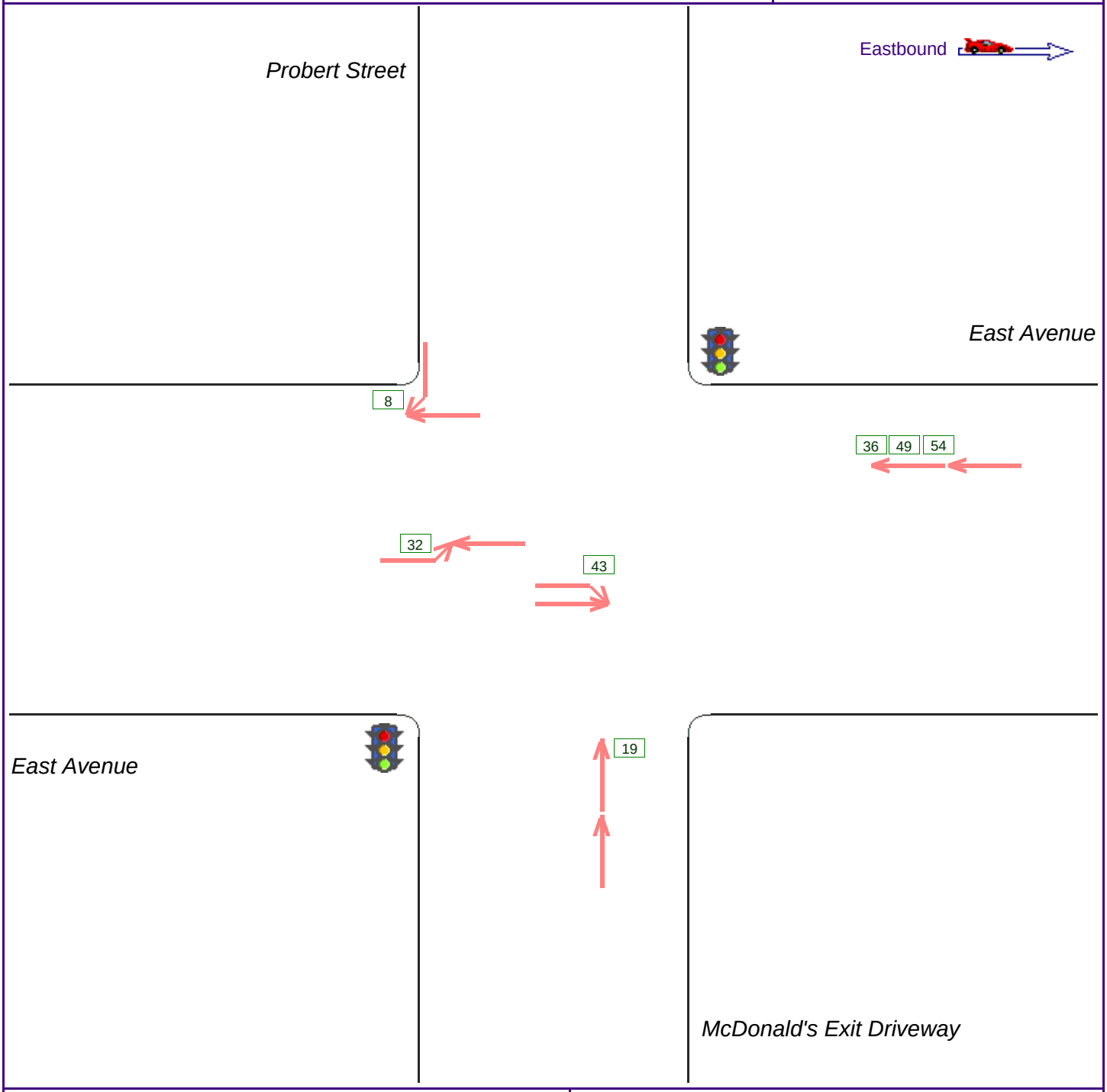
INTERSECTION: *East Avenue & Probert Street (Ref #1)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS

- MOVING VEHICLE
- TURNING VEHICLE
- BACKING VEHICLE
- PARKED VEHICLE
- 999 RECORD NUMBER
- P PEDESTRIAN
- B BICYCLIST
- A ANIMAL
- FIXED OBJECT
- Injury

MANNER OF COLLISION

- REAR END
- LEFT TURN
- LEFT TURN
- OVERTAKE
- OUT OF CONTROL
- HEAD ON
- RIGHT TURN
- RIGHT TURN
- RIGHT ANGLE
- SIDE SWIPE

ACCIDENT SUMMARY SHEET

ROUTE: *East Avenue* **LOCATION:** *Intersection of East Avenue & Probert Street*

MUNICIPALITY: *City of Rochester* **COUNTY:** *Monroe*

TIME PERIOD COVERED: *7/1/2006 - 6/30/2009* **REFERENCE MARKERS / NODES:** -

REMARKS: *Selected Intersection Accidents (Excludes Non-Reportable)* **DATE:** *12/2/2009*

TIME OF DAY	# ACC	%
6 AM - 10 AM	1	14.3%
10 AM - 4 PM	4	57.1%
4 PM - 7 PM	1	14.3%
7 PM - 12 AM	1	14.3%
12 AM - 6 AM	0	0.0%
Unspecified	0	0.0%
Total	**7**	

DIRECTION	# ACC	%
North	2	11.8%
South	1	5.9%
East	3	17.6%
West	11	64.7%
Total	**17**	

DIRECTION	# ACC	
Northeast	0	0.0%
Northwest	0	0.0%
Southeast	0	0.0%
Southwest	0	0.0%
Unspecified	0	0.0%

WEATHER	# ACC	%
Clear	3	42.9%
Cloudy	3	42.9%
Rain	1	14.3%
Snow	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%
Fog/Smog/Smoke	0	0.0%
Unspecified	0	0.0%
Total	**7**	

ACCIDENT TYPE	# ACC	%
Rear End	4	57.1%
Overtake	1	14.3%
Right Angle	0	0.0%
Left Turn	1	14.3%
Right Turn	1	14.3%
Fixed Object	0	0.0%
Head On	0	0.0%
Sideswipe	0	0.0%
Total	**7**	

ACCIDENT TYPE	# ACC	
Pedestrian	0	0.0%
Bicycle	0	0.0%
Parked Vehicle	0	0.0%
Backing	0	0.0%
Run Off The Road	0	0.0%
Animal	0	0.0%
Other	0	0.0%
Unspecified	0	0.0%

SURFACE	# ACC	%
Dry	4	57.1%
Wet	3	42.9%
Mud/Slush	0	0.0%
Snow/Ice	0	0.0%
Unspecified	0	0.0%
Total	**7**	

ACCIDENT SEVERITY	# ACC	%
Fatal	0	0.0%
Injury	0	0.0%
Property Damage	7	100.0%
Non-Reportable	0	0.0%
Total	**7**	

TIME OF YEAR	# ACC	%
Winter (Dec-Feb)	4	57.1%
Spring (Mar-May)	2	28.6%
Summer (Jun-Aug)	0	0.0%
Fall (Sep-Nov)	1	14.3%
Total	**7**	

TYPE OF VEHICLE	# ACC	%
Passenger Cars	17	100.0%
Commercial Vehicles	0	0.0%
Total	**17**	

DAY OF WEEK	# ACC	%
Sunday	2	28.6%
Monday	0	0.0%
Tuesday	1	14.3%
Wednesday	0	0.0%
Thursday	1	14.3%
Friday	1	14.3%
Saturday	2	28.6%
Total	**7**	

LIGHT CONDITION	# ACC	%
Daylight	6	85.7%
Dawn/Dusk	0	0.0%
Night	1	14.3%
Unspecified	0	0.0%
Total	**7**	

SUMMARY OF ACCIDENT SEVERITY BY YEAR:

	2006	2007	2008	2009
Fatal Accidents	0	0	0	0
Injury Accidents	0	0	0	0
Property Damage Accidents	1	2	2	2
Non-Reportable Accidents	0	0	0	0
Total Accidents	**1**	**2**	**2**	**2**

ACCIDENT RATE CALCULATIONS

○ Segment
◉ Intersection

ROUTE: *East Avenue*
LOCATION: *Intersection of East Avenue & Probert Street*
REFERENCE MARKERS / NODES: -
TIME PERIOD: *7/1/2006* - *6/30/2009*

REMARKS: *Selected Intersection Accidents (Excludes Non-Reportable)*

ACCIDENT RATE = $\dfrac{(\ 7\ \text{selected accidents in}\ 3.0\ \text{years}\ ) * (\ 1{,}000{,}000\ )}{(365\ \text{days/yr.}) * (\ 3.0\ \text{years}\ ) * (\ 17400\ \text{veh./day}\ )}$

= 0.37 accidents per million entering vehicles

(**Statewide average rate** = 0.69) (**County average rate** = 0.35)

HSA Software 3.0

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

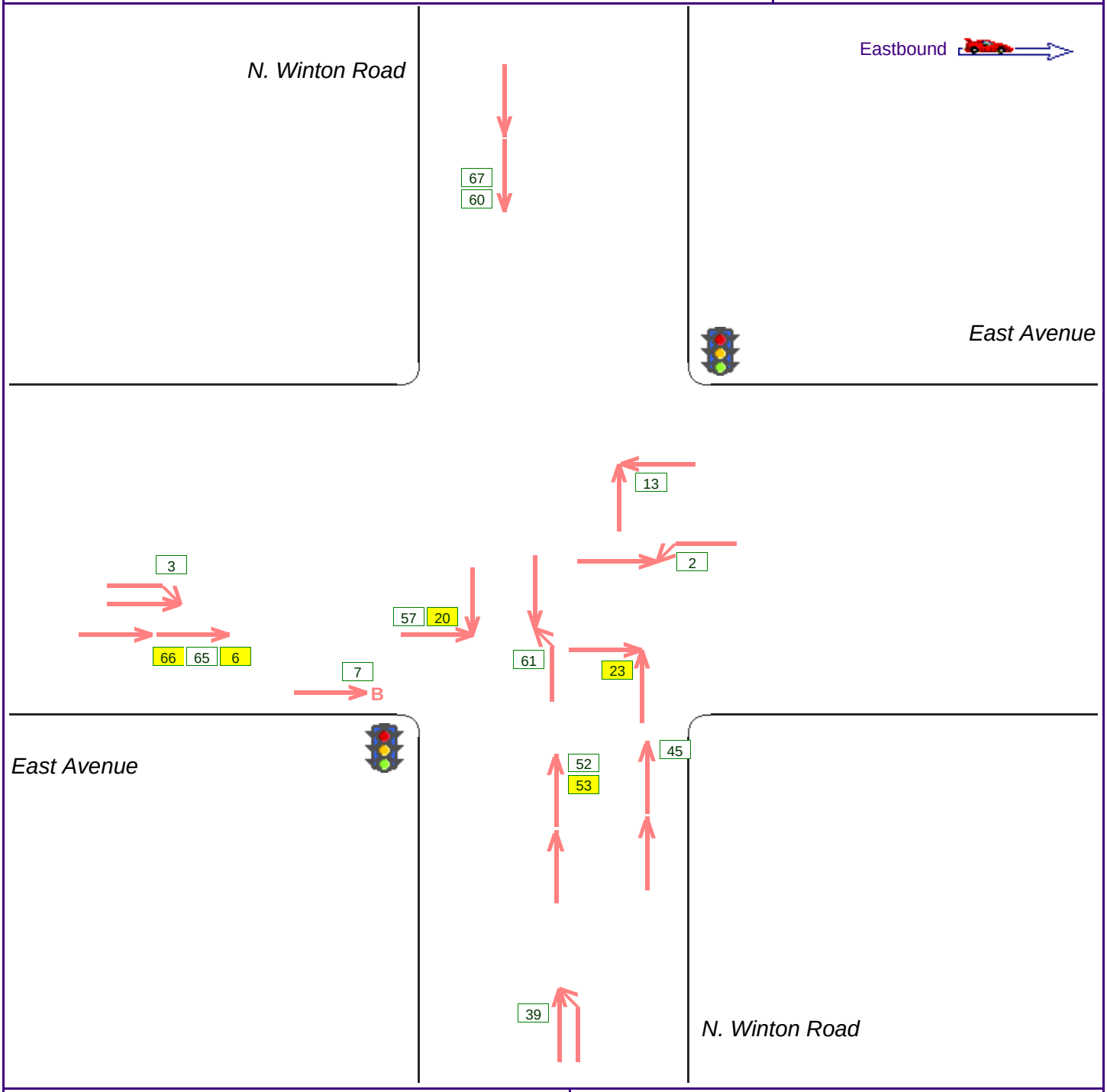
INTERSECTION: *East Avenue & N. Winton Road (Ref #2)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS			MANNER OF COLLISION	
MOVING VEHICLE	P	PEDESTRIAN	REAR END	HEAD ON
TURNING VEHICLE	B	BICYCLIST	LEFT TURN	RIGHT TURN
BACKING VEHICLE	A	ANIMAL	LEFT TURN	RIGHT TURN
PARKED VEHICLE		FIXED OBJECT	OVERTAKE	RIGHT ANGLE
999 RECORD NUMBER		Injury	OUT OF CONTROL	SIDE SWIPE

ACCIDENT SUMMARY SHEET

ROUTE: *East Avenue* **LOCATION:** *Intersection of East Avenue & N. Winton Road*

MUNICIPALITY: *City of Rochester* **COUNTY:** *Monroe*

TIME PERIOD COVERED: *7/1/2006 - 6/30/2009* **REFERENCE MARKERS / NODES:** -

REMARKS: *Selected Intersection Accidents (Excludes Non-Reportable)* **DATE:** *12/2/2009*

TIME OF DAY	# ACC	%
6 AM - 10 AM	1	5.9%
10 AM - 4 PM	8	47.1%
4 PM - 7 PM	2	11.8%
7 PM - 12 AM	3	17.6%
12 AM - 6 AM	3	17.6%
Unspecified	0	0.0%
Total	**17**	

DIRECTION	# ACC	%
North	13	34.2%
South	8	21.1%
East	15	39.5%
West	2	5.3%
Total	**38**	

DIRECTION	# ACC	
Northeast	0	0.0%
Northwest	0	0.0%
Southeast	0	0.0%
Southwest	0	0.0%
Unspecified	0	0.0%

WEATHER	# ACC	%
Clear	8	47.1%
Cloudy	6	35.3%
Rain	1	5.9%
Snow	2	11.8%
Sleet/Hail/Freezing Rain	0	0.0%
Fog/Smog/Smoke	0	0.0%
Unspecified	0	0.0%
Total	**17**	

ACCIDENT TYPE	# ACC	%
Rear End	8	47.1%
Overtake	2	11.8%
Right Angle	4	23.5%
Left Turn	2	11.8%
Right Turn	0	0.0%
Fixed Object	0	0.0%
Head On	0	0.0%
Sideswipe	0	0.0%

ACCIDENT TYPE	# ACC	
Pedestrian	0	0.0%
Bicycle	1	5.9%
Parked Vehicle	0	0.0%
Backing	0	0.0%
Run Off The Road	0	0.0%
Animal	0	0.0%
Other	0	0.0%
Unspecified	0	0.0%

Total **17**

SURFACE	# ACC	%
Dry	10	58.8%
Wet	5	29.4%
Mud/Slush	0	0.0%
Snow/Ice	2	11.8%
Unspecified	0	0.0%
Total	**17**	

ACCIDENT SEVERITY	# ACC	%
Fatal	0	0.0%
Injury	5	29.4%
Property Damage	12	70.6%
Non-Reportable	0	0.0%
Total	**17**	

TIME OF YEAR	# ACC	%
Winter (Dec-Feb)	5	29.4%
Spring (Mar-May)	5	29.4%
Summer (Jun-Aug)	2	11.8%
Fall (Sep-Nov)	5	29.4%
Total	**17**	

TYPE OF VEHICLE	# ACC	%
Passenger Cars	37	100.0%
Commercial Vehicles	0	0.0%
Total	**37**	

DAY OF WEEK	# ACC	%
Sunday	2	11.8%
Monday	0	0.0%
Tuesday	2	11.8%
Wednesday	5	29.4%
Thursday	0	0.0%
Friday	3	17.6%
Saturday	5	29.4%
Total	**17**	

LIGHT CONDITION	# ACC	%
Daylight	10	58.8%
Dawn/Dusk	1	5.9%
Night	6	35.3%
Unspecified	0	0.0%
Total	**17**	

SUMMARY OF ACCIDENT SEVERITY BY YEAR:

	2006	2007	2008	2009
Fatal Accidents	0	0	0	0
Injury Accidents	1	2	1	1
Property Damage Accidents	3	1	3	5
Non-Reportable Accidents	0	0	0	0
Total Accidents	**4**	**3**	**4**	**6**

ACCIDENT RATE CALCULATIONS

○ Segment
◉ Intersection

ROUTE: *East Avenue*

LOCATION: *Intersection of East Avenue & N Winton Road*

REFERENCE MARKERS / NODES: -

TIME PERIOD: *7/1/2006* - *6/30/2009*

REMARKS: *Selected Intersection Accidents (Excludes Non-Reportable)*

ACCIDENT RATE = (17 selected accidents in 3.0 years) * (1,000,000) / (365 days/yr.) * (3.0 years) * (17400 veh./day)

= 0.89 accidents per million entering vehicles

(**Statewide average rate** = 0.54) (**County average rate** = 0.80)

HSA Software 3.0

ACCIDENT SUMMARY SHEET

ROUTE: *East Avenue* **LOCATION:** *Midblock of East Avenue*

MUNICIPALITY: *City of Rochester* **COUNTY:** *Monroe*

TIME PERIOD COVERED: *7/1/2006 - 6/30/2009* **REFERENCE MARKERS / NODES:** *Probert St - Winton Rd*

REMARKS: *Selected Accidents* **DATE:** *12/3/2009*

TIME OF DAY	# ACC	%
6 AM - 10 AM	3	12.5%
10 AM - 4 PM	13	54.2%
4 PM - 7 PM	5	20.8%
7 PM - 12 AM	3	12.5%
12 AM - 6 AM	0	0.0%
Unspecified	0	0.0%
Total	**24**	

WEATHER	# ACC	%
Clear	10	41.7%
Cloudy	12	50.0%
Rain	1	4.2%
Snow	1	4.2%
Sleet/Hail/Freezing Rain	0	0.0%
Fog/Smog/Smoke	0	0.0%
Unspecified	0	0.0%
Total	**24**	

DIRECTION	# ACC	%
North	5	10.4%
South	5	10.4%
East	23	47.9%
West	15	31.3%
Total	**48**	

DIRECTION	# ACC	
Northeast	0	0.0%
Northwest	0	0.0%
Southeast	0	0.0%
Southwest	0	0.0%
Unspecified	0	0.0%

ACCIDENT TYPE	# ACC	%
Rear End	2	8.3%
Overtake	4	16.7%
Right Angle	8	33.3%
Left Turn	8	33.3%
Right Turn	0	0.0%
Fixed Object	0	0.0%
Head On	1	4.2%
Sideswipe	0	0.0%
Total	**24**	

ACCIDENT TYPE	# ACC	
Pedestrian	0	0.0%
Bicycle	1	4.2%
Parked Vehicle	0	0.0%
Backing	0	0.0%
Run Off The Road	0	0.0%
Animal	0	0.0%
Other	0	0.0%
Unspecified	0	0.0%

SURFACE	# ACC	%
Dry	19	79.2%
Wet	4	16.7%
Mud/Slush	0	0.0%
Snow/Ice	1	4.2%
Unspecified	0	0.0%
Total	**24**	

ACCIDENT SEVERITY	# ACC	%
Fatal	0	0.0%
Injury	2	8.3%
Property Damage	22	91.7%
Non-Reportable	0	0.0%
Total	**24**	

TIME OF YEAR	# ACC	%
Winter (Dec-Feb)	7	29.2%
Spring (Mar-May)	5	20.8%
Summer (Jun-Aug)	6	25.0%
Fall (Sep-Nov)	6	25.0%
Total	**24**	

TYPE OF VEHICLE	# ACC	%
Passenger Cars	47	100.0%
Commercial Vehicles	0	0.0%
Total	**47**	

DAY OF WEEK	# ACC	%
Sunday	1	4.2%
Monday	1	4.2%
Tuesday	4	16.7%
Wednesday	3	12.5%
Thursday	5	20.8%
Friday	2	8.3%
Saturday	8	33.3%
Total	**24**	

LIGHT CONDITION	# ACC	%
Daylight	21	87.5%
Dawn/Dusk	0	0.0%
Night	3	12.5%
Unspecified	0	0.0%
Total	**24**	

SUMMARY OF ACCIDENT SEVERITY BY YEAR:

	2006	2007	2008	2009
Fatal Accidents	0	0	0	0
Injury Accidents	1	0	0	1
Property Damage Accidents	5	7	5	5
Non-Reportable Accidents	0	0	0	0
Total Accidents	**6**	**7**	**5**	**6**

ACCIDENT RATE CALCULATIONS

(●) Segment
( ) Intersection

ROUTE: *East Avenue*
LOCATION: *Midblock of East Avenue*
REFERENCE MARKERS / NODES: *Probert St* - *Winton Rd*
TIME PERIOD: *7/1/2006* - *6/30/2009*

REMARKS: *Selected Accidents*

ACCIDENT RATE = (24 selected accidents in 3.0 years) * (1,000,000) / (365 days/yr.) * (3.0 years) * (17400 veh./day) * (0.17 miles)

= 7.28 accidents per million vehicle miles

(Statewide average rate = 2.41) (County average rate = 3.81)

HSA Software 3.0

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

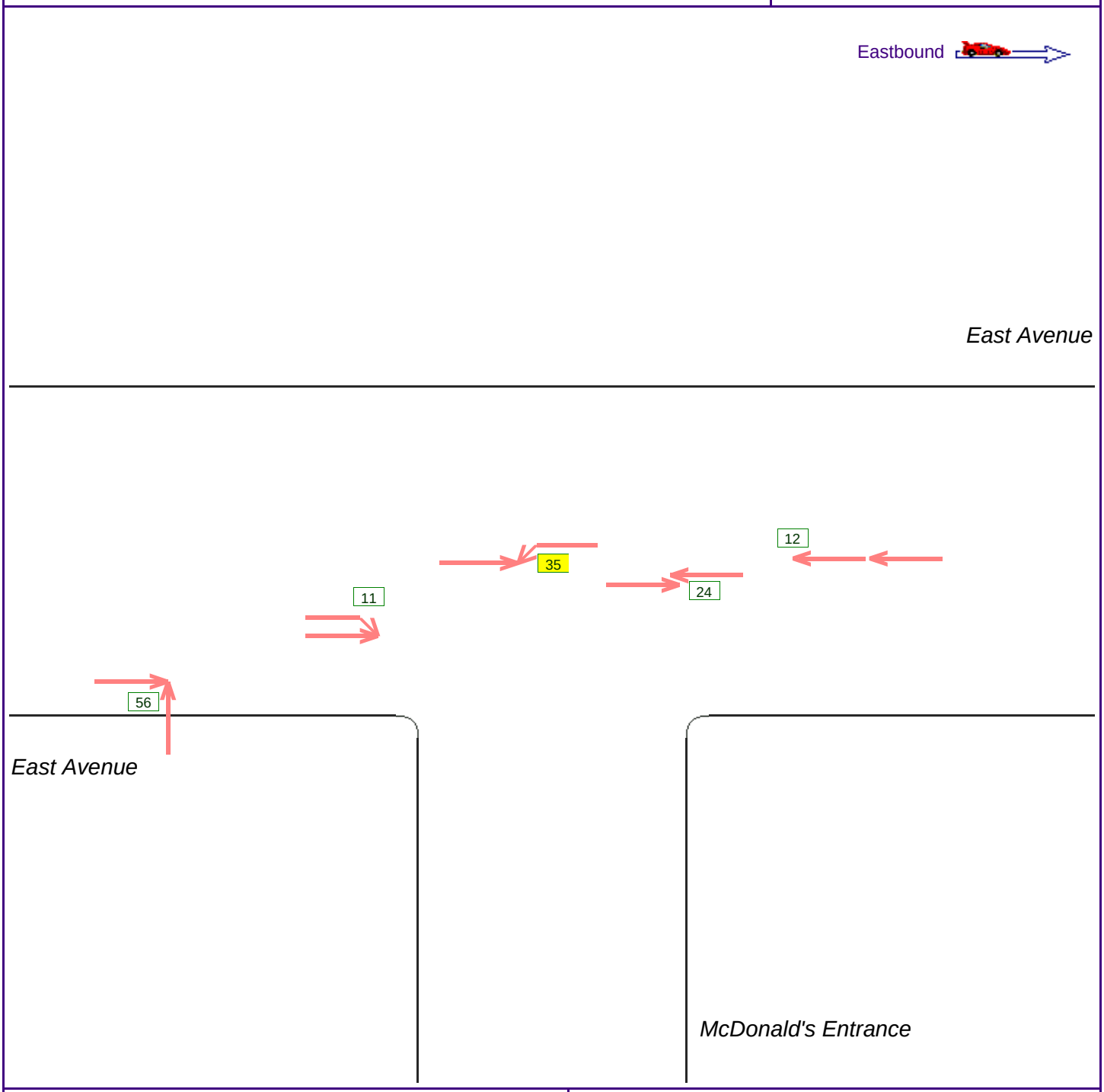
INTERSECTION: *East Avenue & McDonald's Entrance (Ref #101)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS

- MOVING VEHICLE
- TURNING VEHICLE
- BACKING VEHICLE
- PARKED VEHICLE
- 999 RECORD NUMBER
- P PEDESTRIAN
- B BICYCLIST
- A ANIMAL
- FIXED OBJECT
- Injury

MANNER OF COLLISION

- REAR END
- LEFT TURN
- LEFT TURN
- OVERTAKE
- OUT OF CONTROL
- HEAD ON
- RIGHT TURN
- RIGHT TURN
- RIGHT ANGLE
- SIDE SWIPE

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

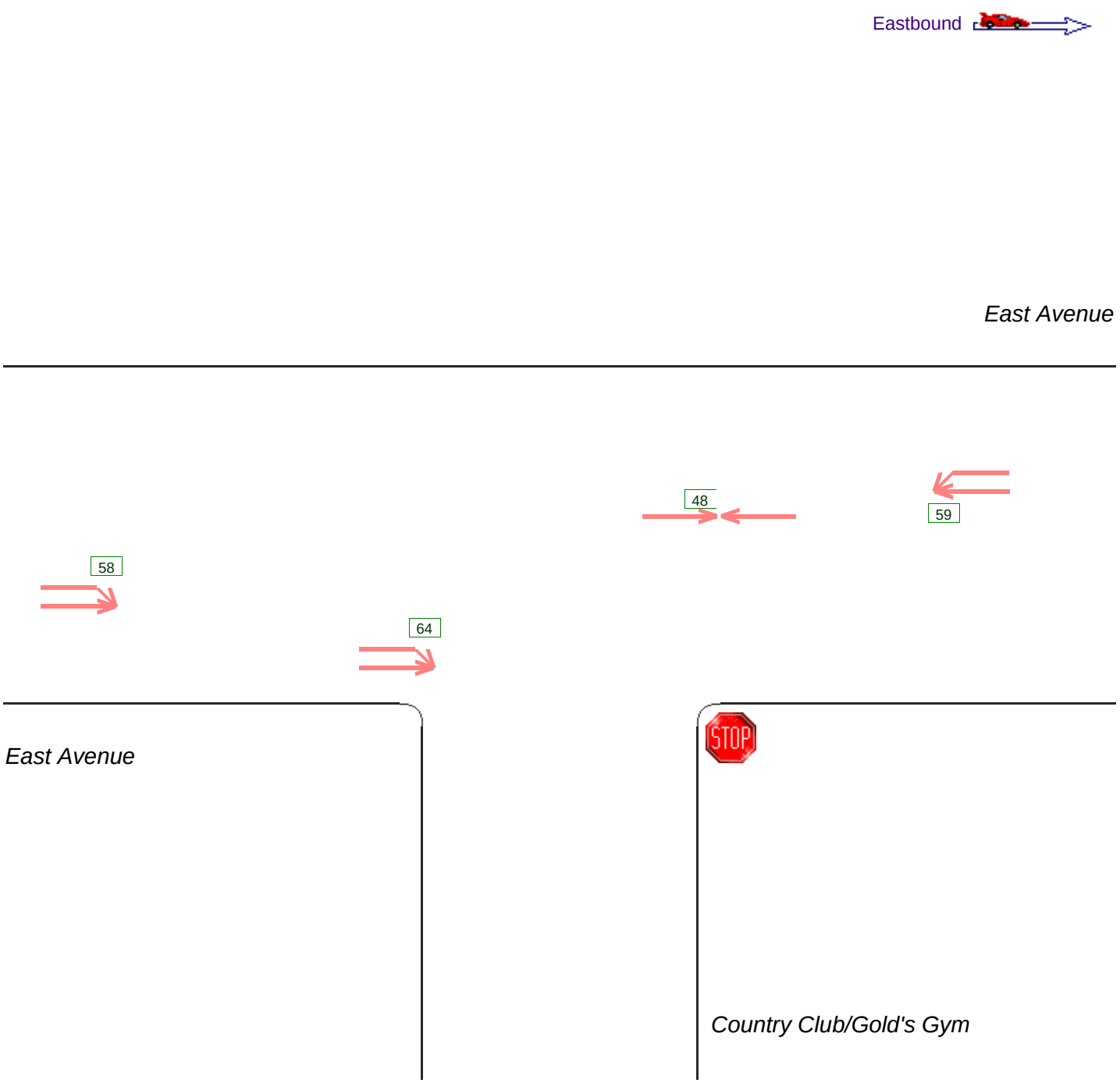
INTERSECTION: *East Avenue & Country Club/Gold's Gym (Ref #102)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS

- MOVING VEHICLE
- TURNING VEHICLE
- BACKING VEHICLE
- PARKED VEHICLE
- 999 RECORD NUMBER
- P PEDESTRIAN
- B BICYCLIST
- A ANIMAL
- FIXED OBJECT
- Injury

MANNER OF COLLISION

- REAR END
- LEFT TURN
- LEFT TURN
- OVERTAKE
- OUT OF CONTROL
- HEAD ON
- RIGHT TURN
- RIGHT TURN
- RIGHT ANGLE
- SIDE SWIPE

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

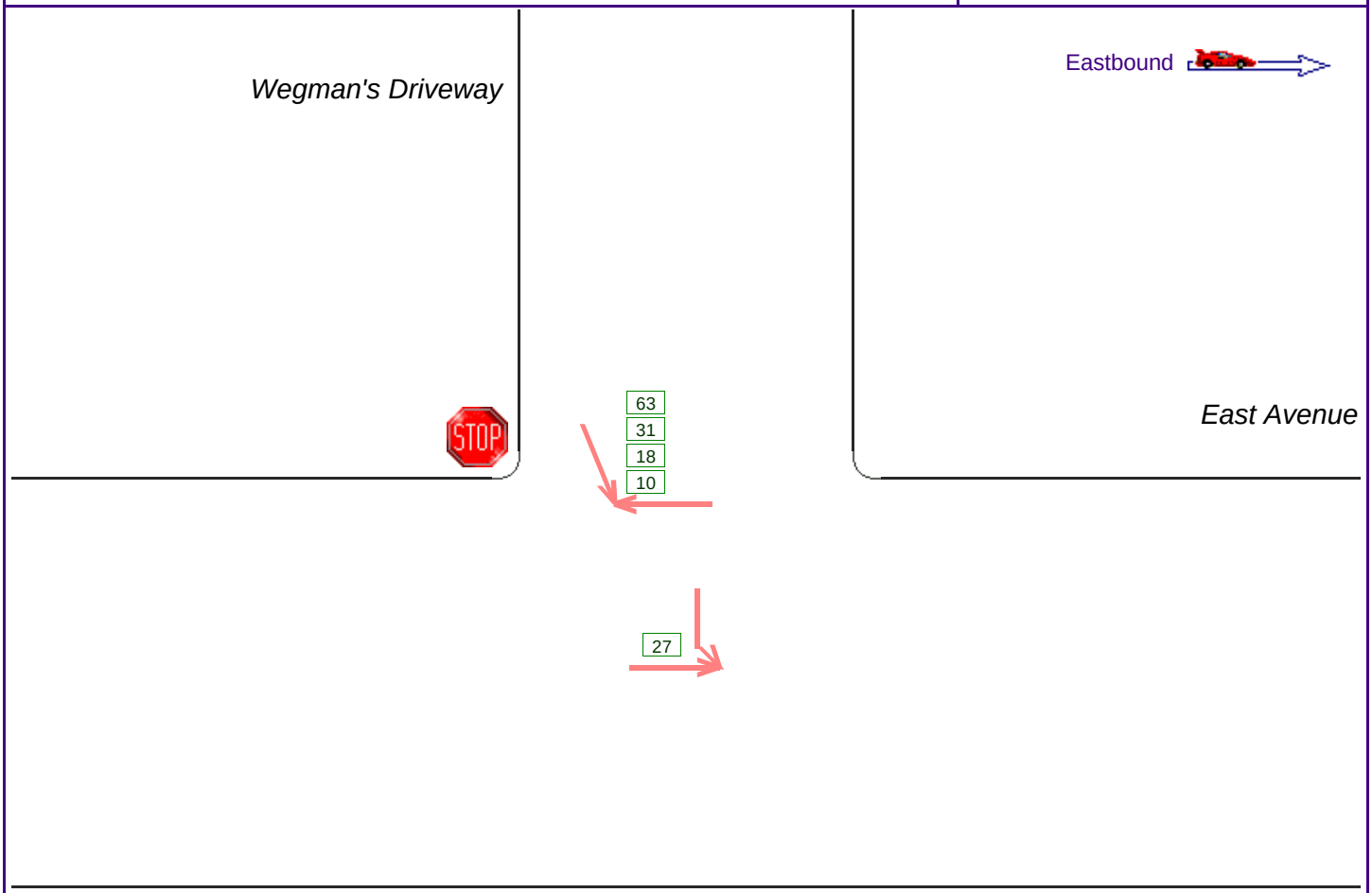
INTERSECTION: *East Avenue & Wegman's Driveway (Ref #103)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS

MOVING VEHICLE	P	PEDESTRIAN
TURNING VEHICLE	B	BICYCLIST
BACKING VEHICLE	A	ANIMAL
PARKED VEHICLE		FIXED OBJECT
999 RECORD NUMBER		Injury

MANNER OF COLLISION

REAR END	HEAD ON
LEFT TURN	RIGHT TURN
LEFT TURN	RIGHT TURN
OVERTAKE	RIGHT ANGLE
OUT OF CONTROL	SIDE SWIPE

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

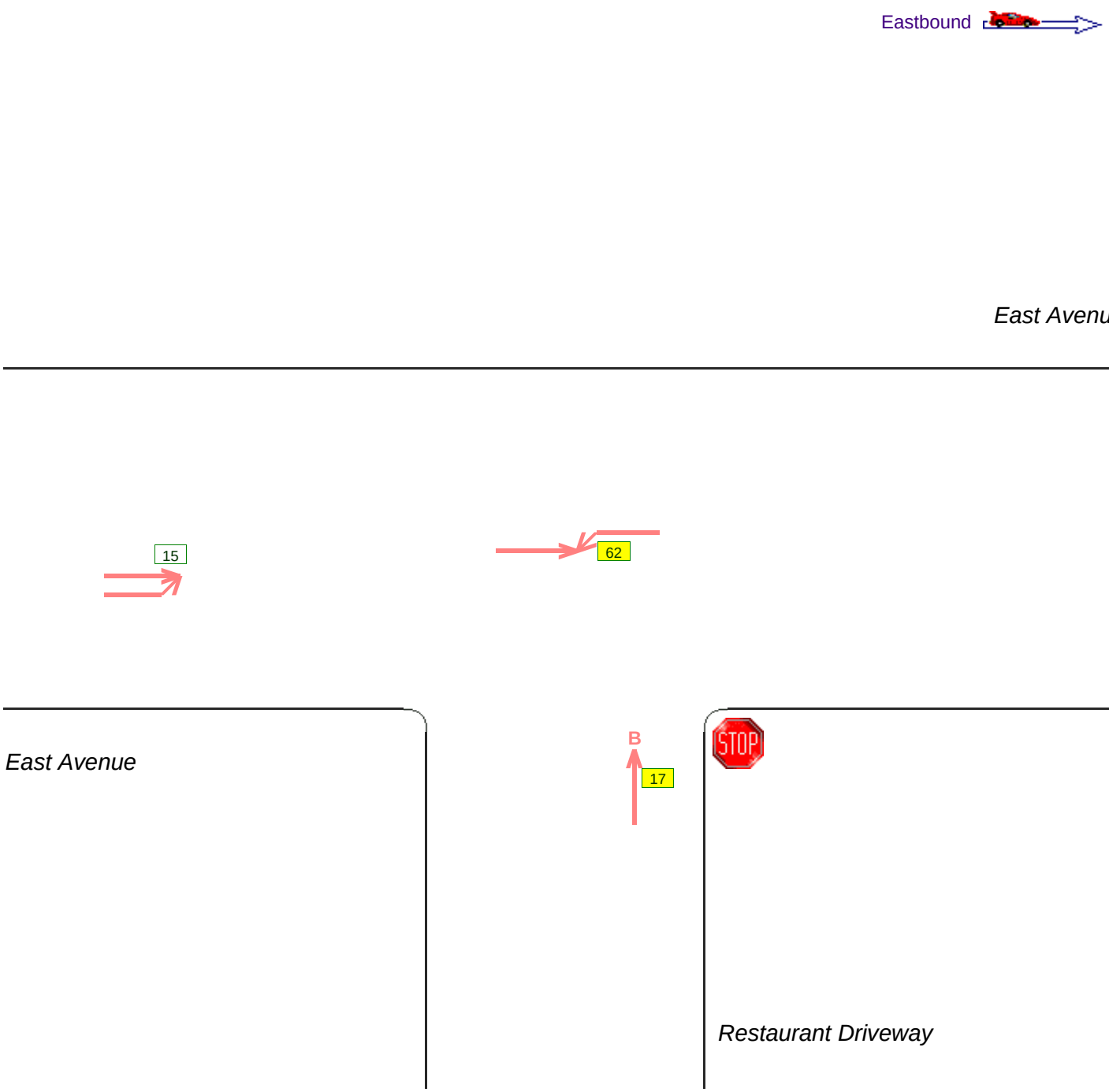
INTERSECTION: *East Avenue & Restaurant Driveway (Ref #104)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS

- MOVING VEHICLE
- TURNING VEHICLE
- BACKING VEHICLE
- PARKED VEHICLE
- 999 RECORD NUMBER
- P PEDESTRIAN
- B BICYCLIST
- A ANIMAL
- FIXED OBJECT
- Injury

MANNER OF COLLISION

- REAR END
- LEFT TURN
- LEFT TURN
- OVERTAKE
- OUT OF CONTROL
- HEAD ON
- RIGHT TURN
- RIGHT TURN
- RIGHT ANGLE
- SIDE SWIPE

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

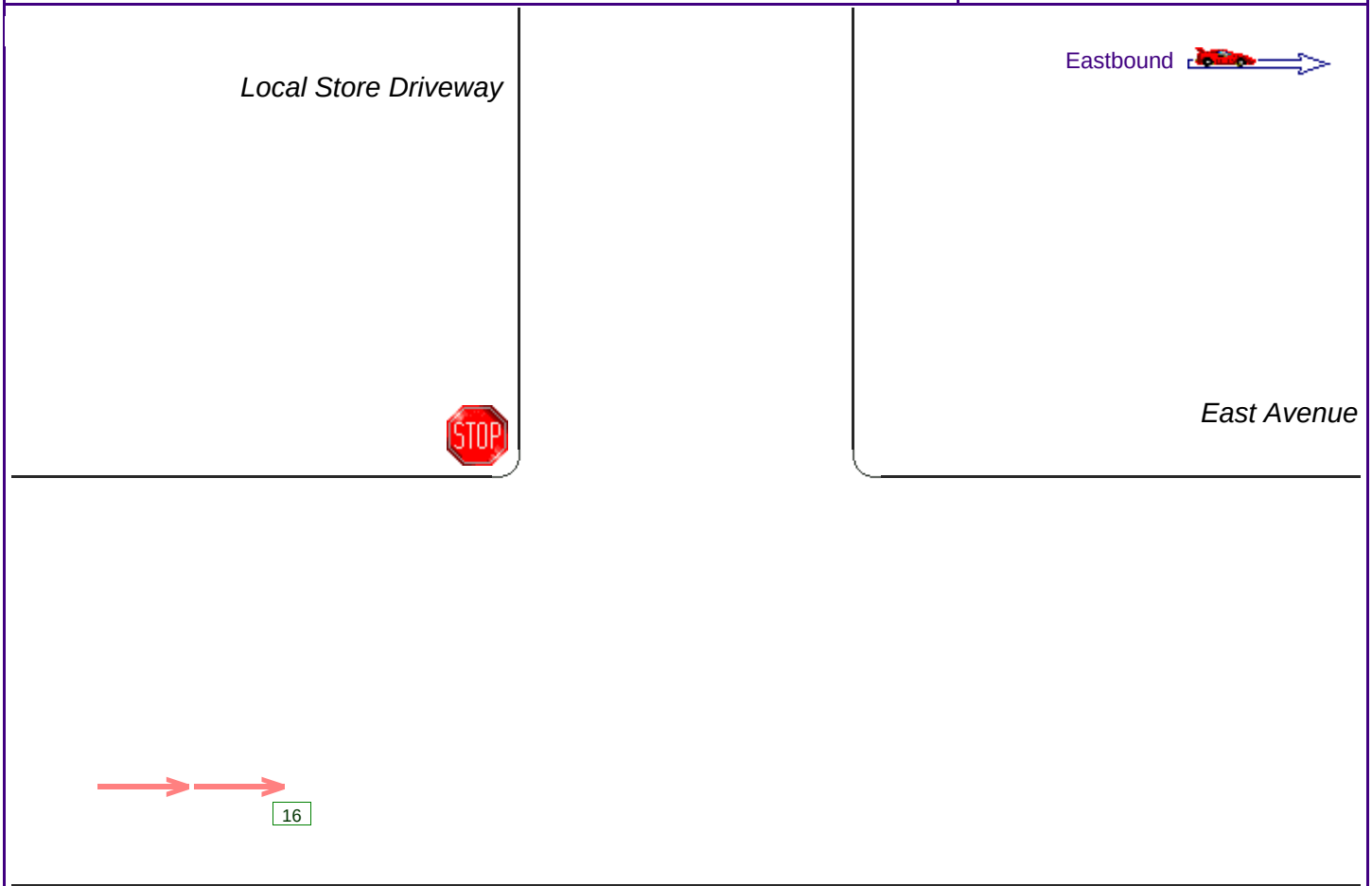
INTERSECTION: *East Avenue & Local Store Driveay (Ref #105)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/2/2009*



