

TRAFFIC IMPACT STUDY FOR:

**THE WALMART MARKET**  
CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN

DATE SUBMITTED: March 31, 2011

**PREPARED FOR:**

McClure Engineering Associates, Inc.  
5417 North 118<sup>th</sup> Court  
Milwaukee, WI 53225  
Phone: (414) 616-4880  
Contact Person: Justin Johnson, P.E.

**PREPARED BY:**

Traffic Analysis & Design, Inc.  
N36 W7505 Buchanan Street  
Cedarburg, WI 53012  
Phone: (800) 605-3091  
Contact Person: Michael May, P.E., PTOE

(WisDOT TIA Certification # SE05-804-030)



*"I certify that this Traffic Impact Analysis has been prepared by me or under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering."*

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Michael May, P.E., PTOE  
Wisconsin Registration #37622-006  
Traffic Analysis & Design, Inc.

**The Walmart Market  
Traffic Impact Analysis  
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## **CHAPTER I – INTRODUCTION & EXECUTIVE SUMMARY**

### **PART A – PURPOSE OF REPORT AND STUDY OBJECTIVES**

A Walmart Market is proposed to be located southwest of the South 70<sup>th</sup> Street intersection with West Main Street in the City of Milwaukee. To ensure a safe and efficient roadway network upon completion of the store, Traffic Analysis & Design, Inc. conducted this traffic impact analysis (TIA) to determine the expected weekday evening and Saturday midday peak hour operating conditions and recommendations at the study area intersections both with and without the proposed development.

This report documents the procedures, findings and conclusions of the TIA. The analysis identifies recommended improvements based on existing intersection geometrics, background traffic volumes, and additional traffic expected to be generated by the Walmart Market.

### **PART B – STUDY AREA & DEVELOPMENT DESCRIPTION**

The executive summary includes a description of the study area, description of the development and conclusions based on the findings of the TIA.

#### **B1. Location of Study Site with Respect to Area Roadway Network**

A street map illustrating the location of the proposed Walmart Market is shown in [Exhibit 1-1](#) at the end of this chapter. A copy of the conceptual site plan is shown in [Exhibit 1-2](#). The study area includes the following existing intersections:

- Main Street & 76<sup>th</sup> Street (traffic signal);
- Main Street & 75<sup>th</sup> Street (two-way stop control);
- Main Street & 74<sup>th</sup> Street (two-way stop control);
- Main Street & 73<sup>rd</sup> Street (two-way stop control);
- Main Street & 72<sup>nd</sup> Street (two-way stop control);
- Main Street & 71<sup>st</sup> Street (two-way stop control);
- Main Street & Public Alley (two-way stop control);
- Main Street & 70<sup>th</sup> Street (traffic signal control); and
- 70<sup>th</sup> Street & Dickinson Street (two-way stop control).

Access points to the Walmart Market are discussed later in this chapter and are also referred to as study area intersections.

The proposed development site is an unutilized, deteriorated parking lot bound by Main Street to the north, 72<sup>nd</sup> Street to the west, a multi-use trail (former railroad) to the south, and a public alley to the east. Jetz gas station/convenience store, Air Comfort Systems, Krause Auto Body, and other small commercial businesses are located between the public alley and the west side of 70<sup>th</sup> Street. Residential neighborhoods are located along the north side of Main Street, and Roman Electric is located along the east side of 70<sup>th</sup> Street.

#### **B2. On-Site Development Description**

The Walmart Market is to be a 39,994 square foot (sf) grocery store with drive-thru pharmacy. No developable outlots are proposed. This traffic study assumes the store will be constructed and operational in Year 2011.

Vehicular access to the Walmart Market site is proposed to be located along Main Street opposite 71<sup>st</sup> Street (west access), along 70<sup>th</sup> Street approximately halfway between Main Street and Dickinson Street (north access), and along 70<sup>th</sup> Street opposite Dickinson Street (south

access). An existing north-south alley that intersects Main Street between 71<sup>st</sup> Street and 70<sup>th</sup> Street will remain. Note that the Krause Auto Body building and the two business buildings south of Jetz gas station/convenience store will be removed to accommodate the access points to 70<sup>th</sup> Street. Jetz gas station/convenience store and the Air Comfort Systems business will remain.

Pedestrian connections are planned for the Walmart Market to/from both Main Street and 70<sup>th</sup> Street. Bicycle racks are also planned, as is a connection to the multi-use trail to the south.

Milwaukee County Transit Service Route 76, which connects Brown Deer, Milwaukee, West Allis, Greenfield and Greendale, currently travels along both 70<sup>th</sup> Street and 76<sup>th</sup> Street within the study area and will be operationally unaffected by the Walmart Market. Note that Route 44 – National Flyer and Route 44U – Fairpark-Whitnall UBUS also travel along 76<sup>th</sup> Street and will be operationally unaffected by the Walmart Market.

### **B3. Off-Site Development Description**

No planned off-site development was identified. Note that the City of Milwaukee plans to reconstruct 70<sup>th</sup> Street and resurface Main Street in Year 2011.

### **B4. Site Generated Traffic**

Traffic volumes expected to be generated by the Walmart Market are based on the type and density of the proposed land use, and on trip rates as published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 8<sup>th</sup> Edition, 2008*. This manual is accepted in Wisconsin and the rest of the country as the industry standard in estimating trips to/from various land uses – including grocery stores like the Walmart Market.

The proposed Walmart Market is expected to generate approximately 125 new trips to/from the study area during a typical weekday morning peak hour (80 in/45 out), 340 new trips to/from the study area during a typical weekday evening peak hour (175 in/165 out) and 350 new trips to/from the study area during a typical Saturday midday peak hour (180 in/170 out). On a typical weekday (24 hour period), the Walmart Market is expected to generate approximately 3,270 new trips (1,635 in/1,635 out).

Based on discussions with Walmart Market Operations, the Walmart Market site is expected to be serviced by between 15 and 20 delivery vehicles on a given day. The deliveries are distributed throughout the day for logistical purposes. All trucks to/from the Walmart Market will be accommodated and focused at the south access along 70<sup>th</sup> Street.

## **PART C – RECOMMENDED IMPROVEMENTS**

### **C1. Level of Service Definition**

The study area intersections were analyzed based on the procedures set forth in the *2000 Highway Capacity Manual (HCM)*. This manual is accepted in Wisconsin and the rest of the country as the industry standard in estimating operations at both signalized and unsignalized intersections.

Intersection operation is defined by “level of service” (LOS), a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. LOS D or better operations (fewer than 35-seconds of average vehicle delay at stop sign controlled intersections, fewer than 55-seconds of average vehicle delay at traffic signal controlled intersections) are defined as acceptable peak hour operating conditions.

## **C2. Year 2011 Background Traffic Recommended Improvements**

The Year 2011 background traffic analysis assumes the Walmart Market does not occur. The analysis was conducted using existing intersection geometrics, traffic controls and signal timings. Based on the capacity analysis, no improvements are necessary to accommodate operations under background traffic volumes. Traffic signalized intersections operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street operate acceptably at LOS B or better conditions.

Note that the City of Milwaukee should consider replacing the bridge rail along the east side of 70<sup>th</sup> Street, south of Dickinson Street, with a more see-through solution to improve sight-distance for motorists currently turning from Dickinson Street onto 70<sup>th</sup> Street. This improvement, which is not related to the Walmart Market in any way, would address an existing sight distance concern for the neighborhood east of 70<sup>th</sup> Street.

## **C3. Year 2011 Total Traffic Recommended Improvements**

Year 2011 total traffic volumes assume the full build-out of the Walmart Market. The following improvements, shown in [Exhibit 1-3](#), are recommended to accommodate the Year 2011 total traffic.

### Main Street & 76<sup>th</sup> Street

- No improvements are anticipated to be necessary.

### Main Street & 75<sup>th</sup> Street

- No improvements are anticipated to be necessary.

### Main Street & 74<sup>th</sup> Street

- No improvements are anticipated to be necessary.

### Main Street & 73<sup>rd</sup> Street

- No improvements are anticipated to be necessary.

### Main Street & 72<sup>nd</sup> Street

- No improvements are anticipated to be necessary.

### Main Street & 71<sup>st</sup> Street/Proposed West Access

- Construct the Walmart Market west access on the south side of Main Street opposite 71<sup>st</sup> Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market northbound approach. Note that “DO NOT ENTER” signs currently exist along the north side of Main Street to inform motorists exiting the site that 71<sup>st</sup> Street is one-way southbound only.

### Main Street & Public Alley

- Install a stop sign to control the public alley northbound approach.

### Main Street & 70<sup>th</sup> Street

- No improvements are anticipated to be necessary.

70<sup>th</sup> Street & Proposed North Access

- Construct the Walmart Market north access on the west side of 70<sup>th</sup> Street approximately half-way between Main Street and Dickinson Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market eastbound approach.

70<sup>th</sup> Street & Proposed South Access

- Construct the Walmart Market south access on the west side of 70<sup>th</sup> Street opposite Dickinson Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market eastbound approach. Note that poor sight-distance exists at the access looking south for passenger vehicles, but not for delivery trucks, due to the height of the existing bridge abutment/railing on the west side of 70<sup>th</sup> Street. Install a MUTCD-compliant “RIGHT-TURN ONLY” sign with an additional sign stating “EXCEPT DELIVERY TRUCKS” to improve the safety of the intersection.

General Improvements

- Recall that the Jetz gas station/convenience store and Air Comfort Systems business are expected to remain when the Walmart Market access points to 70<sup>th</sup> Street are constructed. Both businesses, as well as the Roman Electric business on the east side of 70<sup>th</sup> Street, have off-site parking accommodations. Consideration may be given to removing parking on the west side of 70<sup>th</sup> Street to improve visibility for motorists exiting the Walmart Market, Jetz, and HVAC sites. Consideration may also be given to removing parking on the south side of Main Street along the Walmart Market property to improve visibility for motorists exiting the west access and the existing public alley.