SYMBOLS			MANNER OF COLLISION	
MOVING VEHICLE	P	PEDESTRIAN	REAR END	HEAD ON
TURNING VEHICLE	B	BICYCLIST	LEFT TURN	RIGHT TURN
BACKING VEHICLE	A	ANIMAL	LEFT TURN	RIGHT TURN
PARKED VEHICLE		FIXED OBJECT	OVERTAKE	RIGHT ANGLE
999 RECORD NUMBER		Injury	OUT OF CONTROL	SIDE SWIPE

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: *City of Rochester* COUNTY: *Monroe*

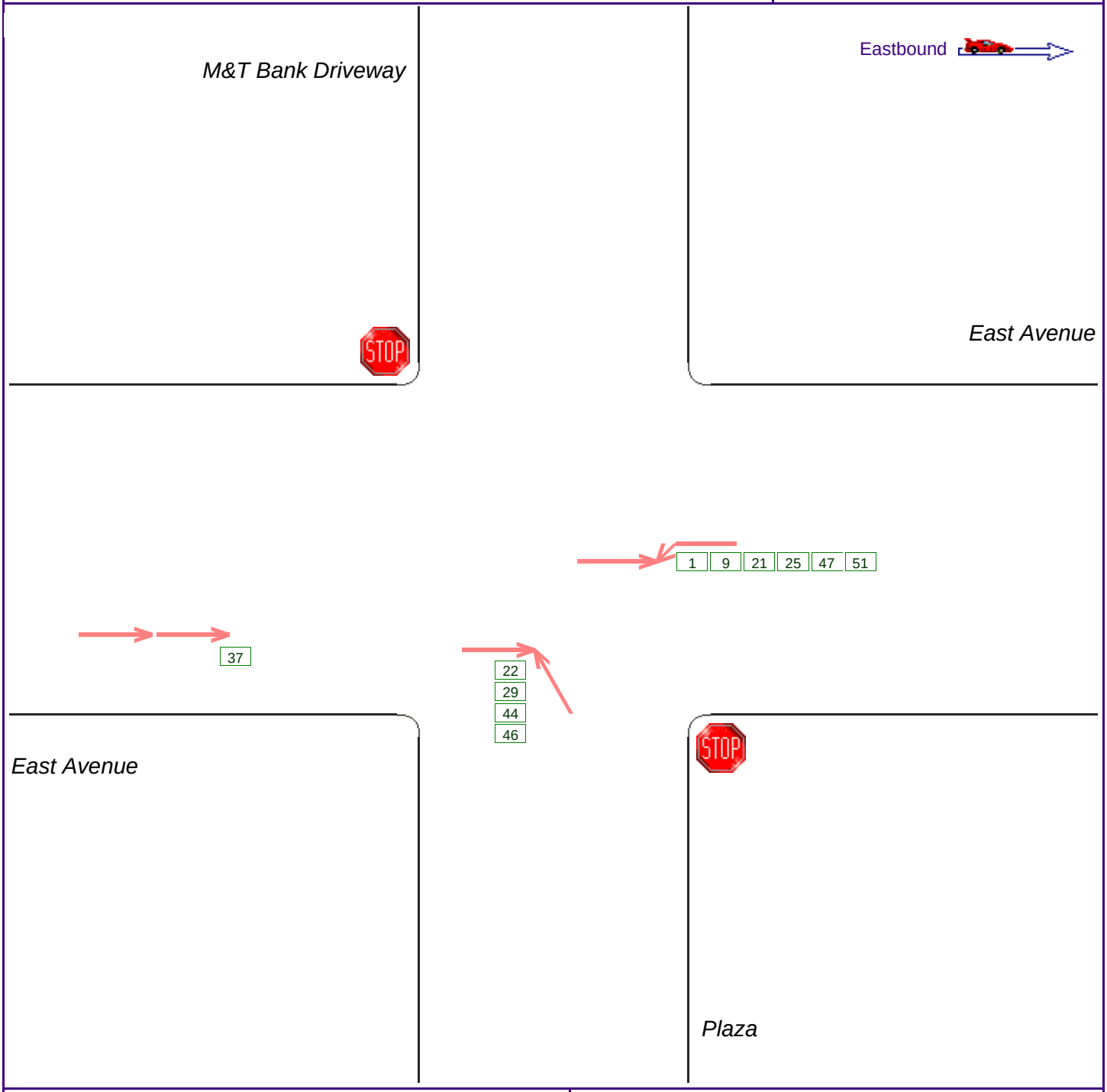
INTERSECTION: *East Avenue & Plaza/M&T Bank Driveway (Ref #107)*

PERIOD: *3* YEARS *0* MONTHS FROM *7/1/2006* TO *6/30/2009*

FILE: *East Ave_09*

CASE # : *433164.04*

BY: *KMO* DATE: *12/3/2009*



SYMBOLS		MANNER OF COLLISION	
MOVING VEHICLE	P PEDESTRIAN	REAR END	HEAD ON
TURNING VEHICLE	B BICYCLIST	LEFT TURN	RIGHT TURN
BACKING VEHICLE	A ANIMAL	LEFT TURN	RIGHT TURN
PARKED VEHICLE	FIXED OBJECT	OVERTAKE	RIGHT ANGLE
999 RECORD NUMBER	Fatal	OUT OF CONTROL	SIDE SWIPE

PARKING DEMAND ANALYSIS FOR

Wegmans

EAST AVENUE

CITY OF ROCHESTER, COUNTY OF MONROE
STATE OF NEW YORK

PREPARED FOR:

WEGMANS FOOD MARKETS, INC.
100 WEGMANS MARKET STREET
ROCHESTER, NEW YORK 14624

PREPARED BY:

COSTICH ENGINEERING

217 LAKE AVENUE
ROCHESTER, NEW YORK 14608

PROJECT NO. 2781

JULY 2009
REVISED: May 3, 2010

COSTICH ENGINEERING

WEGMANS EAST AVENUE
PARKING ANALYSIS

I. GENERAL

The proposed Wegmans Food Market is located at the northeast corner of East Avenue and Winton Road in the City of Rochester. The proposed facility will total 108,500 square feet, and include improved loading areas, circulation and parking. Ingress and egress to the customer parking field will be limited to a main signalized entrance on East Avenue and a signalized entrance on University Avenue. Access to the underground employee parking garage (2 locations) is off of University Avenue. Access to the loading area is off of Winton Road. Loading will be maintained on the east side of the proposed facility. The proposed parking shown on drawing number CN115 (Appendix A), totals 477 parking spaces. Parking is broken down as follows: 356 customer spaces in the main lot west of the proposed food market and 121 employee spaces in the underground garage. In this analysis we will first look at parking requirements in general terms and then for Wegmans Food Market.

II. JUSTIFICATION OF PARKING

Numerous publications exist for documenting the required parking for various uses. Parking Generation by the Institute of Transportation Engineers, Copyright 1987, Parking Requirements for Shopping Centers by the Urban Land Institute, Copyright 1982, The Dimension of Parking by the Urban Land Institute, Copyright 1993, Parking by Robert A. Weant and Herbert S. Levinson, Parking Spaces, by Mark Childs, Copyright 1999 and Performance Zoning, by Lane Kendig, report a variety of parking required for retail and particularly grocery or supermarket uses. The

most widely used source is typically the Parking Generation by ITE. Three basic problems exist with the utilization of the parking numbers associated with the supermarket code (850). Firstly, the age of the study reflects an outdated concept of a food market compared with the proposed Wegmans Food Market, secondly, the number of studies as presented in the ITE (4) is insufficient, and thirdly they likely represent stores in suburban areas. The study itself cautions it to be utilized carefully due to small sample size and insufficient data, "much more data is required for this land use category to draw a conclusion". The rates for grocery, found in these studies, ranges from approximately 3 spaces per 1,000 s.f to over 10 spaces per 1,000 s.f. of floor area.

Table 1
National Parking Rate Standards

Source	Description	Rate per 1000
Parking Generation	Supermarket	2.8 – 3.4
Parking Generation	Shopping Center less than 50,000 sq. ft.	4.0
Parking Requirements for Shopping Centers	Retail 25,000-400,000 sq. ft.	4.0
Parking	Shopping Goods (retail)	5.0
Performance Zoning	Grocery	10 (sales area) 5 (storage)

The above publications also discuss the importance of the geometry of parking fields, specifically with respect to various uses. Two important factors are discussed with regards to grocery use: 1) turnover within the parking field and 2) the use of shopping carts. Parking Spaces, suggests a 61.3 foot bay width for grocery type use, which compares closely with the Wegmans minimum layout of 62 feet.

Food markets (especially Wegmans) introduce the need for a high number of parking spaces and larger dimensions in many ways. Space for shopping carts is one important factor. The new store proposed will offer significant amounts of prepared foods and in-store dining

opportunities. These services tend to result in parking generation that more closely resemble restaurant uses than your traditional food market. These uses are more labor intensive, resulting in more need for parking for the employees utilized in preparation and sale of these prepared and on premise consumed foods. Clearly the demand for higher end number of spaces, found in the national studies, is needed for Wegmans. Wegmans' standard for a new store is six spaces per 1,000 square feet of net floor area.

III. ANALYSIS OF PARKING GENERATION FOR EXISTING EAST AVENUE WEGMANS-ROCHESTER, NY

In order to determine the parking demand for the proposed East Avenue Wegmans facility, we have performed a study of the parking for the existing facility. Although the two facilities differ in size they share obvious similarities including: an urban setting, access to mass transit, pedestrian foot traffic to the facility, some potential for shared parking by surrounding businesses and on-street parking.

The actual parking necessary for the proposed facility may be increased over the results obtained for the existing East Avenue study due to the following reasons. First, the parking counts were performed February and April, where reduced temperatures and stormy weather (rain) were observed on several of the days. Secondly, the proposed Wegmans East Avenue facility will be substantially upgraded to offer many of the products not offered in the existing facility. The demand for employee parking alone will be much higher at the proposed facility.

The results obtained in this study for customer parking are shown in Tables 2-4. Parking was counted on Friday, April 2nd between 4:00 pm and 6:00 pm, Saturday, April 3rd between 11:00 am and 2:00 pm, Wednesday, April 7th between 11:00 am and 6:00 pm, Thursday, April 8th between 11:00 am and 6:00 pm, Friday, April 9th between 11:00 am and 6:00 pm and Saturday, April 10th between 11:00 and 2:00 pm. The peak times for the respective days are shown in the table. The field results are shown in Appendix B.

Table 2
Parking Study Results

Day	Peak Time	Descriptions	# of Spaces Occupied/Available	% of Spaces Occupied	# of Spaces Utilized per 1000 NFA*
Friday, 4-2-04	5:00 pm	Front Lot	202/202	100	4.8
Saturday, 4-3-04	11:40 am	Front Lot	202/202	100	4.8
Wednesday, 4-7-04	5:40 pm	Front Lot	196/202	97	4.6
Thursday, 4-8-04	5:40 pm	Front Lot	186/202	92	4.4
Friday, 4-9-04	5:20 pm	Front Lot	197/202	98	4.6
Saturday, 4-10-04	1:20 pm	Front Lot	192/202	95	4.5

Note: Net floor area equals 42,500 ± square feet.

The results for the customer parking range from 4.4 spaces per thousand to 4.8 per thousand. The results for the overall (customer and employee parking) ranged from 5.1 spaces per thousand to 5.7 spaces per thousand occupied.

Recent parking counts were taken in the main customer lot to verify the accuracy of the 2004 counts. Parking counts were taken on Wednesday, February 3rd between 4:00 p.m. and 6:00 p.m., Friday, February 5th between 4:00 p.m. and 6:00 p.m., Sunday, February 7th between 11:00 a.m.

and 2:00 p.m., Thursday, February 11th between 7:00 a.m. and 8:00 p.m. and Saturday, February 13th between 8:00 a.m. and 8:00 p.m. The peak times for the respective days are shown in Table 5-7.

Table 3
2010 Parking Study Results

Day	Peak Time	Descriptions	# of Spaces Occupied/Available	% of Spaces Occupied	# of Spaces Utilized per 1000 NFA*
Wednesday, 2-3-10	5:15 pm	Front Lot	201/202	99.5	4.7
Friday, 2-5-10	5:00 am	Front Lot	201/202	99.5	4.7
Sunday, 2-7-10	12:00 pm	Front Lot	200/202	99	4.7
Thursday, 2-11-10	5:00 pm	Front Lot	191/202	95	4.5
Saturday, 2-13-10	5:20 pm	Front Lot	192/202	95	4.5

Note: Net floor area equals 42,500± square feet.

These counts are in the same range as the 2004 counts and show the lot to be near, at or over capacity during peak hours. Counts taken during non-peak hours are summarized in Table 5-8.

Table 4
2010 Parking Study Results (Off-Peak Times)

Day	Non-Peak Hours	Range of Spaces Occupied	% of Spaces Occupied
Thursday, 2/11/10	8:00 a.m. to 3:00 p.m.	133 – 182	66 – 90
	7:00p.m. to 8:00 p.m.	168- 180	83 – 89
Saturday, 2/13/10	9:00 a.m. to 10:00 a.m.	135 – 148	67 – 73
	3:00 p.m. to 8:00 p.m.	158 - 191	78 - 95

These results show that the lot was approximately 2/3 to 90% full during non-peak 'daytime' hours.

IV. PROPOSED FACILITY PARKING

As mentioned previously the project proposes 477 spaces, which includes 356 customer spaces in the main lot west of the proposed Food Market and 121 employee spaces in the proposed

underground parking garage. Patrons of Wegmans will have available to them the 356 spaces located in the main lot and the limited on street parking opportunities, 14 metered spaces. The underground parking will be limited to Wegmans employees for safety and security reasons as well as the limited ability for customers to access the underground lot with shopping carts. The parking ratios for the proposed Food Market are shown in Table 5, entitled Proposed Parking-East Avenue Wegmans.

Table 5
Proposed Parking – East Avenue Wegmans

			Spaces/1000 NFA*	
# of Spaces West Lot	**# of Spaces Underground**	**Combined Spaces**	**West Lot**	**West Lot/ Underground**
356	121	477	3.5	4.6

**** NFA equals 100,000 square feet.***

The results shown in Table 5 indicate that the proposed facility can be expected to generate parking needs in excess of the City's allowance 110% of 2.0 spaces/1000 square feet for general retail. Note the low end ratio of occupied spaces for the existing store is 4.0/1000, which projects to 4.0 x 100 = 400 customer spaces for the new store. Although the number of spaces may not have a direct linear relationship to the net square footage, there is a need to provide as many spaces as the site's area allows while also providing for proper queuing, cart storage and safe aisle width.

As shown in Table 5, the proposed facility will provide parking at a ratio of 3.5 spaces/1000 square feet of net floor area when considering the main lot available to patrons only and 4.6 spaces/1000 square feet of net floor area when considering the combined surface and underground spaces available to Wegmans customers and employees.

These results indicate, as expected, that the proposed Food Market will generate a greater need for parking than standard retail spaces. Given the results, it is necessary for the proposed facility to make allowance for parking needs in excess of the City Code.

WEGMANS EAST AVENUE – PARKING ANALYSIS

Spaces Available

Front Lot	202
Rear Lot	68

Friday, April 2, 2004

Rear Lot

Time	Spaces Occupied	
4:00	36	
4:20	31	
4:40	29	
5:00	29	(Peak Hour 4:00 – 5:00)
5:20	22	
5:40	22	
6:00	20	

Front Lot

Time	Spaces Occupied	
4:00	174	
4:20	190	
4:40	192	
5:00	202	(Peak Hour 5:00 – 6:00)
5:20	200	
5:40	198	
6:00	194	

Temperature: 36°, Rain

WEGMANS EAST AVENUE – PARKING ANALYSIS

Saturday, April 3, 2004

Rear Lot

Time	Spaces Occupied	
11:00	32	
11:20	32	
11:40	32	(Peak Hour 12:00 – 1:00)
12:00	32	
12:20	31	
12:40	32	
1:00	33	
1:20	31	
1:40	30	
2:00	31	

Front Lot

Time	Spaces Occupied	
11:00	190	
11:20	197	
11:40	202	(Peak Hour 11:20 – 12:20)
12:00	201	
12:20	194	
12:40	191	
1:00	182	
1:20	194	
1:40	192	
2:00	196	

Temperature: 38°, Rain

WEGMANS EAST AVENUE – PARKING ANALYSIS

Wednesday, April 7, 2004

Rear Lot

Time	Spaces Occupied	
11:00	39	
12:00	42	
1:00	42	
4:00	24	(Peak Hour 12:00 – 1:00)
4:20	20	
4:40	17	
5:00	14	
5:20	11	
5:40	10	
6:00	8	

Front Lot

Time	Spaces Occupied	
11:00	106	
12:00	117	
1:00	110	
4:00	194	(Peak Hour 5:00 – 6:00)
4:20	191	
4:40	182	
5:00	181	
5:20	195	
5:40	196	
6:00	191	

Temperature: 37°, Cloudy

WEGMANS EAST AVENUE – PARKING ANALYSIS

Thursday, April 8, 2004

Rear Lot

Time	Spaces Occupied	
11:00	48	
11:20	51	
11:40	52	
12:40	49	
1:00	49	
4:00	30	
4:20	34	(Peak Hour 11:40 – 12:40)
4:40	29	
5:00	27	
5:20	20	
5:40	17	
6:00	14	

Front Lot

Time	Spaces Occupied	
11:00	118	
11:20	114	
11:40	119	
12:40	165	
1:00	150	
4:00	179	
4:20	183	(Peak Hour 4:40 – 5:40)
4:40	176	
5:00	185	
5:20	186	
5:40	186	
6:00	160	

Temperature: 41°, Clear

WEGMANS EAST AVENUE – PARKING ANALYSIS

Friday, April 9, 2004

Rear Lot

Time	Spaces Occupied	
11:00	46	
11:20	46	
11:40	47	
12:00	48	
12:20	48	
12:40	48	
1:00	48	
4:00	41	
4:20	38	(Peak Hour 12:00 – 1:00)
4:40	35	
5:00	32	
5:20	26	
5:40	25	
6:00	26	

Front Lot

Time	Spaces Occupied	
11:00	153	
11:20	145	
11:40	169	
12:00	160	
12:20	166	
12:40	149	
1:00	150	
4:00	187	
4:20	190	(Peak Hour 4:20 – 5:20)
4:40	181	
5:00	184	
5:20	197	
5:40	Missing angle	(no data available)
6:00	Missing angle	(no data available)

Temperature: 43°, clear

WEGMANS EAST AVENUE – PARKING ANALYSIS

Saturday, April 10, 2004

Rear Lot

Time	Spaces Occupied	
11:00	45	
11:20	50	
11:40	50	
12:00	50	
12:20	47	
12:40	50	
1:00	50	
1:20	52	(Peak Hour 12:40 – 1:40)
1:40	49	
2:00	49	

Front Lot

Time	Spaces Occupied	
11:00	134	
11:20	158	
11:40	170	
12:00	184	
12:20	190	
12:40	188	
1:00	192	
1:20	192	(Peak Hour 12:40 – 1:40)
1:40	190	
2:00	186	

Temperature: 42°, clear

Wegmans Food Markets Inc.

East Avenue Store
Historic Resources Report

Bero Architecture P.C.
32 Winthrop Street
Rochester, NY 14607
Updated October 13, 2009

TABLE OF CONTENTS

INTRODUCTION

The goal of this report is to identify, describe, and investigate the history of the historic resources that may be affected by the construction of a new Wegmans food market located within the block bounded by East Avenue, North Winton Road, University Avenue, and Probert Street. This information will be used to evaluate the impact of the project on historic resources and to develop design considerations aimed at minimizing potential adverse effects. *The original report was completed in July of 2004. The report has been updated to reflect conditions present in the third quarter of 2009.*

The report is divided into two sections. The Historic Resource Analysis section provides a brief history of the development of the area, documents the area's extant architectural elements, and assesses the historic and/or architectural significance of individual resources. *No significant changes in the assessment area were noted so this section has not been updated.* The Building Condition Assessment section evaluates the overall condition of the four older buildings located within the proposed project site*, estimates costs for stabilization, and for rehabilitation. This section has been significantly revised to reflect current conditions and construction costs.*

The Building Condition Assessment section of the report evaluates four older buildings located on the site of the proposed new store (parcels outlined in black).

The Conclusion, located at the end of the report, summarizes our findings regarding the historical and architectural significance of the building surrounding the project site and the viability of the older building located on the proposed site of the new store. *This section has been updated.*

HISTORIC RESOURCE EVALUATION

Methodology

To determine the significance of historic resources, Bero Architecture P.C. staff toured the area surrounding the project site, inspected buildings and their context, identified extant architectural features, and researched the areas's history. Resources were evaluated by applying the eligibility criteria for the National Register of Historic Places, a nationwide standard for assessing historic resources. Properties that are more than fifty years old, retain a sufficient level of integrity[1], and possess architectural or historical importance are eligible for listing on the National Register of Historic Places. The following Criteria for Evaluation[2] have been developed by the National Park Service to provide a standardized method for determining significance:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
> 1) That are associated with events that have made a significant contribution to the broad patterns of our history; or
> 2) That are associated with the lives of persons significant in our past; or
> 3) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose individual components may lack distinction; or
> 4) That have yielded, or may be likely to yield, information important in prehistory or history.

Listing a property on the National Register requires an extensive documentation and approval process. If a property is not listed but appears to meet the eligibility criteria, it may be referred to as "potentially eligible." The actual determination of a property's eligibility status is made by the regional National Register representative of the New York State Department of Parks, Recreation, and Historic Preservation, Field Services Bureau (FSB). If FSB staff determines a property eligible, the property is referred to as "deemed eligible."

This historic resource inventory follows the National Park Service's guidelines for historic resource documentation. Terminology, classification, and format standards have been established by the Park Service to ensure consistency in the evaluation of historic properties.

The inventory includes individual buildings, which due to proximity or visual relationship, might be affected by the project. The areas of proposed construction and the historic resources inventory area boundaries are indicated on the aerial photo below.

[1]Integrity is defined by the National Park Service in "National Register Bulletin 16A" as the "authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period." A "high level of integrity" is a prerequisite for National Register Listing.

[2]*Code of Federal Regulations, Title 36, Part 60*

Black line indicates area of historic resources inventory. White line shows limits of proposed project.

The documentation text of this report is divided into two sections.

The Historic Overview chronicles the historic evolution of the East/Winton area, including its evolution from small rural hamlet to a busy section of metropolitan Rochester.

The Inventory is an annotated list identifying individual buildings and describing the current state of each building, including the current physical condition of the property, its setting, features, buildings, and other physical characteristics. Known changes or alterations are described. Each building inventory includes a significance section describing its historical importance, the quality of design present on the property, and notes about important persons associated with the property.

Historic Overview

The present commercial area centered around the intersection of East Avenue and Winton Road originated as a small hamlet established during the second decade of the nineteenth century. During the early twentieth century, the hamlet was absorbed as part of urban Rochester. During the second half of the twentieth century, changing cultural trends and planning policies fragmented the cohesive physical appearance of the area.

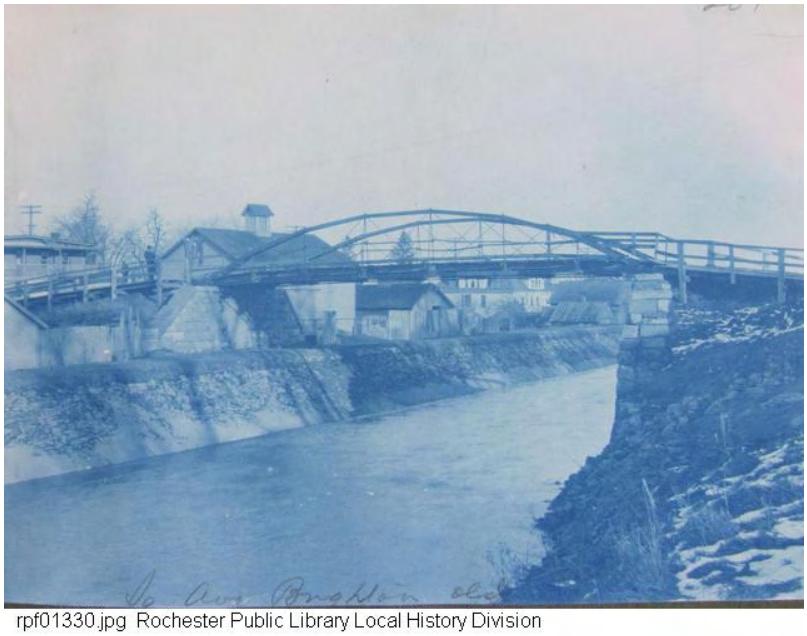
Much of present-day Monroe County east of the Genesee River was incorporated as the town of Northfield in 1796. The area was part of Ontario County until Monroe County was established in 1821. Prior to the emergence of Rochester, Canandaigua served as the center of the region's governmental and business activity.

In 1814, Brighton was established as an independent town. The town and hamlet were named "Brighton" in honor of the William Billinghurst family that had moved from Brighton, England. East Avenue was the primary route through the town. The road linked the Genesee Falls to Canandaigua and was also the route of mail delivery. The construction of other roads made the site of the hamlet the most accessible location within the new town.

Another critical factor in the hamlet's development was the completion of the Erie Canal in 1824. Traffic into the area that had formerly passed through Canandaigua now came directly on the canal. Although Rochester quickly eclipsed Brighton, the hamlet's proximity to three locks meant a waiting period for boats and a time for "canallers" to celebrate at local taverns or purchase supplies.

rpf01329.jpg Rochester Public Library Local History Division

Nineteenth-century view from East Avenue southward on Winton Road toward the canal.



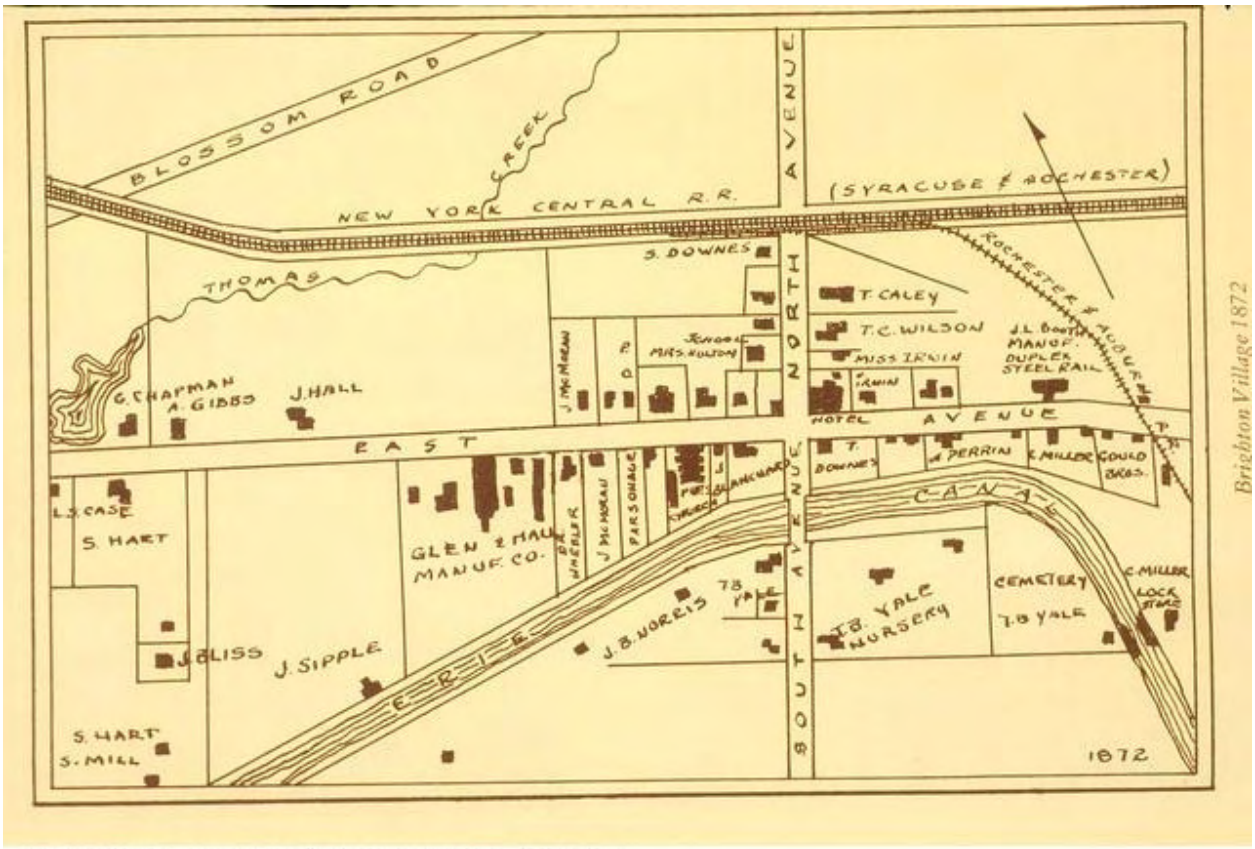
rpf01330.jpg Rochester Public Library Local History Division

Winton Road (South Avenue) canal bridge from the west.

brm00096.jpg Brighton Municipal Historian Collection

Early Brighton house on South Winton Road. (demolished)

The first post office in the area was established in 1817. In 1820, the first church building, housing the predecessor of the current Brighton Presbyterian Church, was constructed in the hamlet near Brighton Cemetery. In the mid 1830s, the Auburn and Rochester Railroad was constructed and a station handling passengers and freight opened on the east side of North Avenue (now Winton Road).



brm00385.jpg Brighton Municipal Historian Collection

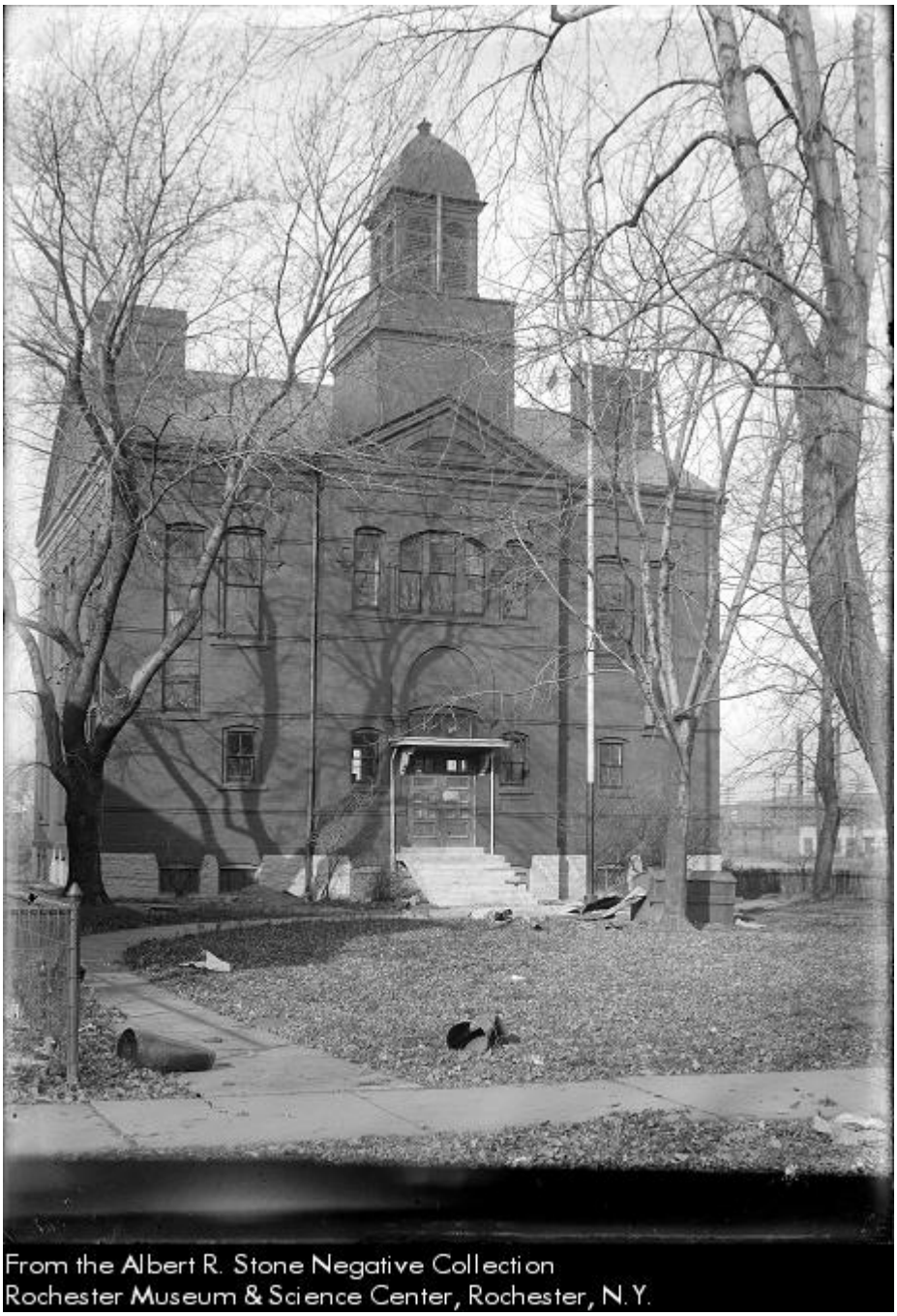
Brighton hamlet in 1872

In 1862, the establishment of horse drawn omnibus service between downtown Rochester and Brighton hamlet represented the beginning of the transition from rural hamlet to urban neighborhood. The Brighton Presbyterian Church erected a new large brick church facing East Avenue in 1868.

By the time the hamlet was incorporated as a 750-acre village in 1885, it exhibited a mixture of urban and rural characteristics. Commuters could easily access downtown Rochester via streetcar or railroad. The village's business district included numerous stores, four hotels, a post office, a fire house, and a large brick school. Village industries included a carriage factory, an agricultural chemical company and a cold storage warehouse. Like most Western New York villages during the period, many residences were tightly clustered around the perimeter of the business district. The remainder of the area within the village's corporate limits was agricultural land and three new residential subdivisions. The section of East Avenue between the western village boundary at Culver Road and the village center was being developed into large estates by wealthy Rochester businessmen. Between 1890 and 1900 the population of the hamlet increased from 705 to 888.

Brighton Village in 1902

At the insistence of influential East Avenue residents, the streetcars running between downtown Rochester and Brighton were routed down Park Avenue. In 1890, horse drawn streetcars were replaced by electric trolleys. In 1902, a high speed interurban line opened running down what is now University Avenue. The village's excellent public transportation encouraged growth after the beginning of the twentieth century. The growing number of commuting residents began demanding additional services of the type enjoyed by neighboring city residents. The growing need to provide sanitary sewers erupted into a protracted debate over whether the village should be annexed by the City of Rochester. A village referendum in favor of annexation passed by one vote in 1905.



Ca. 1884 Brighton School, west side of North Winton Road between East and University Avenues (current site of the Central Trust parking garage.)

brm00153.jpg Brighton Municipal Historian Collection

Nineteenth-century view of Caley & Nash carriage works, NW corner of East Avenue and North Winton Road (North Avenue).

After annexation, the former village evolved into an urban commercial district serving the large new neighborhoods being constructed around its perimeter. In 1914, the Brighton Presbyterian Chuch constructed a new larger church and school adjacent to its 1868 building on East Avenue. A new fire hose company opened on East Avenue in what is now part of Wegmans parking lot. As the number of businesses in the area grew, houses near the East/Winton intersection were converted to commercial use. Several large apartment houses were constructed along the trolley line west of the village center. New country estates were being built along East Avenue and intersecting streets. Larger subdivisions sprang up rapidly during the early 1920s. Between 1920 and 1930, the population of the town of Brighton tripled, increasing from 3027 to 9065 persons. By the time the housing boom of the 1920s ended, the area around the village was nearly entirely developed and the frontier of urban growth had moved several miles out to the boundaries of Penfield and Pittsford.

During the second decade of the century, the Erie Canal was relocated several miles to the south. The City utilized the abandoned canal bed for a new subway system that opened in 1927. The former Brighton school became the Brighton branch of the Rochester Public Library. East Avenue was widened several times and an underpass was constructed to carry Winton Road traffic below the New York Central railroad tracks.

1935 view of East Avenue looking west from Winton Road.

brm00157.jpg Brighton Municipal Historian Collection

1940s view of East/Winton intersection

The stock market crash of 1929 marked a dramatic decline in development and construction in Rochester. After the abandonment of the interurban lines in the 1930s, the former Rochester and Syracuse right-of-way became an extension of University Avenue which previously ended at Culver Road.

brm00092.jpg Brighton Municipal Historian Collection

1950s view east along University Avenue toward North Winton Road.

After World War II, as the Rochester area began to experience significant growth again, changing economic, social and transportation patterns began to alter the physical character of the former Brighton village area. During the late 1950s, the opening of Loblaws (Today occupied by Boxman, Record Archives, and DiBello Subs), and Star Market along East Avenue signaled the supplanting of small specialty food stores by larger chain-operated stores offering a comprehensive selection of merchandise. The proliferation of cars resulted in the construction of parking lots, often requiring the demolition of existing buildings. New businesses entering the area such as Valley Cadillac (demolished – now the site of McDonalds) and Brighton Bowl (now occupied by World Gym) built large private parking lots. In the mid 1950s, the City of Rochester constructed two large Department of Public Works truck garages on University Avenue just west of Winton Road. Increasing traffic, commercial expansion, and changes to the area's physical appearance led to disappearance of residences from adjacent sections of East Avenue and North Winton Road. Increasingly, older homes on the main streets were converted to commercial use or demolished for parking. Newer commercial buildings built during the decade were built out to the street but were usually one story rather than two story as in previous decades.

1950s view of South Winton Road looking north prior to construction of Interstate 490.

The construction of interstates 490 and the Outer Loop expressway in the late 1950's and early 1960s required the demolition of forty-five homes and visually severed the East/Winton intersection from the areas to the south and east. The dramatic loss of historic buildings as a result of highway construction, Urban Renewal programs, and the gradual decline of the mansion-lined section of East Avenue brought about an active historic preservation movement in Rochester. One of the results of this effort was the designation of East Avenue as a locally designated historic district in the late 1960s. Ten years later the area was listed in the National Register of Historic Places. Probert Street was set as the eastern boundary of the historic district because the changes of the 1950s and 1960s had compromised the historic integrity of the East/Winton commercial area.

Continued commercial development in the area during the 1960s and 1970s followed late twentieth-century suburban planning patterns. Smaller two-story structures located close together and built adjacent to the sidewalk were replaced with one-story buildings separated from the street and other buildings by large paved areas.

brm00161.jpg Brighton Municipal Historian Collection

Former school and library building shortly before demolition in 1960s

By the early 1970s, the historic buildings on all four corners of the East/Winton intersection had been demolished. At the time, three of the corners were occupied by gasoline filling stations. By that time, the area's remaining institutional anchors, including the post office, library, and the fire department, had relocated to North Winton Road outside of the former village center.

Despite the changes, the area remained a viable commercial area. In the early 1970s, a double house and several commercial buildings located at the southwest corner of the East/Winton intersection were demolished to permit construction of the small shopping plaza that currently occupies the site. In 1974, the Central Trust Bank constructed a large new bank and office building on the northwest corner of the East/Winton intersection. By the early 1980s McDonalds and Wendy's had constructed new fast food restaurants along East Avenue. Wegmans expanded from a small store opened in 1962 to the forty-thousand square foot store operating today. The most recent large construction project in the area was the Harris Building constructed in the 1980s. The early 1990s project to reconstruct the Can of Worms highway intersection did not have the disruptive impact of the project undertaken thirty years before. Although some buildings were refurbished as new businesses replaced older ones, the area remained relatively stable through the last years of the twentieth century and the first years of the twenty-first.

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Building Inventory - East Avenue, North Side

BUILDING: East Avenue Wegmans Food and Pharmacy

ADDRESS: 1750 East Avenue

DATE OF CONSTRUCTION: Ca. 1960

DESCRIPTION: This one-story, steel-frame, flat-roof, mid twentieth-century grocery store has been greatly altered by numerous additions and renovations. The store spans the width of the block and faces a large parking lot located to the west.