The traffic-signalized intersections are expected to continue to operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street are expected to continue to operate acceptably at LOS B or better conditions. These operations make sense, as 1) Main Street currently services low volumes of traffic to/from the neighborhoods to the north and 2) the Walmart Market site adds a relatively low incremental increase in traffic to Main Street. Traffic exiting the north access along 70<sup>th</sup> Street is expected to operate acceptably at LOS D or better conditions, and traffic exiting the south access along 70<sup>th</sup> Street is expected to operate acceptably at LOS B or better conditions.

**PART D – NEIGHBORHOOD CONCERNS**

A public information meeting (PIM) was conducted for the Walmart Market site at Juneau High School on February 28<sup>th</sup>, 2011. Representatives of the property owner, representatives of Walmart Market, and representatives of the City of Milwaukee were present to take note of the concerns of the surrounding residents. This section of the report is provided to address traffic-related concerns raised at the meeting that relate to the Walmart Market.

**D1. Truck Traffic on Main Street**

Residents at the February PIM stated they had concerns with Walmart delivery truck traffic along Main Street, as well as truck headlights directed northbound into homes. Note that the conceptual site plan at the time included a truck access along Main Street between 71<sup>st</sup> Street and 72<sup>nd</sup> Street, as well as loading docks along the west side of the building with trucks positioned facing north towards Main Street.

To address this concern, the latest Walmart Market site plan has been reconfigured in a manner that will only accommodate delivery trucks along 70<sup>th</sup> Street. More specifically, the loading docks have been placed along the south side of the proposed building with trucks positioned facing south, the truck access along Main Street between 71<sup>st</sup> Street and 72<sup>nd</sup> Street has been removed, and the internal site layout is such that delivery trucks will not be able to physically make turns within the site to reach Main Street. With the IH-94 interchange with 70<sup>th</sup> Street to the north, truck drivers will not use Main Street to reach their destinations since it is much faster and convenient to utilize the 70<sup>th</sup> Street interchange.

## **D2. Walmart Market Traffic on Residential Streets**

A concern was raised at the February PIM that Walmart Market would increase traffic on residential streets north of Main Street.

Motorists take the path of least perceived resistance to reach their destinations. As such, traffic to/from IH-94 will access the Walmart Market site most efficiently from the 70<sup>th</sup> Street interchange rather than from the 84<sup>th</sup> Street interchange/ramp collector system due to fewer stops and conflicts. Traffic to/from the north and south on 76<sup>th</sup> Street and 70<sup>th</sup> Street would access the site most efficiently from the 76<sup>th</sup> Street and 70<sup>th</sup> Street intersections with Main Street rather than the ramp collector system or neighborhoods for the same reasons. Therefore, it is reasonable to expect that the only Walmart Market traffic anticipated to utilize the residential streets north of Main Street would be that traffic generated by the residents themselves.

## **D3. Traffic Signal Wait Times**

A concern was raised at the February PIM that it takes multiple cycles to clear the traffic signals from Main Street to either 70<sup>th</sup> Street or 76<sup>th</sup> Street during rush hours, and that Walmart Market traffic would make wait times considerably longer.

Site observations and the traffic analysis performed at both intersections show that such an operation does not occur during rush hours. A relatively short surge in traffic due to an office release or the egress of Dawes heavy vehicles (both located along Main Street) may occur from time to time during the day and cause a motorist to miss a signal cycle. However, the analysis shows that these operations are not exacerbated by the Walmart Market site – even during its busiest hours of the day – and that outside of these short and few surges the signals operate acceptably at LOS C or better conditions.

## **D4. State Fair Park Special Event Traffic**

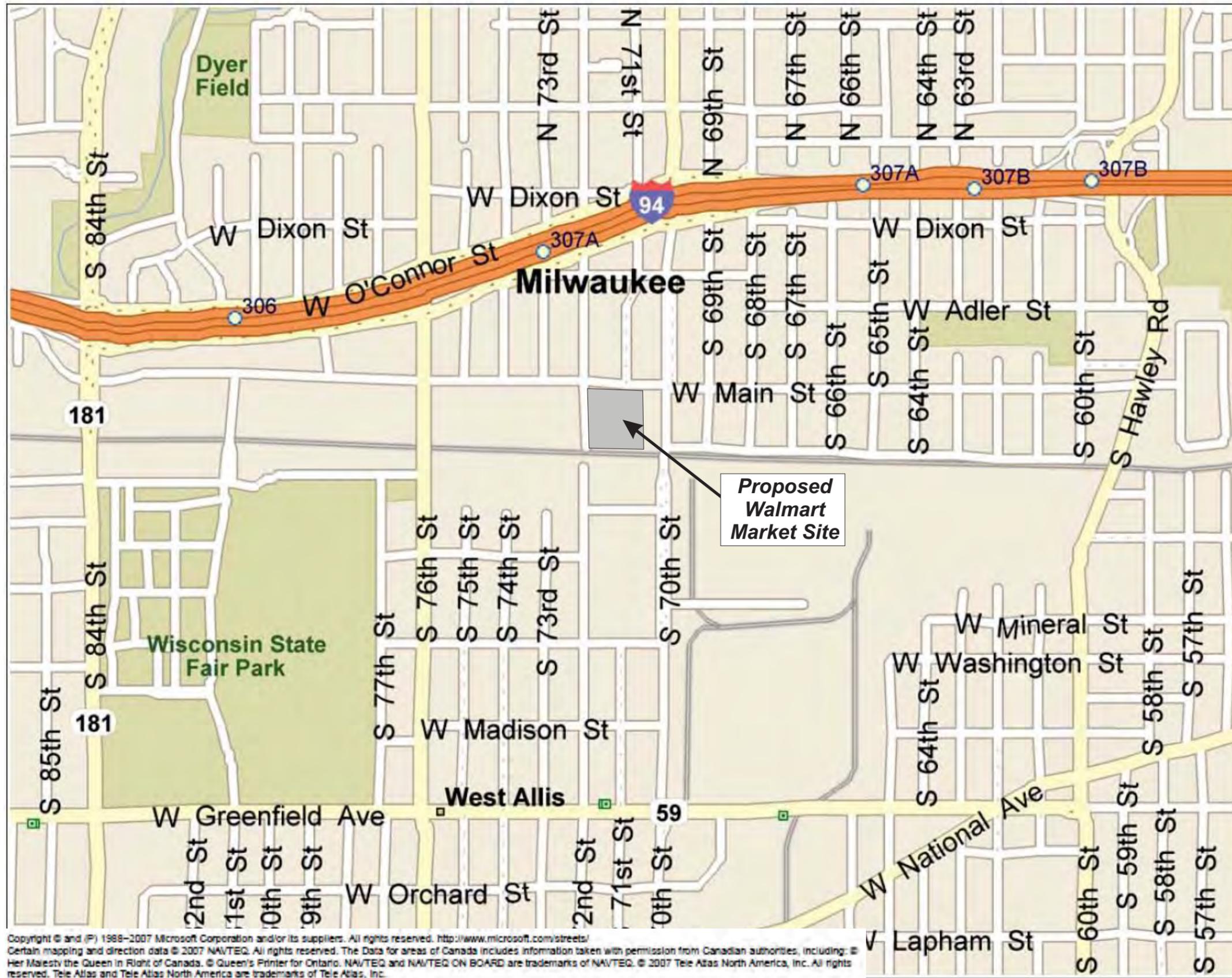
Residents at the February PIM stated they experience heavy traffic due to State Fair Park events – most notably during the 11 days of State Fair. Residents stated that traffic utilizing Main Street is heavy during this time and makes it difficult for them to enter/exit the neighborhood. The stated concern of residents is that the Walmart Market site will further add to the congestion and make it more difficult to enter/exit the neighborhood during such an event.

It is important to note that the Wisconsin State Fair is a special 11-day event and that restricting development to accommodate traffic that occurs for only 3-percent of the year is generally undesirable. It is also important to note that the Walmart Market contribution of traffic to Main Street is minimal compared to the volume expected due to State Fair and that the remaining 97-percent of the year operations are well within acceptable operation levels/available roadway capacity. That being stated, Main Street is currently utilized as a two-lane undivided street with wide parking lanes, and the homes within the neighborhood have private garages/parking areas for personal vehicles. Consideration could be given to restricting parking along Main Street during the short 11-day event, and adjust traffic signal timings accordingly, to aid in moving traffic to/from State Fair Park and the neighborhoods. Such an improvement suggestion is not

caused by the Walmart Market, but is suggested by Traffic Analysis & Design, Inc. for the City of Milwaukee's consideration in easing an existing State Fair traffic condition.

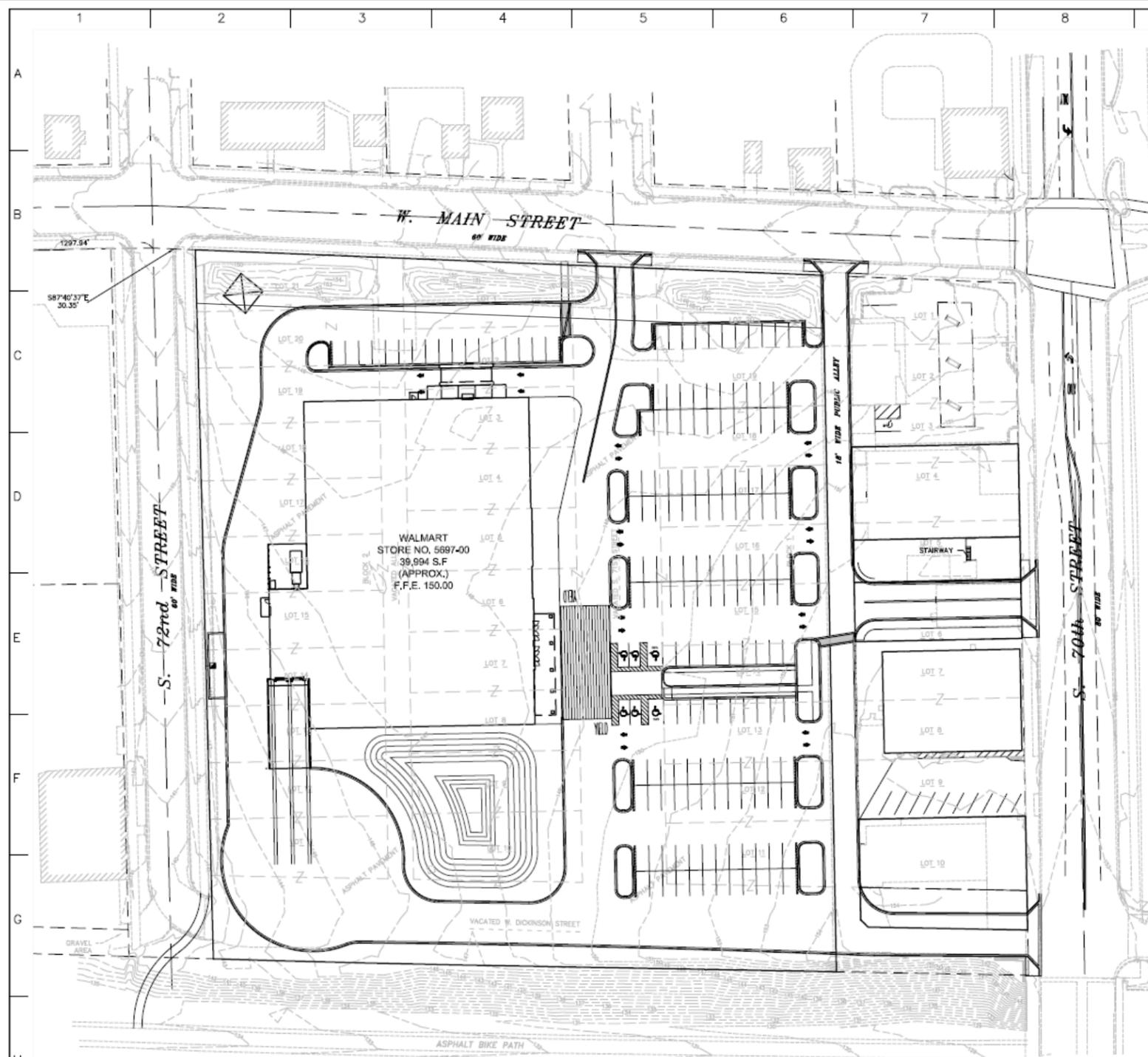
**PART E – CONCLUSION**

All movements at the study area intersections are expected to operate safely and efficiently with the improvements identified in this TIA.



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**LEGEND**

- PROPOSED BUILDING
- PROPOSED 18" CURB AND GUTTER
- PROPOSED PARKING SPACES SYSL/4"
- ASSOCIATE PARKING SPACES SWSL/4"
- CART CORRAL
- HEAVY DUTY ASPHALTIC CONCRETE PAVEMENT
- STANDARD DUTY ASPHALTIC CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- ARCHITECTURAL APRON SEE ARCH. PLANS
- CONCRETE BUFFER, 3' TYP.
- CONCRETE SIDEWALK, 5' TYP.

**LIGHT LEGEND**

KEY	ATTRIBUTES
	CATALOG NUMBER: AMERICAN AME-2 T3-400PS MOUNTING HEIGHT= 28 FEET 1 FIXTURES PER POLE
	CATALOG NUMBER: AMERICAN AME-2 T5-400PS MOUNTING HEIGHT= 28 FEET 3 FIXTURES PER POLE
	CATALOG NUMBER: AMERICAN AME-2 T3-400PS MOUNTING HEIGHT= 28 FEET 2 FIXTURES PER POLE (ROTATED)
	CATALOG NUMBER: AMERICAN AME-2 T3-400PS MOUNTING HEIGHT= 28 FEET 1 FIXTURES PER POLE (SHIELDED)
	CATALOG NUMBER: AMERICAN AME-2 T3-400PS MOUNTING HEIGHT= 28 FEET 2 FIXTURES PER POLE (ROTATED WITH SHIELD)

**PAINTING STRIPING LEGEND**

- SWSL/4" - SINGLE WHITE SOLID LINE / 4" WIDE
- SYSL/4" - SINGLE YELLOW SOLID LINE / 4" WIDE EACH
- DYSL/4" - DOUBLE YELLOW SOLID LINE / 4" WIDE EACH
- SYSL/10" - SINGLE YELLOW SOLID LINE / 10" WIDE
- SWGL/4" - SINGLE WHITE DASHED LINE / 4" WIDE
- SYSL/4" - SINGLE SOLID YELLOW LINE / 4" WIDE
- SWSL/24" - SINGLE WHITE SOLID LINE / 24" WIDE

**SITE NOTES**

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PARKING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL DISTURBED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED. SEE 02900 SPECIFICATION.
4. ALL CURBED RADII ARE TO BE 10' UNLESS OTHERWISE NOTED. STRIPED RADII ARE TO BE 5'.
5. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
6. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH ALL COST SHALL BE INCLUDED IN BASE BID.
8. SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY A LAND SURVEYOR.
9. NO WETLANDS WERE PRESENT ON THIS SITE PER WETLAND DETERMINATION CONDUCTED BY RA SMITH NATIONAL DATED DECEMBER 2010.
10. THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED "THE SITE SPECIFIC SPECIFICATIONS".
11. MONUMENT SIGNS SHALL BE CONSTRUCTED BY OTHERS.
12. REFER TO ARCH. PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
13. ALL WM GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS. OUTLOT AREA TO BE KEPT FREE OF JOB TRAILERS AND STORAGE AFTER THE CONTRACT MILESTONE DATE. PURCHASER OF OUTLOT TO PROVIDE PERMIT DOCUMENTS AND SWPPP REQUIRED BY STATE/LOCAL REQUIREMENTS FOR SPECIFIC OUTLOT.

**SITE LEGEND**

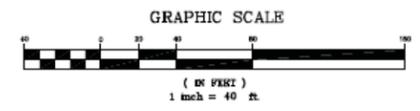
- (A) 8" WIDE FIRE LIME STRIPING PAINTED TRAFFIC RED W/ "NO PARKING FIRE LANE" PAINTED WITH 4" HIGH WHITE LETTERING AT 20' O.C. SEE DETAIL SHEET.
- (B) PEDESTRIAN CROSSWALK WITH 6" WIDE PAINTED WHITE STRIPING PARALLEL TO DIRECTION OF TRAFFIC AT 2'-0" O.C. AND (1)-6" WHITE STRIPE PERPENDICULAR ON BOTH ENDS UNLESS NOTED OTHERWISE SEE SITE PLAN FOR DIMENSIONS.
- (C) PEDESTRIAN CROSSING SIGN TYPICAL AT PEDESTRIAN CROSSWALKS AS NOTED ON PLANS.
- (D) "YIELD" PAINTED WHITE ON PAVEMENT TYPICAL. SEE DETAIL SHEET.
- (E) CONCRETE JOINTING AND FILLERS TO BE COMPLETED PER DETAIL (TYPICAL OF ALL EXTERIOR CONCRETE EXCLUSIVE OF ARCHITECTURAL CONCRETE).
- (F) EXIT PORCH. SEE ARCHITECTURAL PLANS FOR EXACT SIZE, LOCATION FOR STOODS, STAIRS AND/OR RAMPS THAT MAY BE REQUIRED. RAMP PAVEMENT FLUSH WITH THE TOP OF STOOP.
- (G) 6" PIPIC BOLLARD TYPICAL UNLESS NOTED OTHERWISE. SEE DETAIL SHEET.
- (H) AT GRADE OVERHEAD DOOR LOCATION. SEE ARCHITECTURAL PLANS FOR EXACT SIZE AND LOCATION FOR COORDINATION WITH CIVIL PLANS.
- (I) 4" WIDE x 130' LONG YELLOW PAINTED TRUCK ALIGNMENT STRIPES TYPICAL.
- (J) 18" x 42" CONCRETE COMPACTOR PAD AND 18" x 42" HEAVY DUTY PAD (ORIENT FOR TRUCK LOADING). REFER TO ARCHITECTURAL PLAN FOR EXACT LOCATION AND SLOPE.
- (K) CONCRETE TRANSFORMER PAD. CONTRACTOR TO COORDINATE WITH LOCAL POWER COMPANY FOR DETAILS.
- (L) ACCESSIBLE PARKING SPACE TYPICAL. SEE DETAIL SHEET FOR ACCESSIBLE PARKING SPACE SIZE, SIGN AND SYMBOL ("VAN"-INDICATES VAN ACCESSIBLE SPACE).
- (M) 8'-0" WIDE PEDESTRIAN CROSSWALK. EDGE LINES PAINTED SWSL/8" WITH INSIDE STRIPING PAINTED SWSL/6" AT 2'-0" O.C. PERPENDICULAR TO EDGE LINES.
- (N) CART CORRAL TYPICAL. SEE DETAIL SHEET FOR CART CORRAL DETAIL. (SAM'S CART CORRAL LOCATIONS ARE FIXED AND MUST BE CONFIRMED WITH SAM'S MANAGEMENT).
- (O) 2'-0" LOADING ZONE AT ALL CURBED PARKING SPACES. 4" PAINTED YELLOW STRIPING AT 2'-0" O.C. PERPENDICULAR TO PARKING SPACE. SEE DETAIL SHEET.
- (P) 18" CONCRETE CURB AND GUTTER TYPICAL. SEE PLAN FOR TYPE. SEE DETAIL SHEET.
- (Q) PAINTED DIRECTIONAL ARROW TYPICAL. SEE DETAIL SHEET.
- (R) BUILDING SETBACK LINE PER ZONING ORDINANCE.
- (S) "NO PARKING FIRE LANE" SIGN. SEE PLAN FOR LOCATION.
- (T) "NO TRUCKS" SIGN. SEE DETAIL SHEET.
- (U) "TRUCK ROUTE" SIGN. SEE PLAN FOR LOCATION.
- (V) "STOP" SIGN. SEE DETAIL SHEET.
- (W) ADA STALL, LANDSCAPE ISLAND WALKWAY, & CART CROSSOVER. SEE DETAIL SHEET.
- (X) INTERIOR LANDSCAPE ISLAND. SEE DETAIL SHEET.
- (Y) STOP BAR. SEE DETAIL SHEET.
- (Z) 5'-6" PAINTED STRIPED AREA CENTERED ON SPHONIC BREAK STORM MANHOLE. 4" PAINTED SOLID TRAFFIC YELLOW STRIPES 18" O.C. @ 45°. SEE DETAIL SHEET.
- (D) ISOLATION JOINT TYPICAL AT FIXED STRUCTURES (BUILDINGS, RETAINING WALLS/DOCK WALLS, DROP INLETS, MANHOLES, LIGHT POLE BASES AND BOLLARDS). SEE DETAIL SHEET.
- (b) CONCRETE BUFFER, 3' TYP.