SIGNIFICANCE: This 40,000 square-foot building was originally constructed in the early 1960s and completely remodeled and enlarged in 1981,

The Wegmans building is not National Register eligible due to age.

BUILDING: Star Market Building (Shiga Hair Salon)

ADDRESS: 1776-1790 East Avenue

DATE OF CONSTRUCTION: Ca. 1950/1955

DESCRIPTION: This asymmetrical, one-story, steel-frame, flat-roof, mid twentieth-century grocery store features a prominent horizontal cornice and a narrow square tower that originally functioned as a sign. The building is clad with buff brick. The front face of the tower is clad with metal panels.

SIGNIFICANCE: The Star Market building is the work of Thomas Boyd an architect who completed many projects for the Star Market company during the 1950s and 1960s. Boyd is noted as the first African-American architect to practice in Rochester.

The building appears to have been constructed in two stages. The older ca. 1950 section consists of five narrow storefronts at the east end of the Building's East Avenue frontage. When the grocery store was constructed, wrapping around the west and north sides of the original building, a prominent fascia was extended across the East Avvenue façade to create a unified appearance. Several of the building's distinguishing features, including the star that crowned the tower, were removed when the grocery chain went out of business.

Due to age, the building is not historically significant and appears to be ineligible for National Register listing.

BUILDING: George Higbie Building Annex (Cyrus Oriental Rugs and Antiques)

ADDRESS: 1794 East Avenue

DATE OF CONSTRUCTION: Ca. 1900

DESCRIPTION: This small, one-story, wood-frame, gable-roof, early twentieth-century commercial building has a simple wood parapet that partially conceals the gable roof behind it. The building is clad with clapboard on the front façade and novelty siding on the side and rear faces. The storefront has been altered by late twentieth-century replacement canopy, door and windows.

SIGNIFICANCE: This modest building is a very simple example of ca. 1900 vernacular construction.

The building's integrity has suffered from late twentieth-century alterations to its storefront and it is not National Register eligible.

BUILDING: George Higbie Building (Cyrus Oriental Rugs and Antiques)

ADDRESS: 1796 East Avenue

DATE OF CONSTRUCTION: Ca. 1900

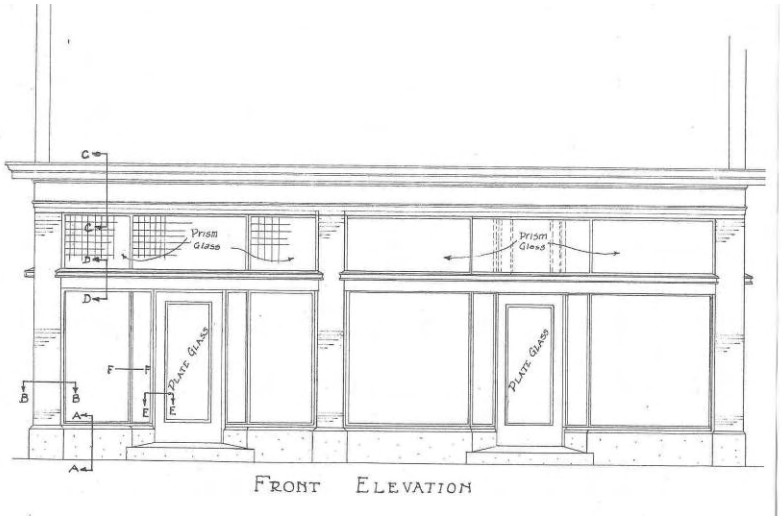
DESCRIPTION: This symmetrical, two-story, wood-frame, flat-roof, early twentieth-century commercial building incorporates a 1924 one-story storefront at its street facade. The primary façade of the original building has twin three-sided bay windows at the second floor, corner pilasters, and a Neoclassical modillioned cornice.

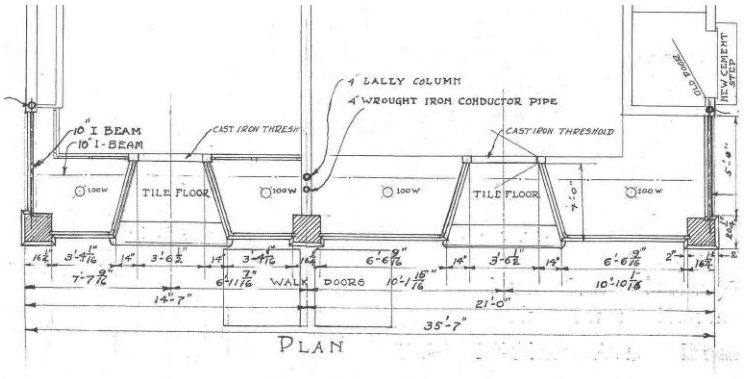
The 1924, flat-roof storefront addition projects four feet forward from the original building. The addition features Medina sandstone watertables and sills. The bulk of the exterior walls of the addition are devoted to large storefront windows. Brick piers at the corners support a wood entablature with modillioned cornice. The addition contains two storefronts of different widths. The original multi-light transom windows have been covered with sign panels and awnings.

The original wood sash have been replaced with vinyl units.

SIGNIFICANCE: Constructed about 1900, the Higbie Building, although not architecturally distinguished, represents the modest scale and detailing typical of the buildings found in Brighton Village prior to the area's annexation by the City of Rochester.

The storefront addition illustrates popular taste during the 1920s. The changes that were made to the building during the 1920s illustrate the trends of expansion and urbanization that modified the Winton/East commercial area in the period between 1905 and World War II. The addition was designed by O. W. Dryer a well-known local architect. Dryer may have also designed the similar storefronts added to the Women's Christian Temperance Building (1800-1802) which were built a few years earlier.





O. W. Dryer architectural plans for 1924 storefront addition[3]

[3] From University of Rochester River Campus Libraries Rare Books and Special Collections, Dryer Architectural Collection, 1886-1989.

BUILDING: Women's Christian Temperance Building (Blu Water/Michael Spitale Salon/Sternberg Design Associates)

ADDRESS: 1800-1802 East Avenue

DATE OF CONSTRUCTION: 1895

DESCRIPTION: This symmetrical, two-and-one-half-story, wood-frame, hip-roof, Queen Anne style building incorporates a ca. 1916 one-story storefront at its street facade. The exposed foundation includes sections of rock face aslar as well as brick.

The front of the building above the storefronts and the secondary facades retains much of its original appearance. At the façade, symmetrical twin three-sided bays rise above the main roof eave to prominent hip roofs capped with metal finials. The bay spandrels between the second-floor and attic windows have small centered bull's eye windows. Colonial Revival two-story corner pilasters and a wide frieze with unusual lattice panels occur at the front and sides of the building. The steeply pitched hip roof has broadly overhanging flared eaves.

The ca. 1916, flat-roof storefront addition projects about ten feet forward from the original building. The addition features Medina sandstone watertables and sills. The bulk of the addition's exterior walls are devoted to large storefront windows. Brick piers at the corners support a wood entablature with modillioned cornice. The addition contains two storefronts flanking an entrance to the upper level of the building. The entrance incorporates an intricate multi-light lunette transom window.

The two-story porch at the rear of the building appears to be a recent replacement of an earlier structure. Other alterations include the removal of the street entrance at the east storefront and grooved plywood panels applied to the storefront transoms.

SIGNIFICANCE: Constructed in the 1895, the Women's Christian Temperance Building is the oldest building remaining in the area that was the core of Brighton Village. The building is historically significant for its association with the Woman's Christian Temperance Union and as the location of Brighton Village government offices. Architecturally the building is representative of nineteenth-century Queen Anne architecture and early twentieth-century commercial design.

The building served as the meeting site for the local chapter of the Woman's Christian Temperance Union (W. C. T. U.). The group was organized in 1874 by women who were concerned about the problems alcohol was causing their families and society. In many towns in Ohio and New York in the fall of 1873, women concerned about the destructive power of alcohol met in churches to pray and then marched to the saloons to ask the owners to close their establishments. They met with success but it was only temporary so by the next summer the women concluded that they must become organized nationally. This led to the founding of the National Woman's Christian Temperance Union - the oldest continuing non-sectarian woman's organization in the world.

The Brighton W. C. T. U. chapter was formed in 1879 and in 1888 purchased an existing house to be used as their headquarters. The present building was constructed in 1895 and contained a library, lodge room, rooms for young men and a large lecture hall. The building also served as a meeting location for the Brighton village government. [4]

Shortly after the Village of Brighton was annexed by the City of Rochester in 1905, the building was converted into rental apartments. In 1916 a building permit was issued by the city to permit the construction of new storefronts at the East Avenue façade. The storefront addition illustrates popular taste during the 1910s. The alterations to the building are consistent with the trends of expansion and urbanization that modified the Winton/East commercial area in the period between 1905 and World War II. The similarity to the storefront added to the adjacent building to the west by architect O. W. Dryer a few years later, suggest that both additions may be by the same designer.

Although this building possesses historic significance, it does not appear to meet National Register eligibility under Criteria A (association with historic events of trends) because the extant historic fabric, i.e. the auditorium or other spaces associated with the W. C. T. U. and Brighton government, no longer exist. In other words, in its current state, the building no longer conveys its historic associations.

[4] Katherine Eggers Comeau. 2001. "1800 East Avenue (Former Brighton W.C.T. U. Hall), Summary of findings." (typescript)

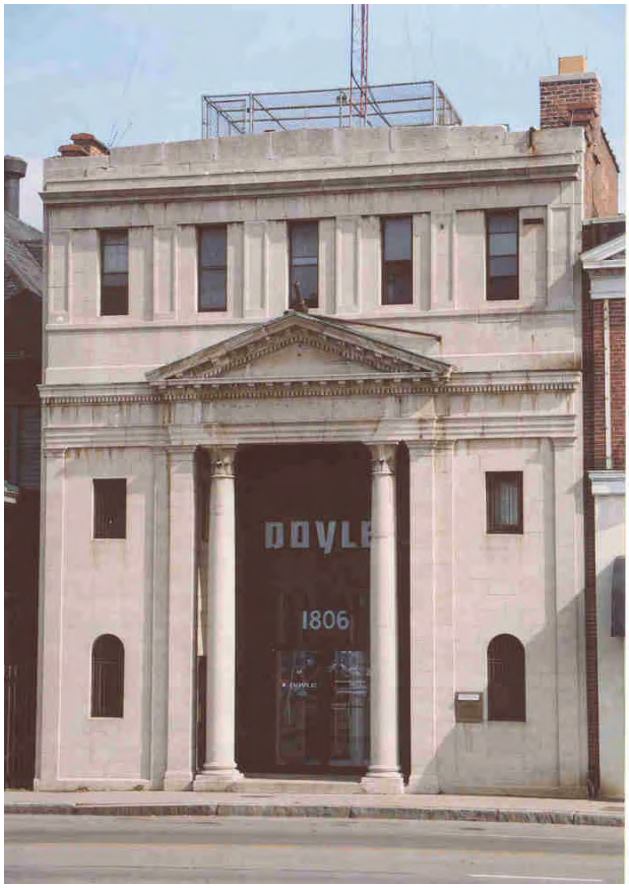
BUILDING: Old Central Trust Building (Doyle Security Systems)

ADDRESS: 1806 East Avenue

DATE OF CONSTRUCTION: 1925

DESCRIPTION: This symmetrical, three-story, masonry, commercial building is clad with a Neoclassical cast stone facade. Fitted to a long, narrow urban site, the building's architectural embellishment is limited to the front façade. A massive cornice separates the third story from the two levels below. The vault-like configuration of the façade is dominated by a centered, tall, narrow, two-story, deeply recessed opening. The pilastered surround at the opening projects slightly from the primary plane of the façade. Free-standing Temple-of-the-Winds columns are located at each side of the opening. Above the entrance is a full pediment with modillioned cornice. The five-bay third floor is treated as an attic story with cornice and stepped parapet.

The original two-story banking hall within the building has been subdivided for office use by the insertion of an intermediate floor. The main entrance has been altered by the insertion of an aluminum-clad wall and storefront door system. A non-contributing one-story wing (added about 1954) is located at the rear of the building.


DOYLE
1806


CENTRAL

SIGNIFICANCE: Constructed in the 1920s, the Old Central Trust Bank Building is a good example of early twentieth-century bank design. Use of the Neoclassical style was often used on Banks during the period as a way to project stability and permanence while the allusion to a vault in the building's façade gave the impression of security. The building's substantial materials, architectural sophistication, and compact footprint illustrate the urbanization that reshaped the East/Winton area in the period between 1905 and the end of World War II.

Due to the alteration of the building's interior and the loss of its original entrance door and surrounding trim this building is no longer National Register eligible.

BUILDING: J. H. Quine Building (Fountain Bleu Coiffures)

ADDRESS: 1812 East Avenue

DATE OF CONSTRUCTION: 1945

DESCRIPTION: This symmetrical, two-story, masonry, commercial building is an example of the popular Georgian Revival Style applied to many public and commercial buildings during the first three quarters of the twentieth century. Fitted to a long, narrow urban site, the building's architectural embellishment is limited to the front façade. Stucco cladding at the first floor contrasts with Flemish bond brick cladding at the second floor. The storefront consists of a recessed entrance flanked by large storefront windows. An ample area of blank wall between the storefront and its cornice was originally intended for a sign. Above the cornice are three tall, narrow double-hung windows with decorative wrought metal balconettes. Flat arches, constructed with gauged brick, span the window openings. A classically inspired pediment crowns the street façade. A limestone date panel is centered in the brick field of the tympanum.

The side and rear of the building, intended to be concealed by other buildings, are clad with stucco and feature a regular arrangement of window openings. The building incorporates a flat roof with parapets capped with clay tile coping.

The building has been altered by aluminum replacement windows and fixed vinyl awnings.


FOUNTAIN BLEU
HAIR
1812
NAILS


FOUNTAIN BLEU

SIGNIFICANCE: Constructed in the 1940s, the Quine Building is one of the last buildings constructed in the area that continued to follow pre-World War II patterns of design, including its narrow footprint completely filling the width of the lot, vertical proportions, and its recessed-entrance storefront located flush to the sidewalk.

The Quine building is a representative example of mid twentieth-century commercial architecture executed in an eclectic interpretation of the Colonial revival style.

Although this building is older than fifty years old, it has suffered some loss of architectural integrity and does not possess outstanding architectural distinction. At the present time (2004), this building does not appear to qualify as individually eligible for National Register listing.

BUILDING: Central Trust Bank Building (M & T Bank/vacant)

ADDRESS: 1820 East Avenue

DATE OF CONSTRUCTION: Ca. 1975

DESCRIPTION: This asymmetrical, four-story, steel-frame, bank/office building is designed in the variation of Modernism prevalent from 1970 to 1985 incorporating articulated building volumes and an emphasis building mass. Typical of the period, the bulk of the building is set well back from the established street wall defined by the older commercial buildings to the west. The upper three floors of the tower are clad with precast concrete panels, while the first floor is clad with brick and sections of a glass storefront system. Windows at the upper floors are recessed and are organized in a repeating wide/narrow pattern. Attached to the East Avenue face of the tower are a skewed, brick-clad stair tower and a one-story glass-walled pavilion. A three-level concrete-frame parking garage is built into the slope north of the building.

SIGNIFICANCE: This visually prominent site is located in the center of what was once Brighton Village. From the late nineteenth century to the mid 1940s the site housed Caley & Nash, a carriage workshop that evolved into an

automobile body shop. About 1950, the site was cleared and a gas station occupied the site until the Central Trust Bank building was built in the 1970s. The northern portion of the site, now occupied by the parking garage, was the site of the ca.1884 Brighton School building and a wood-frame house. After Brighton Village was annexed by the City of Rochester, the school became a branch library. By the mid 1960s, both the school and house had been demolished and replaced by a parking lot.

Although the building is a representative example of late twentieth-century Modernism, it is not historically significant due to its age.

BUILDING: Wendy's

ADDRESS: 1844 East Avenue

DATE OF CONSTRUCTION: Ca. 1978

DESCRIPTION: This symmetrical, one-story, brick-clad masonry fast-food restaurant is set back from the street in the center of the lot. The building is surrounded by parking and a stacking lane for a drive-up window.

The building has been altered by the application of a simulated masard roof to its cornice and a greenhouse eating area located at the west façade.

SIGNIFICANCE: The building is representative of the suburban one-story box-like fast food restaurants which were introduced in the 1970s and have continued to dominate commercial areas in the United States

since that time. Although corporate identity are expressed through the application of color and roof detailing the building lacks architectural distinction..

Although the building is a representative example of a common late twentieth-century building type, it is not historically significant due to its age and it is not National Register eligible.

BUILDING INVENTORY – East Avenue, south side

BUILDING: Brighton Presbyterian Church[5]

ADDRESS: 1783-1803 East Avenue

DATE OF CONSTRUCTION: 1913-1914

DESCRIPTION: This asymmetrical, stone-clad, three-bay, one-and-one-half-story, side-gable, English Gothic Revival church consists of a rectangular main block with an engaged square tower. The church is set back from the street behind a large lawn. Attached to the west end of the church auditorium is an L-shaped two-and-one-half-story wing housing classrooms, meeting rooms, and offices. The primary facades of the church are clad with uncoursed rock-face ashlar. Much of the west wing and rear of the church are clad with buff brick. The steeply pitched roofs on the sanctuary and wings are clad with rectangular gray slate.

A large projecting gable, containing a large tripartite pointed-arch window glazed with opalescent glass, dominates the primary façade of the auditorium. Decorative buttresses flank each side of the window. Raking parapets occur at the projecting gable and the east gable of the auditorium.

The main entrance to the church occurs at the base of the tower beneath a gable roof canopy. The tower has an articulated two-story base. On each face above the base are twin lancet openings divided by intricate plate tracery into smaller louvered openings. The flat-roof tower is crowned by a crenellated parapet.

The ca. 1954 west wing has random course ashlar foundation. A dressed stone beveled watertable caps the foundation. The wing incorporates many Tudor Revival elements including quoined surrounds, a three-sided bay, grouped casement windows, and asymmetrical form.

[5] The statement of significance describing the Brighton Presbyterian Church is based on the NYS Building Inventory form for the building in contained in Volume III of the 1986. "City of Rochester Historic Resources Survey".

SIGNIFICANCE: The Brighton Presbyterian Church is architecturally significant as an example of the English Gothic Revival style that was a popular form of ecclesiastical design during the first few decades of the twentieth century. The church was designed by Leonard Waasdorp working in the office of Gordon and Madden, one of Rochester's most prominent early twentieth-century architecture firms.

The building's picturesque asymmetrical form, large square engaged tower, parapetted gables, buttresses, and steeply pitched slate-clad roofs are characteristic features of the style. The stone facing on the church was quarried in Rochester in a quarry off Goodman Street.

The church was originally organized in 1817 at Orringh Stone's house on East Avenue. The first church building was located in the southwest

section of the Brighton Cemetery at the end of Hoyt Place. After purchasing the homestead of Benjamin Blossum, the church built a new larger brick building on East Avenue in 1868. In 1912, planning for the current auditorium was begun. The building was dedicated in 1914 on a site abutting the east side of the older building. The 1868 building remained in use until the early 1950s when it was demolished to make way for the current educational building.

As a well-preserved work of one of Rochester's early twentieth-century architectural firms, and as the oldest surviving religious organization in the Brighton area, the church appears to be potentially eligible for National Register listing under National Register Criteria A and C.

BUILDING CONDITION ASSESSMENT

Purpose

This section of the report is the result of a two-phase process. The first step was to assess the physical condition of the four older buildings that are located on the proposed site of the new Wegmans store. After identifying potential problems we developed a list of repairs needed to stabilize the buildings; prevent further deterioration; and to address significant fire and safety issues. We estimated the probable costs of completing the repairs required for each building.

The second phase of the building condition assessment included developing a list of the work needed to rehabilitate the four buildings to meet modern commercial standards; comply with current building code requirements; and provide handicapped accessibility. We estimated the probable construction costs for the work identified.

Methodology

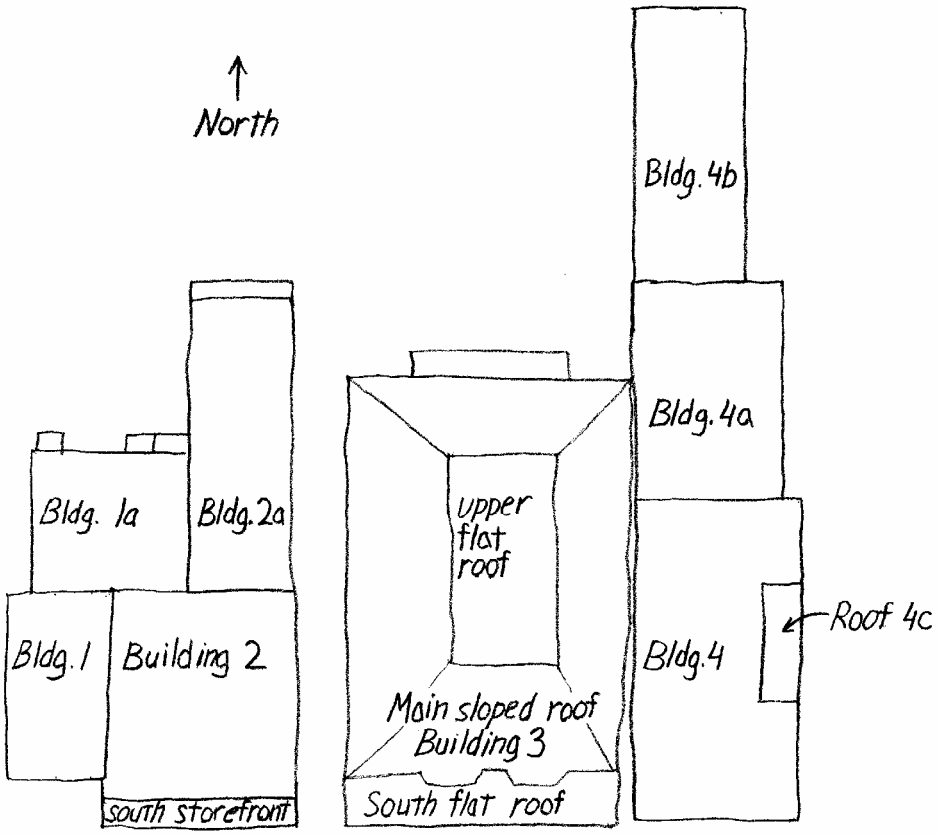
The building condition assessment is based on observations made by John Bero and Michael Gable-Bain during site visits on April 12, 14, and 16, 2004. *The update inspection was conducted by John Bero and John Page October 13, 2009.*

Inspections were visual, areas concealed from view were not opened or uncovered. Where accessible, roofs were inspected at close range. Inaccessible roofs were viewed from accessible locations Photographs were made to document observations and are included in the report. . *Limited additional photographs were made and included in the updated report.* The Secretary of the Interior's *Standards for Rehabilitation* were used as the basis for recommendations in this report, please refer to Attachment 1.

Arrangement

The building condition assessment consists of four sections, with each addressing one of the four buildings we inspected.

Each section contains two work lists. The work lists include work items, associated costs, and annotated illustrative photographs. The first list identifies stabilization work required to preserve the building as it exists, including structural and exterior envelope repairs. The rehabilitation work list outlines optional work for rehabilitating interior finishes, mechanicals, and meeting ADA accessibility requirements. The second work list incorporates the totals from the first work list to provide total project costs and total square foot costs for each building. A summary of our findings is included in the condition assessment section of the Conclusion section. Annotations indicating different roof areas follow the labels marked on the sketch below. . *The work lists and other sections have been updated.*



Limitations

No finishes or trim were removed and no concealed spaces were opened. Chimney flues were not inspected.

The inspection and report were conducted by an architect and an architectural conservator. No engineers were engaged to examine structural, or mechanical (plumbing and heating) systems. An electrical engineer was engaged to examine the electrical service in order to determine its current capacity and recommend modifications to accommodate a planned elevator. A few observations were made about other aspects of the electrical system but no systematic electrical inspection was undertaken. The electrical engineer's report is included as Attachment 3.

The condition assessment is not an Historic Structure Report or a Condition Report but rather a brief overview of present conditions.

Priorities

A list of work items was prepared and the work was prioritized as follows:

1) Non-deferrable: Life safety and immediate stabilization.
2) Preservation: Work that is deferrable, but required for long-term stabilization and longevity of building fabric.
3) Optional: Restoration of historic detail and optional improvements/upgrading.

Priorities were assigned, without knowledge of available funds, on the basis of an item's importance as it relates to occupancy and preservation of the property.

Prevailing Wages

Prevailing wages were used for the estimates in this report. Prevailing wages are determined by the Secretary of Labor and closely approximate union wages. The following wage rates for Monroe County are supplied by the NYS Department of Labor and the overhead and profit percentages are from *Means Repair & Remodeling Costs Data*, 22nd edition. . *Update costs rely on 2009 Prevailing Wage Rates and the 29th edition of Means Repair & Remodeling Costs Data. Building costs between July 2004 and October 2009 have increased by and average of 18.7%. We have adjusted non-labor estimate costs accordingly. Estimate costs for labor are adjusted according to the rates listed below.*

Trade	Wage/Hour	Overhead & Profit	Total
Carpenter	~~$33.52~~ *$41.85*	~~66.50%~~ *65.60*	~~$56~~ *$69*
Laborer	~~27.07~~ *$34.97*	~~66.50%~~ *65.80*	~~42~~ *58*
Mason	~~34.48~~ *42.55*	~~64.50%~~ *62.10*	~~57~~ *69*
Roofer	~~30.79~~ *37.97*	~~81.80%~~ *80.2*	~~56~~ *68*
Painter	~~39.41~~ *37.06*	~~62.30%~~ *60.20*	~~48~~ *59*
Plumber	~~35.92~~ *47.74*	~~56.00%~~ *55.40*	~~56~~ *74*
Electrician	~~35.46~~ *46.75*	~~54.30%~~ *54.00*	~~55~~ *72*

Markup

Included in the estimated costs for general construction work is a markup of 1.8, for mechanical work the markup is 1.6, and for speciality contractors the markup is 1.3. The markups are arrived at as follows:

	GC	Mechs	Speciality
General Conditions	10%	5%	5%
General Contractor's Overhead and Profit	15%	15%	10%
Contingency	20%	15%	10%
Fees	15%[6]	10%	5%
Compounded and Rounded	1.8[7]	1.6	1.3

[6] Fees vary widely depending on project size, complexity , and tasks involved.

When estimating professional services (engineering, etc.) a markup of 1.2, which includes only the contingency, is used.

Accuracy

Cost estimates should be used with considerable caution since they are based on limited visits and information available in our office: estimating handbooks and past experience. No contractors were consulted. A more elaborate planning process is required to determine the actual costs you can expect; prices included in this report are, at best, guesses based on limited time and budget. Accordingly, Bero Architecture cannot warrant or represent that bids or negotiated prices will not vary from the prices shown.

Estimated Costs below $10,000 are rounded off to the nearest $100 and above $10,000 to the nearest $1000.

Building Codes

New York State has adopted a family of codes that regulate the operation and construction of buildings.

Building Operation - Codes applicable to operation of all existing buildings include:

Fire Code[8] *of New York State*
Plumbing Code of New York State
Mechanical Code of New York State
Fuel Gas Code of New York State.
Property Code[9] *of New York State*

Bero Architecture recommends that operators of buildings to which the public has access obtain copies of these codes, review their provisions, and comply with their requirements. The *Fire Code* and the *Property Code*, in particular, are written for the average building operator and do not require the specialized knowledge assumed by writers of the Plumbing, Mechanical, and Fuel Gas Codes - This report does not include a comprehensive survey of these codes (that is a major

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[7] Percentages are compounded; not added.

[8] The *Fire Code of New York State* is intended to, ". . . establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises." It deals with maintaining a fire-safe building.

[9] The *Property Code of New York State* is intended to, ". . . ensure public health, safety, and welfare insofar as they are affected by the continued occupancy and maintenance of structures and premises." It deals primarily with issues such as structural integrity and maintenance of the exterior envelope.

task, well beyond the scope of this report) but where violations were observed we have attempted to point them out and, in some cases, to cite the applicable code.

Building Changes - Codes applicable to changes include the operational codes discussed above plus:

The Building Code of New York State
The Residential Code of New York State
The Energy Code of New York State

These apply to new construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition. In other words, these Codes are usually triggered only by change; absent changes, there is rarely an obligation to alter your building to comply with these Codes. If changes are minor, only the change needs to comply with these Codes. If changes are major, the entire building may be required to comply with these Codes.

So, as your building stands, you are not required to comply with most provisions of the Building or Energy Codes. Nevertheless, improvements to safety can be made and the Building Code is a decent standard to use as a target for improvements. The comments in this report are based on the assumption that you wish to work toward meeting the standards established by the *Building Code*.

The *Building Code* incorporates by reference the *National Electrical Code* which governs the installation of electrical equipment in buildings. Most electricians are familiar with this code. It has evolved outside the normal governmental code development process, primarily based on the need of insurance companies to have some confidence that the buildings they insure are reasonably safe from fires caused by faulty electrical installations. A strong recommendation of this report is that you have the building inspected by an electrical engineer or licensed electrician and that the building be brought into compliance with the National Electrical Code.

BUILDING 1 *and 1A* (1794 East Avenue - George Higbie Building annex)

Stabilization

This small one-story frame building is built over an inaccessible crawl space. The grade is high around the building, causing deterioration of its wood sills. Although the crawlspace could not be inspected, the high grade and lack of ventilation are probably keeping the area wet. The effect of these conditions is evident in the noticeably soft floors, particularly at the south end of the building. We believe the sills and floor system will require replacement. Recent roof leaks have been reported although no active leaks were observed. Much of the attic insulation has been displaced, reducing its effectiveness. The current tenant reported that during last winter the rear door head deflected under snow loads making it inoperable. This condition was probably caused by undersized deflecting roof members. Continued use of the building will require a structural analysis of the adequacy of its roof structure.

This small building has significant deterioration and is in poor condition.

UPDATE COMMENTS:
This building has been unoccupied since the last inspection.

Additional deterioration noted included:
1. West gable roof shingles missing and failing.
2. Further rear building 1A floor deflection.
3. Further west wall exterior siding deterioration.
4. North-west downspout is missing. The stone foundation in this area is further deteriorated.
5. North-west wooden porch is failing and is unsafe.

Rehabilitation

This building is all commercial space. It is not handicap accessible, the mechanicals are outdated, and the building must be rehabilitated to provide modern useable commercial space. The tenant's space is currently divided between this building and the west section of building 2. We assume the west wall of building 2 will be reinserted and tenant space will be limited to building 1*/1A*.

The low grade around the building allows for easy provision of accessible entry, but a new accessible toilet room is required. We assume all other mechanical and electrical systems will be upgraded, as will interior finishes.

Photo	Work Item	Essential	Preservation	Optional	Qty	Units	Unit Cost	Subtotal	Markup	Total
	Site Work									
3	Grade around building		*$500*					*$292*	1.8	*$500*
	labor				4	mh	*$58*	*$232*		
	material				1	ls	*$60*	*$60*		
	Roofing									
4, *24*	Replace roofing on west half of building 1		*$7,400*		383	sf	*$11*	*$4,213*	1.8	*$7,400*
5,6	Provide mod. bit. on 3 small roofs at north of building 1a		*$3,500*		16	ch	*$126*	*$2,016*	1.8	*$3,500*
7,8	Replace flashing and counter flashing around roofs 1 and 1a		*$3,400*		65	lf	*$30*	*$1,941*	1.8	*$3,400*
8	Pitch the valley between buildings 1and 2 to the north		*$6,000*					*$3,438*	1.8	*$6,000*
	remove existing roofing, capped roof penetrations, and fence at north				8	mh	*$58*	*$464*		
	pitch deck to drain north				1	ls	*$478*	*$478*		
	provide new EPDM membrane				144	sf	*$9*	*$1,296*		
	repair flashing at building 2				40	lf	*$30*	*$1,200*		
9	Provide flashing at south roof		*$700*		17	lf	*$24*	*$408*	1.8	*$700*
	Provide ridge and one side eave vents at attic building 1		*$2,300*		37	lf	*$35*	*$1,295*	1.8	*$2,300*
10	Provide insulation and vapor barrier for roof 1a		*$1,900*		899	sf	*$1.2*	*$1,079*	1.8	*$1,900*
	AND									
10	Provide finished drywall for east ceiling in 1a		*$2,800*		450	sf	*$3.5*	*$1,573*	1.8	*$2,800*
	Stormwater Management									
	Reattach existing gutters with concealed fasteners ($1,200)							*$807*	1.8	*$1,400*
11	labor				5	ch	*$126*	*$630*		
	material				1	ls	*$177*	*$177*		
	AND									
	Repair existing gutters and downspouts ($400)				4	mh	*$69*	*$276*	1.8	*$500*
11,12	OR									
	Provide new galvanized steel gutters and downspouts		*$7,300*		102	lf	*$41*	*$4,182*	1.8	*$7,300*
12	Provide cast iron cleanout "T"s at stormsewer connections		*$900*		3	ea	*$177*	*$531*	1.8	*$900*
	OR									
12	Provide splashblocks at all downspouts ($300)				3	ea	*$58*	*$174*	1.8	*$300*
12	Provide connection to stormsewer		*$14,000*		95	lf	*$85*	*$8,075*	1.8	*$14,000*
	Masonry									
13	Repoint/relay chimney top at west wall of building 1a		*$3,100*		1	ls	*$1,770*	*$1,770*	1.8	*$3,100*
	OR									
13	Remove chimney if not in use ($700)							*$458*	1.8	*$800*
	demo				2	vlf	*$22*	*$44*		
	repair wall				6	mh	*$69*	*$414*		
14,15	Repair masonry foundation wall at N,S,W		*$21,000*		96	ch	*$127*	*$12,192*	1.8	*$21,000*

	assumes walls can be repaired using piers with sound									
	foundations currently in place									
	Carpentry									
16	Add additional rafters in building 1 (assume 2x8, 16' oc)		*$4,000*		648	lf	*$3.5*	*$2,268*	1.8	*$4,000*
10	Sister damaged roof joists in east half of building 1a	*$800*			3	ea	*$157*	*$471*	1.8	*$800*
14,15	Repair probable sill rot in buildings 1 and 1a (guess)		*$59,000*		182	lf	*$184*	*$33,488*	1.8	*$59,000*
	Repair probable joist damage in building 1		*$10,000*		684	sf	*$8*	*$5,677*	1.8	*$10,000*
25	*Replace floor const. in building 1a*		*$30,500*		870	sf	*$20*	*$17,400*	1.8	*$30,500*
15	Repair siding and cornice where damaged		*$5,300*		24	ch	*$127*	*$3,048*	1.8	*$5,300*
23	*Replace north wood porch*	*$2,700*			*12*	*ch*	*$127*	*$1,524*	1.8	*$2,700*
	Doors & Windows									
17	Replace south door grille		*$200*		1	ea	*$131*	*$131*	1.8	*$200*
	Finishes									
18	Paint building		*$5,000*		1,191	sf	*$2*	*$2,858*	1.8	*$5,000*
19	Repair cracked or failing interior finishes		*$800*		8	mh	*$59*	*$472*	1.8	*$800*
19	Paint water damage and similar failures		*$400*		4	mh	*$59*	*$236*	1.8	*$400*
20	Drywall and paint wall between spaces 1 and 1a		*$2,100*		171	sf	*$7*	*$1,197*	1.8	*$2,100*
	Mechanical									
21	Provide support for air conditioners on roof 1a		*$500*		2	ea	*$218*	*$436*	1.2	*$500*
22	Remove abandoned mechanicals		*$900*		4	ch	*$130*	*$520*	1.8	*$900*
	Electrical									
21	Conceal surface mounted wiring or run in conduit		*$2,000*		16	*mh*	*$72*	*$1,152*	1.8	*$2,000*
	Totals by priority	*$4,000*	*$196,000*	*$0*						
	total priority 1 + priority 2		*$200,000*							
	total all priorities			***$200,000***						
Notes										
1	*Labor costs, [man hours (mh) and crew hours (ch)], have been adjusted to reflect current Monroe County Prevailing Wage Rates provided by New*									
2	*Unit costs have been increased by 18.7% based on the ENR Historical Cost Index for Building Construction.*									
3	*Modified cost and text is 'italized' in 'blue'.*									

Work Item	Optional	Qty	Units	Unit Cost	Markup
Foundation	$0				
Substructure	$0				
Superstructure	$0				
Exterior Closure	$0				
Roofing	$0				
Interior Construction					
Residential		0	sf		
demo			sf		1.3
partitions			lf		1.8
doors			ea		1.8
ceiling			sf		1.8
floors			sf		1.8
Commercial		1,560	sf		
demo	*$12,200*	1,560	sf	*$6*	1.3
sidewalls	*$12,300*	182	lf	*$37*	1.8
partitions	*$3,200*	26	lf	*$66*	1.8
doors	*$3,100*	3	ea	*$648*	1.8
ceiling	*$10,000*	1,560	sf	*$3.5*	1.8
floors	*$13,500*	1,560	sf	*$4.7*	1.8
Conveying					
Elevator			ls		1.3
Lift			ls		1.3
Mechanical					
PLUMBING					
Accessible toilets					
water closet - tank type	*$3,200*	1	ea	*$2,018*	1.6
HC wall hung lavatory	*$2,900*	1	ea	*$1,789*	1.6
toilet partition	*$1,700*	1	ea	*$1,040*	1.6
toilet accessories	*$700*	1	ea	*$457*	1.6
Additional toilets (non-accessible)					
water closet - tank type			ea	*$1,470*	1.6
wall hung lavatory			ea	*$1,364*	1.6
toilet partition			ea	*$684*	1.6
toilet accessories			ea	*$336*	1.6
bath tub			ea	*$1,380*	1.6
HVAC					
commercial	*$33,000*	1,560	sf	*$13*	1.6
residential			sf		1.6
ELECTRICAL					
commercial	*$33,000*	1,560	sf	*$13*	1.6
residential					1.6
Specialities	*$0*				
Site Work					
Ramps	*$2,400*	3	lf	*$447*	1.8
Totals - *Rehabilitation*	***$131,000***				
Building Stabalization (total all priorities)	*$200,000*				

Grand Total *- Stabalization and Rehabilitation*	***$331,000***				
Square Feet - Total	*1,560*				
Cost / Square Foot	*$212*				
Notes					
1 Costs are increased by 18.7% based on the ENR historic cost index for building construction.					
2 Stabalization costs are from the Stabalization Work List.					
3 Modified cost and text is 'italized' in 'blue'.					

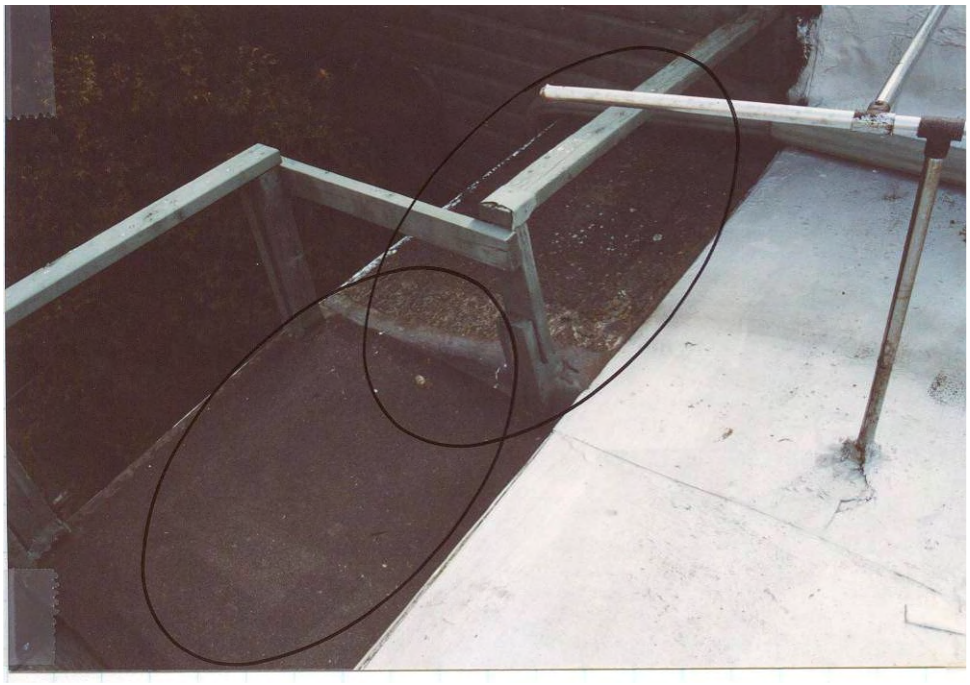
1. Building 1 looking north.