**ALERT TO CONTRACTOR:**  
 ALL WM GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS. OUTLOT AREA TO BE KEPT FREE OF JOB TRAILERS AND STORAGE AFTER THE CONTRACT MILESTONE DATE FOR THE OUTLOT. WM GENERAL CONTRACTOR TO PROVIDE CLEAR ACCESS FOR OUTLOT CONTRACTOR TO THE SPECIFIC PARCEL AT ALL TIMES AFTER MILESTONE DATE. PURCHASER OF OUTLOT TO PROVIDE PERMIT DOCUMENTS AND SWPPP REQUIRED BY STATE/LOCAL REQUIREMENTS FOR SPECIFIC OUTLOT.

**SITE ANALYSIS TABLE**

WALMART	39,994 S.F.
PARKING (ASSOCIATE AND CUSTOMER)	165 SPACES
ACCESSIBLE	6 SPACES
TOTAL PARKING	171 SPACES
RATIO	4.28/1,000 S.F.

\*PARKING SPACES OBSTRUCTED BY CART CORRALS ARE NOT INCLUDED IN OVERALL PARKING RATIO.



**SITE PLAN**  
 WALMART STORE NO. 5697-00  
 Milwaukee, Wisconsin  
 SWX 70th Street and Main Street  
 PROJECT NO. 10104 MILW 70TH STREET (06/15/10-10-10)  
 JOB NUMBER: 08-15-10-104

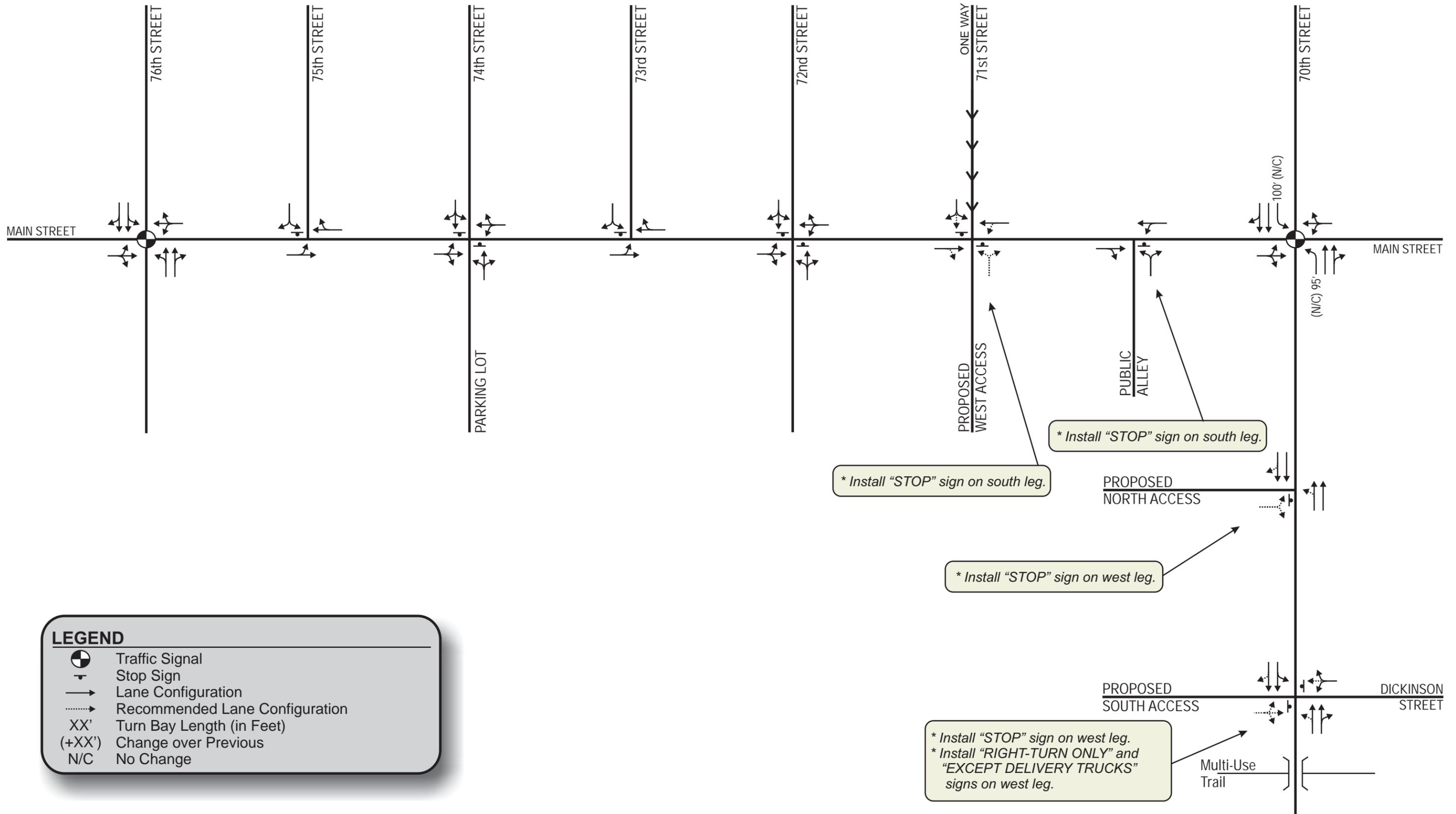


PLOTTING SCALE: 1" = 40'	JRB
DESIGNED BY:	JLJ
DRAWN BY:	JLJ
CHECKED BY:	JLJ
DATE:	February 17, 2011

NO.	REVISIONS	DATE

SHEET NO.  
**C5.0**  
 08-15-10-104





**LEGEND**

- Traffic Signal
- Stop Sign
- Lane Configuration
- Recommended Lane Configuration
- XX' Turn Bay Length (in Feet)
- (+XX') Change over Previous
- N/C No Change



NOT TO SCALE

## CHAPTER II – PROPOSED DEVELOPMENT

### PART A – ON-SITE DEVELOPMENT

#### A1. Development Site Location

A Walmart Market is proposed to be located southwest of the South 70<sup>th</sup> Street intersection with West Main Street in the City of Milwaukee. A street map illustrating the location of the proposed is shown in [Exhibit 2-1](#) at the end of this chapter. A copy of the conceptual site plan is shown in [Exhibit 2-2](#).

#### A2. Surrounding Land Use

The proposed development site is an unutilized, deteriorated parking lot bound by Main Street to the north, 72<sup>nd</sup> Street to the west, a multi-use trail (former railroad) to the south, and a public alley to the east. Jetz gas station/convenience store, Air Comfort Systems, Krause Auto Body, and other small commercial businesses are located between the public alley and the west side of 70<sup>th</sup> Street. Residential neighborhoods are located along the north side of Main Street, and Roman Electric is located along the east side of 70<sup>th</sup> Street.

#### A3. Conceptual Site Plan & Phasing/Timing

The Walmart Market is to be a 39,994 square foot (sf) grocery store with drive-thru pharmacy. No developable outlots are proposed. This traffic study assumes the store will be constructed and operational in Year 2011.

Vehicular access to the Walmart Market site is proposed to be located along Main Street opposite 71<sup>st</sup> Street (west access), along 70<sup>th</sup> Street approximately halfway between Main Street and Dickinson Street (north access), and along 70<sup>th</sup> Street opposite Dickinson Street (south access). An existing north-south alley that intersects Main Street between 71<sup>st</sup> Street and 70<sup>th</sup> Street will remain. Note that the Krause Auto Body building and the two business buildings south of Jetz gas station/convenience store will be removed to accommodate the access points to 70<sup>th</sup> Street. Jetz gas station/convenience store and the Air Comfort Systems business will remain.

Pedestrian connections are planned for the Walmart Market to/from both Main Street and 70<sup>th</sup> Street. Bicycle racks are also planned, as is a connection to the multi-use trail to the south.

### PART B – STUDY AREA

#### B1. Influence Area

The area of primary influence for Walmart Market includes surrounding neighborhoods in the City of Milwaukee and the City of West Allis.

#### B2. Area of Traffic Impact

The study area includes the following existing intersections:

- Main Street & 76<sup>th</sup> Street (traffic signal);
- Main Street & 75<sup>th</sup> Street (two-way stop control);
- Main Street & 74<sup>th</sup> Street (two-way stop control);
- Main Street & 73<sup>rd</sup> Street (two-way stop control);
- Main Street & 72<sup>nd</sup> Street (two-way stop control);
- Main Street & 71<sup>st</sup> Street (two-way stop control);
- Main Street & Public Alley (two-way stop control);
- Main Street & 70<sup>th</sup> Street (traffic signal control); and

- 70<sup>th</sup> Street & Dickinson Street (two-way stop control).