2. Buildings 1 & 1a looking south

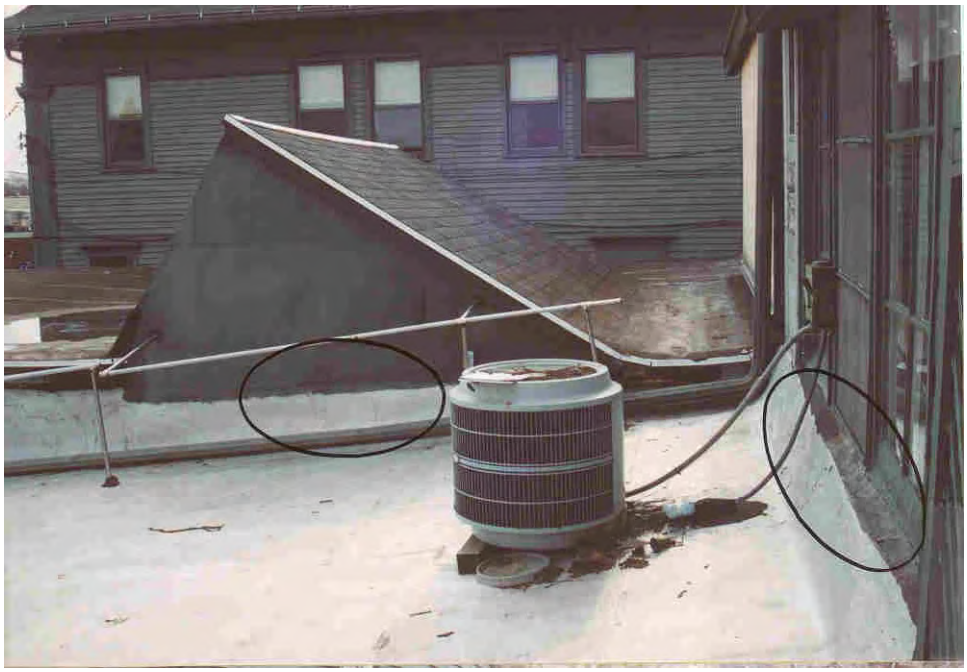
3. Grade sloped to building 1a at north.

4. Deteriorated roofing on building 1. Note sag in roof structure.

5. Deteriorated roofing at NW of building 1 1Deteriorated roofing at NW of building 1a.



6. Deteriorated roofing, NE of corner building 1a.

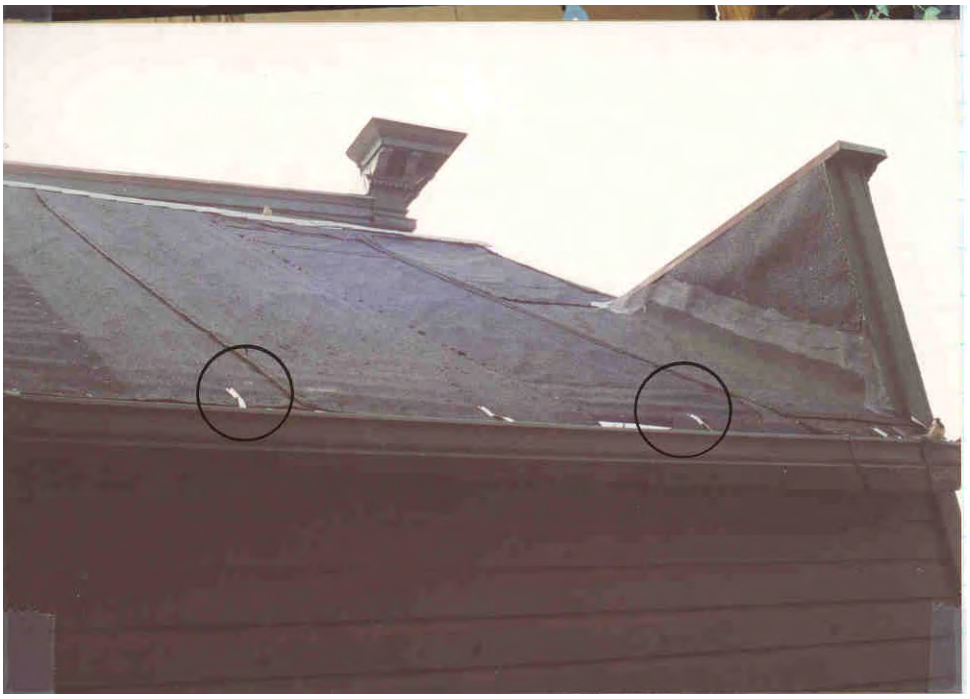


7. Tar covered flashing and missing counterflashing.

8. Valley between buildings 1 and 2, note standing water.

9. Poor flashing at south roof.

10. No insulation or finish at east side.



11. Gutter hangers with exposed fasteners.

12. Downspout dumping water at wood sill note all wood in contact with contact to the ground.

13. Deteriorated mortar joints and missing cap.

14. Suspected foundation failure, note arch and bow of west walls.

15. Foundation stones missing at west wall, note rotted wood in contact with ground.

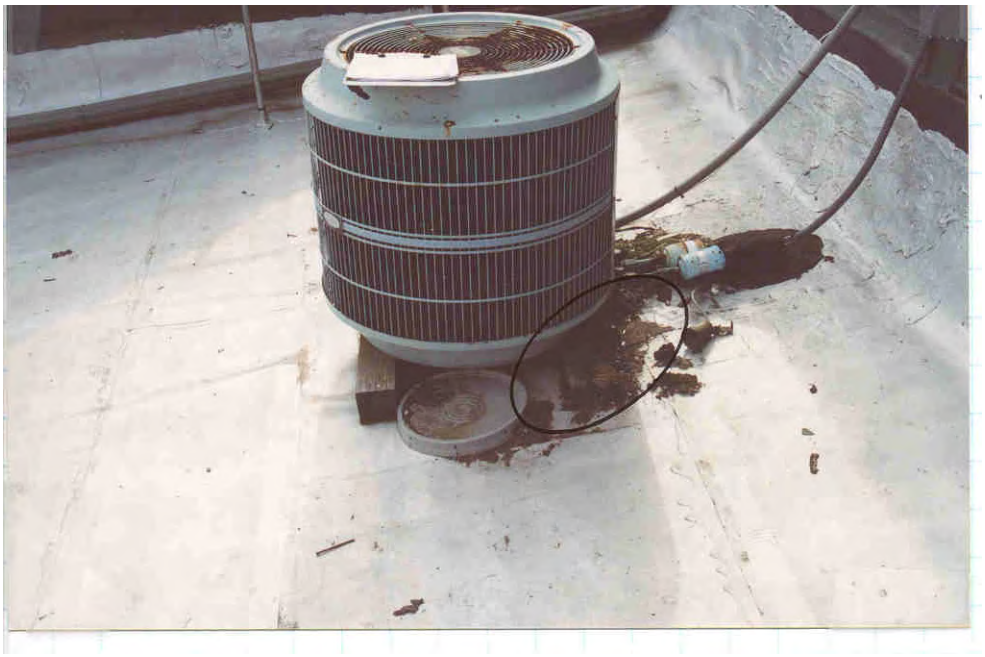
16. Attic of building rafters recommended

17. Cracked grille on door, note small step into building.

18. Failing paint

19. Water damage in building 1a west side.

20. Unfinished wall and exposed wiring at north wall of building 1.



21. Rusted and poorly supported air conditioner.

22. Abandoned mechanicals and debris in building 1 attic.

23. North porch construction failure. Unsafe condition.

24. West gable roofing deterioration.Compare to 2004 photo #11.

25. Building 1A sagging floor, west side at junction with Building1.

BUILDING 2 *and 2A* (1796 East Avenue - George Higbie Building annex)

Stabilization

This two-story wood-frame building contains two stores on the ground level and a single apartment on the floor above.

Despite the high *grade* on the east side of the building and the lack of ventilation, the cellar remains relatively dry *(exception – see Update Comments below)*. Both the second and first floors slope to the west suggesting *settlement*. The modern concrete block west foundation wall shows no apparent signs of movement, suggesting the building is now stable.

A one-story wing projects from the north side of the building. The wing covers a crawl space and the sills appear rotten. Sill and foundation deterioration appear to have caused settlement of the east wall (photo 22). A large skylight provides light in this area (photo 20). Both the skylight and the surrounding roof show obvious structural deflection. There is widespread evidence of past roof leaks.

Although the rear wing has several significant problems the main section of the building remains in generally sound condition.

UPDATE COMMENTS:
This building was occupied during the last inspection. The first floor commercial space has been unoccupied since 2005. The second floor apartment remains occupied. We did not make observations in the apartment or in any accessible attic space.

Additional deterioration noted included:
1. North porch canopy roofing and gutters have further deteriorated.
2. North porch canopy columns deteriorated further and shifted from plumb.
3. The north-east corner of the basement is wet and has silt intruding into the room. This suggests significant water intrusion and is likely undermining the foundation walls in this area.
4. The north end of the roof has further deteriorated as evidenced by roof membrane joint separation.
5. The south first floor, built-up roofing has further deteriorated. The second floor, south, bay window metal roofing has further deteriorated.

Rehabilitation

The rehabilitation costs include updating the building's mechanical and electrical systems serving both floors. Currently, the building is not handicap accessible at either floor. For the purpose of estimating rehabilitation costs for the building, we assumed the residential space at the second-floor level will remain accessible only by stair. A ramp and toilet room will be required at the first floor for ADA compliance. The first-floor space is currently split between the building 1 and building 2 tenants. To provide a better configuration with adequate rest room facilities we have assumed that the first floor will be reconfigured to accommodate one tenant and that the finishes will be up-graded to create a more attractive space. The rehabilitation work also includes upgrading the interiors of the second-floor apartment.

Photo	Work Item	Essential	Preservation	Optional	Qty	Units	Unit Cost	Subtotal	Markup	Total
	Site Work									
4,5	Remove ~~trees and~~ stumps at west of building 2a		*$1,600*		3	ea	$300	$900	1.8	*$1,600*
	Grade at west side of building 2a after tree removal		*$500*					$290	1.8	*$500*
	labor				4	mh	$58	$232		
	material				1	ls	$58	$58		
	Roofing									
6	~~Coat roofing on building 2~~ *not required*		*$0*		~~1,548~~	~~sf~~	~~$0.50~~		1.8	*$0*
7	Coat roofing on building 2a		*$1,300*		1,218	sf	$0.59	$719	1.8	*$1,300*
37,38	*Replace north porch roofing and flashing*		*$1,200*		*120*	*sf*	*$5.50*	$660	*1.8*	*$1,200*
41	*Repair north roofing and flashing at building 2A*		*$500*		*4*	*mh*	$68	$272	*1.8*	*$500*
10	Replace counter flashing at roof 2a joint with building 2		*$1,100*		20	lf	$30	$600	1.8	*$1,100*
8,9,10	Provide counterflashing at 3 chimneys		*$1,000*		19	lf	$30	$570	1.8	*$1,000*
7	Provide counterflashing at skylight on building 2a		*$1,300*		24	lf	$30	$720	1.8	*$1,300*
10	Provide flashing and counterflashing at 5 roof penetrations		*$800*		5	ea	$89	$445	1.8	*$800*
10	Provide slope to drain building 2a roof		*$37,000*					$21,193	1.8	*$37,000*
	demo				1,218	sf	$8	$9,744		
	slope to drain				1,218	sf	$2.4	$2,923		
	new EPDM membrane				1,218	sf	$7	$8,526		
11*,42, 43*	Provide roofing at south over storefront		*$3,000*		180	sf	$9.5	$1,710	1.8	*$3,000*
36	Provide flashing at marquee		*$1,100*		25	lf	$24	$600	1.8	*$1,100*
12	Provide new flashings at south roofing over storefront		*$3,300*		36	lf	$53	$1,908	1.8	*$3,300*
13	Flash east wall at asphalt shingle sidewall covering		*$500*		11	lf	$24	$264	1.8	*$500*
	Stormwater Management									
14,15	Provide new galvanized steel gutters and downspouts		*$10,300*		143	lf	$41	$5,863	1.8	*$10,300*
	OR									
14,15	Provide new aluminum gutters and downspouts ($7,500)				143	lf	$36	$5,148	1.8	*$9,000*
	Provide cast iron cleanout "T"s at stormsewer connections		*$600*		2	ea	$178	$356	1.8	*$600*
	Provide connection to stormsewer		*$21,000*		144	lf	$85	$12,240	1.8	*$21,000*
	OR									
	Provide splashblocks at all downspouts ($200)				2	ea	$59	$118	1.8	*$200*
	Masonry									
8,9	Provide new concrete caps and repoint chimneys at building 2		*$6,200*		2	ea	$1,780	$3,560	1.8	*$6,200*
16	Rebuild chimney building 2a		*$5,200*		1	ea	$2,968	$2,968	1.8	*$5,200*
17	Re-pour new slab over cracking north porch		*$1,700*		100	sf	$9.5	$950	1.8	*$1,700*
	AND									
17	Repair wood posts and flash wall		*$2,600*		1	ls	$1,488	$1,488	1.8	*$2,600*

39, 40	*Repair probable undermined and deteriorated NE found.*		*$9,100*		*40*	*ch*	*$127*	$5,080	*1.8*	*$9,100*
18,19	Repair stonework at storefront		*$13,000*					$7,172	1.8	*$13,000*
	remove glazing				8	mh	$69	$552		
	remove stones				8	ch	*$127*	*$1,016*		
	repair foundation				16	ch	*$127*	*$2,032*		
	material				1	ls	*$712*	*$712*		
	reset stones				16	ch	*$127*	*$2,032*		
	replace glazing				12	mh	*$69*	*$828*		
	Carpentry									
20	Strengthen roof framing at skylight		*$9,700*					*$5,555*	1.8	*$9,700*
	open ceiling				8	ch	*$127*	*$1,016*		
	install new beam				16	ch	*$127*	*$2,032*		
	material				1	ls	*$475*	*$475*		
	repair ceiling				16	ch	*$127*	*$2,032*		
	OR									
21	Provide bearing for post supporting skylight ($6,900)							*$4,658*	1.8	*$8,200*
	footing				1	ea	*$594*	*$594*		
	demo and repair of floor				32	mh	*$127*	*$4,064*		
13	Replace asphalt shingle sidewall covering with wood siding			*$3,000*	144	sf	*$12*	*$1,728*	1.8	*$3,000*
22	Repair probable sill rot in building 2a (guess) - *increase due to additional deterioration*		*$44,000*		136	lf	*$186*	*$25,296*	1.8	*$44,000*
23	Repair east wall siding - *increase due to additional deterioration*		*$5,300*		*24*	ch	*$127*	*$3,048*	1.8	*$5,300*
24	Repair siding around oil fill pipes at southeast corner		*$1,000*		8	mh	*$69*	*$552*	1.8	*$1,000*
	Doors & Windows									
37	*Repair north porch framing*		*$500*		*4*	*mh*	*$69*	*$276*	*1.8*	*$500*
16	Replace stormdoor to roof 1a		$600		1	ea	*$328*	*$328*	1.8	*$600*
25	Restore east windows		$6,200		3	ea	*$1,187*	*$3,561*	1.8	*$6,200*
20	Replace tar covered skylight windows		$6,200		3	ea	*$1,187*	*$3,561*	1.8	*$6,200*
26	Repair tar covered windows at northwest corner of building 2		$2,900		24	mh	*$69*	*$1,656*	1.8	*$2,900*
25	Provide flashing over window hood at north end of east wall		$200		1	ea	*$119*	*$119*	1.8	*$200*
	Finishes									
23, 28	Paint building		$22,000		3,552	sf	*$4*	*$12,787*	1.8	*$22,000*
27	Repair cracked or failing plaster		$1,700		16	mh	*$59*	*$944*	1.8	*$1,700*
27	Paint interior water damage and similar failures		$1,700		16	mh	*$59*	*$944*	1.8	*$1,700*
36	Paint rusted exterior lights at south		$400		4	mh	*$59*	*$236*	1.8	*$400*
	Other									
29	Replace small wall vents around building		$700		6	mh	*$69*	*$414*	1.8	*$700*

30	Remove suspected asbestos pipe insulation (guess) 25' 8" pipe		$4,200		1	ls	*$2,374*	*$2,374*	1.8	*$4,200*
31	Replace flourescent fixtures suspected of containing PCBs (guess)		$11,700		10	ea	*$665*	*$6,650*	1.8	*$11,700*
	Mechanical									
32	Replace rusted unit air conditioner at southwest corner			$1,200	1	ea	*$978*	*$978*	1.2	*$1,200*
	AND									
32	Repair wood trim around it		$1,800		8	ch	*$127*	*$1,016*	1.8	*$1,800*
	Electrical									
33	Clean work space around electric panels		$200		2	mh	*$58*	*$116*	1.8	*$200*
34	Rewire north exterior light		$500		4	mh	*$72*	*$288*	1.8	*$500*
35	Provide electric panel closure	$700						*$394*	1.8	*$700*
	labor				3	mh	*$72*	*$216*		
	material				1	ls	*$178*	*$178*		
	Totals by priority	*$1,000*	*$245,000*	*$4,000*						
	total priority 1 + priority 2		*$246,000*							
	total all priorities			***$250,000***						
Notes										
1	*Labor costs, [man hours (mh) and crew hours (ch)], have been adjusted to reflect current Monroe County Prevailing Wage Rates provided by New York State*									
2	*Unit costs have been increased by 18.7% based on the ENR Historical Cost Index for Building Construction.*									
3	*Modified cost and text is 'italized' in 'blue'.*									

Work Item	Optional	Qty	Units	Unit Cost	Markup
Foundation	$0				
Substructure	$0				
Superstructure	$0				
Exterior Closure	$0				
Roofing	$0				
Interior Construction					
Residential		1,542	sf		
demo	*$12,000*	1,542	sf	*$6*	1.3
partitions	*$20,800*	171	lf	*$66*	1.8
doors	*$14,000*	17	ea	*$444*	1.8
ceiling	*$9,900*	1,542	sf	*$3.5*	1.8
floors	*$13,300*	1,542	sf	*$4.7*	1.8
Commercial		2,741	sf		
demo	*$24,900*	2,741	sf	*$7*	1.3
sidewalls	*$17,600*	259	lf	*$37*	1.8
partitions	*$5,500*	46	lf	*$66*	1.8
doors	*$5,400*	5	ea	*$648*	1.8
ceiling	*$17,600*	2,741	sf	*$3.5*	1.8
floors	*$23,700*	2,741	sf	*$4.7*	1.8
Conveying					
Elevator	*$0*		ls		1.3
Mechanical					
PLUMBING					
Accessible toilets					
water closet - tank type	*$3,200*	1	ea	*$2,018*	1.6
HC wall hung lavatory	*$2,900*	1	ea	*$1,789*	1.6
toilet partition	*$1,700*	1	ea	*$1,040*	1.6
toilet accessories	*$700*	1	ea	*$457*	1.6
Additional toilets (non-accessible)					
water closet - tank type	*$2,400*	1	ea	*$1,470*	1.6
wall hung lavatory	*$2,200*	1	ea	*$1,364*	1.6
toilet partition	*$1,100*	1	ea	*$684*	1.6
toilet accessories	*$500*	1	ea	*$336*	1.6
bath tub	*$2,200*	1	ea	*$1,380*	1.6
HVAC					
commercial	*$57,300*	2,741	sf	*$13*	1.6
residential	*$23,500*	1,542	sf	*$9.5*	1.6
ELECTRICAL					
commercial	*$57,300*	2,741	sf	*$13*	1.6
residential	*$14,900*	1,542		*$6*	1.6
Specialities	*$0*				
Site Work					
Ramps	*$5,400*	8	lf	*$377*	1.8
Total - Rehabilitation	***$340,000***				
Building Stabalization (total all priorities)	*$250,000*				

Grand Total - Stabilization and Rehabilitation	***$590,000***				
Square Feet - Total	*4,283*				
Cost / Square Foot	*$138*				
Notes					
1 Costs are increased by 18.7% based on the ENR historic cost index for building construction.					
2 Stabalization costs are from the Stabalization Work List.					
3 Modified cost and text is 'italized' in 'blue'.					

1. Building 2 looking north.

2. Looking northwest

3. Looking southwest

4. Looking south

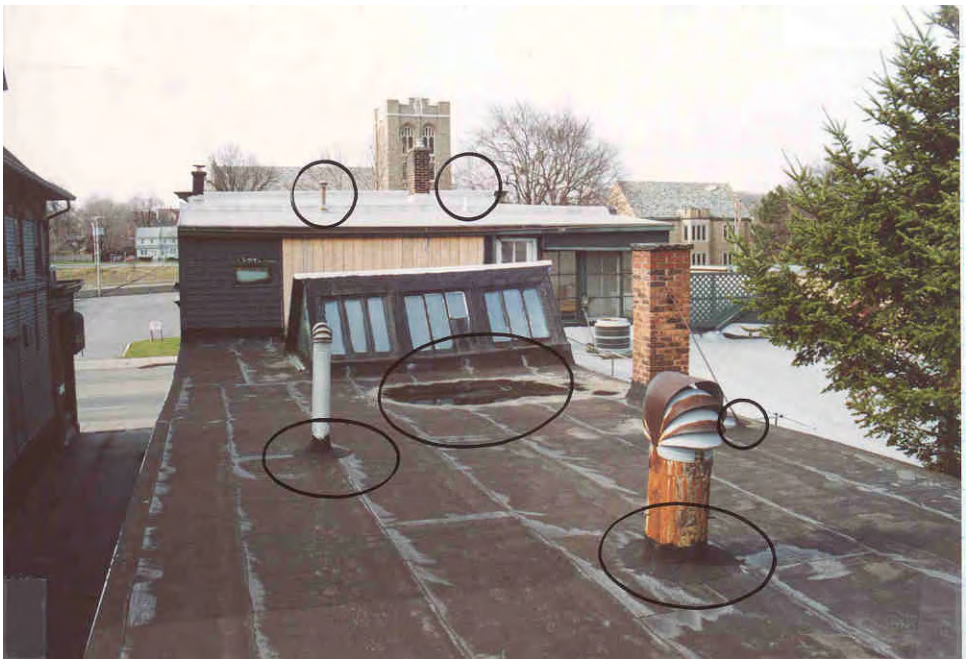
5. Looking southeast

6. Building 2 roofing

7. Building 2a roofing 1

8. Missing counter flashing on east chimney.

9. Missing counter flashing on west chimney.



10. Poor flashing at penetrations, note ponded water.

11. South roofing

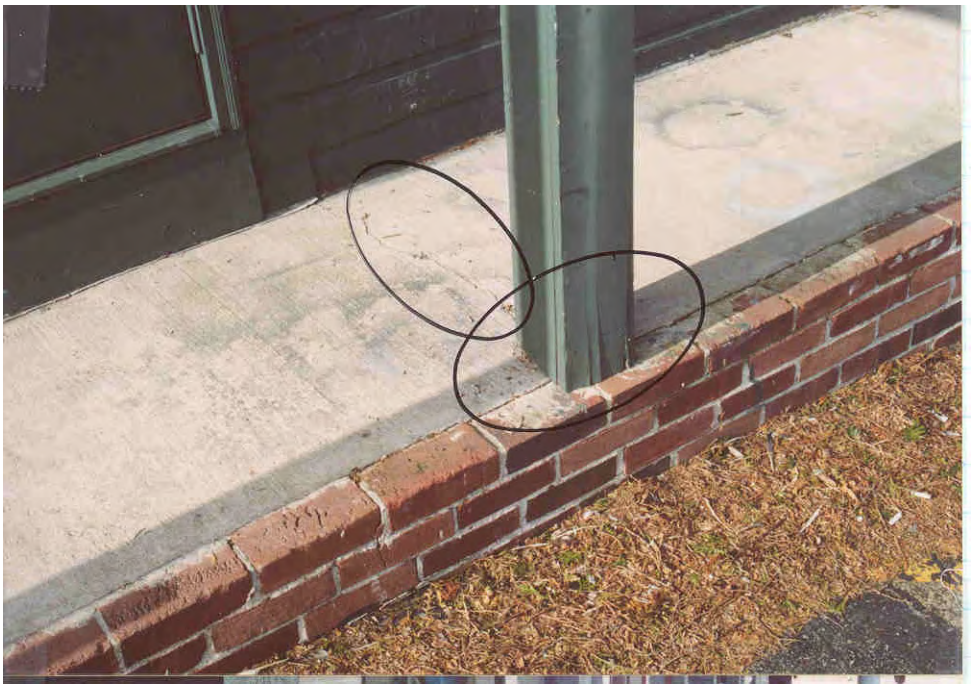
12. Failed flashing at south roofing. 1

13. Missing flashing at shingle sidewall.

14. Rusted, failing gutter at north

15. Partially missing and deteriorated gutter at west.

16. Deteriorated chimney on building 2a .



17. Poorly detailed and cracking north slab.

18. Store front stone work .

19. Close up of storefront stonework .

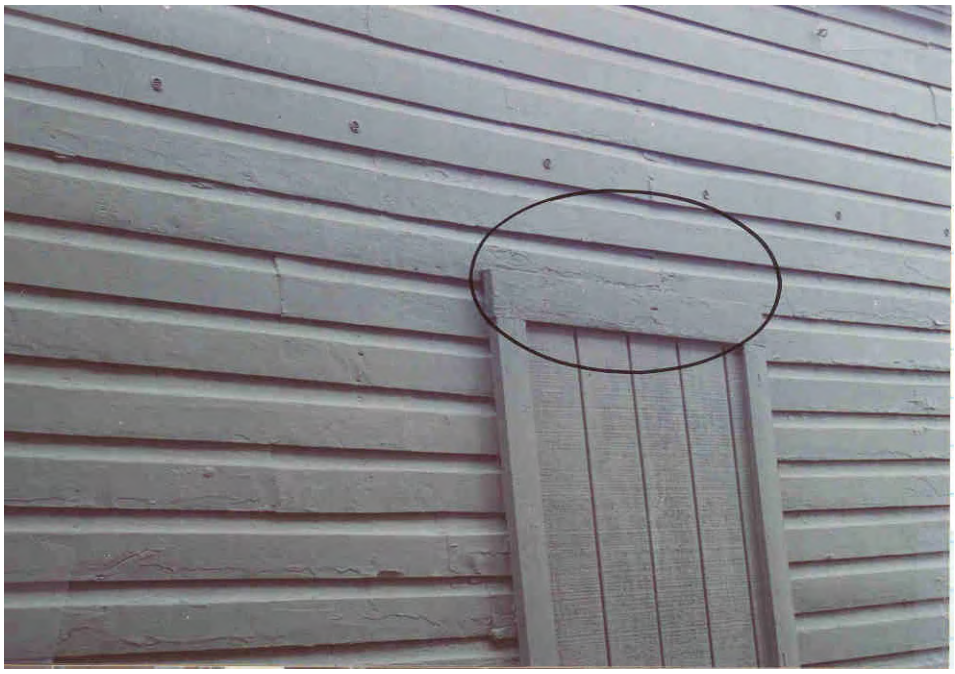
20. Roof sag at skylight east corner.

21. Post supporting skylight.

22. Settlement of east wall suggesting sill and foundation deterioration.

23. Loose and damaged east wall clapboards.

24. Damage to trim at fuel oil fill pipes.

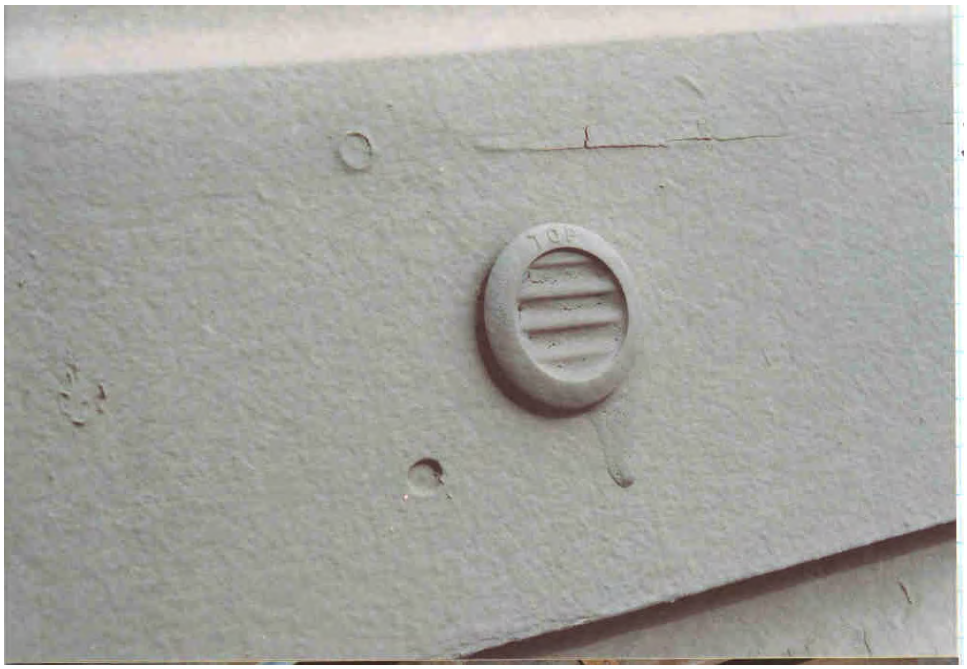


25. Closed window opening at east wall, note missing head flashing.

26. Tar covered northwest 2nd floor wiindows

27. Interior paint and plaster damage.

28. Failing paint on siding and rusted door.

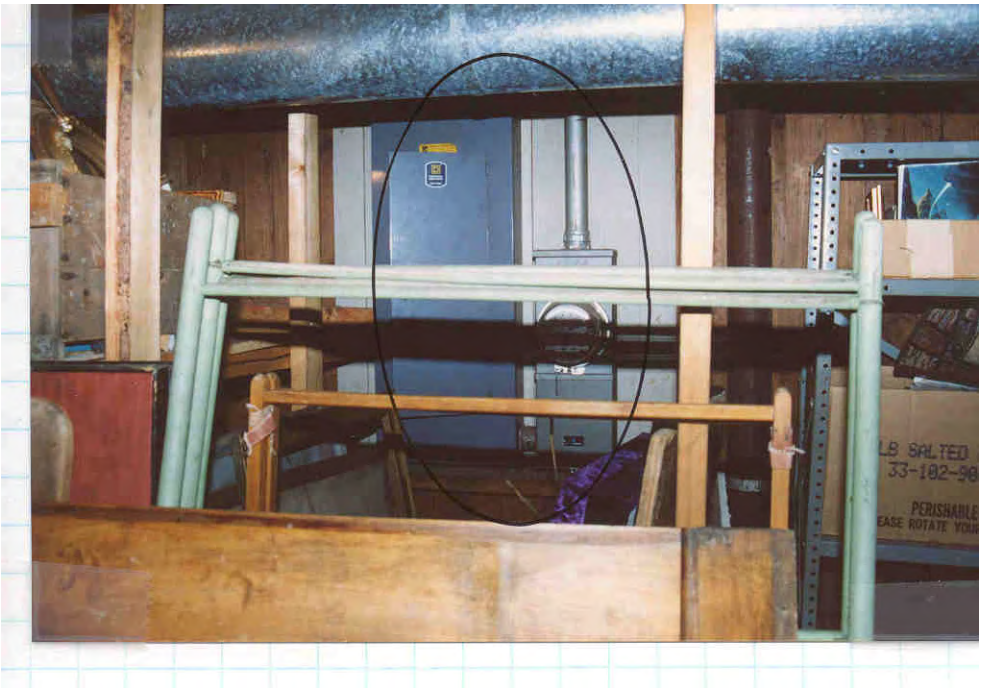


29. Siding vent obstructed with paint.

30. Possible asbestos.

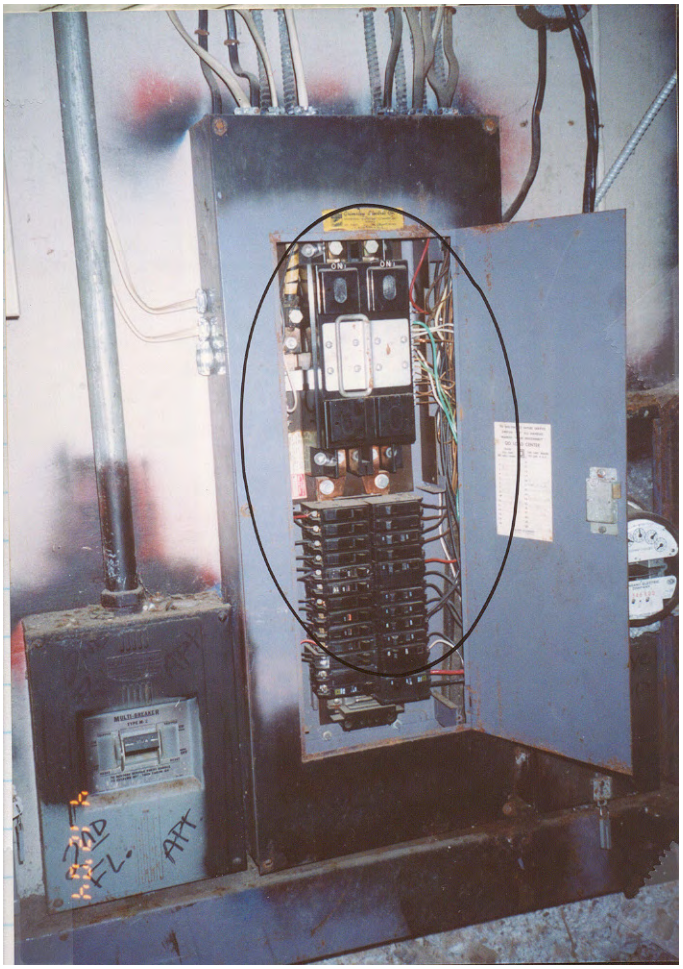
31. Rusted air conditioner and deteriorated wood trim.

32. Rusted air conditioner and deteriorated trim.



33. Storage at electric service.

34. Exposed wiring at north.



35. Missing interior closure at electric panel.

36. Rusted lights at south.

37. North porch roof and framing deterioration. Refer to 2004 photos 3, 4, and 17.

38. North porch roof and gutter deterioration. Refer to 2004 photos 3,and 4.

39. Basement – NE corner – water and silt intrusion.

40. Basement – NE corner – water and silt intrusion.

41. North roof membrane separation.

42. South roof deterioration. Refer to 2004 photo 11.

43. South bay window roof deterioration.

BUILDING 3 (1800-1802 East Avenue - Women's Christian Temperance Union Hall)

Stabilization

Building three contains two stores at the front of the building. A third tenant space occupies an area that may have been the building's stage. Four apartments are located on the second floor. The original plan is no longer evident although long-span trusses indicate the former presence of a large interior space. The cellar is relatively dry although it is unventilated. A wet area in the cellar at the northwest corner appears to be the result of a clogged storm drain. The east side of the cellar is finished and is used by the tenant occupying the west storefront.

The roof of the building has many leaks although so far, little damage is visible in the building's interior.

At the rear of the building is a recently constructed porch that is probably a replacement of an earlier structure. The structure of the porch appears undersized to meet code requirements for the current use. Structural analysis of the porch is recommended.

UPDATE COMMENTS:
This building was occupied during the last inspection. It has been unoccupied since 2005.

Additional deterioration noted included:
1. West roof has sustained substantial additional deterioration due to missing roofing. Interior damage has accelerated.
2. The alley between buildings 3 and 4 has continued to direct water to the basements of both buildings. A downspout directing water to the north parking lot is missing contributing to the problem.
3. The south flat first floor roof continues to deteriorate and holds water due to the plugged drain.
4. The south roofing, gutters, and soffit has deteriorated further. The gutters require cleaning.
5. The north-east and north-west masonry corners at grade continue to deteriorate due to exposure to water. A downspout directing water to an existing hub is missing, accelerating the deterioration here.

Rehabilitation

The building is not handicapped accessible at either floor. We assume the residential space at the second floor level will remain accessible only by the existing stairs. Ramps and toilet rooms are required for accessibility in the three first floor commercial units. We assume the commercial units at the first floor will remain as they are except for accessibility changes. The rehabilitation costs include updating the mechanicals and electrical in the second floor apartments and upgrading them to meet code and provide more attractive rental space.