Access points to the Walmart Market, described previously, are also referred to as study area intersections.

## **PART C – OFF-SITE DEVELOPMENT**

No planned off-site development was identified. Note that the City of Milwaukee plans to reconstruct 70<sup>th</sup> Street and resurface Main Street in Year 2011.

## **PART D – SITE ACCESSIBILITY**

### **D1. Study Area Roadways**

The study area roadways are discussed below:

*Main Street* is an east-west two-lane undivided roadway with parking along both sides of the street and a posted speed limit of 25 miles per hour (mph) within the study area. According to the Wisconsin Department of Transportation (WisDOT), the Year 2009 annual average daily traffic (AADT) volume on Main Street was approximately 2,600 vehicles per day (vpd) between 70<sup>th</sup> Street and 71<sup>st</sup> Street. The City of Milwaukee plans to resurface Main Street in the Year 2011.

*76<sup>th</sup> Street* is a north-south four-lane divided roadway with a posted speed limit of 30-mph. According to WisDOT, the Year 2009 AADT volume on 76<sup>th</sup> Street just north of Main Street was approximately 9,800 vpd.

*75<sup>th</sup> Street* is a north-south two-lane undivided local roadway with a speed limit of 25-mph that intersects Main Street as a tee-intersection from the north. This street provides access to the residential neighborhood north of Main Street. No AADT data is available for this street.

*74<sup>th</sup> Street* is a north-south two-lane undivided local roadway with a speed limit of 25-mph that intersects Main Street as a tee-intersection from the north opposite a private parking lot. This street provides access to the residential neighborhood north of Main Street. No AADT data is available for this street.

*73<sup>rd</sup> Street* is a north-south two-lane undivided local roadway with a speed limit of 25-mph that intersects Main Street as a tee-intersection from the north. This street provides access to the residential neighborhood north of Main Street. No AADT data is available for this street.

*72<sup>nd</sup> Street* is a north-south two-lane undivided local roadway with a speed limit of 25-mph. This street provides access to the residential neighborhood north of Main Street and commercial-type land uses south of Main Street. No AADT data is available for this street.

*71<sup>st</sup> Street* is a north-south one-lane, one-way southbound, undivided local roadway with a speed limit of 25-mph that intersects Main Street as a tee-intersection from the north. This street provides access from the residential neighborhood north of Main Street. No AADT data is available for this street.

*A Public Alley* intersects Main Street as a tee-intersection from the south approximately halfway between 71<sup>st</sup> Street and 70<sup>th</sup> Street. A posted speed limit does not exist, and the alley terminates north of the existing multi-use trail (former railroad). The public alley provides access to the backside of businesses that front the west side of 70<sup>th</sup> Street. No AADT data is available for the alley.

*70<sup>th</sup> Street* is a north-south four-lane undivided roadway with a posted speed limit of 30-mph. Parking is currently provided along the west side of the street between Main Street and Dickinson Street. According to WisDOT, the Year 2009 AADT volume on 70<sup>th</sup> Street north of

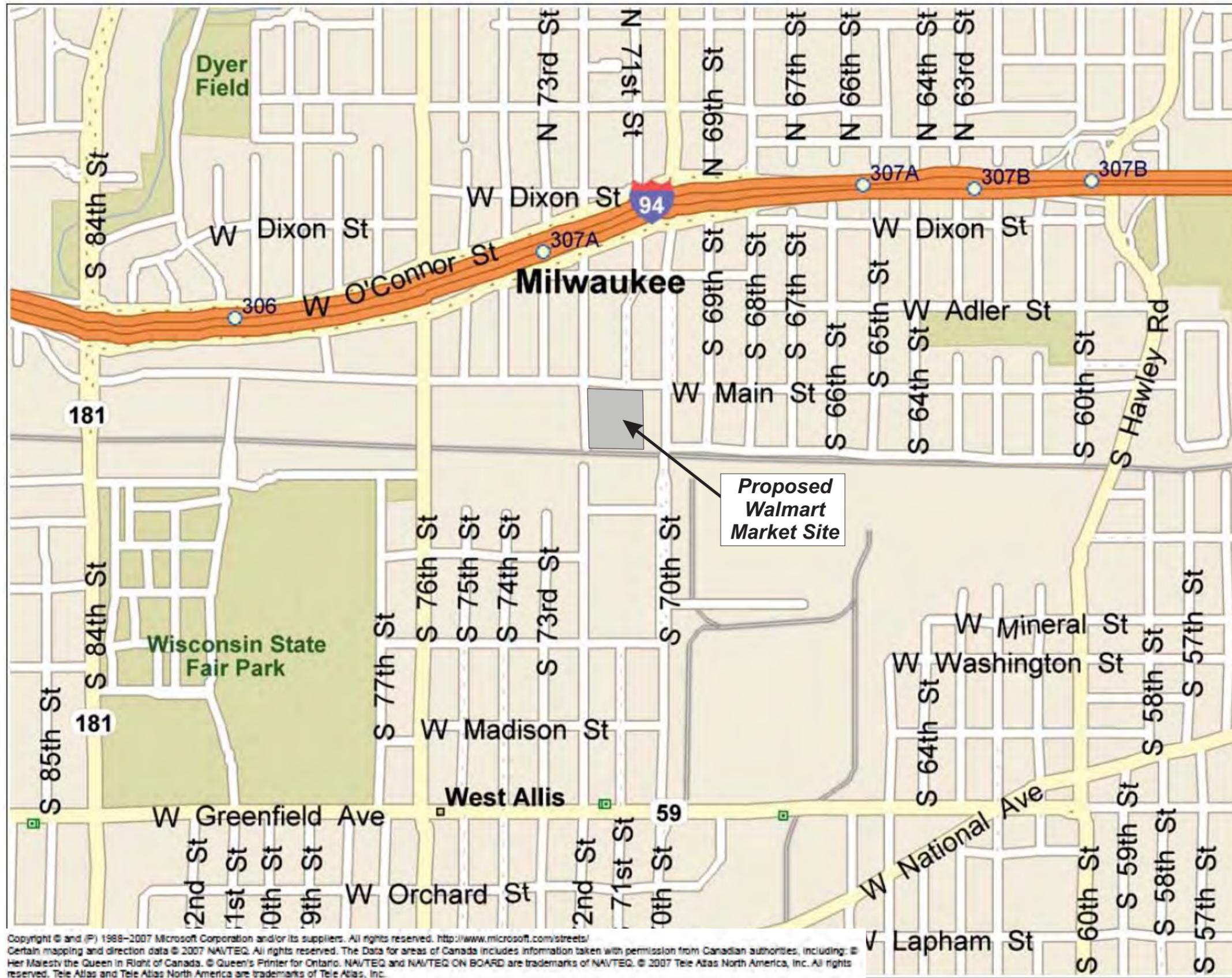
Main Street was approximately 15,900 vpd. The Year 2008 AADT volume on 70<sup>th</sup> Street south of Dickinson Street was approximately 14,100 vpd. The City of Milwaukee plans to reconstruct 70<sup>th</sup> Street in the Year 2011.

*Dickinson Street* is an east-west two-lane undivided roadway with a posted speed limit of 25-mph that intersects 70<sup>th</sup> Street as a tee intersection from the east. This street provides access to the residential neighborhood east of 70<sup>th</sup> Street. No AADT data is available for this street.

## **D2. Existing Alternative Modes of Transportation**

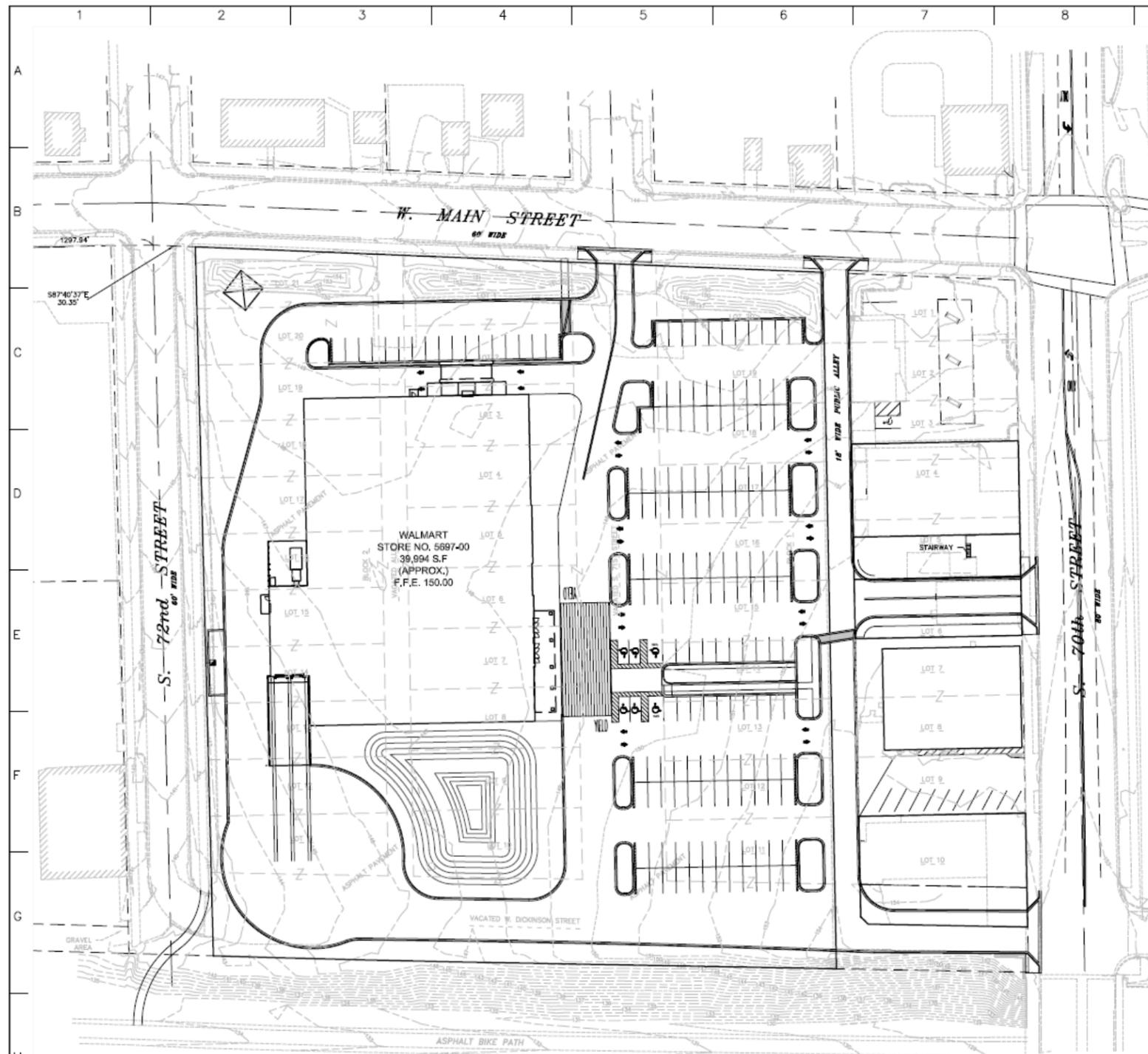
Pedestrian sidewalks are currently located along the both sides of Main Street, 70<sup>th</sup> Street, 71<sup>st</sup> Street, 72<sup>nd</sup> Street, 73<sup>rd</sup> Street, 74<sup>th</sup> Street, 75<sup>th</sup> Street, and 76<sup>th</sup> Street. No dedicated pedestrian facilities are provided along Dickinson Street. A multi-use trail exists on a former railroad right-of-way that runs east-west south of Dickinson Street. No other bicycle accommodations are provided.