Photo	Work Item	Essential	Preservation	Optional	Qty	Units	Unit Cost	Subtotal	Markup	Total
	Site Work									
4	Remove debris and pigeon droppings at east side		*$800*		8	mh	*$58*	*$464*	1.8	*$800*
4	Provide drainage and gravel covering			*$19,000*				*$11,107*	1.8	*$19,000*
	stormsewer piping				97	lf	*$85*	*$8,245*		
	gravel channel				97	lf	*$3.5*	*$340*		
	catch basin				1	ea	*$2,522*	*$2,522*		
	Roofing									
5	Clean south flat roofing		*$800*		8	mh	*$58*	*$464*	1.8	*$800*
6	Seal open seams		*$500*		2	ea	*$144*	*$288*	1.8	*$500*
7	Provide counterflashing at building and coping at roof edge		*$7,700*		146	lf	*$30*	*$4,380*	1.8	*$7,700*
8	Repair constricted roof drain		*$500*		4	mh	*$74*	*$296*	1.8	*$500*
9,27	Replace upper flat roofing	*$20,000*			1,200	sf	*$9.5*	*$11,400*	1.8	*$20,000*
10,28	Replace main sloped roofing	*$89,000*			3,907	sf	*$13*	*$50,785*	1.8	*$89,000*
10	Provide base and counterflashing at chimneys	*$5,600*			60	lf	*$53*	*$3,180*	1.8	*$5,600*
10	Provide open copper valleys			*$9,100*	110	lf	*$47*	*$5,170*	1.8	*$9,100*
11	Provide new metal covers at dormer returns		*$1,500*		3	ea	*$287*	*$861*	1.8	*$1,500*
12	Provide new cap flashing at all window hoods 7		*$1,500*		7	ea	*$119*	*$833*	1.8	*$1,500*
13	Retain and repair south dormer peak caps (allowance)		*$2,000*		2	ea	*$574*	*$1,148*	1.8	*$2,000*
9	Assume repairs at flashing and skylights of upper flat roof	*$6,900*						*$3,947*	1.8	*$6,900*
	labor				40	mh	*$69*	*$2,760*		
	material				1	ls	*$1,187*	*$1,187*		
	Provide ventilation for main roof attic		*$7,300*		130	lf	*$32*	*$4,160*	1.8	*$7,300*
	Stormwater Management									
14	Reattach existing gutters with concealed fasteners ($20,000)				382	lf	*$36*	*$13,752*	1.8	*$24,000*
	Provide new galvanized steel gutters and downspouts ($23,000)				382	lf	*$42*	*$15,891*	1.8	*$28,000*
	OR									
	Provide new copper gutters and downspouts		*$31,000*		382	lf	*$47*	*$17,954*	1.8	*$31,000*
15	Provide cast iron cleanout "T"s at stormsewer connections		*$1,200*		4	ea	*$178*	*$712*	1.8	*$1,200*
4,58, 63	*Provide temporary downspouts at NE and NW corners*	*$3,300*			*40*	*lf*	*$47*	*$1,880*	1.8	*$3,300*
16,17	Provide connection to stormsewer		*$8,200*		55	lf	*$85*	*$4,675*	1.8	*$8,200*
	OR									
16	Provide splashblocks at all downspouts ($400)				4	ea	*$58*	*$232*	1.8	*$400*
	Masonry									
18	Repoint chimneys above roofing and assume replace caps		*$26,000*		5	ea	*$2,967*	*$14,835*	1.8	*$26,000*
9	Provide flue caps for all chimneys		*$5,000*		5	ea	*$576*	*$2,880*	1.8	*$5,000*
19	Point foundation masonry west and east		*$3,600*		16	ch	*$127*	*$2,032*	1.8	*$3,600*

20	Repair masonry at south wall		*$3,600*		16	ch	*$127*	*$2,032*	1.8	*$3,600*
21	Point interior basement wall masonry		*$5,300*		24	ch	*$127*	*$3,048*	1.8	*$5,300*
19	Replace missing brick at west foundation wall - *Increase*		*$3,600*		*60*	ea	*$34*	*$2,040*	1.8	*$3,600*
22	Repair lower foot of two basement brick piers		*$1,800*		8	ch	*$127*	*$1,016*	1.8	*$1,800*
	Carpentry									
23	Provide bearing at 2 basement beams	*$1,800*			8	ch	*$127*	*$1,016*	1.8	*$1,800*
24	Replace 3 rows of clapboards above south flat roofing		*$1,800*		8	ch	*$127*	*$1,016*	1.8	*$1,800*
24,25	Repair caps and sills of windows at south above flat roof	*$17,000*			138	mh	*$69*	*$9,522*	1.8	*$17,000*
26	Repair cornice - *Increase*	*$13,400*			*60*	ch	*$127*	*$7,620*	1.8	*$13,400*
27,28, 55,56	Repair roof decks - *Increase*	*$8,900*			*40*	ch	*$127*	*$5,080*	1.8	*$8,900*
28	Repair roof joists - *Increase*	*$3,600*			*16*	ch	*$127*	*$2,032*	1.8	*$3,600*
29	Repair east watertable		*$1,500*		12	mh	*$69*	*$828*	1.8	*$1,500*
30	Repair storefront		*$2,700*		12	ch	*$127*	*$1,524*	1.8	*$2,700*
31	Repair decorative pilasters			*$14,000*	64	ch	*$127*	*$8,128*	1.8	*$14,000*
32	Provide stair between two basement levels		*$700*		1	ls	*$401*	*$401*	1.8	*$700*
33	Repair uneven riser heights at basement stair		*$1,500*		12	mh	*$69*	*$828*	1.8	*$1,500*
34,35	Repair cracked or rotten joists under salon	*$900*			4	ch	*$127*	*$508*	1.8	*$900*
36,37	Repair rot and poor framing details at north porch		*$1,500*		12	mh	*$69*	*$828*	1.8	*$1,500*
	Provide attic insulation 6" existing			*$12,000*	3,500	sf	*$2.00*	*$7,000*	1.8	*$12,000*
	Doors & Windows									
38	Repair west dormer window	*$500*			1	ea	*$290*	*$290*	1.8	*$500*
	Repair existing wood windows		*$5,600*		10	ea	*$318*	*$3,180*	1.8	*$5,600*
39	Restore circular and circle top windows at south - *Increase*		*$9,500*		12	ea	*$450*	*$5,400*	1.8	*$9,500*
	Restore replaced windows			*$58,000*	28	ea	*$1,187*	*$33,236*	1.8	*$58,000*
	Repair east basement windows		*$1,100*		2	ea	*$318*	*$636*	1.8	*$1,100*
	Repair lower windows at east wall		*$2,000*		4	ea	*$290*	*$1,160*	1.8	*$2,000*
	Replace rusted west door		*$800*		1	ea	*$439*	*$439*	1.8	*$800*
40	Repair *leaded* glass window at east of storefront		*$3,600*		30	mh	*$69*	*$2,070*	1.8	*$3,600*
2	Restore 2 doors of west wall			*$6,300*	2	ea	*$1,789*	*$3,578*	1.8	*$6,300*
2	Restore 3 closed windows of west wall			*$6,200*	3	ea	*$1,187*	*$3,561*	1.8	*$6,200*
	Replace stormdoor at north second floor		*$600*		1	ea	*$328*	*$328*	1.8	*$600*
	Finishes									
41	Paint building		*$32,000*		5,240	sf	*$3.5*	*$18,340*	1.8	*$32,000*
42,*57*	Repair cracked / failing plaster(generally attic level)-*Increase*		*$3,300*		*32*	mh	*$59*	*$1,888*	1.8	*$3,300*
42,*57*	Paint water damage and similar failures - *Increase*		*$12,900*		*3,060*	sf	*$2.4*	*$7,344*	1.8	*$12,900*
41	Glaze and paint original wood windows		*$9,100*		22	ea	*$237*	*$5,214*	1.8	*$9,100*

	Paint iron fence at east		*$700*		6	mh	*$64*	*$384*	1.8	*$700*
	Other									
43	Clean bird droppings from vacant apartment	*$1,200*			12	mh	*$59*	*$708*	1.8	*$1,200*
44	Remove pipe in attic suspected of containing asbestos (guess)		*$6,600*		57	lf	*$66*	*$3,762*	1.8	*$6,600*
45,46	Remove added walls in attic, drywall and chicken wire			*$1,200*	12	mh	*$59*	*$708*	1.8	*$1,200*
45	Clean basement and attic spaces		*$1,200*		12	mh	*$59*	*$708*	1.8	*$1,200*
	Mechanical									
47	Remove unsafe water heater	*$700*			3	ch	*$132*	*$396*	1.8	*$700*
48	Provide shorter drain for furnace condensation		*$500*		4	mh	*$74*	*$296*	1.8	*$500*
49	Remove abandoned mechanicals		*$2,900*		12	ch	*$137*	*$1,644*	1.8	*$2,900*
50	Repair plumbing vents in attic		*$3,900*		40	lf	*$55*	*$2,200*	1.8	*$3,900*
51	Repair water heater flue in attic		*$500*		4	mh	*$74*	*$296*	1.8	*$500*
	Electrical									
52	Clean work space around electric panels		*$400*		4	mh	*$59*	*$236*	1.8	*$400*
52,53	Provide additional outlets, eliminate extension cords		*$8,200*		68	ea	*$69*	*$4,692*	1.8	*$8,200*
54	Removed abandoned wiring and support existing wiring		*$4,000*		32	mh	*$72*	*$2,304*	1.8	*$4,000*
	Totals by priority	*$173,000*	*$231,000*	*$126,000*						
	total priority 1 + priority 2		*$404,000*							
	total all priorities			***$530,000***						
Notes										
1	*Labor costs, [man hours (mh) and crew hours (ch)], have been adjusted to reflect current Monroe County Prevailing Wage Rates provided by New York State*									
2	*Unit costs have been increased by 18.7% based on the ENR Historical Cost Index for Building Construction.*									
3	*Modified cost and text is 'italized' in 'blue'.*									

Work Item	Optional	Qty	Units	Unit Cost	Markup
Foundation	$0				
Substructure	$0				
Superstructure	$0				
Exterior Closure	$0				
Roofing	$0				
Interior Construction					
Residential		3,519	sf		
demo	*$27,000*	3,519	sf	*$6*	1.3
partitions	*$47,000*	391	lf	*$66*	1.8
doors	*$32,000*	39	ea	*$444*	1.8
ceiling	*$23,000*	3,519	sf	*$3.5*	1.8
floors	*$30,000*	3,519	sf	*$4.7*	1.8
Commercial		4,182	sf		
demo		0	sf	*$6*	1.3
sidewalls		0	lf	*$37*	1.8
partitions		0	lf	*$66*	1.8
doors		0	ea	*$648*	1.8
ceiling		0	sf	*$3.5*	1.8
floors		0	sf	*$4.7*	1.8
Conveying					
Lift	*$54,000*	1	ls	*$41,545*	1.3
Mechanical					
PLUMBING					
Accessible toilets					
water closet - tank type	*$9,700*	3	ea	*$2,018*	1.6
HC wall hung lavatory	*$8,600*	3	ea	*$1,780*	1.6
toilet partition	*$5,000*	3	ea	*$1,040*	1.6
toilet accessories	*$2,200*	3	ea	*$457*	1.6
Additional toilets (non-accessible)					
water closet - tank type	*$9,500*	4	ea	*$1,470*	1.6
wall hung lavatory	*$8,800*	4	ea	*$1,364*	1.6
toilet partition	*$4,400*	4	ea	*$684*	1.6
toilet accessories	*$2,200*	4	ea	*$336*	1.6
bath tub	*$8,900*	4	ea	*$1,380*	1.6
HVAC					
commercial	*$0*	0	sf	*$13*	1.6
residential	*$54,000*	3,519	sf	*$9.5*	1.6
ELECTRICAL					
commercial	*$0*		sf		1.6
residential	*$33,900*	3,519		*$6*	1.6
Specialities	*$0*				
Site Work					
Ramps	*$56,000*	69	lf	*$447*	1.8
Total - Rehabilitation	***$416,000***				
Building Stabalization (total all priorities)	***$530,000***				

Grand Total - Stabilization and Rehabilitation	***$946,000***				
Square Feet - Total	*7,701*				
Cost / Square Foot	*$123*				
Notes					
1 Costs are increased by 18.7% based on the ENR historic cost index for building construction.					
2 Stabalization costs are from the Stabalization Work List.					
3 Modified cost and text is 'italized' in 'blue'.					

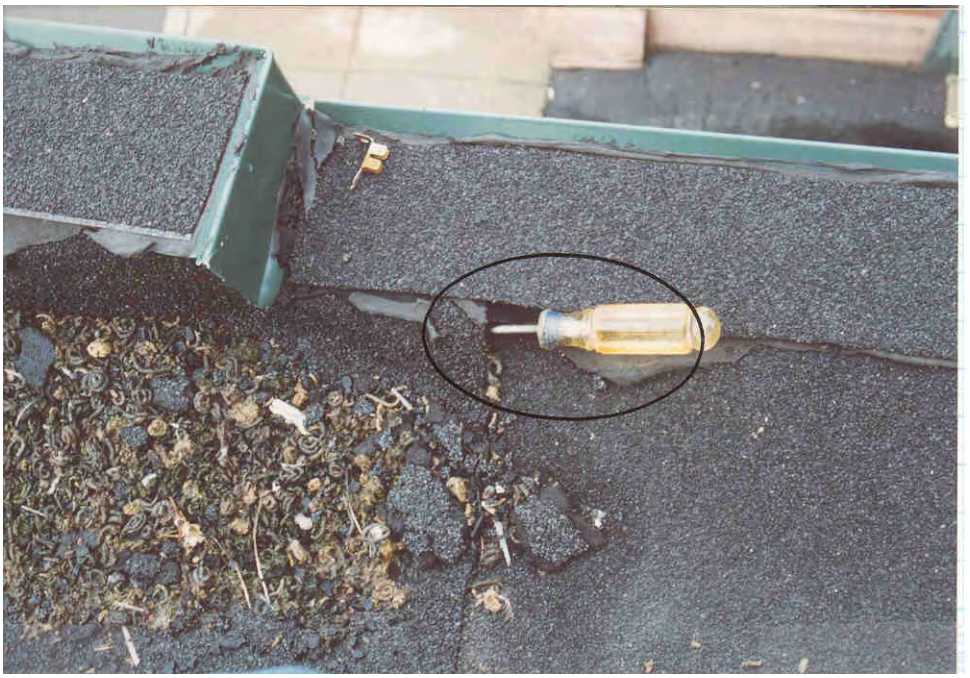
1. Building 3 looking north.

2. Looking northeast 1

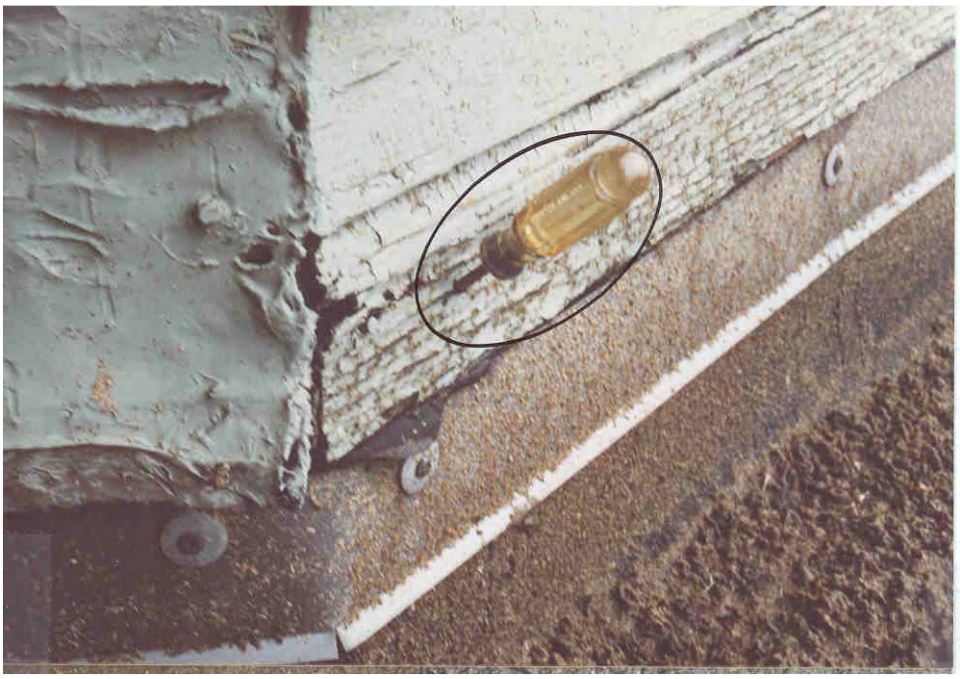
3. Looking southeast.

4. Wet alley between buildings 3 and 4.

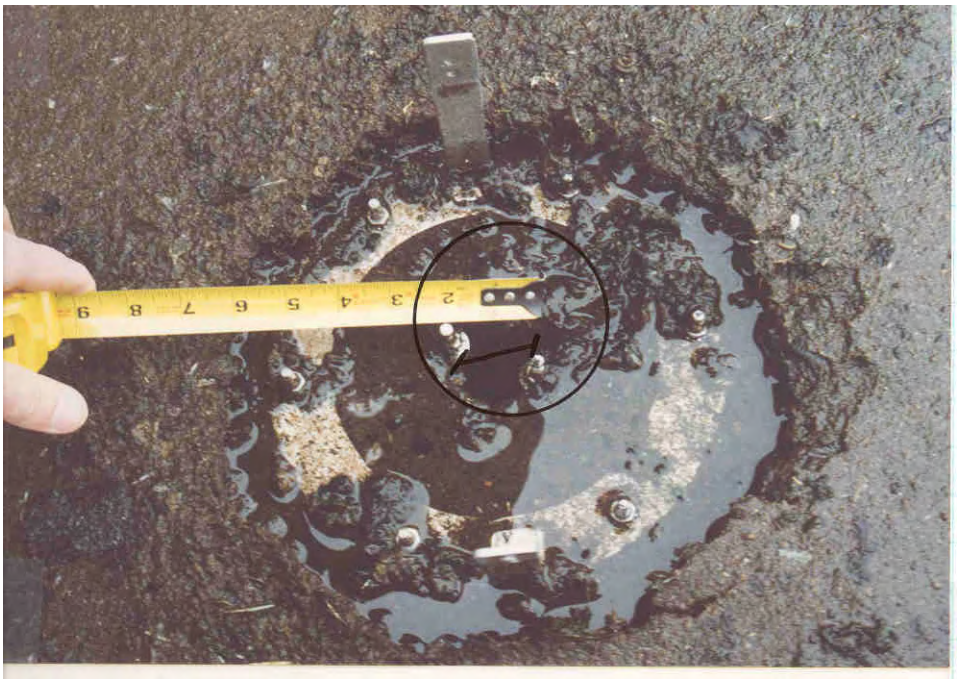
5. South roof, note accumulated pigeon droppings and roof shingles.



6. Hole at south roof coping.



7. Deteriorated clapboards over south roof.



8. Constricted south roof drain.

9. Upper flat roofing.

10. Worn main sloped roofing.

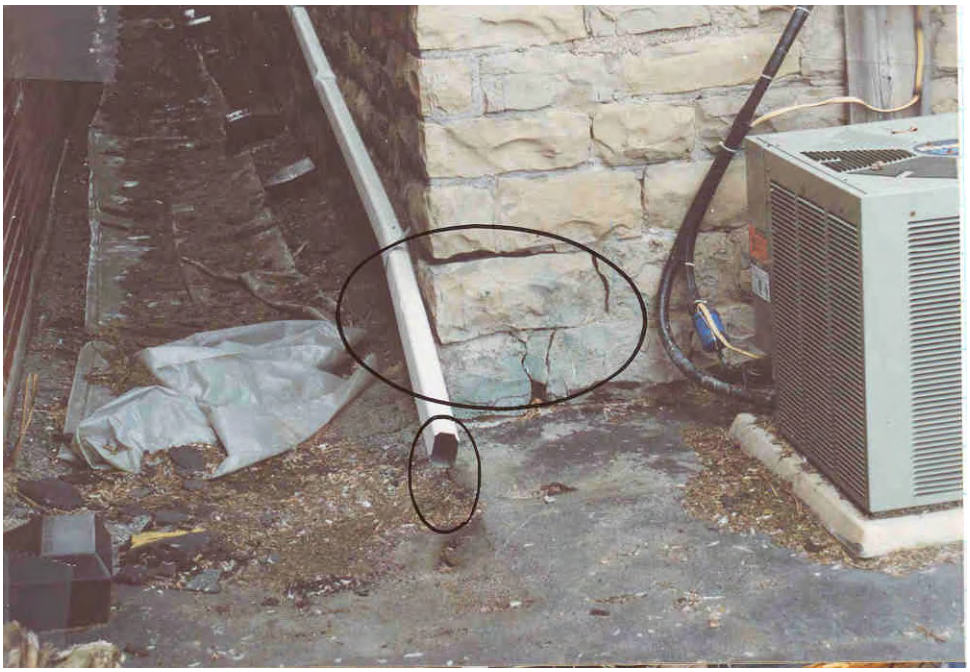
11. Main sloped roofing. 1

12. Deteriorated window cap flashing.

13. Main slope roofing, note cap.

14. Exposed fasteners at gutter hangers.

15. No clean-out at storm drain.



16. Storm water dumping in wet alley note foundation stones.

17. Wet basement at northwest, possible storm drain leak/clog.

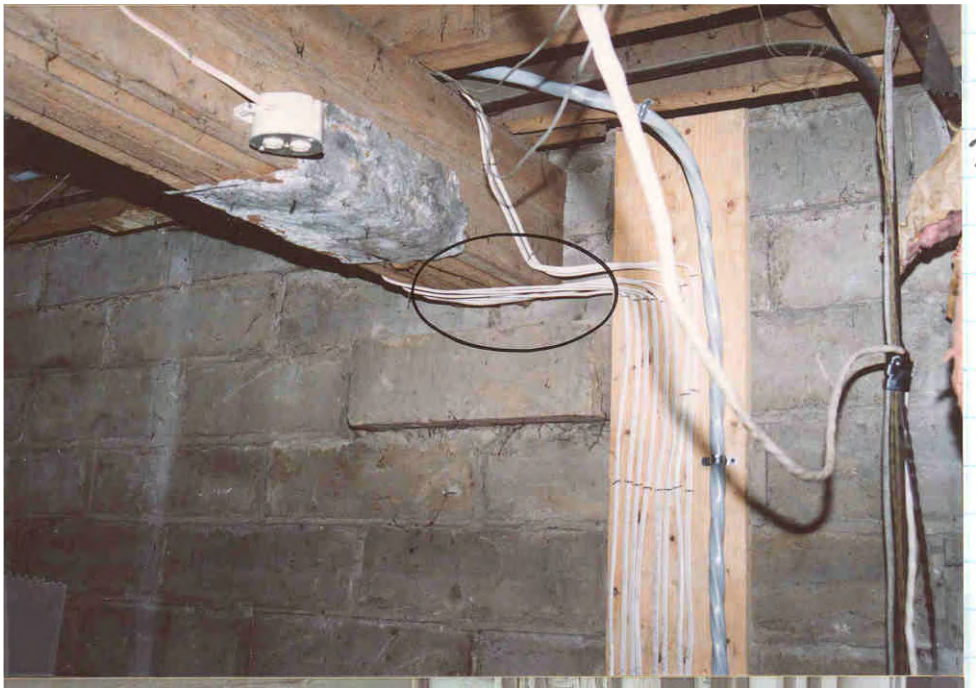
18. Typical chimney flashing.

19. Deteriorated west foundation.

20. Repointing required at south.

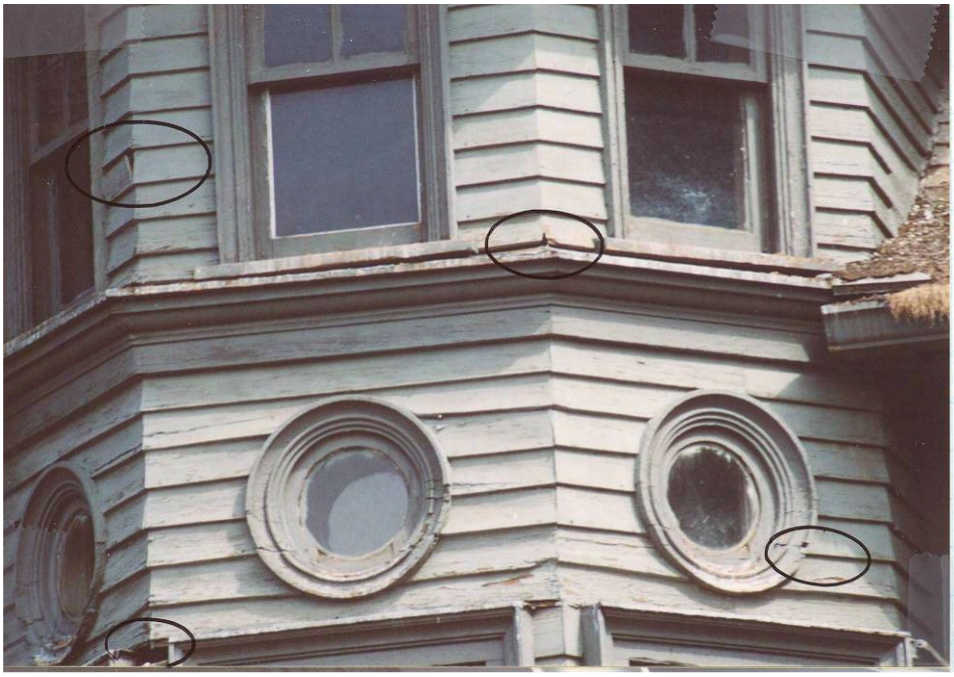
21. Open joints at interior basement wall.

22. Deteriorated basement column.



22. Beam end without bearing.

24. Rot at south window sill.



25. Typical window, cornice side wall damage.

26. Rot at cornice.

27. Damage at underside of roof deck.

28. Rot at roof rafter and deck.

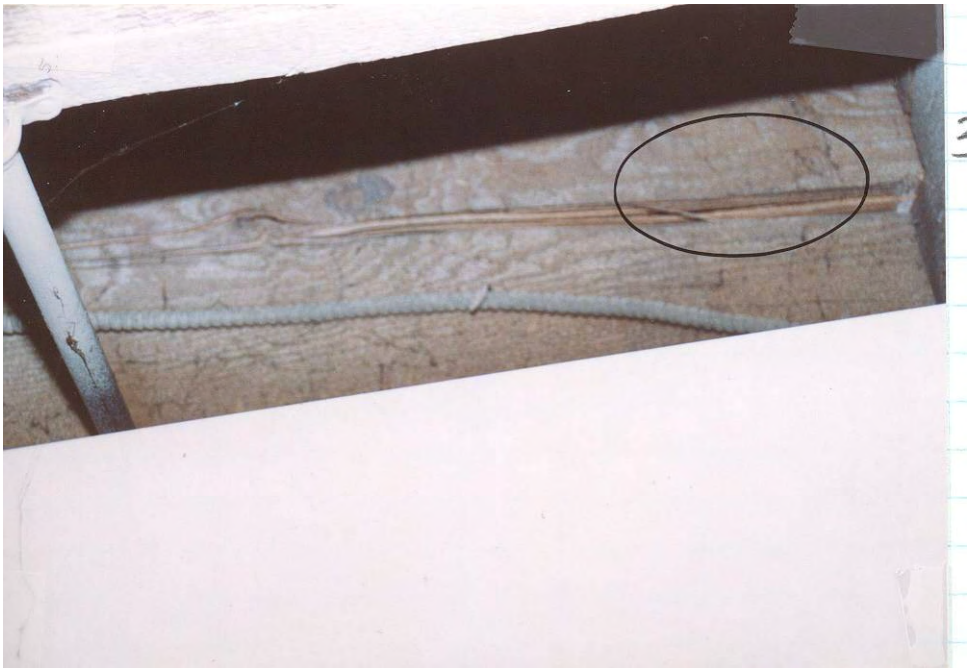
29. Loose water table at east, note open electric box.

30. Loose trim at south.

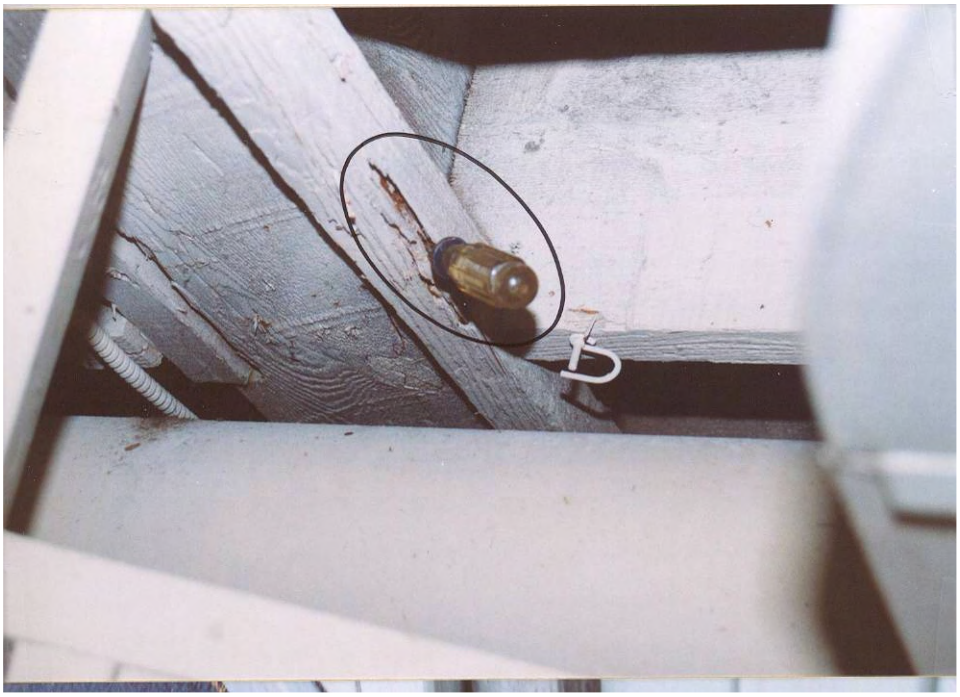
31. Deteriorated pilaster trim.

32. Missing stair in basement.

33. High first step in basement.

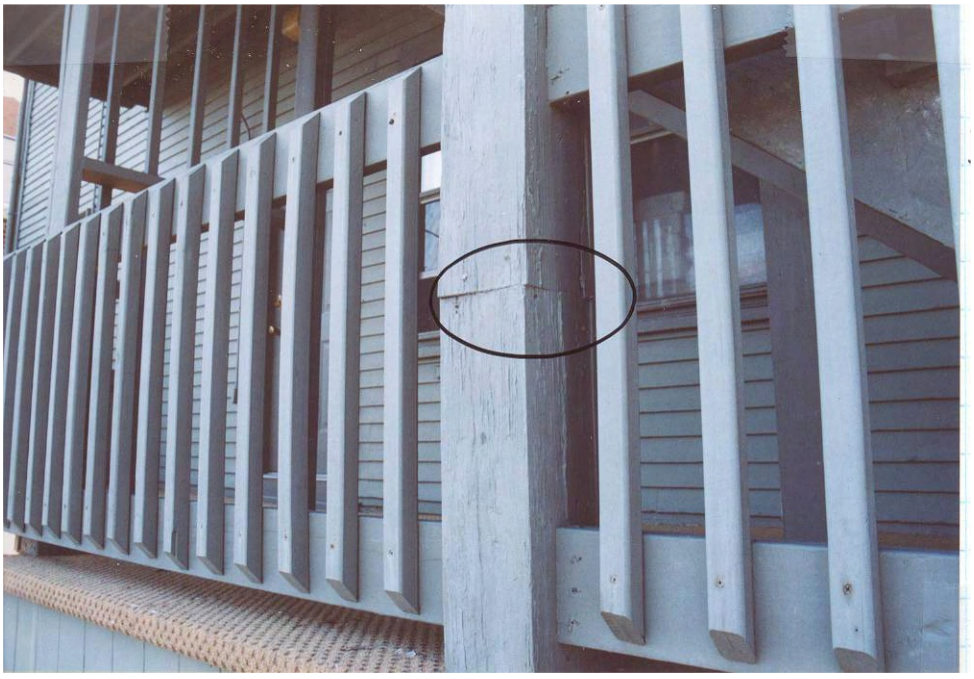


34. Split basement joist.



35. Rot in basement ledger.

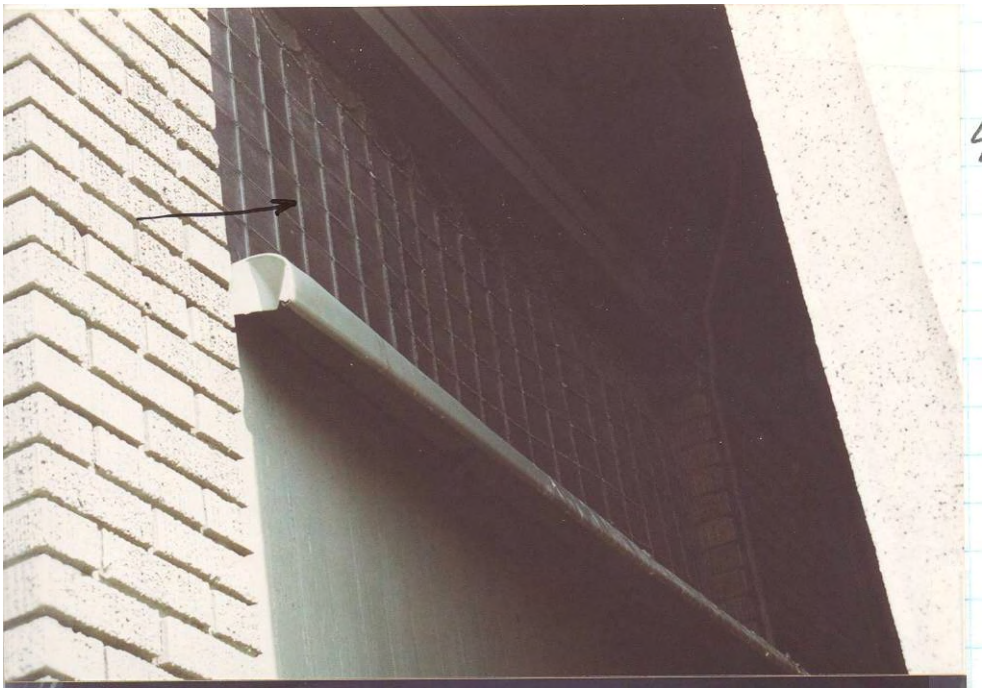
36. Rot at north porch column.



37. Poor repair at north porch.

38. Broken west dormer window.

39. Rot at south window.



40. East storefront window.

41. Paint and glazing failure at south window.

42. Plaster and paint damage at attic level.

43. Pigeon droppings in second floor apartment.

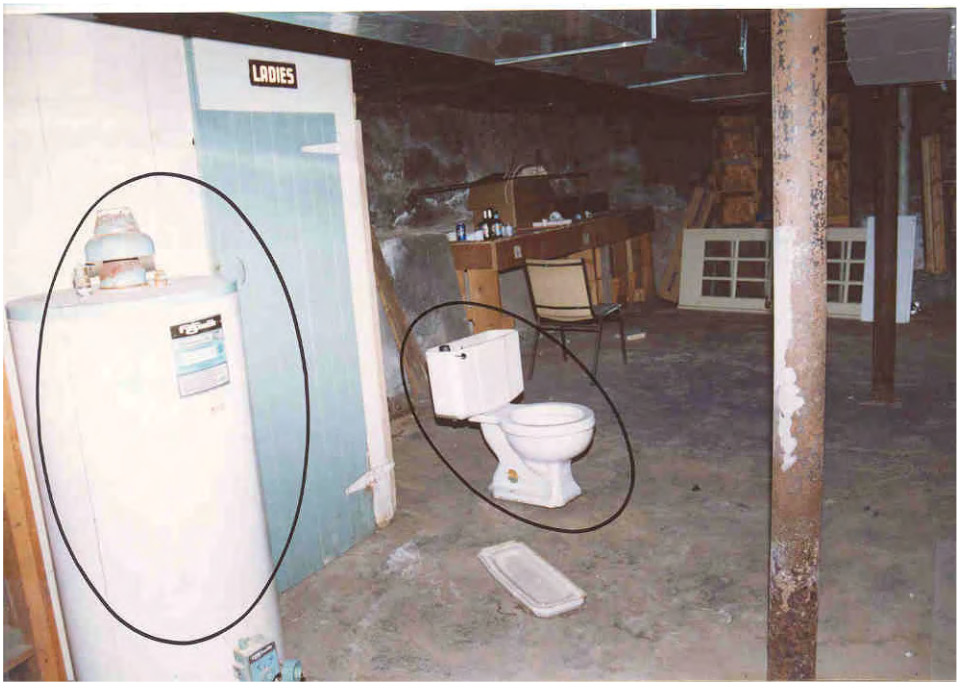
44. Possible asbestos containing pipe.

45. Chicken wire attic wall.

46. Attic partition.

47. Unsafe water heater per RG&E tag.

48. Furnace condensation hose 35' long.



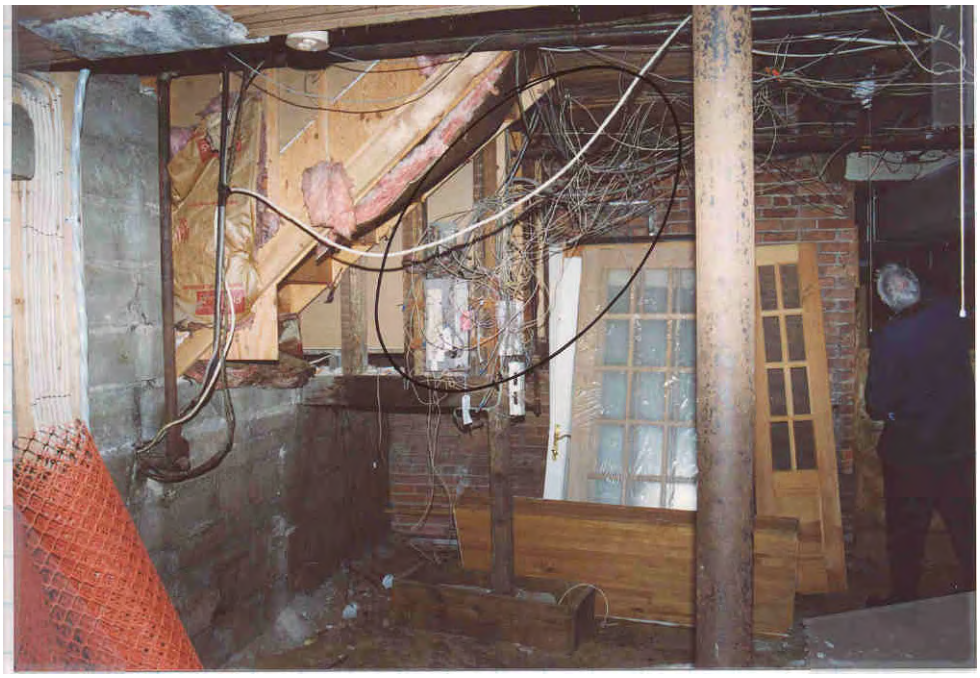
49. Abandoned mechanicals.

50. Broken plumbing vent pipe.

51. Inappropriate connection of flue pipe.

52. Storage and debris in front of electric panel.

53. Extension cords.



54. Abandoned and unsupported wiring

55. Roof sheathing deterioration in west attic. Refer to 2004 photo 28

56. Roof sheathing deterioration and insulation damage in west attic.

57. Interior finish damage, third floor, west side.

58. Alley between buildings 3 and 4 – holding water – missing downspout. Refer to 2004 photo 4.

59. South, first floor roof – downspout blocked.

60. South gutters blocked with vegetation.. Refer to 2004 photos 13, 14.

61. South soffit deterioration.

62. North-west deteriorated masonry foundation wall at grade. Note open joints and masonry spalling. Missing downspout. Refer to 2004 photos 3, 15.

63. North-east deteriorated masonry foundation wall at grade. Note open masonry joints. Possible settlement. Refer to 2004 photos 4, 16.

BUILDING 4, *4A, 4B, 4C* (1806 East Avenue - Old Central Trust Building)

Stabilization

This former bank was constructed as an entirely noncombustible building. The building's fire resistance was compromised when a wood frame floor was inserted in the upper section of the former banking hall. The current corridors are too narrow to provide a handicapped accessible route through the building.

The cellar of the building is finished and appears dry. The building has an asphalt built-up roof that still appears sound. An unused generator no longer in use should be removed.

The building retains high-quality steel windows that remain in good condition.

UPDATE COMMENTS:
This building was occupied during the last inspection. It has been unoccupied since 2005.

Additional deterioration noted included:
1. Additional interior moisture damage was noted throughout the building related to deferred masonry and roofing repair.
2. All roofs show signs of continued deterioration. The small roof 4C between building 4 and the Fountain Bleu building is particularly vunerable.
3. The south cast stone parapet continues to deteriorate. We noted a shifted stone on the east side that may be the result of vandalism.
4. Many of the original paneled wood doors and their frames have been damaged by vandalism. They appear to have been kicked in, splintering the latch side door style and frame trim..

Rehabilitation

Currently, no area of the building is handicapped accessible. To provide accessibility, a ramp will be required at the first floor and an elevator to the upper floors. In addition, men and women's' accessible toilet rooms are required at the first and second floors. The estimated rehabilitation costs assume the entire interior of the building will be gutted to provide handicapped accessible halls, doors, etc.; to update the worn finishes; and to make the space more attractive. The estimate also includes updating the mechanicals and electrical in all spaces.

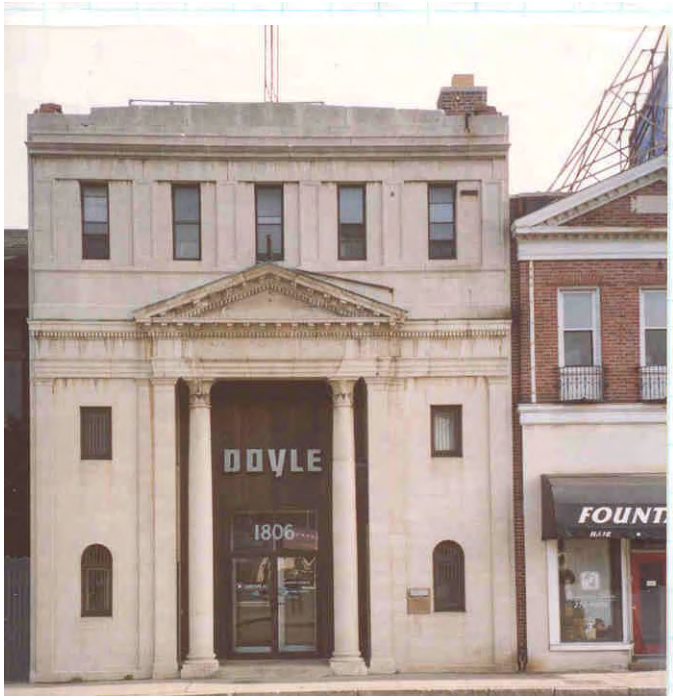
Photo	Work Item	Essential	Preservation	Optional	Qty	Units	Unit Cost	Subtotal	Markup	Total
	Site Work									
4	Remove tree stumps at west wall		*$2,500*		6	ea	*$236*	*$1,416*	1.8	*$2,500*
	Grade at west of building see work list 3									
	Roofing									
5	Provide new copper roofing over south pediment	*$16,000*						*$9,129*	1.8	*$16,000*
	roofing				1	sq	*$3,789*	*$3,789*		
	counter flashing				20	lf	*$30*	*$600*		
	demo assume abatement necessary				1	ls	*$4,740*	*$4,740*		
5	Replace entablature flashing at south facade		*$2,700*		20	lf	*$78*	*$1,560*	1.8	*$2,700*
6,7	Provide counter flashing at roof 4a		*$8,400*		160	lf	*$30*	*$4,800*	1.8	*$8,400*
8	Remove tar from roof 4 counterflashing and repoint joint		*$8,600*		164	lf	*$30*	*$4,920*	1.8	*$8,600*
8	Repair flashing at roof 4		*$1,100*		8	mh	*$78*	*$624*	1.8	*$1,100*
9,10	Repair flashing at roof hatch and vents roof 4		*$1,200*		22	lf	*$30*	*$660*	1.8	*$1,200*
	AND									
	Plan to replace roofing on roof 4		*$33,000*		1,560	sf	*$12*	*$18,720*	1.8	*$33,000*
11,12	Remove tar from roof 4c flashings		*$6,100*		66	lf	*$53*	*$3,498*	1.8	*$6,100*
12	Provide counter flashing at roof 4c junction with building 5		*$1,300*		25	lf	*$30*	*$750*	1.8	*$1,300*
11,*27,28*	Clean moss *and vegetation* from roof 4c - *Increase*		*$1,000*		*8*	mh	*$69*	*$552*	1.8	*$1,000*
	AND									
	~~Plan to~~ replace roofing on roof 4c		*$4,900*		200	sf	*$14*	*$2,800*	1.8	*$4,900*
	Secure roof hatch and provide hinges		*$500*		4	mh	*$69*	*$276*	1.8	*$500*
36	*Clean moss from roof 4b - make temporary repairs*		*$1,500*		*12*	*mh*	*$69*	*$828*	*1.8*	*$1,500*
	AND									
	Plan to replace roofing on roof 4b			*$27,500*	*1,120*	*sf*	*$14*	*$15,680*	*1.8*	*$27,500*
13,14	Repoint upper portion of south facade	*$7,800*			470	lf	*$9.5*	*$4,465*	1.8	*$7,800*
	Lift for facade work (masonry and roofing)	*$3,700*			1	mth	*$2,113*	*$2,113*	1.8	*$3,700*
29,30	*Reset cast stone south parapet stones*		*$1,800*		*8*	*ch*	*$126*	*$1,008*	*1.8*	*$1,800*
29,30	*Repair deteriorated cast stone elements of south parapet*		*$3,500*		*16*	*ch*	*$126*	*$2,016*	*1.8*	*$3,500*
31	*Replace deteriorated tile parapet caps on roof 4*		*$2,600*		*6*	*ea*	*$250*	*$1,500*	*1.8*	*$2,600*
15	Repoint west wall and foundation		*$1,400*		114	sf	*$7*	*$798*	1.8	*$1,400*
16	Replace spalled brick at west wall		*$3,000*		50	ea	*$34*	*$1,700*	1.8	*$3,000*
17	Repair damaged beam at south entry basement		*$11,800*					*$6,744*	1.8	*$11,800*
	scrape and paint steel				8	mh	*$59*	*$472*		
	provide masonry piers				4	ea	*$1,187*	*$4,748*		
	repair concrete				12	ch	*$127*	*$1,524*		
18	Provide joint covers for all weather surfaces at south facade		*$2,100*		114	lf	*$10.7*	*$1,220*	1.8	*$2,100*

	Replace spalled bricks at north and east		*$2,400*		24	mh	*$58*	*$1,384*	1.8	*$2,400*
19	Replace damaged coping tiles		*$500*		2	ea	*$136*	*$272*	1.8	*$500*
7	Provide joint covers at roof 4a coping stones		*$2,200*		97	lf	*$13*	*$1,261*	1.8	*$2,200*
23	Replace concrete steps at north *exterior door*		*$2,500*		1	ls	*$1,409*	*$1,409*	1.8	*$2,500*
	Doors & Windows									
20	Repair steel windows to operate smoothly (allowance)		*$9,900*		13	ea	*$434*	*$5,642*	1.8	*$9,900*
32,33	*Repair or replace broken wood doors, frames, and hardware*		*$15,000*					*$8,580*	1.8	*$15,000*
					40	*ch*	*$127*	*$5,080*		
					1	*ls*	*$3,500*	*$3,500*		
	Finishes									
21	Paint alarm box		*$400*		4	mh	*$59*	*$236*	1.8	*$400*
	OR									
21	Remove alarm box ($500)				1	ls	*$344*	*$344*	1.8	*$600*
26	Repair cracked or failing plaster - *Increase*		*$2,500*		*24*	mh	*$59*	*$1,416*	1.8	*$2,500*
26	Paint water damage and similar failures - *Increase*		*$2,500*		*24*	mh	*$59*	*$1,416*	1.8	*$2,500*
20	Paint and glaze all steel windows		*$8,700*		13	ea	*$381*	*$4,953*	1.8	*$8,700*
22	Paint iron window bars at south		*$2,000*		6	ea	*$191*	*$1,146*	1.8	*$2,000*
23,24	Paint steel door and 2 vents at north and west		*$1,500*		3	ea	*$286*	*$858*	1.8	*$1,500*
	Replace shifted and missing ceiling tiles		*$1,000*		8	mh	*$69*	*$552*	1.8	*$1,000*
	Other									
34	*Remove abandoned sidewalk lift from basement*				*12*	*ch*	*$116*	*$1,392*	*1.8*	*$2,400*
	Remove possible asbestos pipe insulation (guess)		*$3,100*		1	ls	*$1,780*	*$1,780*	1.8	*$3,100*
35	Provide new cover for basement sump pit		*$200*		1	ls	*$119*	*$119*	1.8	*$200*
	Mechanical									
	Repair duct used as a chase for other mechanicals		*$500*		4	mh	*$74*	*$296*	1.8	*$500*
	Replace water heater pipes corroded		*$500*		4	mh	*$74*	*$296*	1.8	*$500*
25	Remove abandoned mechanicals		*$1,900*		8	ch	*$132*	*$1,056*	1.8	*$1,900*
	Provide vents at toilets		*$4,200*		4	ea	*$593*	*$2,372*	1.8	*$4,200*
	Removed abandoned roof mounted generator and anchorage		*$8,100*					*$4,594*	1.8	*$8,100*
	demo				1	ls	*$1,626*	*$1,626*		
	crane				1	ls	*$2,968*	*$2,968*		
	Electrical									
	Support existing wiring		*$3,000*		24	mh	*$72*	*$1,728*	1.8	*$3,000*
	Totals by priority	*$28,000*	*$172,000*	*$28,000*						
	total priority 1 + priority 2		*$200,000*							
	total all priorities			***$228,000***						

Notes										
1	*Labor costs, [man hours (mh) and crew hours (ch)], have been adjusted to reflect current Monroe County Prevailing Wage Rates provided by New York State Department of Labor. Refer to 'Prevailing Wages, page 43.*									
2	*Unit costs have been increased by 18.7% based on the ENR Historical Cost Index for Building Construction.*									
3	*Modified cost and text is 'italized' in 'blue'.*									

Work Item	Optional	Qty	Units	Unit Cost	Markup
Foundation	$0				
Substructure	$0				
Superstructure	$0				
Exterior Closure	$0				
Roofing	$0				
Interior Construction					
Residential		0	sf		
demo			sf		1.3
partitions			lf		1.8
doors			ea		1.8
ceiling			sf		1.8
floors			sf		1.8
Commercial		10,588	sf		
demo	*$83,000*	10,588	sf	*$6*	1.3
sidewalls	*$71,000*	1,040	lf	*$37*	1.8
partitions	*$64,000*	529	lf	*$66*	1.8
doors	*$63,000*	53	ea	*$648*	1.8
ceiling	*$68,000*	10,588	sf	*$3.5*	1.8
floors	*$91,000*	10,588	sf	*$4.7*	1.8
Conveying					
Elevator	*$168,000*	1	ls	*$129,600*	1.3
Mechanical					
PLUMBING					
Accessible toilets					
water closet - tank type	*$13,000*	4	ea	*$2,018*	1.6
HC wall hung lavatory	*$11,000*	4	ea	*$1,780*	1.6
toilet partition	*$7,000*	4	ea	*$1,040*	1.6
toilet accessories	*$3,000*	4	ea	*$457*	1.6
Additional toilets (non-accessible)					
water closet - tank type			ea	*$1,470*	1.6
wall hung lavatory			ea	*$1,364*	1.6
toilet partition			ea	*$684*	1.6
toilet accessories			ea	*$336*	1.6
bath tub			ea	*$1,380*	1.6
HVAC					
commercial	*$221,000*	10,588	sf	*$13*	1.6
residential			sf		1.6
ELECTRICAL					
commercial	*$221,000*	10,588	sf	*$13*	1.6
residential					1.6
Specialities	*$0*				
Site Work					
Ramps	*$6,000*	7	lf	*$447*	1.8
Total - Rehabilitation	***$1,100,000***				
Building Stabalization (total all priorities)	*$228,000*				

Grand Total - Stabilization and Rehabilitation	***$1,328,000***				
Square Feet - Total	*10,588*				
Cost / Square Foot	*$125*				
Notes					
1 Costs are increased by 18.7% based on the ENR historic cost index for building construction.					
2 Stabalization costs are from the Stabalization Work List.					
3 Modified cost and text is 'italized' in 'blue'.					