Milwaukee County Transit Service Route 76, which connects Brown Deer, Milwaukee, West Allis, Greenfield and Greendale, currently travels along both 70<sup>th</sup> Street and 76<sup>th</sup> Street within the study area. Route 44 – National Flyer and Route 44U – Fairpark-Whitnall UBUS also travel along 76<sup>th</sup> Street.



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**LEGEND**

- PROPOSED BUILDING
- PROPOSED 18" CURB AND GUTTER
- PROPOSED PARKING SPACES SYSL/4"
- ASSOCIATE PARKING SPACES SWSL/4"
- CART CORRAL
- HEAVY DUTY ASPHALTIC CONCRETE PAVEMENT
- STANDARD DUTY ASPHALTIC CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- ARCHITECTURAL APRON SEE ARCH. PLANS
- CONCRETE BUFFER, 3' TYP.
- CONCRETE SIDEWALK, 5' TYP.

**LIGHT LEGEND**

KEY	ATTRIBUTES
	CATALOG NUMBER: AMERICAN ABE-2 T3-400PS MOUNTING HEIGHT= 28 FEET 1 FIXTURES PER POLE
	CATALOG NUMBER: AMERICAN ABE-2 T5-400PS MOUNTING HEIGHT= 28 FEET 3 FIXTURES PER POLE
	CATALOG NUMBER: AMERICAN ABE-2 T3-400PS MOUNTING HEIGHT= 28 FEET 2 FIXTURES PER POLE (ROTATED)
	CATALOG NUMBER: AMERICAN ABE-2 T3-400PS MOUNTING HEIGHT= 28 FEET 1 FIXTURES PER POLE (SHIELDED)
	CATALOG NUMBER: AMERICAN ABE-2 T3-400PS MOUNTING HEIGHT= 28 FEET 2 FIXTURES PER POLE (ROTATED WITH SHIELD)

**PAINTING STRIPING LEGEND**

- SWSL/4" - SINGLE WHITE SOLID LINE / 4" WIDE
- SYSL/4" - SINGLE YELLOW SOLID LINE / 4" WIDE EACH
- DSYL/4" - DOUBLE YELLOW SOLID LINE / 4" WIDE EACH
- SYSL/10" - SINGLE YELLOW SOLID LINE / 10" WIDE
- SWGL/4" - SINGLE WHITE DASHED LINE / 4" WIDE
- SYSL/4" - SINGLE SOLID YELLOW LINE / 4" WIDE
- SWSL/24" - SINGLE WHITE SOLID LINE / 24" WIDE

**SITE NOTES**

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PARKING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL DISTURBED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED. SEE 02900 SPECIFICATION.
4. ALL CURBED RADII ARE TO BE 10' UNLESS OTHERWISE NOTED. STRIPED RADII ARE TO BE 5'.
5. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
6. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
8. SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY A LAND SURVEYOR.
9. NO WETLANDS WERE PRESENT ON THIS SITE PER WETLAND DETERMINATION CONDUCTED BY RA SMITH NATIONAL, DATED DECEMBER 2010.
10. THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED "THE SITE SPECIFIC SPECIFICATIONS".
11. MONUMENT SIGNS SHALL BE CONSTRUCTED BY OTHERS.
12. REFER TO ARCH. PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
13. ALL WM GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS. OUTLOT AREA TO BE KEPT FREE OF JOB TRAILERS AND STORAGE AFTER THE CONTRACT MILESTONE DATE. PURCHASER OF OUTLOT TO PROVIDE PERMIT DOCUMENTS AND SWPPP REQUIRED BY STATE/LOCAL REQUIREMENTS FOR SPECIFIC OUTLOT.

**SITE LEGEND**

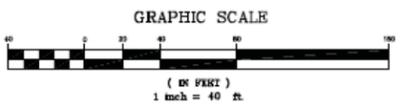
- (A) 8" WIDE FIRE LIME STRIPING PAINTED TRAFFIC RED W/ "NO PARKING FIRE LANE" PAINTED WITH 4" HIGH WHITE LETTERING AT 20' O.C. SEE DETAIL SHEET.
- (B) PEDESTRIAN CROSSWALK WITH 6" WIDE PAINTED WHITE STRIPING PARALLEL TO DIRECTION OF TRAFFIC AT 2'-0" O.C. AND (1)-6" WHITE STRIPE PERPENDICULAR ON BOTH ENDS UNLESS NOTED OTHERWISE. SEE SITE PLAN FOR DIMENSIONS.
- (C) PEDESTRIAN CROSSING SIGN TYPICAL AT PEDESTRIAN CROSSWALKS AS NOTED ON PLANS.
- (D) "YIELD" PAINTED WHITE ON PAVEMENT TYPICAL. SEE DETAIL SHEET.
- (E) CONCRETE JOINTING AND FILLERS TO BE COMPLETED PER DETAIL (TYPICAL OF ALL EXTERIOR CONCRETE EXCLUSIVE OF ARCHITECTURAL CONCRETE).
- (F) EXIT PORCH. SEE ARCHITECTURAL PLANS FOR EXACT SIZE, LOCATION FOR STOODS, STAIRS AND/OR RAMPS THAT MAY BE REQUIRED. RAMP PAVEMENT FLUSH WITH THE TOP OF STOOP.
- (G) 6" PIPIC BOLLARD TYPICAL UNLESS NOTED OTHERWISE. SEE DETAIL SHEET.
- (H) AT GRADE OVERHEAD DOOR LOCATION. SEE ARCHITECTURAL PLANS FOR EXACT SIZE AND LOCATION FOR COORDINATION WITH CIVIL PLANS.
- (I) 4" WIDE x 130' LONG YELLOW PAINTED TRUCK ALIGNMENT STRIPES TYPICAL.
- (J) 18" x 42" CONCRETE COMPACTOR PAD AND 18" x 42" HEAVY DUTY PAD (ORIENT FOR TRUCK LOADING). REFER TO ARCHITECTURAL PLAN FOR EXACT LOCATION AND SLOPE.
- (K) CONCRETE TRANSFORMER PAD. CONTRACTOR TO COORDINATE WITH LOCAL POWER COMPANY FOR DETAILS.
- (L) ACCESSIBLE PARKING SPACE TYPICAL. SEE DETAIL SHEET FOR ACCESSIBLE PARKING SPACE SIZE, SIGN AND SYMBOL ("VAN"-INDICATES VAN ACCESSIBLE SPACE).
- (M) 8'-0" WIDE PEDESTRIAN CROSSWALK. EDGE LINES PAINTED SWSL/8" WITH INSIDE STRIPING PAINTED SWSL/6" AT 2'-0" O.C. PERPENDICULAR TO EDGE LINES.
- (N) CART CORRAL TYPICAL. SEE DETAIL SHEET FOR CART CORRAL DETAIL. (SAM'S CART CORRAL LOCATIONS ARE FIXED AND MUST BE CONFIRMED WITH SAM'S MANAGEMENT).
- (O) 2'-0" LOADING ZONE AT ALL CURBED PARKING SPACES. 4" PAINTED YELLOW STRIPING AT 2'-0" O.C. PERPENDICULAR TO PARKING SPACE. SEE DETAIL SHEET.
- (P) 18" CONCRETE CURB AND GUTTER TYPICAL. SEE PLAN FOR TYPE. SEE DETAIL SHEET.
- (Q) PAINTED DIRECTIONAL ARROW TYPICAL. SEE DETAIL SHEET.
- (R) BUILDING SETBACK LINE PER ZONING ORDINANCE.
- (S) "NO PARKING FIRE LANE" SIGN. SEE PLAN FOR LOCATION.
- (T) "NO TRUCKS" SIGN. SEE DETAIL SHEET.
- (U) "TRUCK ROUTE" SIGN. SEE PLAN FOR LOCATION.
- (V) "STOP" SIGN. SEE DETAIL SHEET.
- (W) ADA STALL, LANDSCAPE ISLAND WALKWAY, & CART CROSSOVER. SEE DETAIL SHEET.
- (X) INTERIOR LANDSCAPE ISLAND. SEE DETAIL SHEET.
- (Y) STOP BAR. SEE DETAIL SHEET.
- (Z) 5'-6" PAINTED STRIPED AREA CENTERED ON SPHONIC BREAK STORM MANHOLE. 4" PAINTED SOLID TRAFFIC YELLOW STRIPES 18" O.C. @ 45°. SEE DETAIL SHEET.
- (D) ISOLATION JOINT TYPICAL AT FIXED STRUCTURES (BUILDINGS, RETAINING WALLS/DOCK WALLS, DROP INLETS, MANHOLES, LIGHT POLE BASES AND BOLLARDS). SEE DETAIL SHEET.
- (b) CONCRETE BUFFER, 3' TYP.