1. Building 4 looking north.

2. Looking southwest.

3. Looking southeast.

4. Tree stump at west wall.

5. Worn out pediment roofing.

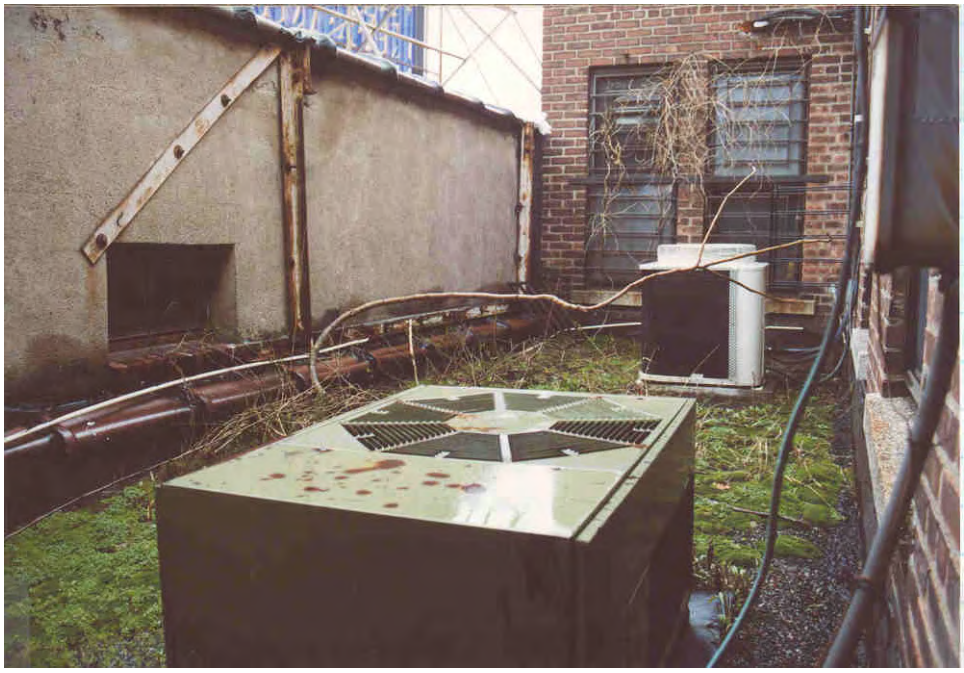
6. Roof 4a from above.

7. Missing counter flashing at roof 4a.

8. Open seam at roof 4.

9. Poor flashing at roof 4 penetrations.

10. Tar covered flashings and multiple penetrations.

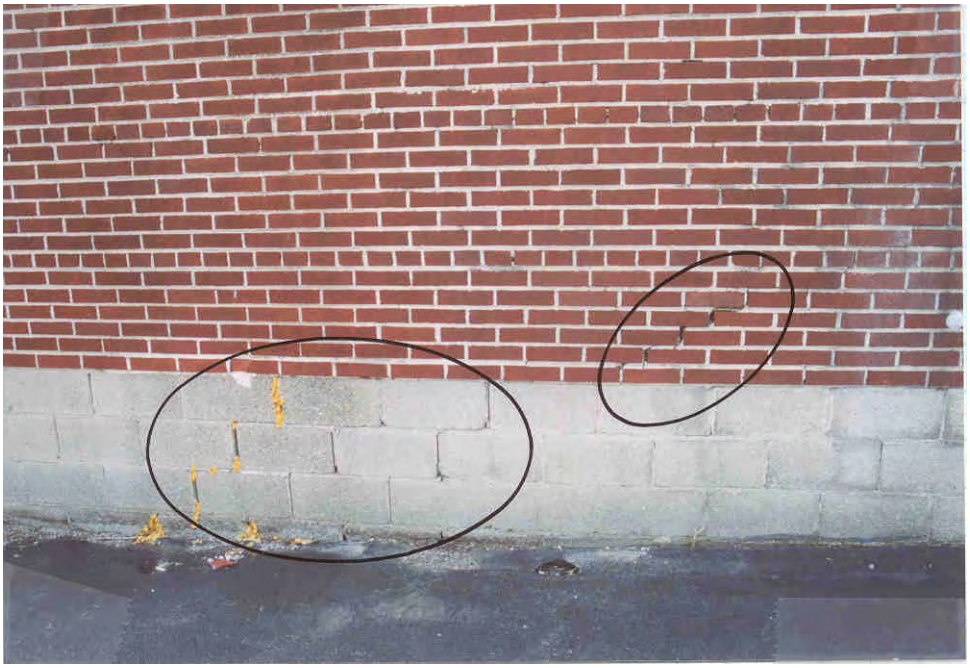


11. Roof 4c looking south.

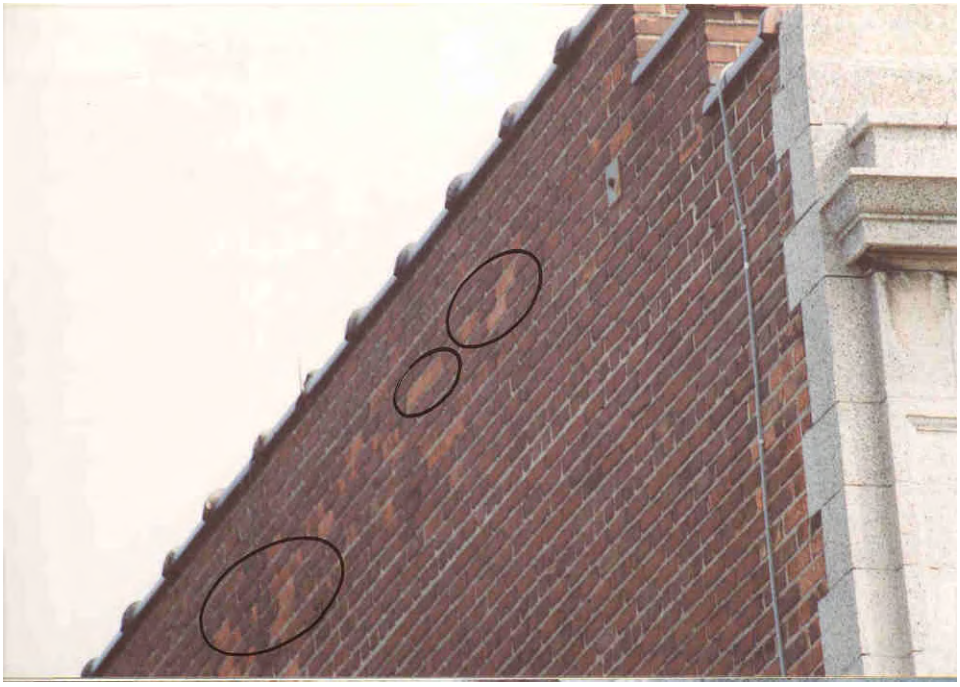
12. Tar coated flashing and connection neighbor building.

13. Open joints at south facade.

14. Close-up of south facade joints.

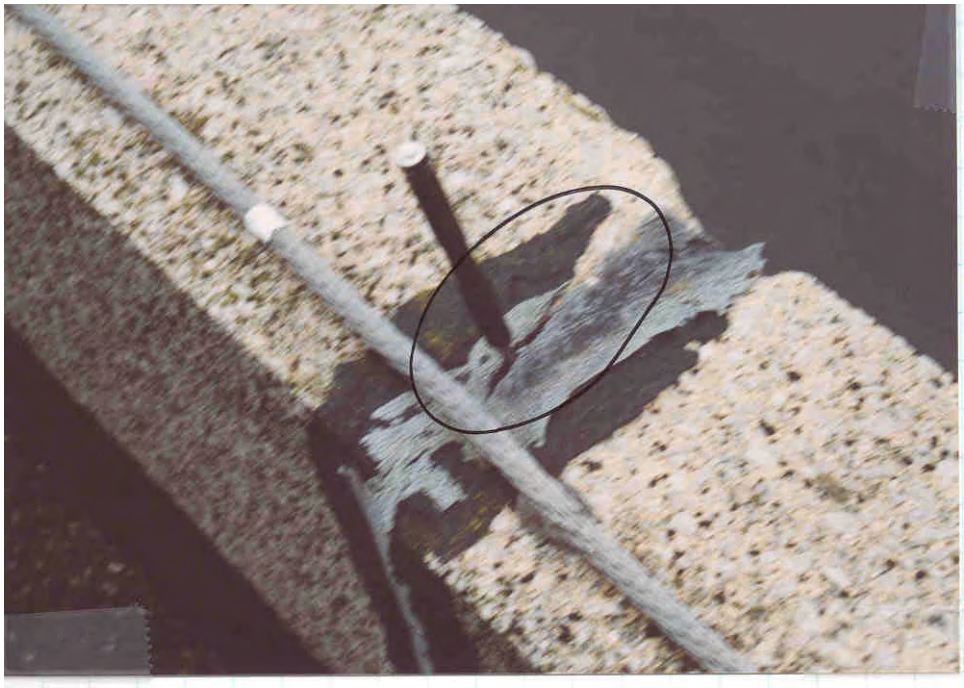


15. Cracks in foundation and sidewall joints.



16. Spalled bricks at west wall.

17. Deteriorated beam at south of basement.



18. Open joints at south facade coping.

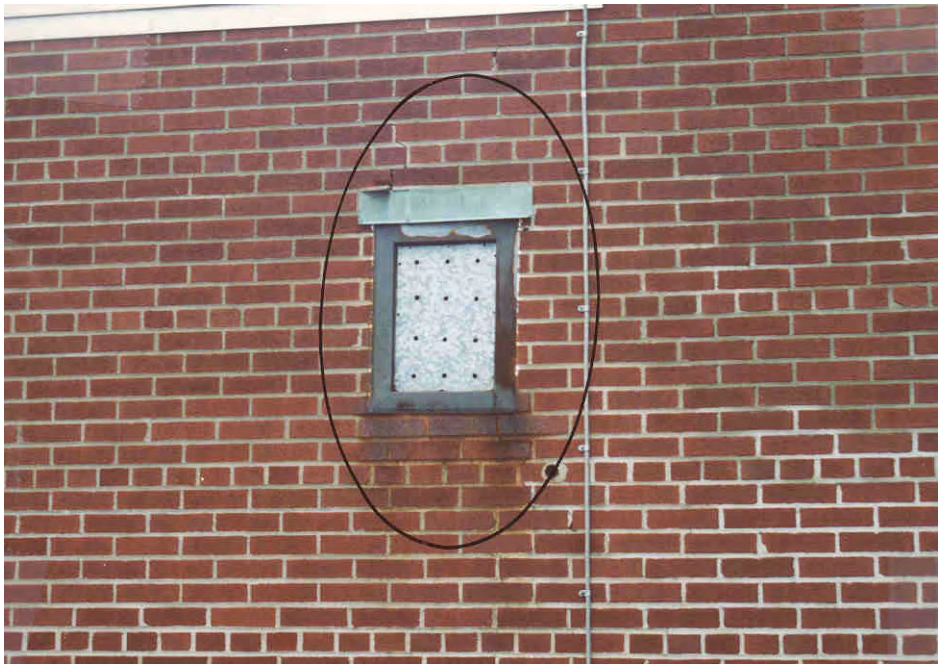
19. Broken coping tile at roof 4.

20. Typical condition of steel windows.

21. Rusted bank alarm. 1

22. Rusted window and bars at south. 1

23. Rusted door and vent at north, note stair deterioration.



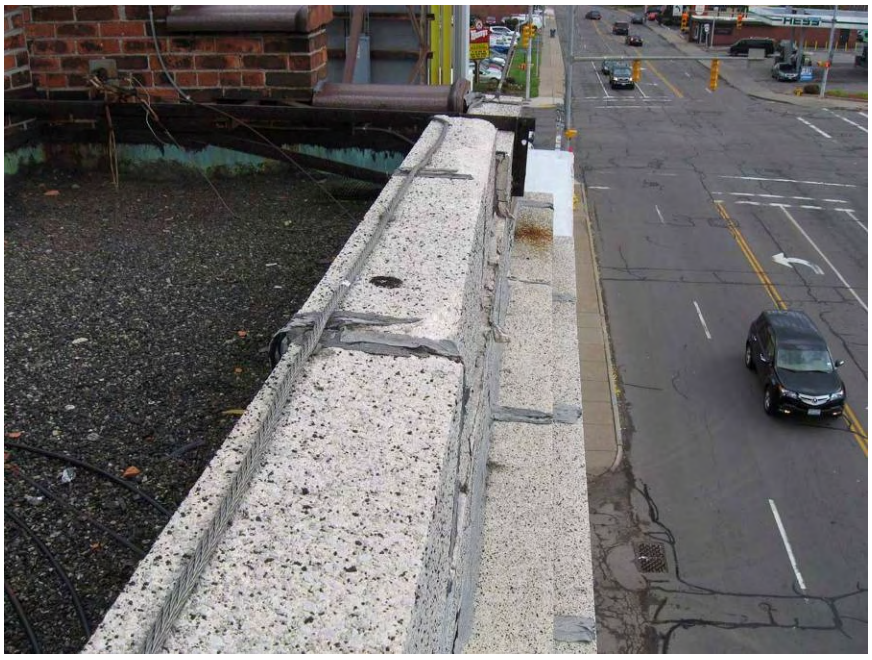
24. Rusted vent at west wall.

25. Rusted abandoned piping.

26. Continuing interior finish deterioration due to moisture intrusion.

27. Roof 4C – continued vegetation growth and debris. Refer to 2004 photos 11, 12.

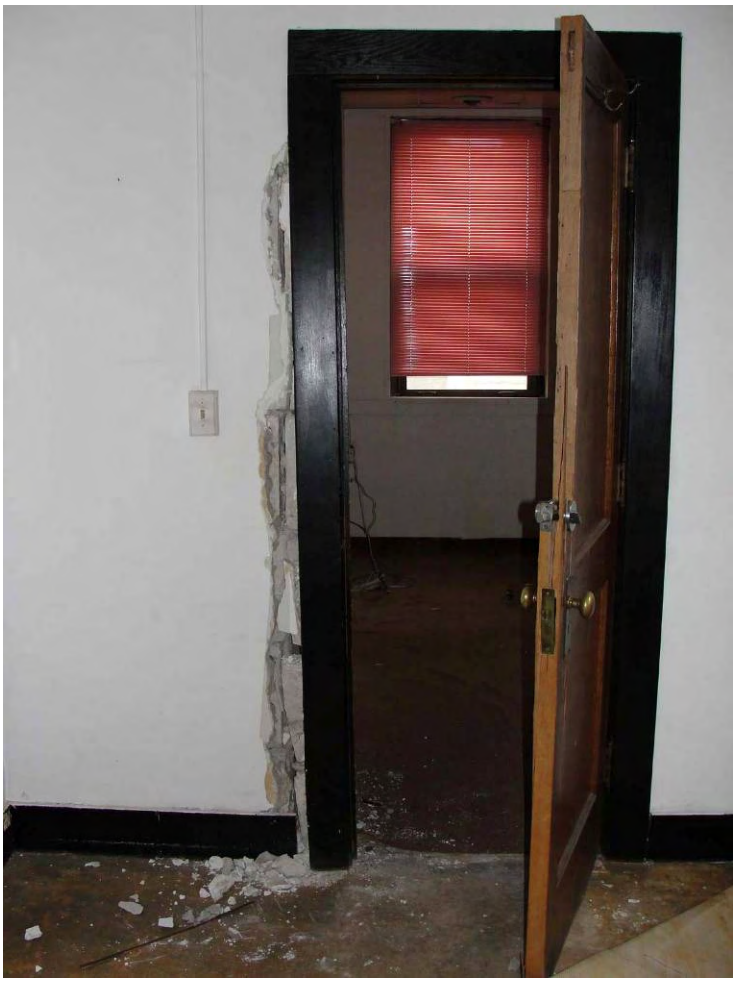
28. Roof 4C – blocked roof drain and sump. Refer to 2004 photos11, 12.



29. South cast stone parapet – open joints and stone shifting. Refer to 2004 photo 18.

30. South cast stone parapet – open joints and stone shifting. Refer to 2004 photo 18.

31.Roof 4 tile parapet cap deterioration. Refer to 2004 photo 19.



32. Third floor damaged wood door and frame.

33. Third floor damaged wood door.

34.Basement abandoned sidewalk lift.

35. Basement sump with broken cover near stair. This is a safety issue.

36. Roof 4B showing moss cover and general deterioration.

CONCLUSION

Historic Resource Evaluation

The area including and surrounding the proposed Wegmans project site began as one of the earlier European-American settlements established in Monroe County. Despite its long history, the area retains little of its historic appearance due to the dramatic changes that occurred during the twentieth century. Today the area is dominated by middle and late twentieth-century buildings and parking lots.

Although no historic buildings remain at the East/Winton intersection, six pre World War II structures survive in what once was the core of the village's central business district. Of the six, the Brighton Presbyterian Church is the most significant and is potentially individually eligible for listing in the National Register.[10] The church is historically significant as the area's oldest religious institution. It is also architecturally important as the work of a prominent local early twentieth-century architecture firm and as a representative example of the Late Gothic Revival style of architecture.

Across the street from the church are five remaining historic commercial buildings. Four are located within the proposed project site. All five of the buildings have suffered some loss of integrity due to *the removal of adjacent contemporary structures,* unsympathetic alterations, *and additions,* particularly in their interiors. None of the buildings appear to be individually eligible for National Register listing *although the Women's Christian Temperance Building, which is the oldest remaining nineteenth structure and served as an early meting location for the Brighton Village government prior to the 1905 annexation of this area by the city of Rochester, is a fine example of the Queen Anne style and possesses a rich history.*. As a group, the buildings encompass several late nineteenth and early twentieth-century architectural styles and illustrate the scale, massing, and design that was typical in the East/Winton commercial district in the years prior to World War II. The 1986 Mack survey of the City of Rochester identified the group as "possessing local significance." The group is not mentioned in the "The City of Rochester, New York, Consolidated Historic Resources Survey" produced in 2001.

The west edge of the project site abuts the easternmost section of the locally designated East Avenue Preservation District. This area includes the five residential structures on the west side of Probert Street. Constructed about 1920 as part of the Anna Gould subdivision, most of the houses were constructed as double or multi-family structures. Although the facades of two of the buildings have been altered, the street represents the style of dense middle-class residential development that occurred in many areas of Rochester during the period.

The former Stromberg Carlson plant, located northwest of the project site, was constructed about 1905. The building has been modernized but remains an excellent example of early twentieth-century industrial construction.

[10] The church was cited as being potentially eligible in the 1986 "City of Rochester Survey of Historic Resources." The City of Rochester, New York, Consolidated Historic Resources Survey" produced in 2001 does not mention the church.

Building Condition Assessment

Four of the identified historic buildings are located within the project site. These buildings are generally sound*, with the exception of the rear additions to buildings 1 and 2,* but have been damaged by deferred maintenance, improper repairs and raising of the surrounding grade. *The rear additions to buildings 1 and 2 show signs of significant structural distress* The stabilization costs below are estimates of the cost of repairs needed to address deterioration, structural deficiencies and life/safety issues in each of the four buildings. *These costs have been updated from the 2004 report.*

The buildings will need considerable work to bring them in compliance with the New York State Property Code, the Americans with Disabilities Act, and to meet modern commercial standards for good quality lease able space. The rehabilitation costs below estimate the cost of this work.

	Stabilization	Rehabilitation	Total
Building 1 (1794 East Avenue)	*$200,000*	*$131,000*	*$331,000*
Building 2 1796 East Avenue	*$250,000*	*$340,000*	*$590,000*
Building 3 1800-1802 East Avenue	*$530,000*	*$416,000*	*$946,000*
Building 4 1806 East Avenue	*$228,000*	*$1,100,000*	*$1,328,000*

For both stabilization and rehabilitation work, we have assumed the building use will remain the same. If the use of the buildings is changed, the expenses involved in returning them to a sound and code compliant condition, will increase significantly. The alternate use costs may be reduced by National Register listing.

The Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior's Standards for Rehabilitation are ten basic principles created to help preserve the distinctive character of a historic building and its site, while allowing for reasonable change to meet new needs.

The Standards (**36 CFR Part 67**) apply to historic buildings of all periods, styles, types, materials, and sizes. They apply to both the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building's site and environment as well as attached, adjacent, or related new construction.

Rehabilitation projects must meet the following Standards, as interpreted by the National Park Service, to qualify as “certified rehabilitations” eligible for the 20% rehabilitation tax credit.

The Standards are applied to projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

ATTACHMENT 2

OPRHP Standards for Photographic Documentation

1. Photograph significant context views, all exterior elevations, any intact interior spaces, features or hardware, and select historic views where available.
2. Use Black-and-white film.
3. Provide 3" by 5" negatives. (This size minimizes distortion of prints.)
4. Provide an annotated list of photo locations on archival-quality acid-free paper.
5. Distribute 3 copies of photo prints using archival-quality acid-free paper to the following organizations:

New York State Office of Parks, Recreation, and Historic Preservation
Field Services Bureau
Peebles Island
P.O. Box 189
Waterford, NY 12188-0189

University of Rochester River Campus Libraries
Rare Books and Special Collections
Rush Rhees Library
University of Rochester
Rochester, NY 14627

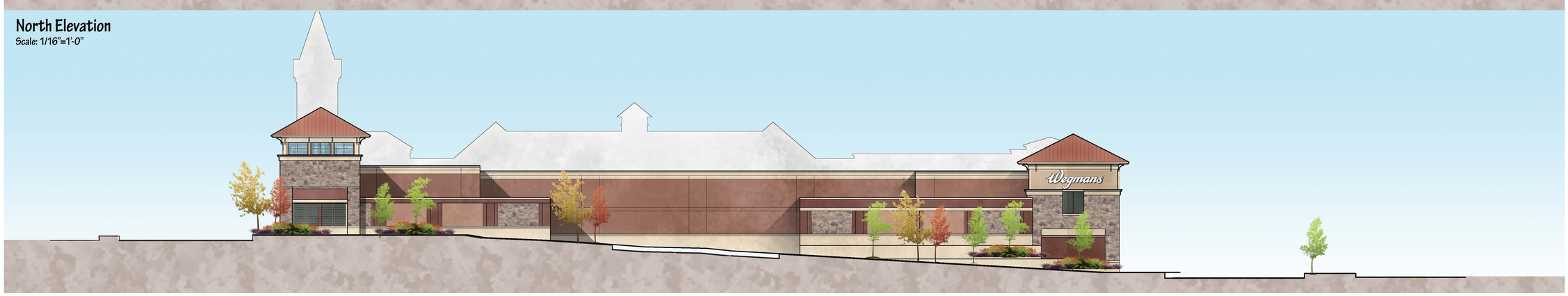
Central Library of Rochester and Monroe County, New York
115 South Avenue
Rochester, NY 14604-1896

The Landmark Society of Western New York
133 South Fitzhugh Street
Rochester, NY 14608

West Elevation
Scale: 1/16"=1'-0"

South Elevation
Scale: 1/16"=1'-0"

North Elevation
Scale: 1/16"=1'-0"



East Elevation
Scale: 1/16"=1'-0"

Wegmans

East Avenue
Rochester, New York

3/29/10

Bignell Watkins Hasser
ARCHITECTS P.C.

South Elevation - Option 1
Scale: 1/16"=1'-0"

South Elevation - Option 2
Scale: 1/16"=1'-0"

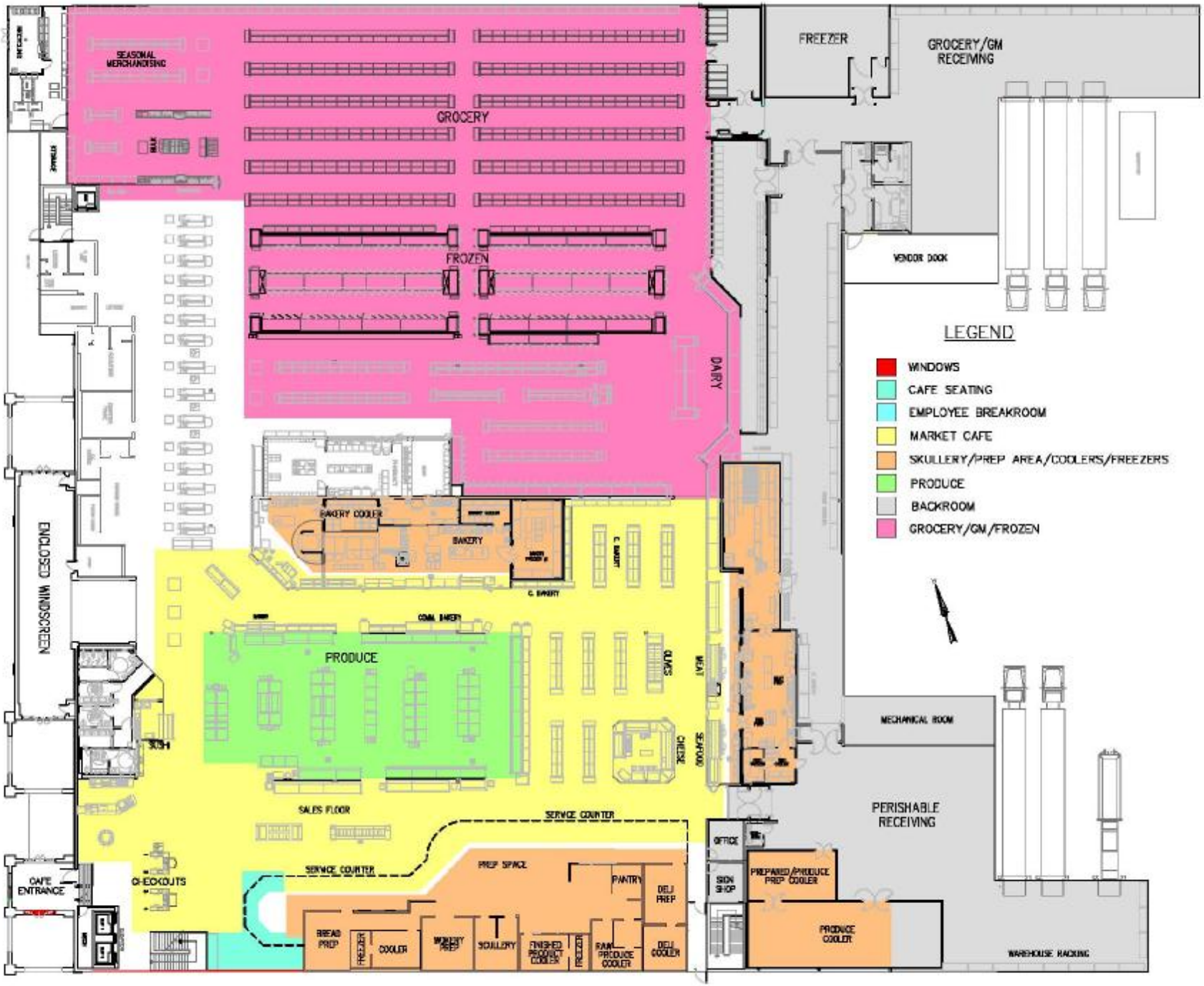
South Elevation - Option 3
Scale: 1/16"=1'-0"

Wegmans

East Avenue
Rochester, New York

3/29/10

Bignell Watkins Hasser
ARCHITECTS P.C.


SEASONAL MERCHANDISING
GROCERY
FROZEN
DAIRY
FREEZER
GROCERY/GM RECEIVING
VENDOR DOOR
LEGEND
WINDOWS
CAFE SEATING
EMPLOYEE BREAKROOM
MARKET CAFE
SKULLERY/PREP AREA/COOLERS/FREEZERS
PRODUCE
BACKROOM
GROCERY/GM/FROZEN
ENCLOSED WINDSCREEN
BAKERY COOLER
BAKERY
C. BAKERY
PRODUCE
SUSHI
OLIVES
MEAT
SEAFOOD
CHEESE
MECHANICAL ROOM
SALES FLOOR
SERVICE COUNTER
SERVICE COUNTER
PERISHABLE RECEIVING
OFFICE
SIGN SHOP
PREPARED/PRODUCE PREP COOLER
CAFE ENTRANCE
CHECKOUTS
PREP SPACE
PANTRY
DELI PREP
BREAD PREP
FREEZER
COOLER
BAKERY PREP
SKULLERY
FINISHED PRODUCT COOLER
FREEZER
RAW PRODUCE COOLER
DELI COOLER
PRODUCE COOLER
WAREHOUSE RACKING


Wegmans FOOD PHARMACY


FOUNTAIN BLE


FOUNTAIN BLEU


GOLD


EASTSIDE
TRADING POST
ANTIQUES & COLLECTIBLES
BUY & SELL
LAUNDROMAT & DRY CLEANERS
1765


GAME CRAZE
WE PAY CASH


COUNTRY


COUNTRY CLUB DINER


WORLD
GYM


McDonald's

View From Probert Street

Wegmans

East Avenue Store
Rochester, New York

03/30/2010

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View From East Avenue

Wegmans

East Avenue Store
Rochester, New York

03/30/2010

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View From Intersection of East Avenue & North Winton Road

Wegmans

East Avenue Store
Rochester, New York

03/30/2010

Bignell Watkins Hasser
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View From University Ave.

Wegmans

East Avenue Store
Rochester, New York

03/30/2010

Bignell Watkins Hasser
ARCHITECTS P.C.

View From Intersection of University Boulevard & North Winton Road

Wegmans

East Avenue Store
Rochester, New York

03/30/2010

Bignell Watkins Hasser
ARCHITECTS P.C.

CITY OF ROCHESTER
ROCHESTER POLICE DEPARTMENT
INTRA-DEPARTMENTAL CORRESPONDENCE

TO: Lt Donald Lucas, Commanding Research and Evaluation
FROM: Officer Patrick M. Piano #563, Research and Evaluation
DATE: Tuesday, September 29th, 2009
SUBJECT: 1750 East Avenue- Wegmans Project

I was forwarded an e-mail request from Tricia Trocano-Renna from Costich Engineering P.C. requesting input from the Rochester Police Department regarding the proposed construction project at 1750 East Avenue.

The preparation and completion of this report includes input and data collection from Chris Delaney –MCAC, Commander Clark-Patrol Division East and members of the Research and Evaluation Staff.

The proposed project is bordered on the west- Probert Street, to the east- North Winton Road, to the north by University Avenue and to the south by East Avenue.

The project is currently undergoing the State Environmental Quality Review (SEQR) process. As part of the review, the Developer is preparing a Draft Environmental Impact Statement (DEIS). The initial steps outlined in the DEIS require the Developer to explore the capacity of existing emergency services and information regarding which stations are responsible for covering this area.

The location is served by the Rochester Police Department Patrol Division East (PDE) which headquarters is at 630 North Clinton Avenue. The PDE is staffed with 162 sworn police officers working on 5 different platoons. The location is situated in Police Service Area-30.

At the present time the location is used as a Wegman's Grocery Store.

Since January 1st, 2008, the previous 20 months, 1750 East Avenue has generated 412 police calls for service (CFS). In the same general area and time frame, the RPD investigated 132 traffic accidents.

The general area is currently on the City of Rochester Accident Hotspot map. The top problem locations are East/Winton, Winton/University, East/Probert, and 1750

East Ave (Wegmans, but some of these accidents are actually occurring on Probert pulling out of Wegmans, and some are occurring pulling out onto East Ave from Wegmans.)

Generally, the accidents in this area are non-injury accidents. Accidents tend to cluster on Weekdays around the noon hour, with the second clustering occurring weekdays around the 4-6 timeframe.

Although the traffic related incidents are elevated, the entire CFS activity to the vicinity at this time did not raise a cause for concern.

The new configuration plans for an additional entrance and exit from North Winton Rd as well as an entrance/exit on East Avenue approximately 80 feet west of the intersection of North Winton Rd. The entrance on North Winton Rd will serve the vendor and delivery dock as well and new retail space parking.

The addition of these new entrances and exits will impact the traffic pattern and may have an impact on police staffing and public safety should traffic related incidents raise from the current levels.

From a public safety perspective, the designers should consider the following concerns:

- Will the proposed signal on East Ave. help to alleviate the congestion problems that are currently a contributing factor to the traffic accidents?

- Will there be timing variations will be introduced (if any) to address the clustering of accidents that are occurring during the noon and rush hour periods?

- Will the truck delivery traffic impact the accident risk at the East/Winton intersection? Not sure if there is provision for taking deliveries outside of peak accident periods to alleviate problems associated with limited driver visibility.

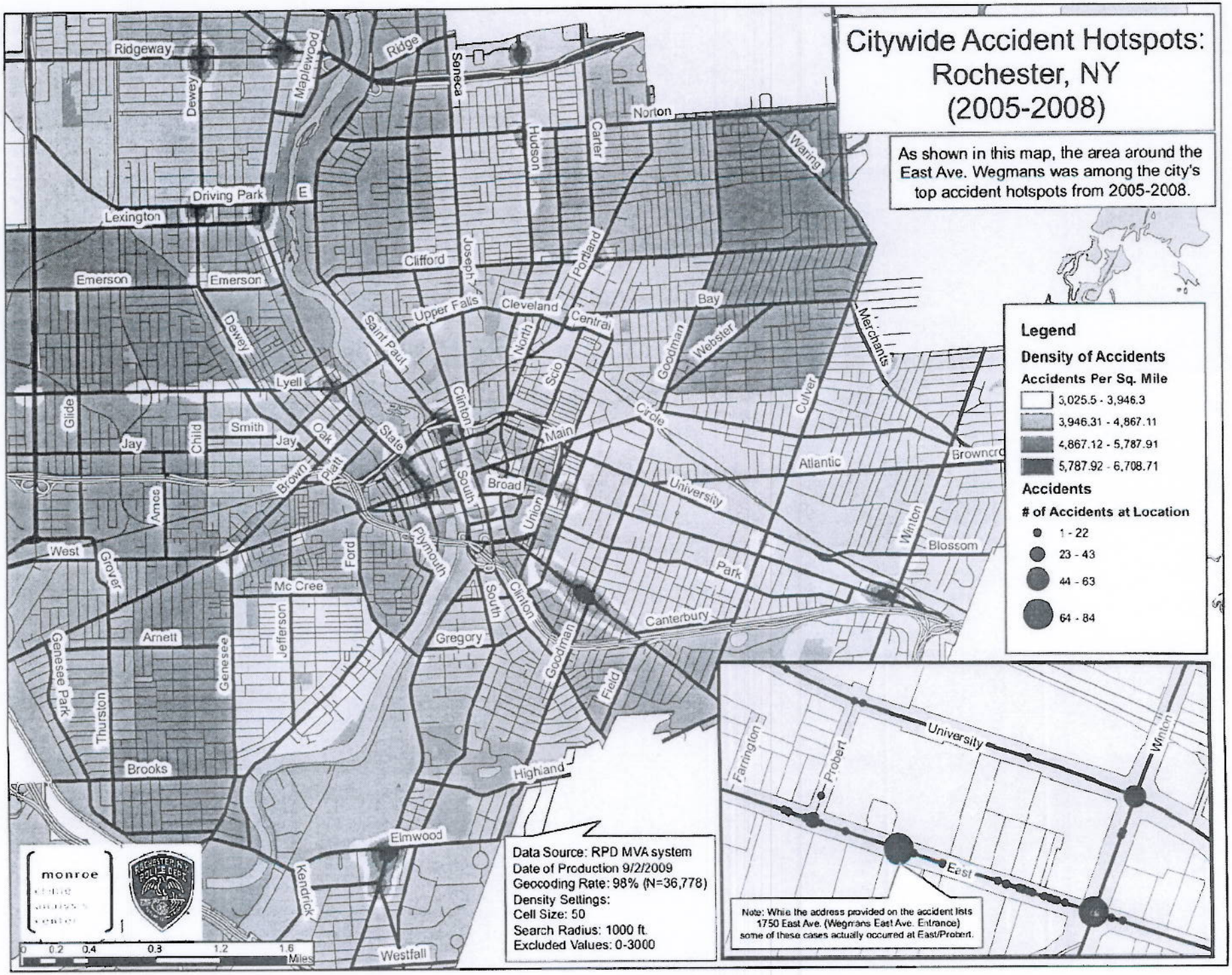
- Will the plan provide for a "bump out" for RTS buses on East Ave- This is a heavily used bus stop, and it takes time for passengers to load due to groceries in hand. Stopped buses impede driver visibility, alter traffic flow, and create risk for accidents. Presently the accident cluster does not include vehicle pedestrian accidents, hoping not to change the pattern as such.

- Currently, Wegmans customers tend to park on the north side of East Ave.- This too impedes driver visibility and creates risk for accidents- What provisions or considerations can be made to restrict this tendency?

Attached for your reference is:

- Wegmans Food Market conceptual Site plan
- The current Pictometry image
- CFS reports
- The Citywide Accident Hotspot Map.`

Please advise if you have additional questions and/or concerns.


Citywide Accident Hotspots: Rochester, NY (2005-2008)
As shown in this map, the area around the East Ave. Wegmans was among the city's top accident hotspots from 2005-2008.
Legend
Density of Accidents
Accidents Per Sq. Mile
3,025.5 - 3,946.3
3,946.31 - 4,867.11
4,867.12 - 5,787.91
5,787.92 - 6,708.71
Accidents
# of Accidents at Location
1 - 22
23 - 43
44 - 63
64 - 84
Data Source: RPD MVA system
Date of Production 9/2/2009
Geocoding Rate: 98% (N=36,778)
Density Settings:
Cell Size: 50
Search Radius: 1000 ft.
Excluded Values: 0-3000
Note: While the address provided on the accident lists 1750 East Ave. (Wegmans East Ave. Entrance) some of these cases actually occurred at East/Probert.
monroe
0 0.2 0.4 0.8 1.2 1.6 Miles
Ridgeway
Dewey
Maplewood
Ridge
Seneca
Norton
Hudson
Carter
Waring
Driving Park
E
Lexington
Emerson
Clifford
Joseph
Portland
Upper Falls
Cleveland
Central
Bay
Merchants
Saint Paul
North
Scio
Goodman
Webster
Culver
Lyell
Glide
Smith
Jay
Child
Oak
State
Clinton
Main
Circle
Atlantic
Brown
Platt
South
Broad
University
Union
Winton
Blossom
Park
Amee
West
Grover
Ford
Plymouth
Mc Cree
Canterbury
Arnett
Jefferson
Gregory
Genesee Park
Genesee
Thurston
Field
Brooks
Highland
Elmwood
Kendrick
Westfall
Farrington
Probert
East

Count of Incident Number	Year				
Class Rollups.Category	2008	2009	Grand Total	# Reported to Police	% Reported to Police
Abandoned Vehicle		2	2	0	0%
Checks- Paper		7	7	7	100%
Credit Card\Wegmans Gift Card	1	2	3	1	33%
Criminal Mischief		1	1	0	0%
Customer Complaints	1		1	0	0%
Disorderly Conduct	4		4	2	50%
Employee Complaint	1		1	0	0%
Harassment	6	3	9	2	22%
Hazardous Condition	1		1	0	0%
Information Received		1	1	0	0%
Medical Problem\Injury	7	1	8	1	13%
Motor Vehicle Accident	3		3	1	33%
Parking Problem		2	2	0	0%
Policy Violation	1	1	2	0	0%
Product Tampering		1	1	0	0%
Property Found\Recovered	1		1	0	0%
Property-Reported Missing	1	1	2	0	0%
Soliciting	2	2	4	0	0%
Suspicious Activity	5	2	7	3	43%
Suspicious Refund	1	2	3	0	0%
Theft-Approach	18	13	31	13	42%
Theft-Attempt	5		5	0	0%
Theft-By Employee	5	7	12	0	0%
Theft-Personal Property	3		3	1	33%
Theft-Purse\Wallet	2	2	4	2	50%
Theft-Shoplifting	51	125	176	56	32%
Trespassing	14	2	16	7	44%
Unsecured Assets		1	1	0	0%
Grand Total	**133**	**178**	**311**	**96**	**31%**

Piano, Patrick

From: Lucas, Donald
Sent: Tuesday, September 01, 2009 2:48 PM
To: Piano, Patrick
Subject: FW: Wegmans - East Avenue
Attachments: 2781 CN100 Conceptual Site Plan 2009-07-10.pdf

Pat,

Can you take a look at this and flush out the concerns.

Thanks!

From: Schill, Richard
Sent: Tuesday, September 01, 2009 12:10 PM
To: Lucas, Donald
Cc: Markert, George
Subject: FW: Wegmans - East Avenue

He asked I forward to R and E on any input (if this location would create a need for additional police services or a change in our response).

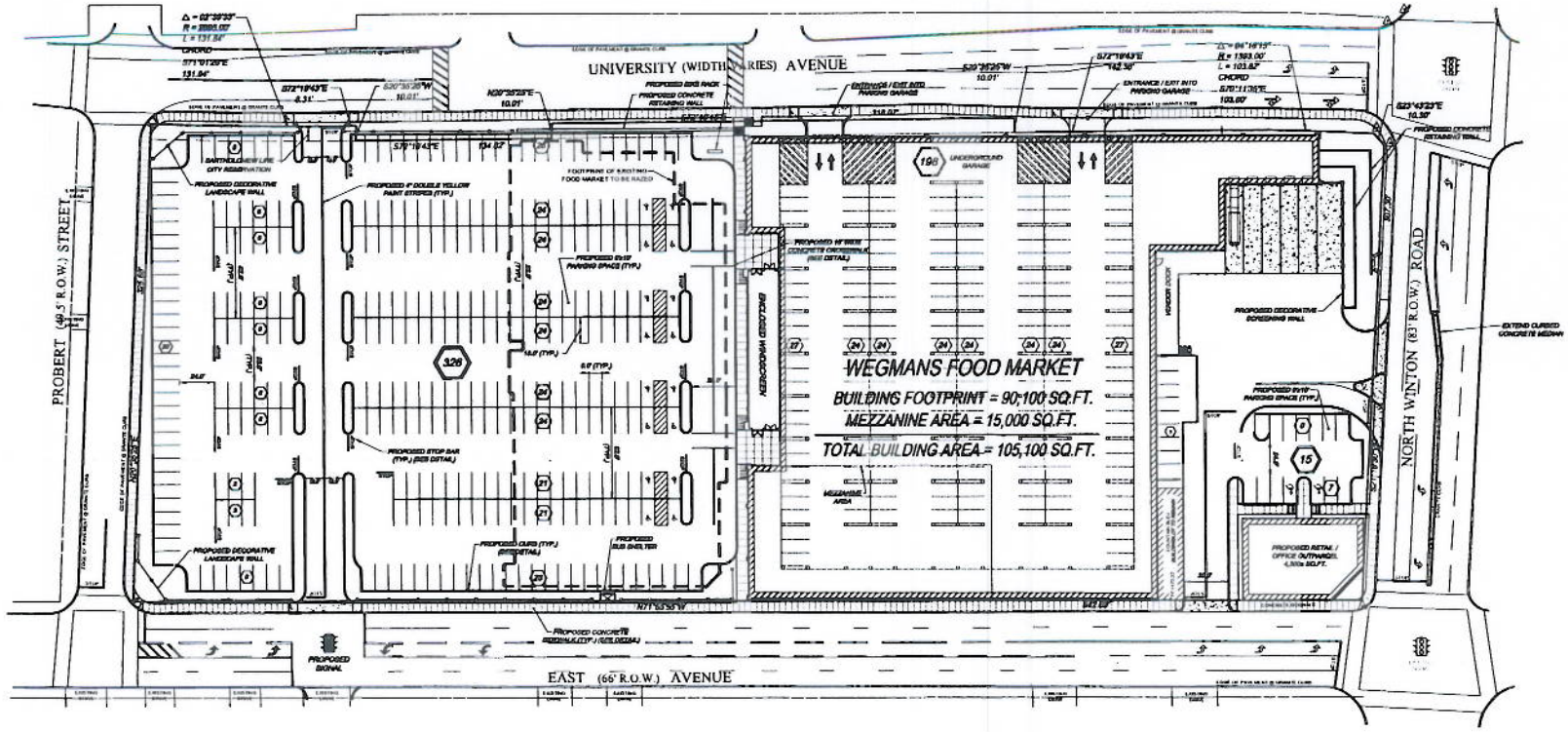
Lieutenant Richard Schill
Aide to Chief David Moore
185 Exchange Blvd
Rochester, NY 14614
585-428-6029, 585-428-7033
Fax: (585) 428-6093
RS0898@cityofrochester.gov

From: Tricia Renna [mailto:trenna@costich.com]
Sent: Tuesday, September 01, 2009 9:22 AM
Subject: Wegmans - East Avenue

To Whom it May Concern:
I am contacting you to request input from your department regarding a project located in the City of Rochester. The proposed project is located between Probert Street and Winton Road on East Avenue. The project is currently undergoing the State Environmental Quality Review (SEQR) process. As part of the review, the Developer is preparing a Draft Environmental Impact Statement (DEIS). The initial steps outlined in the DEIS require the Developer to explore the capacity of existing emergency services and information regarding which stations are responsible for covering this area. I am also seeking comments with regards for future services. Please see attached concept plan for your use.

I appreciate your prompt response in this matter. I can be contacted at the information below. Thank you in advance.

Tricia A.Trocano-Renna
Costich Engineering, P.C.
217 Lake Avenue
Rochester, NY 14608
585-458-3020, ext. 132
585-458-2731 -- fax
trenna@costich.com



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- Dig With Care

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GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

NO	DATE	REVISION	BY	CHKD	APVD

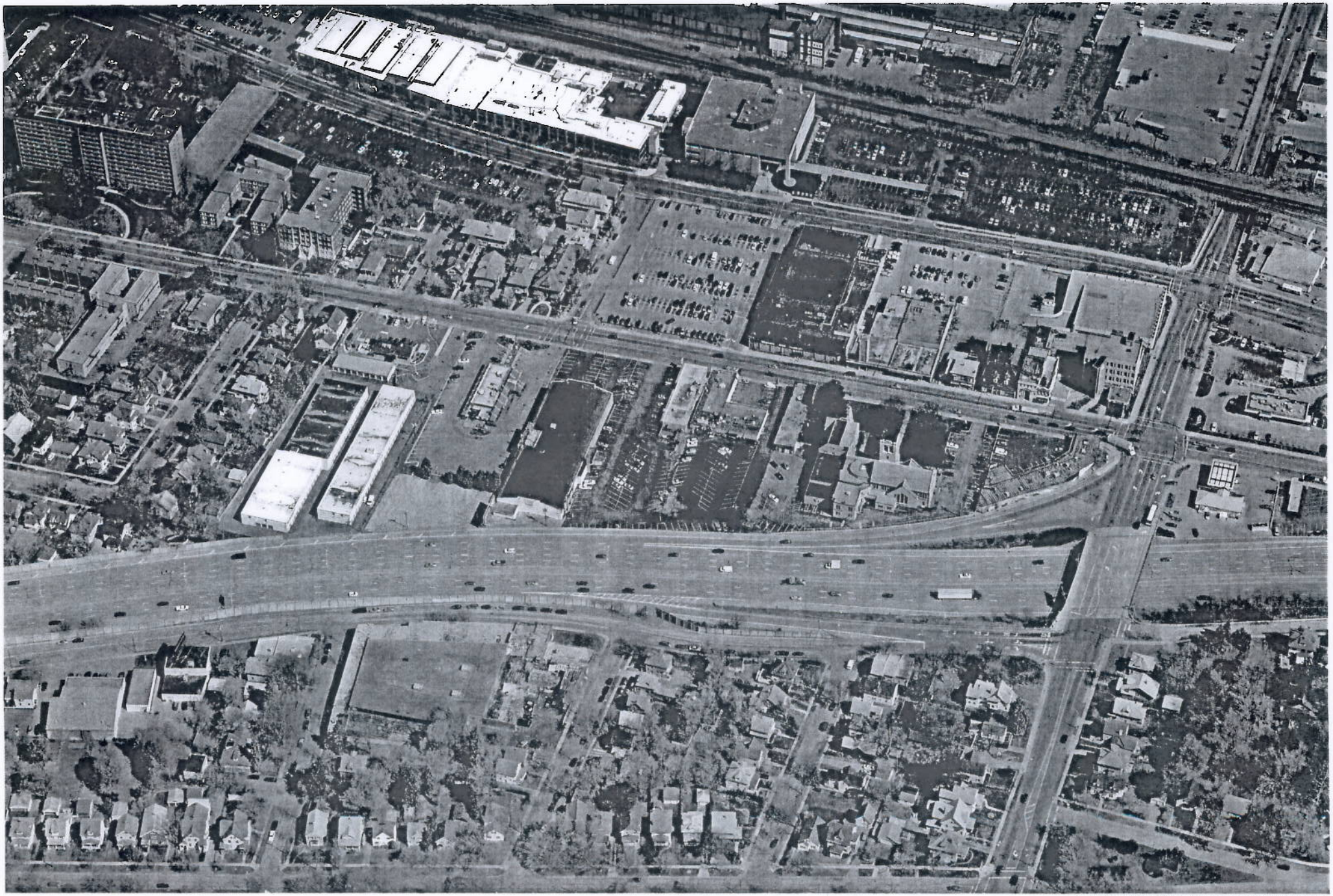
STATE OF NEW YORK
MARK R. COSTICH
No. 065501
Licensed Professional Engineer

PROJECT MANAGER	G.W.
DRAWN BY	D.E.L.
SURVEYED	D.T.H.
COMPLETED	D.T.H.
DATE	07/10/2009
SCALE	1"=40'

COSTICH ENGINEERING
- CIVIL ENGINEERING
- LAND PLANNING
- SURVEYING

217 LAKE AVENUE
ROCHESTER, NEW YORK 14608
(585) 458-3020

TITLE OF PROJECT	WEGMANS FOOD MARKETS, INC. 1750 EAST AVENUE
TITLE OF DRAWING	CONCEPTUAL SITE PLAN
LOCATION OF PROJECT	CITY OF ROCHESTER COUNTY OF MONROE, STATE OF NEW YORK
CLIENT	WEGMANS FOOD MARKETS, INC. 1500 WEGMANS MARKET STREET ROCHESTER, NEW YORK 14624
DWG #	2781
	CN100
	SHEET 1 OF 1



A support Lt Lucas recommendation
Chief David D. Moore

CITY OF ROCHESTER
ROCHESTER POLICE DEPARTMENT
INTRA-DEPARTMENTAL CORRESPONDENCE

TO: Lt Donald Lucas, Commanding Research and Evaluation
FROM: Officer Patrick M. Piano #563, Research and Evaluation
DATE: Tuesday, September 29th, 2009
SUBJECT: 1750 East Avenue- Wegmans Project

OCT 20 2009

I was forwarded an e-mail request from Tricia Trocano-Renna from Costich Engineering P.C. requesting input from the Rochester Police Department regarding the proposed construction project at 1750 East Avenue.

The preparation and completion of this report includes input and data collection from Chris Delaney –MCAC, Commander Clark-Patrol Division East and members of the Research and Evaluation Staff.

The proposed project is bordered on the west- Probert Street, to the east- North Winton Road, to the north by University Avenue and to the south by East Avenue.

The project is currently undergoing the State Environmental Quality Review (SEQR) process. As part of the review, the Developer is preparing a Draft Environmental Impact Statement (DEIS). The initial steps outlined in the DEIS require the Developer to explore the capacity of existing emergency services and information regarding which stations are responsible for covering this area.

The location is served by the Rochester Police Department Patrol Division East (PDE) which headquarters is at 630 North Clinton Avenue. The PDE is staffed with 162 sworn police officers working on 5 different platoons. The location is situated in Police Service Area-30.

At the present time the location is used as a Wegman's Grocery Store.

Since January 1st, 2008, the previous 20 months, 1750 East Avenue has generated 412 police calls for service (CFS). In the same general area and time frame, the RPD investigated 132 traffic accidents.

The general area is currently on the City of Rochester Accident Hotspot map. The top problem locations are East/Winton, Winton/University, East/Probert, and 1750

East Ave (Wegmans, but some of these accidents are actually occurring on Probert pulling out of Wegmans, and some are occurring pulling out onto East Ave from Wegmans.)

Generally, the accidents in this area are non-injury accidents. Accidents tend to cluster on Weekdays around the noon hour, with the second clustering occurring weekdays around the 4-6 timeframe.

Although the traffic related incidents are elevated, the entire CFS activity to the vicinity at this time did not raise a cause for concern.

The new configuration plans for an additional entrance and exit from North Winton Rd as well as an entrance/exit on East Avenue approximately 80 feet west of the intersection of North Winton Rd. The entrance on North Winton Rd will serve the vendor and delivery dock as well and new retail space parking.

The addition of these new entrances and exits will impact the traffic pattern and may have an impact on police staffing and public safety should traffic related incidents raise from the current levels.

From a public safety perspective, the designers should consider the following concerns:

- Will the proposed signal on East Ave. help to alleviate the congestion problems that are currently a contributing factor to the traffic accidents?

- Will there be timing variations will be introduced (if any) to address the clustering of accidents that are occurring during the noon and rush hour periods?

- Will the truck delivery traffic impact the accident risk at the East/Winton intersection? Not sure if there is provision for taking deliveries outside of peak accident periods to alleviate problems associated with limited driver visibility.

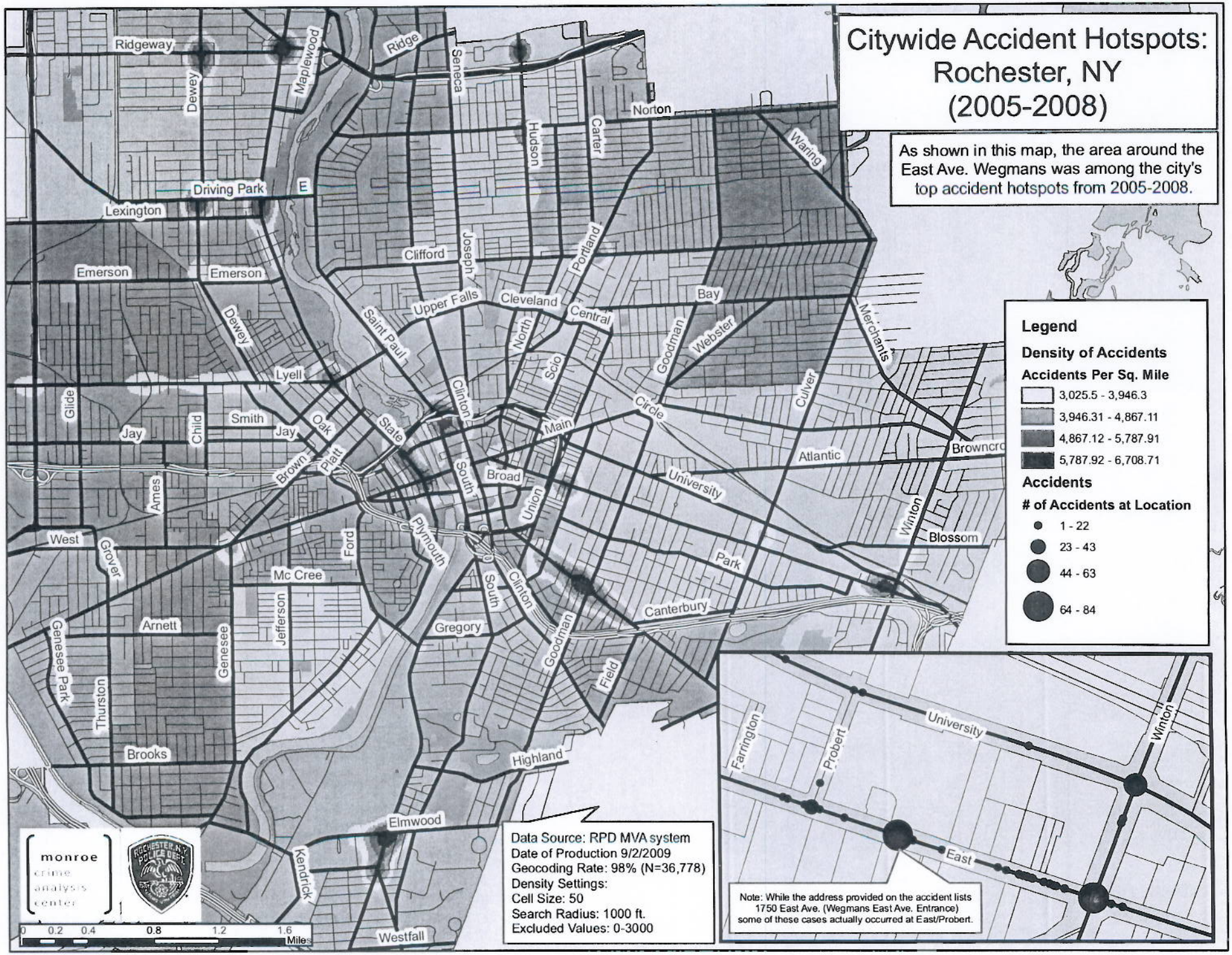
- Will the plan provide for a "bump out" for RTS buses on East Ave- This is a heavily used bus stop, and it takes time for passengers to load due to groceries in hand. Stopped buses impede driver visibility, alter traffic flow, and create risk for accidents. Presently the accident cluster does not include vehicle pedestrian accidents, hoping not to change the pattern as such.

- Currently, Wegmans customers tend to park on the north side of East Ave.- This too impedes driver visibility and creates risk for accidents- What provisions or considerations can be made to restrict this tendency?

Attached for your reference is:

- Wegmans Food Market conceptual Site plan
- The current Pictometry image
- CFS reports
- The Citywide Accident Hotspot Map.`

Please advise if you have additional questions and/or concerns.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Ridgeway
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Maplewood
Ridge
Seneca
Norton
Hudson
Carter
Waring
Driving Park
E
Lexington
Emerson
Emerson
Clifford
Joseph
Portland
Upper Falls
Cleveland
Central
Bay
Saint Paul
North
Scio
Goodman
Webster
Merchants
Culver
Lyell
Glide
Smith
Child
Jay
Jay
Oak
Slate
Clinton
Main
Circle
Atlantic
Brown
Platt
South
Broad
University
Union
Ames
West
Grover
Ford
Plymouth
Park
Winton
Blossom
Mc Cree
South
Clinton
Canterbury
Arnett
Jefferson
Gregory
Goodman
Genesee Park
Genesee
Thurston
Field
Brooks
Highland
Elmwood
Kendrick
Westfall
Farrington
Probert
University
Winton
East
monroe crime analysis center
0 0.2 0.4 0.8 1.2 1.6 Miles
Data Source: RPD MVA system
Date of Production 9/2/2009
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Density Settings:
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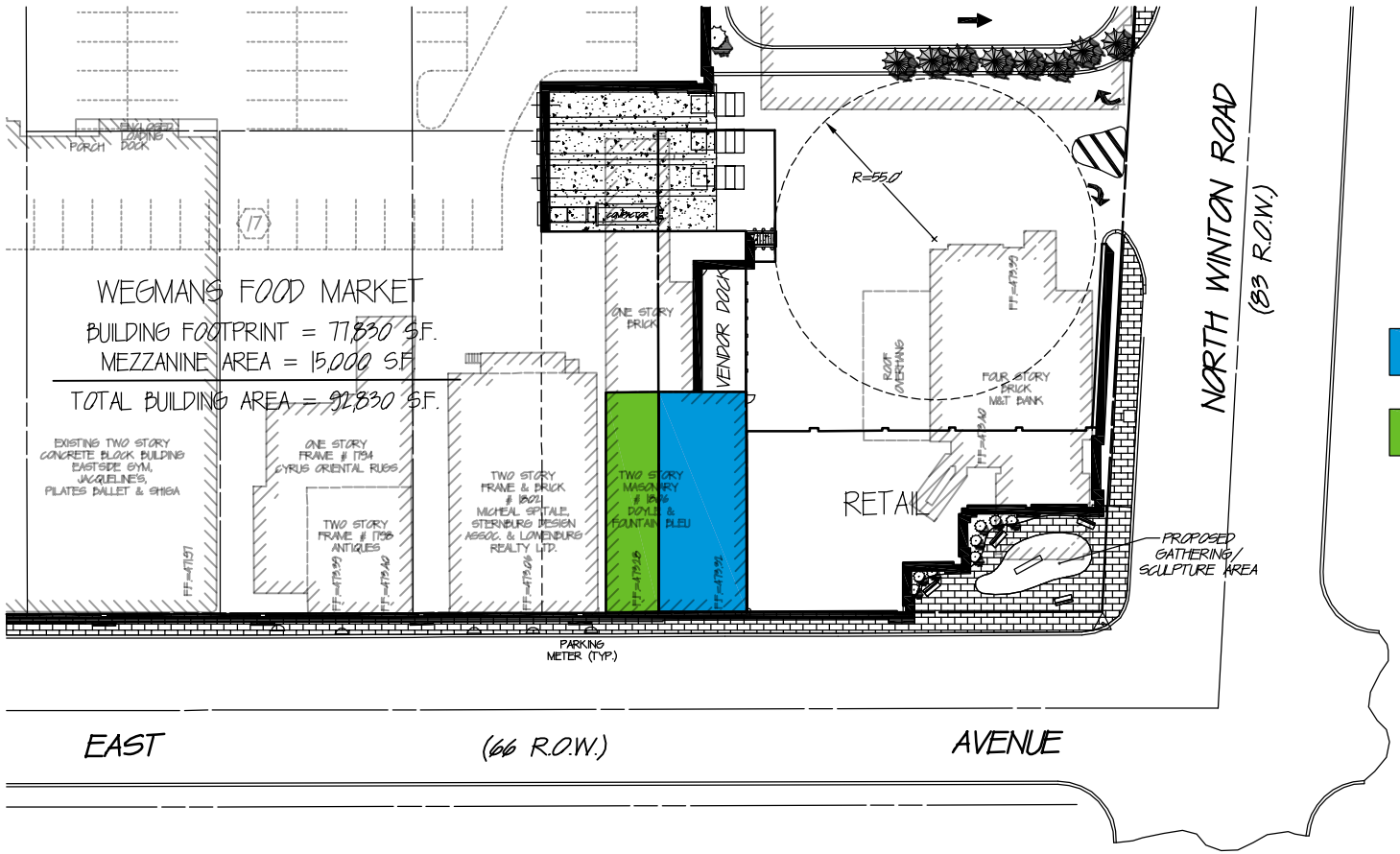

RETAIL LEGEND

FOUNTAIN BLUE
2,260 S.F.

DOYLE
1,360 S.F.

Cons:

- Smaller Food Market footprint
- No parking for existing and proposed retail
- Tight loading, not good for ingress/egress

COSTICH ENGINEERING
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· LAND PLANNING
· SURVEYING
217 LAKE AVENUE
ROCHESTER, NEW YORK
14608
(585) 458-3020

GRAPHIC SCALE

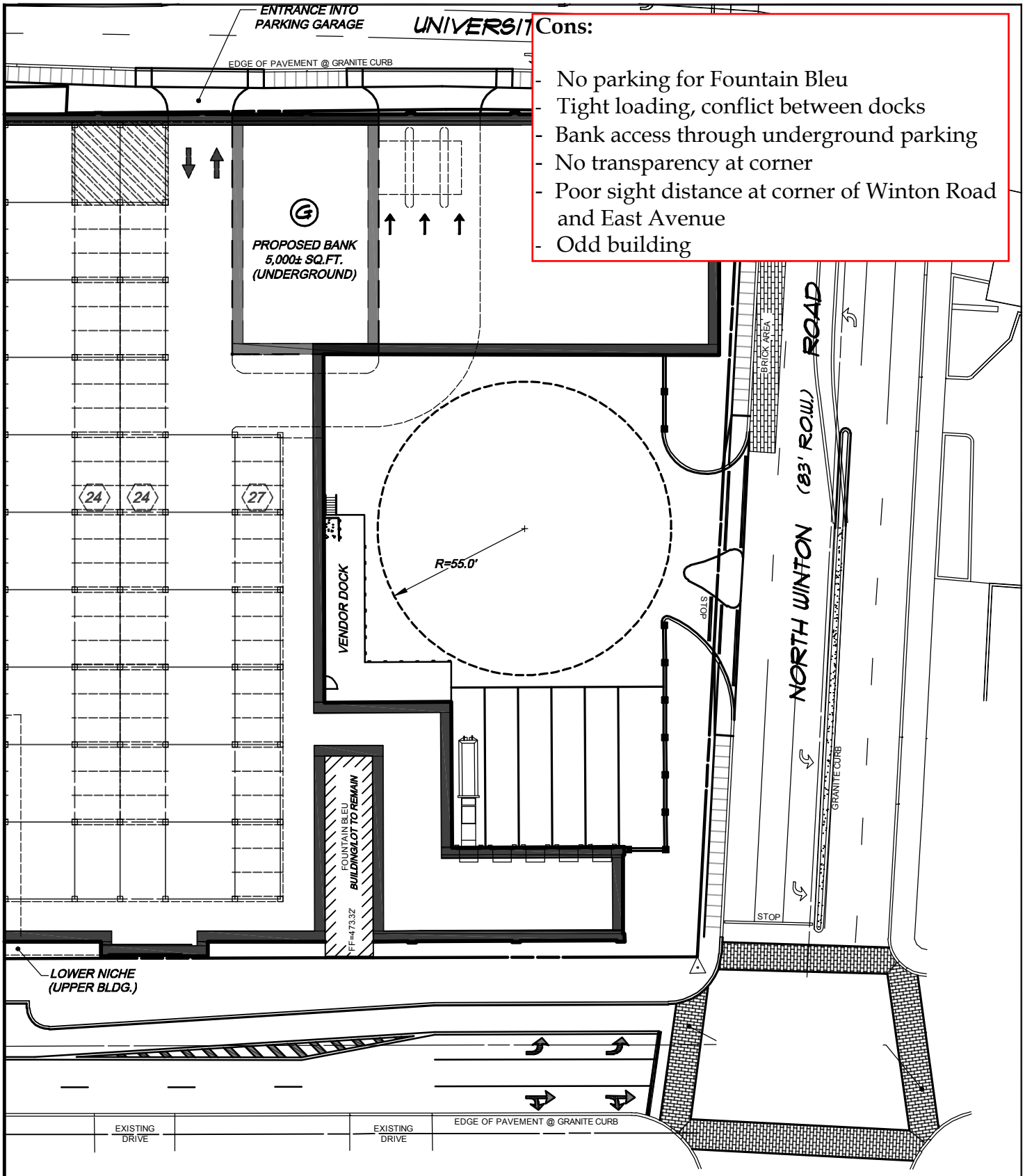
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

WEGMANS EAST AVENUE RETAIL STUDY

DATED: 7/1/2003

CE#2781-RS2



Cons:

- No parking for Fountain Bleu
- Tight loading, conflict between docks
- Bank access through underground parking
- No transparency at corner
- Poor sight distance at corner of Winton Road and East Avenue
- Odd building

COSTICH ENGINEERING

GRAPHIC SCALE

0 25 50

(IN FEET)

1 inch = 50 feet

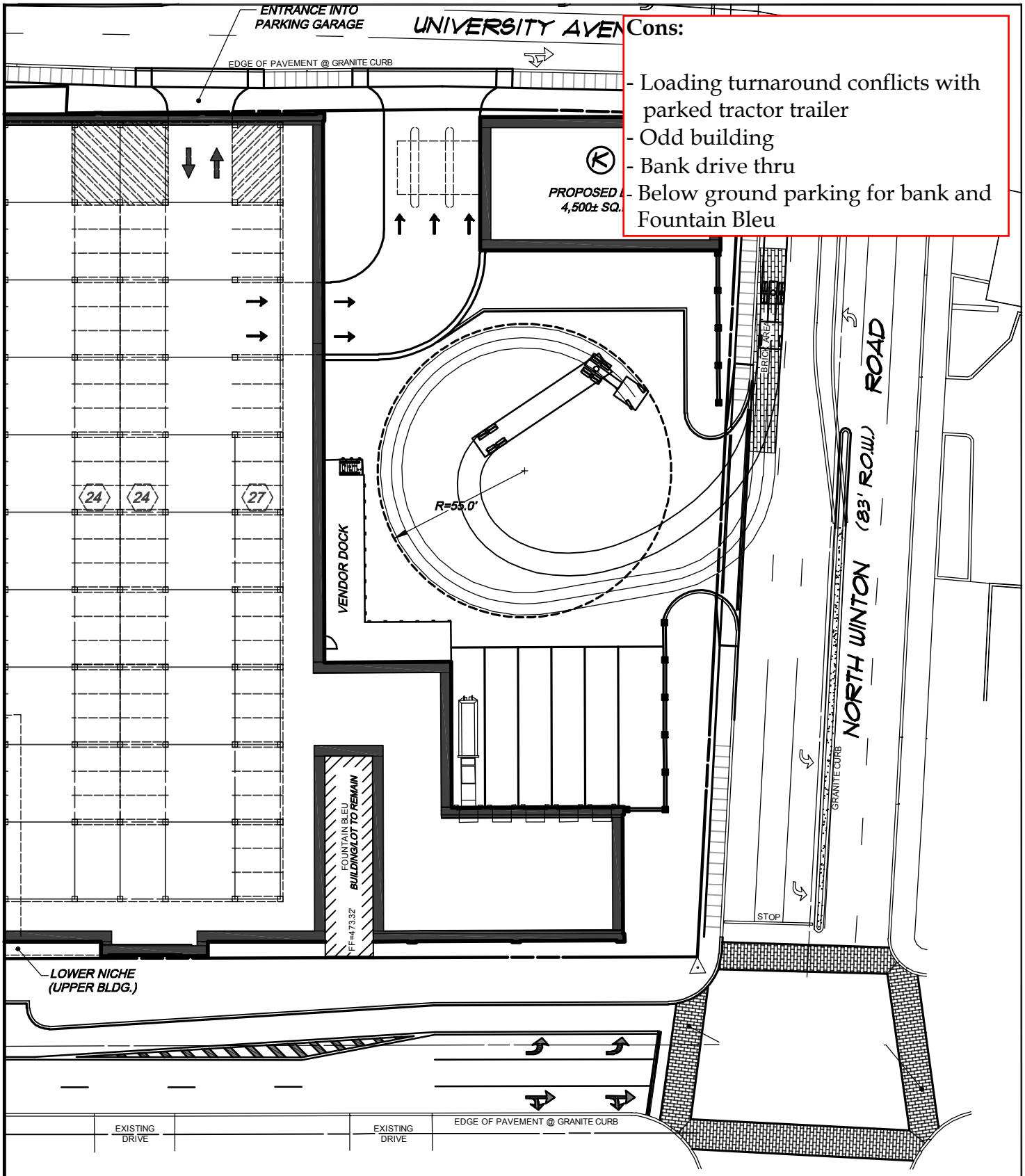
WEGMANS FOOD MARKET

EAST AVENUE

SCHEMATIC BANK LAYOUT "G"

3/10/2004

CE#2781-BNK1



Cons:

- Loading turnaround conflicts with parked tractor trailer
- Odd building
- Bank drive thru
- Below ground parking for bank and Fountain Bleu

COSTICH ENGINEERING

GRAPHIC SCALE

0 25 50

(IN FEET)

1 inch = 50 feet

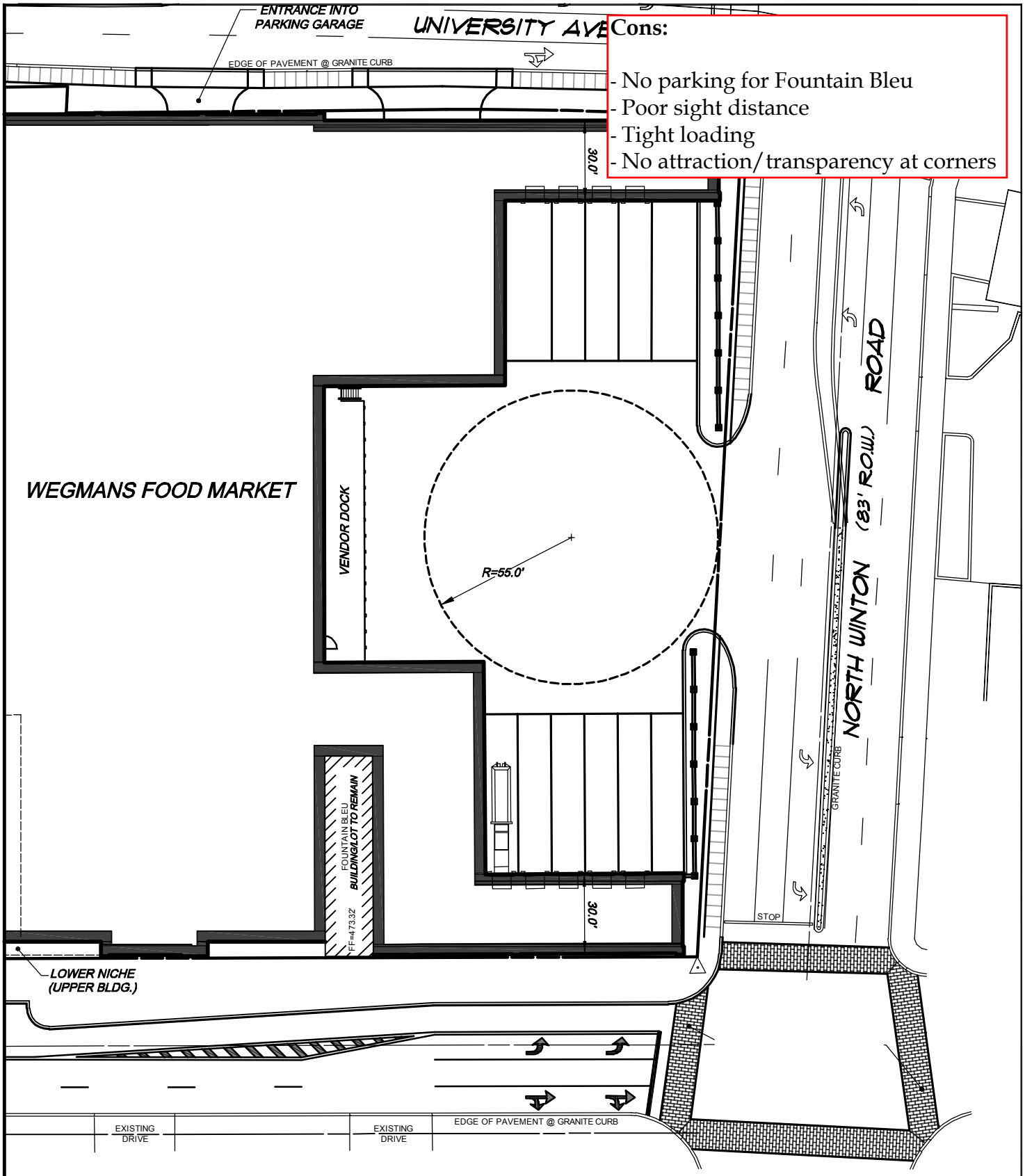
WEGMANS FOOD MARKET

EAST AVENUE

SCHEMATIC BANK LAYOUT "K"

3/10/2004

CE#2781-BNK10



Cons:

- No parking for Fountain Bleu
- Poor sight distance
- Tight loading
- No attraction/transparency at corners

COSTICH ENGINEERING

GRAPHIC SCALE

0 25 50

(IN FEET)

1 inch = 50 feet

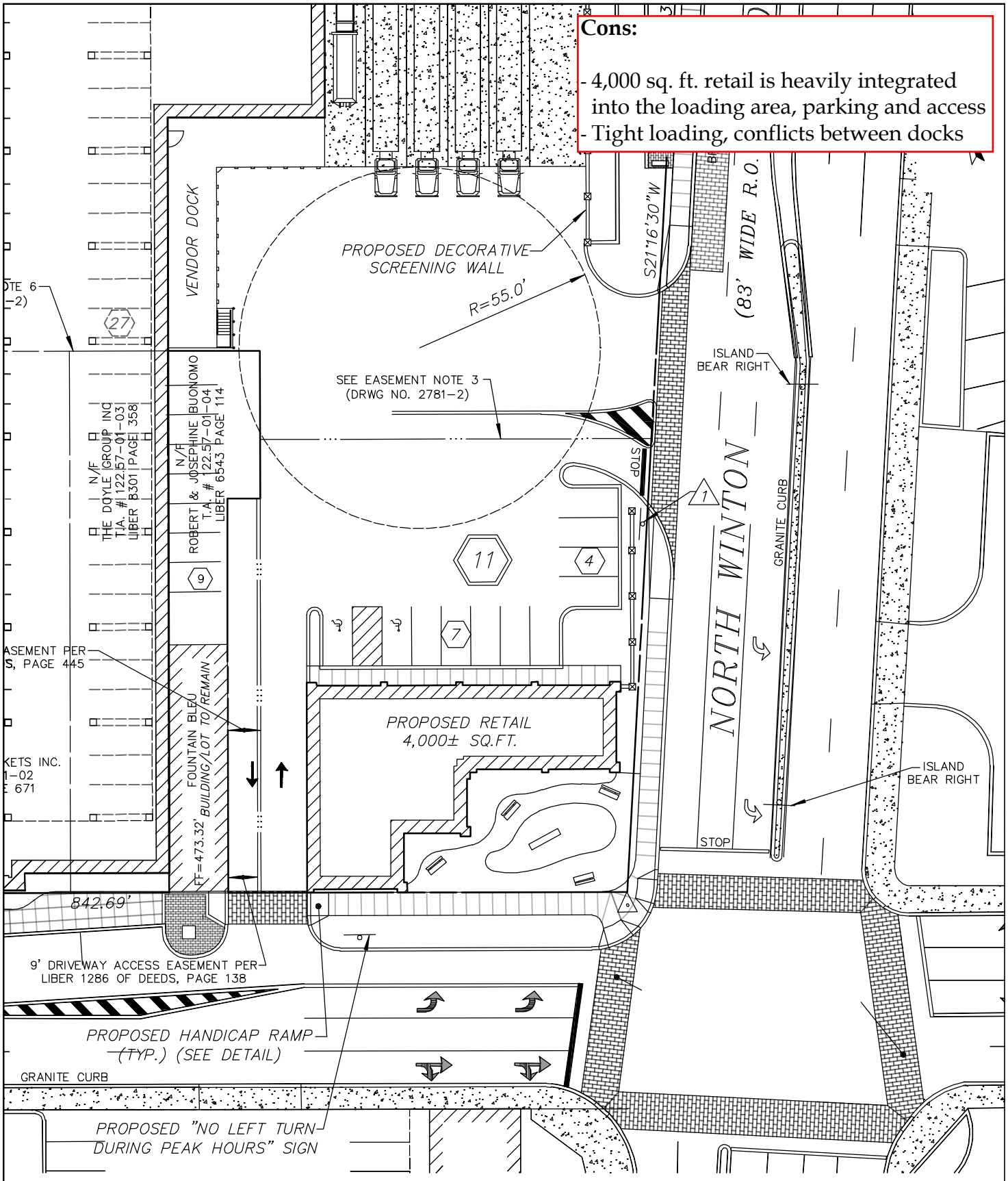
WEGMANS FOOD MARKET

EAST AVENUE

UPPER LEVEL LOADING LAYOUT "K / L"