**ALERT TO CONTRACTOR:**  
 ALL WM GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS. OUTLOT AREA TO BE KEPT FREE OF JOB TRAILERS AND STORAGE AFTER THE CONTRACT MILESTONE DATE FOR THE OUTLOT. WM GENERAL CONTRACTOR TO PROVIDE CLEAR ACCESS FOR OUTLOT CONTRACTOR TO THE SPECIFIC PARCEL AT ALL TIMES AFTER MILESTONE DATE. PURCHASER OF OUTLOT TO PROVIDE PERMIT DOCUMENTS AND SWPPP REQUIRED BY STATE/LOCAL REQUIREMENTS FOR SPECIFIC OUTLOT.

**SITE ANALYSIS TABLE**

WALMART	39,994 S.F.
PARKING (ASSOCIATE AND CUSTOMER)	165 SPACES
ACCESSIBLE	6 SPACES
TOTAL PARKING	171 SPACES
RATIO	4.28/1,000 S.F.

\*PARKING SPACES OBSTRUCTED BY CART CORRALS ARE NOT INCLUDED IN OVERALL PARKING RATIO.



**SITE PLAN**  
 WALMART STORE NO. 5697-00  
 SWX 70th Street and Main Street  
 Milwaukee, Wisconsin  
 JOB NUMBER: 08-15-10-104  
 FILE NAME: T:\proj\proj0104\104\_70th Street\001\001REV.dwg



PLOTTING SCALE: 1" = 40'	JRB
DESIGNED BY:	JLJ
DRAWN BY:	JLJ
CHECKED BY:	JLJ
DATE:	February 17, 2011

NO.	REVISIONS	DATE

SHEET NO.  
**C5.0**  
 08-15-10-104



## CHAPTER III – ANALYSIS OF EXISTING CONDITIONS

### PART A – EXISTING PHYSICAL CHARACTERISTICS

[Exhibit 3-1](#) shows the existing transportation detail for the study area intersections. More specifically, the exhibit illustrates intersection lane configurations, intersection traffic controls, posted speed limits, and approximate intersection spacing.

### PART B – EXISTING/BACKGROUND TRAFFIC VOLUMES

Weekday evening and Saturday midday peak hour turning movement counts were conducted prior to conducting any traffic analysis. The following table summarizes the date each count was conducted.

<i>Intersection:</i>	<i>Weekday PM</i>	<i>Saturday MID</i>
Main Street & 76 <sup>th</sup> Street	1/13/2011	1/15/2011
Main Street & 75 <sup>th</sup> Street	1/13/2011	1/15/2011
Main Street & 74 <sup>th</sup> Street	1/11/2011	1/15/2011
Main Street & 73 <sup>rd</sup> Street	1/12/2011	1/15/2011
Main Street & 72 <sup>nd</sup> Street	1/12/2011	1/15/2011
Main Street & 71 <sup>st</sup> Street	1/12/2011	1/15/2011
Main Street & 70 <sup>th</sup> Street	1/13/2011	1/15/2011
70 <sup>th</sup> Street & Dickinson Street	1/13/2011	1/15/2011

The weekday evening and Saturday midday peak hours were determined to be 4:30 to 5:30pm and 11:15am to 12:15pm. Copies of the existing traffic counts and related calculations are included in [Appendix A](#).

The development is planned to be built in the Year 2011. Therefore, no growth rate was applied to the existing traffic volumes. However, since the counts were conducted in January of 2011, the counts were seasonally adjusted then balanced using WisDOT seasonal factors for urban collectors. The seasonal growth rate increased the January of 2011 volumes by a factor of 1.087, or an 8.7-percent increase. The seasonally adjusted volumes have been labeled Year 2011 background traffic volumes and are shown in [Exhibit 3-2](#).

### PART C – BACKGROUND TRAFFIC LEVEL OF SERVICE

#### C1. Level of Service Definitions

The study area intersections were analyzed based on the procedures set forth in the *2000 Highway Capacity Manual (HCM)*. Intersection operation is defined by “level of service”. Level of service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are as follows:

**LOS A** is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.

**LOS B** represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

**LOS C** still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

**LOS D** represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

**LOS E** represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

**LOS F** represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

## **C2. Year 2011 Background Traffic Operations – With Improvements**

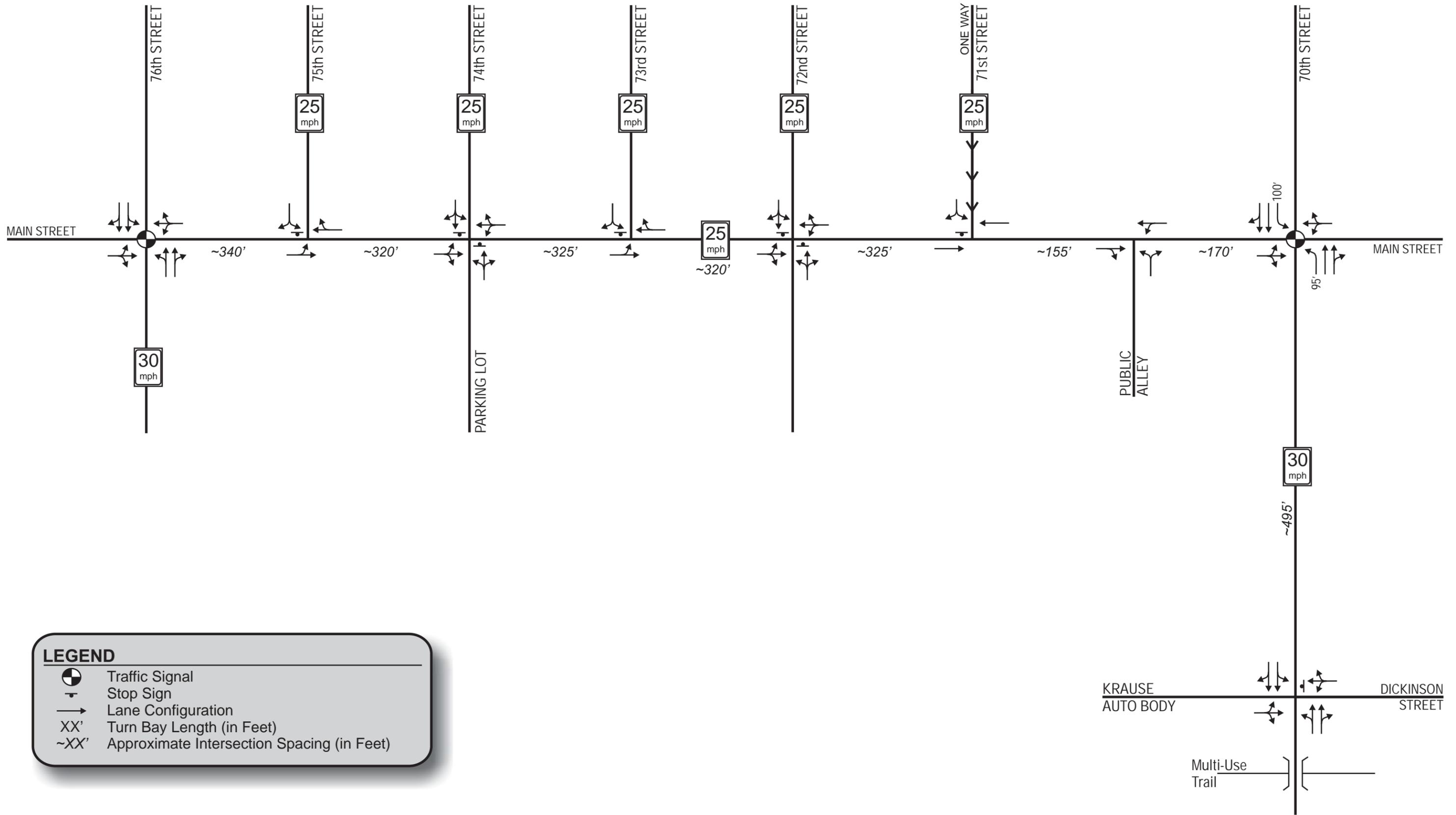
**Exhibit 3-3** shows the Year 2011 background traffic (no development) peak hour operating conditions at the study area intersections. The Year 2011 background traffic analysis was conducted using the existing lane configurations shown in **Exhibit 3-1**, the Year 2011 background traffic volumes shown in **Exhibit 3-2**, and the existing traffic signal timings obtained from the City of Milwaukee and included in **Appendix A**.

As shown in **Exhibit 3-3**, traffic signalized intersections currently operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street operate acceptably at LOS B or better conditions. The westbound approach of Dickinson Street operates at LOS E conditions for 10 vehicles in the weekday evening peak hour. Since the approach services a low volume of traffic, operates well outside the weekday evening peak hour, has a volume-to-capacity (v/c) ratio of 0.12 (desirably less than 1.00), and alternative access exists via the Main Street intersection with 70<sup>th</sup> Street, this LOS E condition does not warrant correction.