3/16/2004

CE#2781-LD1



COSTICH ENGINEERING

GRAPHIC SCALE

0 20 40

(IN FEET)

1 inch = 40 feet

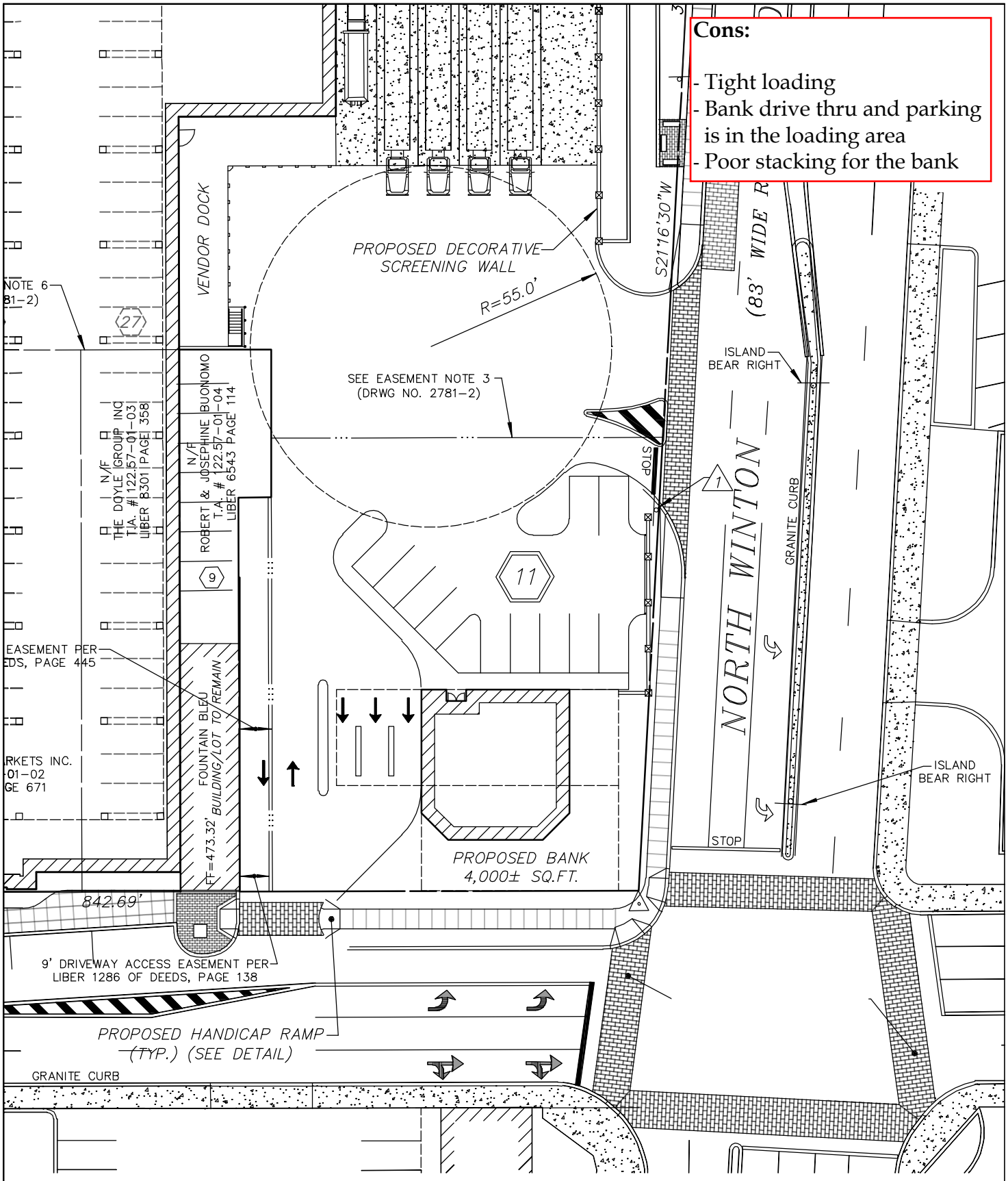
WEGMANS FOOD MARKET

EAST AVENUE

SCHEMATIC OUTPARCEL LAYOUT

5/11/04

CE#2781-OP1



COSTICH ENGINEERING

GRAPHIC SCALE

0 20 40

(IN FEET)

1 inch = 40 feet

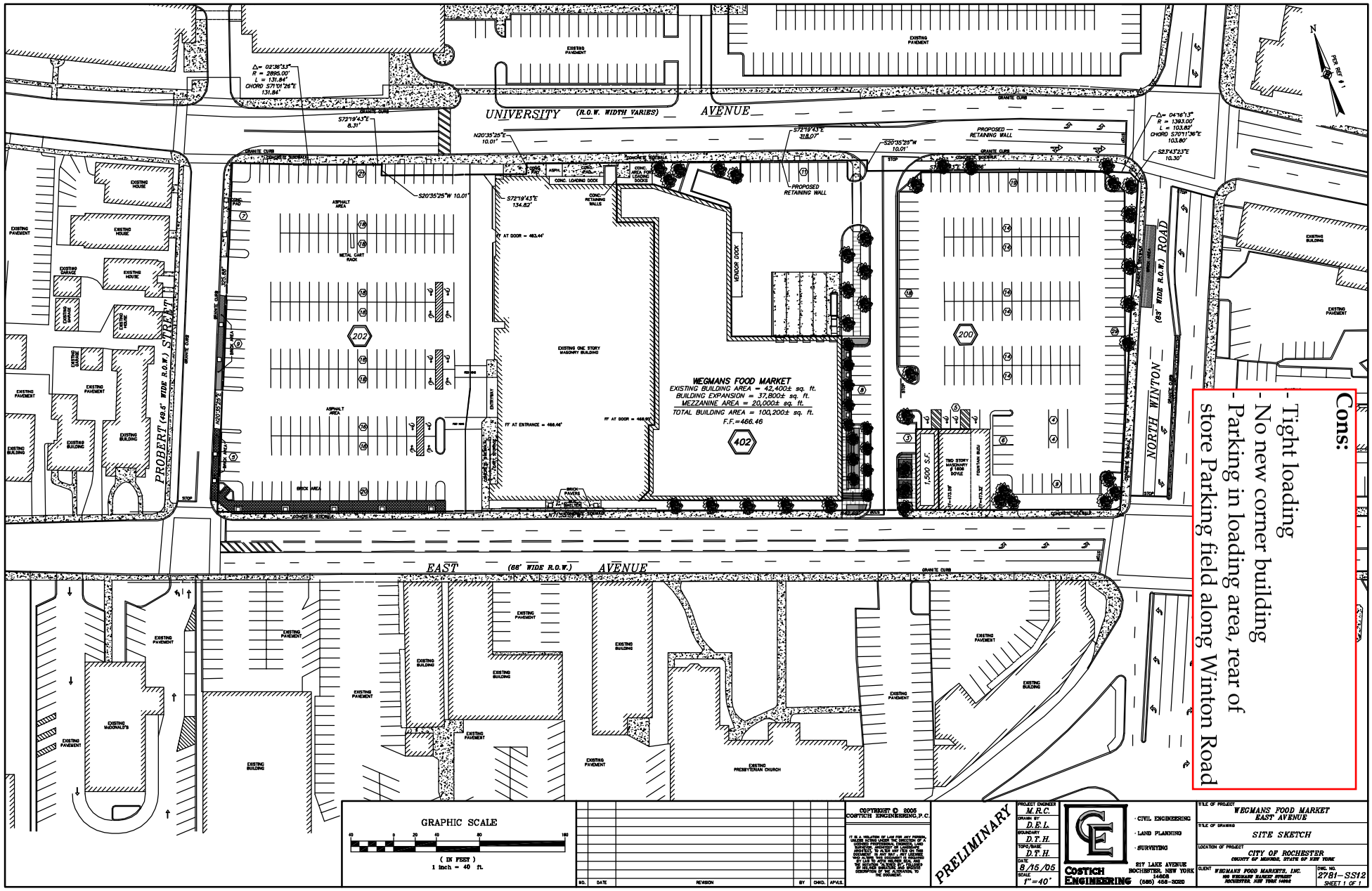
WEGMANS FOOD MARKET

EAST AVENUE

SCHEMATIC OUTPARCEL LAYOUT

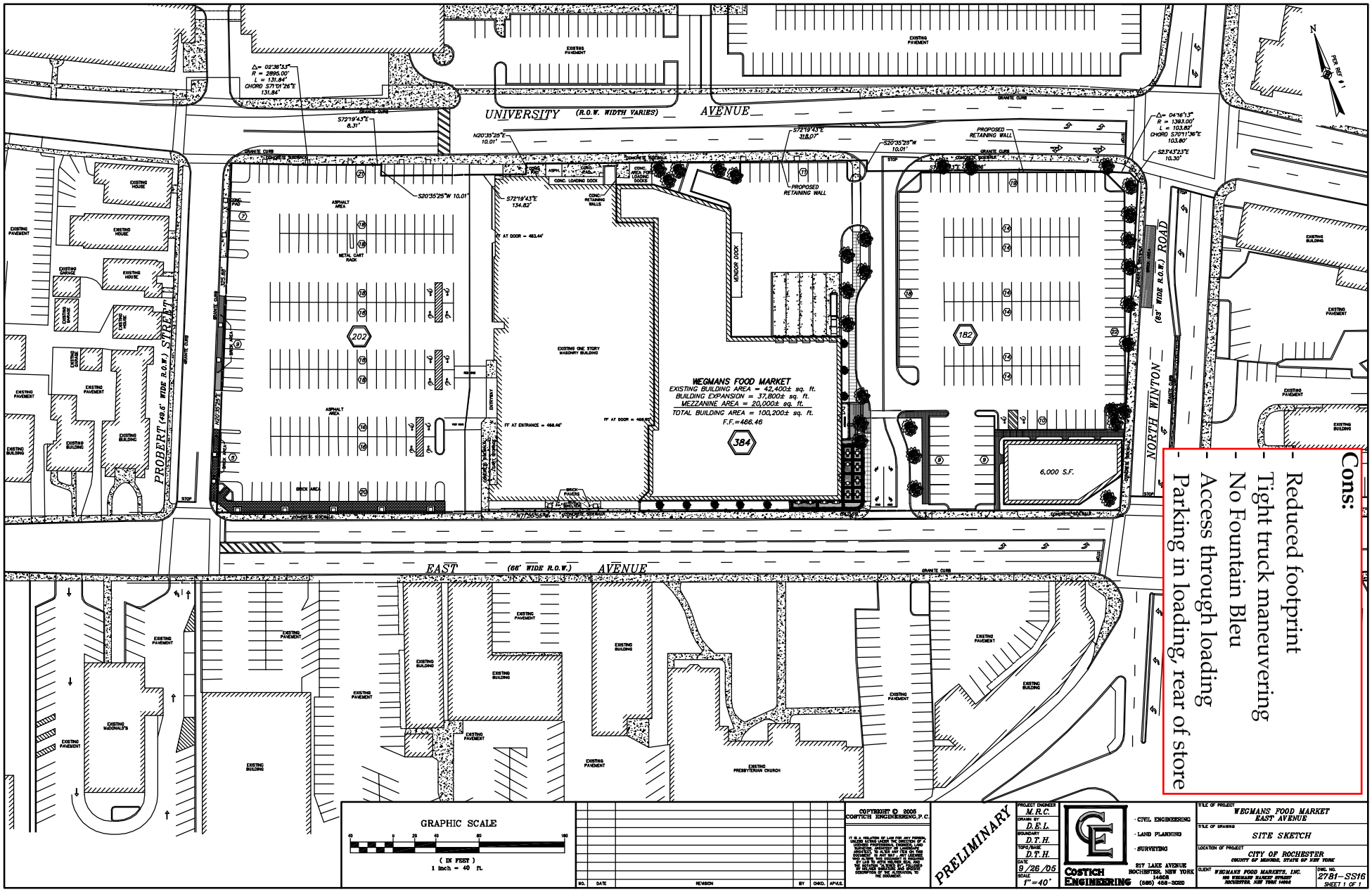
5/14/04

CE#2781-OP3



Cons:

- Tight loading
- No new corner building
- Parking in loading area, rear of store Parking field along Winton Road



Cons:

- Reduced footprint
- Tight truck maneuvering
- No Fountain Bleu
- Access through loading
- Parking in loading, rear of store

PRELIMINARY

NO.	DATE	REVISION	BY	CHKD.	APVLS.

PROJECT ENGINEER	M.R.C.
DRAWN BY	D.E.L.
BOUNDARY	D.T.H.
TOPO/BASE	D.T.H.
DATE	9/26/05
SCALE	1"=40'

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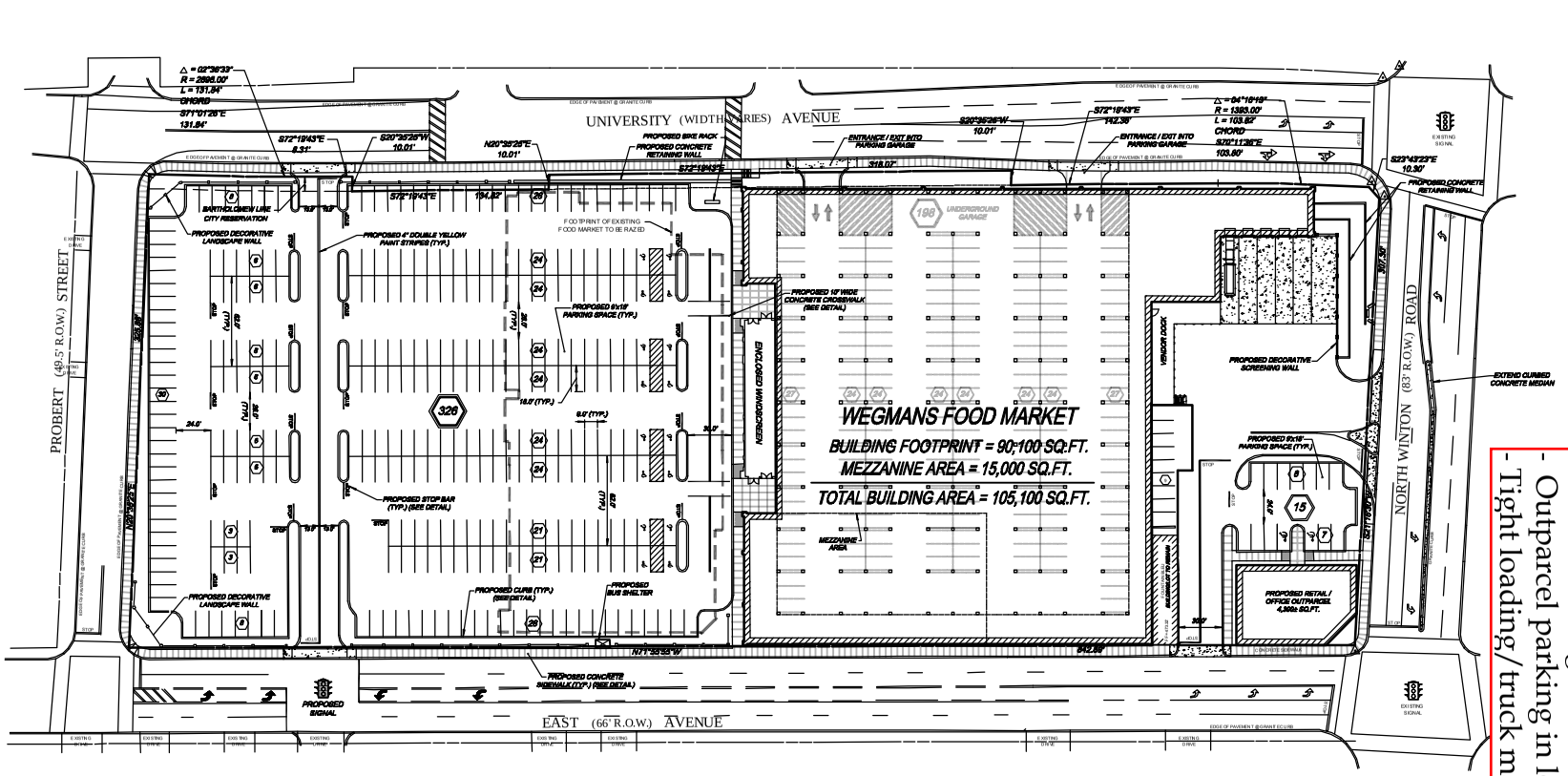
· CIVIL ENGINEERING
· LAND PLANNING
· SURVEYING
217 LAKE AVENUE
ROCHESTER, NEW YORK
14608
(585) 458-3020

TITLE OF PROJECT: WEGMANS FOOD MARKET EAST AVENUE
TITLE OF DRAWING: SITE SKETCH
LOCATION OF PROJECT: CITY OF ROCHESTER, COUNTY OF MONROE, STATE OF NEW YORK
CLIENT: WEGMANS FOOD MARKETS, INC. 926 WEGMANS MARKET STREET ROCHESTER, NEW YORK 14624
DWG. NO. 2781-SS16
SHEET 1 OF 1



Cons:

- Access through loading
- Outparcel parking in loading area
- Tight loading/truck maneuvering area

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GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD	APVD.

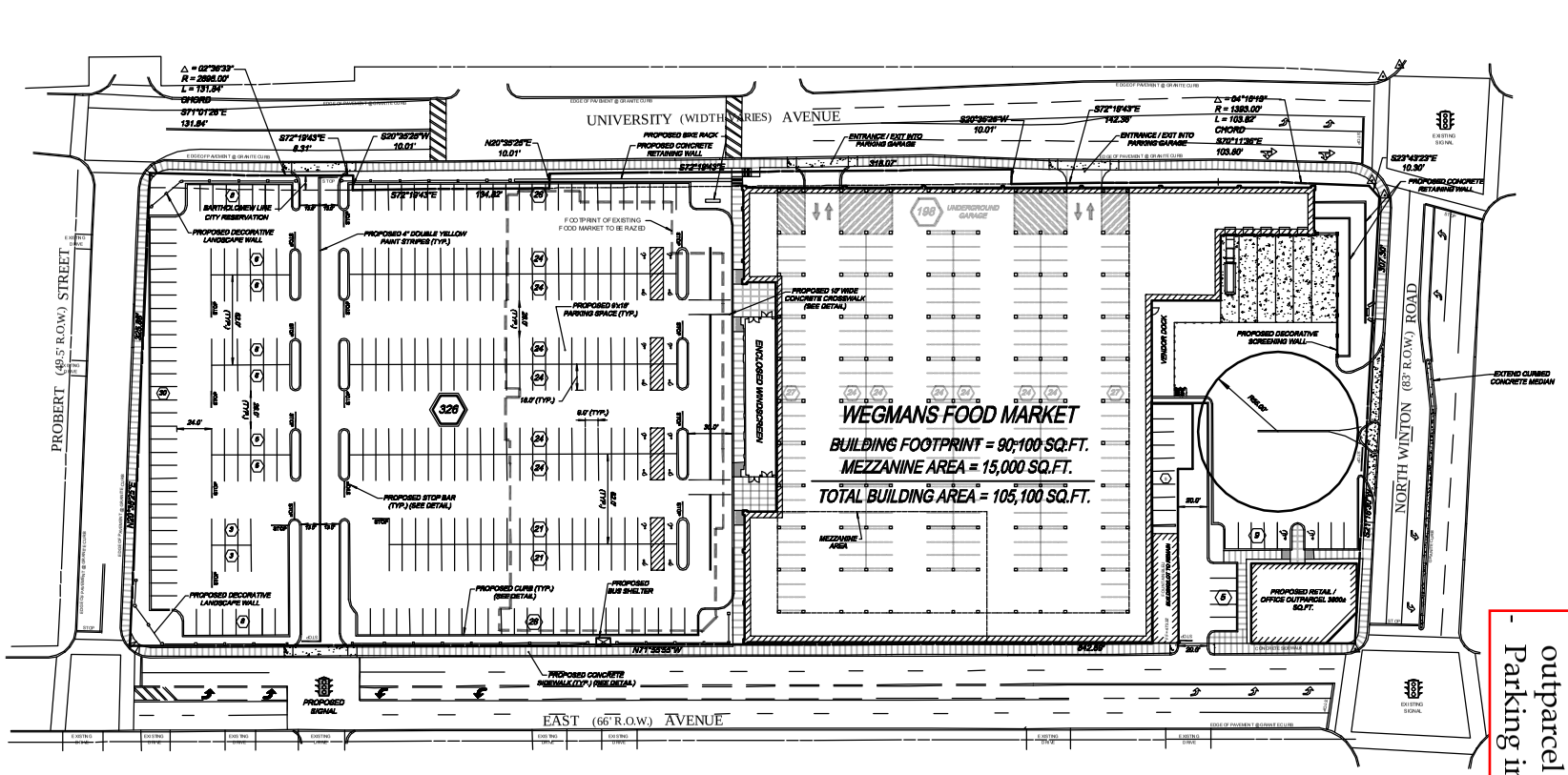
STATE OF NEW YORK
MARK R. COSTICH
NO. 065871
Licensed Professional Engineer

PROJECT NO/HDR	G.W.
DRAWN BY	D.E.L.
CHKD/APV'D BY	D.T.H.
DATE	07/10/2009
SCALE	1" =40'

COSTICH ENGINEERING
- CIVIL ENGINEERING
- LAND PLANNING
- SURVEYING

217 LAKE AVENUE
ROCHESTER, NEW YORK 14608
(585) 458-3020

TITLE OF PROJECT: WEGMANS FOOD MARKETS, INC.
1750 EAST AVENUE
TITLE OF DRAWING: CONCEPTUAL SITE PLAN
LOCATION OF PROJECT: CITY OF ROCHESTER
COUNTY OF MONROE, STATE OF NEW YORK
CLIENT: WEGMANS FOOD MARKETS, INC.
100 WEGMANS MARKET STREET
ROCHESTER, NEW YORK 14692
DWG # 2781
CN100
SHEET 1 OF 1



Cons:

- Tight loading area due to outparcel parking
- Parking in loading area

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Underground Facilities Protection Organization
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NO.	DATE	REVISION	BY	CHKD	APVD.

STATE OF NEW YORK
MARK R. COSTICH
NO. 065871
Licensed Professional Engineer

PROJECT MANAGER	G.W.
DRAWN BY	D.E.L.
FOUND BY	D.T.H.
CHECKED BY	D.T.H.
DATE	07/10/2009
SCALE	1" = 40'

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND PLANNING
• SURVEYING
217 LAKE AVENUE
ROCHESTER, NEW YORK 14608
(585) 458-3020

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100 WEGMANS MARKET STREET
ROCHESTER, NEW YORK 14692
DWG # 2781
CN102
SHEET 1 OF 1

FINAL SCOPE
for

Wegmans Food Markets, Inc.
East Avenue Project
Environmental Impact Statement

September 21, 2009

APPLICANT:

Wegmans Food Markets, Inc.
1500 Brooks Avenue
Rochester, New York 14603-0844
Attn: Eric Bartles
(585) 464-4600 x6827

LEAD AGENCY:

City of Rochester Manager of Zoning
Attn: Marcia Barry
(585) 428-6858

INVOLVED AGENCIES:

City of Rochester Manager of Zoning
City of Rochester Mayor
Rochester City Council
City of Rochester Planning Commission
City of Rochester Zoning Board of Appeals
City of Rochester Commissioner of Neighborhood and Business Development
City of Rochester Traffic Control Board

APPLICANT CONSULTANTS:

ENGINEERING:

Costich Engineering, P.C.
217 Lake Avenue
Rochester, New York 14608

FRA Engineering, P.C.
520 Summit Point Drive
Henrietta, New York 14467

ARCHITECTS:

Bignell Watson Hasser
1 Park Place, suite 250
Annapolis, MD 21401

Bergmann Associates
200 First Federal Plaza
28 East Main Street
Rochester, NY 14614

Bero Associates
32 Winthrop Street
Rochester, New York 14625

LEGAL:

Wegmans Food Markets, Inc.
Legal Department
1500 Brooks Avenue
Rochester, New York 14603

Nixon Peabody LLP
1100 Clinton Square
Rochester, New York 14604

I. INTRODUCTION

An application for site plan approval was received by the City on July 22, 2009 for the development of the proposed Wegmans East Avenue Food Market (the "Project") in the City of Rochester, New York. Pursuant to the requirements of the State Environmental Quality Review Act ("SEQRA"), the project was classified as an Unlisted Action. The City of Rochester Manager of Zoning is designated as the Lead Agency and has issued a positive declaration.

The project was first discussed with the City in early 2004. Prior to the application submission, a preapplication conference was conducted on February 26, 2004 to assist Wegmans in preparing an application. The application arrived in October, 2004. A positive declaration was issued in November, 2004, followed by a public scoping meeting in December, 2004. A final scope was accepted by the lead agency on December 29, 2004. In late 2005, the project was withdrawn by the applicant.

The final scope accepted for the 2004 application has been modified to reflect the minor changes that have occurred in the project over the past five years to produce this draft scope. This draft scope incorporates the comments of the Involved and Interested Agencies/parties that were received during the comment period for the 2004 scope.

II. DESCRIPTION OF THE PROJECT

This section will include a detailed description of the design and construction of the proposal, the phasing, schedule, and operation. All proposed changes to the transportation and utility infrastructure must be identified. All property addresses must be outlined. All proposed new buildings, facilities and services should be discussed. The proposed out parcel at the corner of Winton and East shall be discussed in detail, including the size and configuration of the parcel and building. The marketability of that parcel/building and potential uses must be explored. Explain how Wegmans plans to develop that parcel or sell it for development. What will the phasing of that development be with respect to the store project? The operation of the store and the loading shall be discussed.

III. REQUIRED PERMITS/APPROVALS SUBJECT TO SEQR

This section shall discuss the SEQR process as well as the land use and building permit approval processes required for the implementation of the proposal. This discussion should include the following information. The Project Site is located in a C-2, Communit y Center District. The Wegmans market is a permitted use in the C-2 District. Major site plan approval is required and will be conducted by the Rochester Manager of Zoning. An Official Map Amendment may be required from City Council and the Mayor if right-of-way widths are modified. Area variances from the Zoning Board of Appeals will be required to waive the maximum square footage floor area limit of 6,000 square feet in a C-2 district and are likely for certain City-wide Design Standards and potentially for sign area overages. Approval of a special permit by the Rochester Planning Commission is required for the number of parking spaces which is in excess of 110% of the parking requirements. A site preparation permit and demolition permit will be required from the Rochester Commissioner of Neighborhood and Business Development. A decision by the Traffic Control Board will be needed for signalization changes, on-street parking changes, and turning lane modifications. Required permits and approvals will be presented in list format.

Other approvals or permits that may be identified as the Project progresses will be indicated in the DEIS.

IV. PUBLIC NEED AND BENEFIT

This section will include a detailed description of the purpose and benefits to the community of the proposal as a whole. This should include, but not be limited to, a discussion of the store in terms of goods and services to be provided; the amount of parking needed to best serve the public; the public need for and benefits of certain right-of-way changes; and, the economic benefits to the City and region.

V. ENVIRONMENTAL SETTING

Included in this section will be a discussion of the existing project site and the immediate neighborhood as well as a broader discussion of East Avenue. The geographic parameters for the discussion of the immediate neighborhood shall be the railroad tracks to the north and the expressway to the south on Winton, one block east and one block west on University Avenue, the frontage properties on East Avenue from the expressway to the east and Park Avenue to the west. East Avenue, however, is a significant asset to the community in the context of its historical, architectural and gateway aspects. Therefore, it should be discussed in its entirety as an important street and not just in terms of the portion that is within the geographic boundaries defined herein. The environmental setting description shall include but not be limited to such neighborhood features as predominant land uses, traffic patterns, pedestrian movements, and historic assets. Also included shall be a discussion about the historical development of the development site and the historical significance of the existing buildings.

In addition, the service/market area of the new store as compared to the existing store should be identified.

VI. POTENTIAL SIGNIFICANT ADVERSE IMPACTS

A. Neighborhood Character

The proposed 105,000sf. building would be more than 17 times larger than the floor area permitted in the C-2 Zoning District. The size, scale and massing of the proposed building are inconsistent with the Comprehensive Plan as well as the Design Guidelines and Standards of the Zoning Code. In addition, the proposal would remove several smaller scale buildings, which are more consistent with the plan, code and neighborhood, than the proposed building. The buildings proposed to be demolished exude the pedestrian scaled type of urban fabric that the new code encourages and requires.

The proposed surface parking (326 spaces) exceeds the number of spaces allowed by the Zoning Code and creates a large gap in the streetscape thereby negatively impacting neighborhood character and its urban pedestrian qualities. The larger store will require an increase in the loading operations and additional truck traffic. Noise from HVAC units, generators, external speakers and loading operations may cause adverse impacts to the neighborhood.

Specifically, the following impacts will be described and evaluated in detail:

1. A building that exceeds maximum allowed building size for a C-2 district and is inconsistent with the neighborhood massing, scale, and architectural quality.
2. The removal of existing neighborhood- scale structures with entrances on East Avenue.
3. The design features of the proposal on the character of the neighborhood. This assessment will include all four sides of the site and all facades. An important component of the assessment shall be the presence or absence of pedestrian entrances into the building from East Avenue.
4. A large surface parking lot that exceeds the maximum number of parking spaces allowed in the Zoning Code and creates a significant gap in the streetscape.
5. Not meeting the transparency requirement of the Zoning Code.

6. Proposed on-street parking changes.
7. The implications of the Fountain Bleu building remaining.
8. Loading on the surrounding neighborhood with regard to appearance, traffic and noise.
9. Generators, HVAC equipment, and the like with respect to aesthetics, venting, and noise.
10. Lighting spillover and glare on adjacent properties.
11. Proposed signage.
12. Consistency and/or inconsistency with Comprehensive Plan as may be the case.

B. Historic Resources

The proposal is located adjacent to a Local Preservation District and a church that is potentially eligible for listing on the National Register of Historic Places. One of the properties slated for demolition is the subject of some local debate over its historic significance. Specifically, the following impacts will be described and evaluated in detail:

1. Development impacts on East Avenue National Register Historic District.
2. Development impacts on the East Avenue Preservation District.
3. Impacts on the church and its greenspace located at 1775 East Avenue.
4. Loss of existing structures on site that may have historic, vernacular and aesthetic importance to the neighborhood.

C. Traffic/Transportation

The proposal will increase passenger vehicle and truck traffic volumes on surrounding streets. Intersections will be impacted by the increased traffic and may require signal and/or lane modifications. An existing traffic signal is proposed to be relocated and modifications to the East Avenue sidewalk and driving lanes are proposed. Specifically, impacts on the following will be described and evaluated in detail:

1. Volume of passenger vehicles and trucks and changes in traffic patterns on Probert, University, Winton and East and all affected intersections. Include a discussion on the potential for a traffic signal at University Avenue and the proposed Wegmans driveway. Evaluate the East Ave. corridor in the area of the project site with respect to on-street parking needs/utilization.
2. Volume of pedestrian traffic and potential alterations to the existing pedestrian movement, including new trips and alternative routes.
3. Proposed ingress and egress of pedestrians, with and without disabilities, and vehicular traffic and any potential conflicts or improvements.
4. Traffic signal relocation from the corner of Probert Street and East Avenue eastward approximately 150 feet.
5. Public transit usage and facilities.
6. Loading operations and how the operations compare to the existing loading operations in terms of size, type, frequency, time, etc.
7. Bicycle use and parking.
8. On-site snow storage.
9. The businesses on the South side of East Avenue resulting from loss of center turning lane on East Avenue and relocation of signal.

D. Economic

1. Analyze building supplies, labor, economic resources.
2. Describe impacts to tax generation, tax breaks/incentives.
3. Describe job creation – construction and operational.
4. Analyze employment impacts.

E. Police/Fire Municipal Resources

Analyze fire protection, emergency services, public works.

F. Noise

1. Discuss impact of increased traffic noise on local streets as well as on the site.
2. Discuss impact of loading.
3. Discuss the use of external speakers.

G. Construction

1. Discuss impact to surrounding vehicular traffic in the public right-of-way.
2. Discuss impact to surrounding pedestrian movement in the neighborhood. Include a discussion on how access to the sidewalks surrounding the property will be preserved and remain safe for pedestrians with and without disabilities.
3. Discuss impact of multi-phasing of project.
4. Discuss impact of noise, dust, vibrations.
5. Discuss impact of construction and demolition on the Brighton Presbyterian Church at 1775 East Avenue and Fountain Bleu business and building at 1812 East Avenue.
6. Discuss the impacts of staging locations and operations.
7. Describe construction vehicle routes.
8. Describe past uses of the site for assessment of impact of soil conditions on excavation and development.
9. Describe the management of construction-site storm water.

H. Utilities

1. Analyze utilities (water and sewers).
2. Analyze electricity, telecommunications, natural gas facilities.

VII. MITIGATION MEASURES (This section could be incrementally incorporated into Section VI above. Also, the alternatives discussed in Section VIII include mitigation measures that can be incorporated in this section either directly or by reference.)

A. Neighborhood Character

1. Incorporate architectural and site amenities consistent with good urbanism and neighborhood qualities.
2. Modify prototypical plans to a more urban setting.
3. Provide screening of parking and loading.
4. Provide architectural enhancements to give the appearance of several smaller buildings.
5. Improve overall landscaping and streetscape, including providing a generous pedestrian sidewalk and tree lawn along East Avenue, including in front of the store. The recommended width for this pedestrian area is 12' minimum/19'optimum.
6. Increase underground parking.
7. Include transparency in facade to the maximum extent practicable.
8. Modify floor plan to enhance exterior facades.
9. Minimize building size by utilizing landscaping, hardscape, walls, fences, columns structures, and architectural features.
10. Enhance streetscape along south side of East Avenue across from development site commensurate with proposed north side improvements.
11. Provide alternative approaches of matching architectural elevations along all four sides of the proposed development to surrounding neighborhoods.
12. Retain the Doyle building façade and incorporate it into the façade of the new store.
13. Install site and building lighting that will not spill over or produce glare on adjacent

B. Historic Resources

Modify siting and architecture of proposed structure to incorporate significant historic aspects found in the surrounding area, particularly the East Avenue Historic/Preservation District.

C. Traffic/Transportation

The following is a list of potential mitigation measures to be incorporated into the proposal:

1. Highway and signal modifications to improve highway capacity and safety.
2. Traffic calming.
3. Modified bus stops.
4. Site design that provides sufficient stacking and queuing areas.
5. Site design that provides sufficient loading area.
6. Improved pedestrian walkways along the entire site with sufficient width (i.e., 12' minimum, 19'optimum).
7. Improved landscape, streetscape.
8. Incentivize use of mass transit, walking, and bicycles.
9. Street modifications to include on-street parking.

D. Economic

1. Tax generation.
2. Job creation.

E. Police/Fire Municipal Resources

1. Advanced security systems.
2. Advanced lighting systems.
3. Advanced fire protection systems.
4. Wegmans Loss Prevention Department.

F. Noise

1. Sound attenuation/buffering.
2. Eliminate/reduce outdoor speakers.

G. Construction

1. Maintenance and Protection of Traffic plans.
2. Multi-phase development.
3. Construction techniques and best practices.
4. Construction noise abatement
5. Protection of public right-of-ways from staging and mud tracking.
6. Truck and construction equipment routing to minimize Analyze surrounding residential areas.
7. Limitation on hours of construction activity
8. Construction site storm water management measures.

H. Utilities

1. Energy saving devices.
2. Water saving fixtures.
3. Low maintenance design.
4. Storm water management.

VIII. REASONABLE ALTERNATIVES TO BE CONSIDERED

A. No Action

B. Reduced Building Size/Scale/Configuration. Consider construction of a smaller and more focused store, given the unique demographics of the neighborhood and the store's customer base, which includes a high percentage of senior citizens and young professionals. There are people who prefer the smaller, more easily navigated size of the existing store versus the larger suburban stores which can be difficult for those with mobility issues to navigate and inconvenient for quick trips. Explore reconfiguring the proposal to bring the whole East Avenue façade or portion of it back to allow for a wider and enhanced pedestrian sidewalk, tree lawn and/or a forecourt with outdoor seating.

C. Alternative floor plan to accommodate several entrances on East Avenue to separate store elements (e.g., bakery, dry cleaner, florist, movie rentals) and more glazing on East Avenue Street wall.

D. Renovate existing buildings (i.e., in whole or only the facades) on East Avenue and incorporate them into the project.

E. Alternative site plan showing additional building/s along the south side of the parking lot along the East Avenue frontage, especially at the corner of Probert Street, to close the gap in the streetscape.

F. Alternative site plan showing structural treatments along the south side of the parking lot along the East Avenue frontage, especially at the corner of Probert Street, to close the gap in the streetscape.

G. Alternative parking structures/strategies, including roof parking.

H. Right-of-way alternatives

I. Alternative phasing strategies

IX. EXTENT, QUALITY AND SOURCE OF INFORMATION AND GRAPHICS NEEDED FOR THE PREPARER TO ADEQUATELY ADDRESS EACH IMPACT

A. Neighborhood Character

1. Assessment of character of the existing surrounding neighborhood in terms of land use, historic preservation, gateway, scale, etc.
2. Conformance with and deviation from City of Rochester Zoning Ordinance and Comprehensive Plan.
3. Wegmans Food Market store operations justification for the square footage proposed.
4. Parking analysis to justify need for proposed parking and distribution between open and covered employee and customer. The parking demand analysis shall address the unique characteristics of this urban location and shall not apply suburban-model parking calculations (or ITE parking figures, which are based on a suburban model) to this location.
5. Results of AIA/Neighborhood Design Charette.
6. Comparison of market area data for similar sized stores in suburban areas with this city location.
7. Examples of successful urban grocery stores in other Cities.
8. Photographs of a 3-D model of the proposal or a computer-rendered 3-D model.

9. Include on the site plan some neighborhood context by drawing the outline of all adjacent properties/buildings.
10. Elevation drawings shall be done for all facades.
11. Perspective drawings of the site from various vantage points on East Avenue, Winton Road and University Avenue.

B. Historic Resources

1. Prepare a historic resource study that will include inspections of the 5 buildings to be demolished that may or may not possess some historic significance as well as survey of all buildings around the perimeter of the block and across the street.
2. Research following the guideline described on National Register Bulletin 39, "Research Historic Property".

C. Traffic/Transportation

1. Traffic impact study to evaluate existing and proposed roadway capacity/levels of service; accident data.
2. Oral and written communications with pertinent agencies and entities including State, County and City of Rochester departments, planned improvements/maintenance projects, etc.
3. Bus ridership data for routes and stops in the vicinity of the project.
4. Anticipated truck counts by suppliers and Wegmans trucks.
5. Meeting with City and County Officials and neighbors.

D. Economic Resources/Jobs

1. Monroe County Economic Development.
2. City of Rochester Economic Development.
3. New York State Economic Development.
4. City Assessor.
5. City School District.
6. Historical data from development of other food markets.
7. Analysis of existing businesses.

E. Police/Fire Municipal Resources

1. City Police, City Fire Department, Public Works Department.
2. City Department of Environmental Services.

F. Noise

1. Character of existing ambient noise levels.
2. Projection of new noise generators.
3. Decibel levels.

G. Construction

1. Historic data of Wegmans construction projects.
2. City Ordinance.
3. Construction site staging and truck routing plans.
4. Storm water Pollution Prevention Plan

H. Utility Resources

City of Rochester, Monroe County, City Water Bureau, Pure Waters, Monroe County Health Department, RG&E, telecommunication.

I. Urban Design Resources

1. Congress for the New Urbanism.
2. Urban Land Institute
3. Rochester Regional Community Design Center
4. City of Rochester Zoning Ordinance
5. Landmark Society of Western New York
6. Preservation League of NY
7. National Trust for Historic Preservation
8. Smart Growth network
9. The Conservation Fund