## **PART D – SOURCES OF DATA**

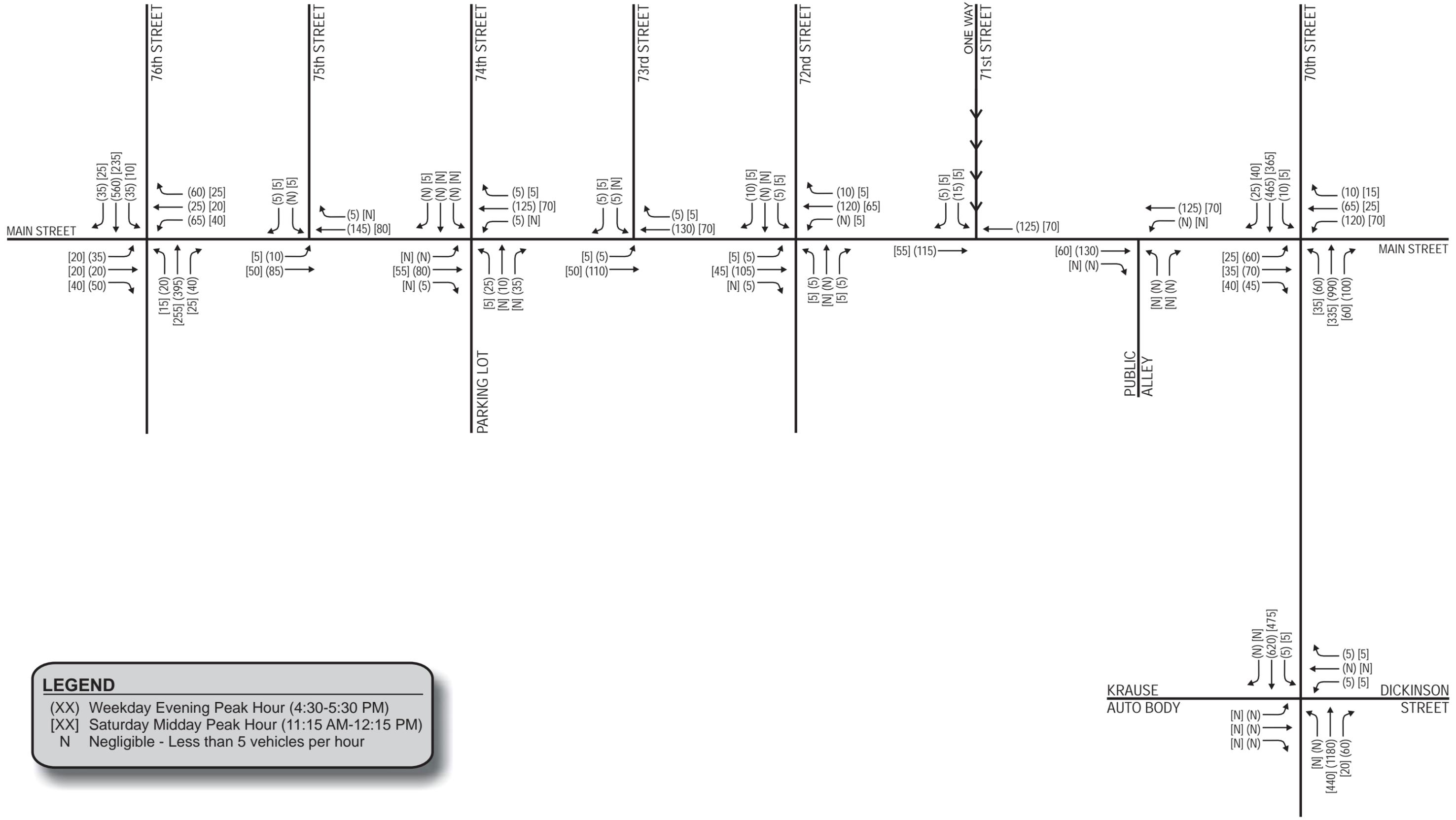
The following sources of data were obtained for use in conducting this traffic study:

- Turning movement traffic counts – Traffic Analysis & Design, Inc.
- Existing transportation detail – Traffic Analysis & Design, Inc.
- Traffic signal timings & roadway resurfacing/reconstruction projects – City of Milwaukee
- On-site development information – McClure Engineering Associates, Inc.
- Transit information – Milwaukee County Transit Service via <http://www.ridemcts.com>



**LEGEND**

- Traffic Signal
- Stop Sign
- Lane Configuration
- XX' Turn Bay Length (in Feet)
- ~XX' Approximate Intersection Spacing (in Feet)



**LEGEND**

(XX) Weekday Evening Peak Hour (4:30-5:30 PM)  
 [XX] Saturday Midday Peak Hour (11:15 AM-12:15 PM)  
 N Negligible - Less than 5 vehicles per hour



NOT TO SCALE

**Year 2011 Background Traffic Operations  
With Existing Geometrics and Traffic Control**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Main Street & 76th Street	Traffic Signal	PM	C	C	C	C	C	C	A	A	A	A	A	A
		SAT	C	C	C	C	C	C	A	A	A	A	A	A
Main Street & 75th Street	Two-Way Stop Sign	PM	A	*	-	-	*	*	-	-	-	A	-	A
		SAT	A	*	-	-	*	*	-	-	-	A	-	A
Main Street & 74th Street	Two-Way Stop Sign	PM	A	*	*	A	*	*	A	A	A	B	B	B
		SAT	A	*	*	A	*	*	A	A	A	A	A	A
Main Street & 73rd Street	Two-Way Stop Sign	PM	A	*	-	-	*	*	-	-	-	A	-	A
		SAT	A	*	-	-	*	*	-	-	-	A	-	A
Main Street & 72nd Street	Two-Way Stop Sign	PM	A	*	*	A	*	*	B	B	B	A	A	A
		SAT	A	*	*	A	*	*	A	A	A	A	A	A
Main Street & 71st Street	Two-Way Stop Sign	PM	-	*	-	-	*	-	-	-	-	B	-	B
		SAT	-	*	-	-	*	-	-	-	-	A	-	A
Main Street & Public Alley	Two-Way Stop Sign	PM	-	*	*	A	*	-	A	-	A	-	-	-
		SAT	-	*	*	A	*	-	A	-	A	-	-	-
Main Street & 70th Street	Traffic Signal	PM	B	B	B	C	C	C	A	B	B	A	A	A
		SAT	B	B	B	B	B	B	A	A	A	A	A	A
70th Street & Dickinson Street/ Krause Auto Body Access	Two-Way Stop Sign	PM	E <sup>1</sup>	E <sup>1</sup>	E <sup>1</sup>	E <sup>2</sup>	E <sup>2</sup>	E <sup>2</sup>	A	*	*	A	*	*
		SAT	C	C	C	B	B	B	A	*	*	A	*	*

Notes: (-) indicates a movement that is not possible or is prohibited. (\*) indicates uncontrolled or free-flow movement.

1. 4.2-sec of average delay beyond LOS D/E threshold, <5 vehicles. Operational improvements not necessary
2. 9.4-sec of average delay beyond LOS D/E threshold, 10 vehicles. Operational improvements not necessary

## CHAPTER IV – DEVELOPMENT TRAFFIC

### PART A – DEVELOPMENT TRAFFIC FORECASTING

To address future traffic impacts along study area roadways and at the intersections adjacent to the development, it is necessary to identify the hourly and daily volume of traffic generated by the development. The expected traffic volumes generated by the Walmart Market development are based on the type and size of the proposed land use, and on trip rates as published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual*, 8<sup>th</sup> Edition, 2008.

#### A1. Trip Generation & Distribution

The trip generation and distribution for the Walmart Market is shown in [Exhibit 4-1](#). The trip distribution was based on the location of surrounding populated areas and on the existing AADT traffic patterns of the surrounding roadways.

As shown in [Exhibit 4-1](#), the proposed Walmart Market is expected to generate approximately 125 new trips to/from the study area during a typical weekday morning peak hour (80 in/45 out), 340 new trips to/from the study area during a typical weekday evening peak hour (175 in/165 out) and 350 new trips to/from the study area during a typical Saturday midday peak hour (180 in/170 out). On a typical weekday (24 hour period), the Walmart Market is expected to generate approximately 3,270 new trips (1,635 in/1,635 out).

#### A2. Mode Split

Though accessible to pedestrian, bicycle, and transit users, the primary mode to/from the Walmart Market development is expected to be personal motorized vehicle. Therefore, no trip reductions were taken for other modes. As such, the analysis assumes a more conservative and higher vehicle volume scenario.

#### A3. Determination of Linked and Pass-by Trip Traffic

Linked trips occur when a patron or employee visits more than one land use within a site without leaving the site. Since no other users are planned for the Walmart Market site, linked trips will not occur.

Pass-by trips occur when motorists on the adjacent roadway system stop off at a development prior to continuing on their intended route. For example, a motorist southbound on 70<sup>th</sup> Street stops at the Walmart Market prior to continuing southbound on 70<sup>th</sup> Street. Approximately 15-percent of the total driveway trips for the development are expected to be a result of pass-by trips. Per the ITE *Trip Generation Manual*, this percentage is well within the pass-by rate ranges seen at other grocery stores in the United States. Further, the resulting pass-by trip figures were not allowed to exceed 10-percent of the existing traffic along 70<sup>th</sup> Street per guidance in the ITE *Trip Generation Manual*. The Walmart Market pass-by trips are shown in [Exhibit 4-2](#).

#### A4. Trip Assignment

New trips (i.e. total trips minus linked trips minus pass-by trips) expected to be generated by Walmart Market were assigned based on the trip distribution shown in [Exhibit 4-1](#). The Walmart Market new trips are shown in [Exhibit 4-3](#).

The Walmart Market pass-by trips ([Exhibit 4-2](#)) were added to the Walmart Market new trips ([Exhibit 4-3](#)) to determine the Walmart Market driveway trips shown in [Exhibit 4-4](#).

### PART B – DETERMINATION OF TOTAL TRAFFIC

Year 2011 total traffic volumes, shown in [Exhibit 4-5](#), were determined by adding the Year 2011 background traffic volumes ([Exhibit 3-2](#)) to the Walmart Market driveway trips ([Exhibit 4-4](#)).

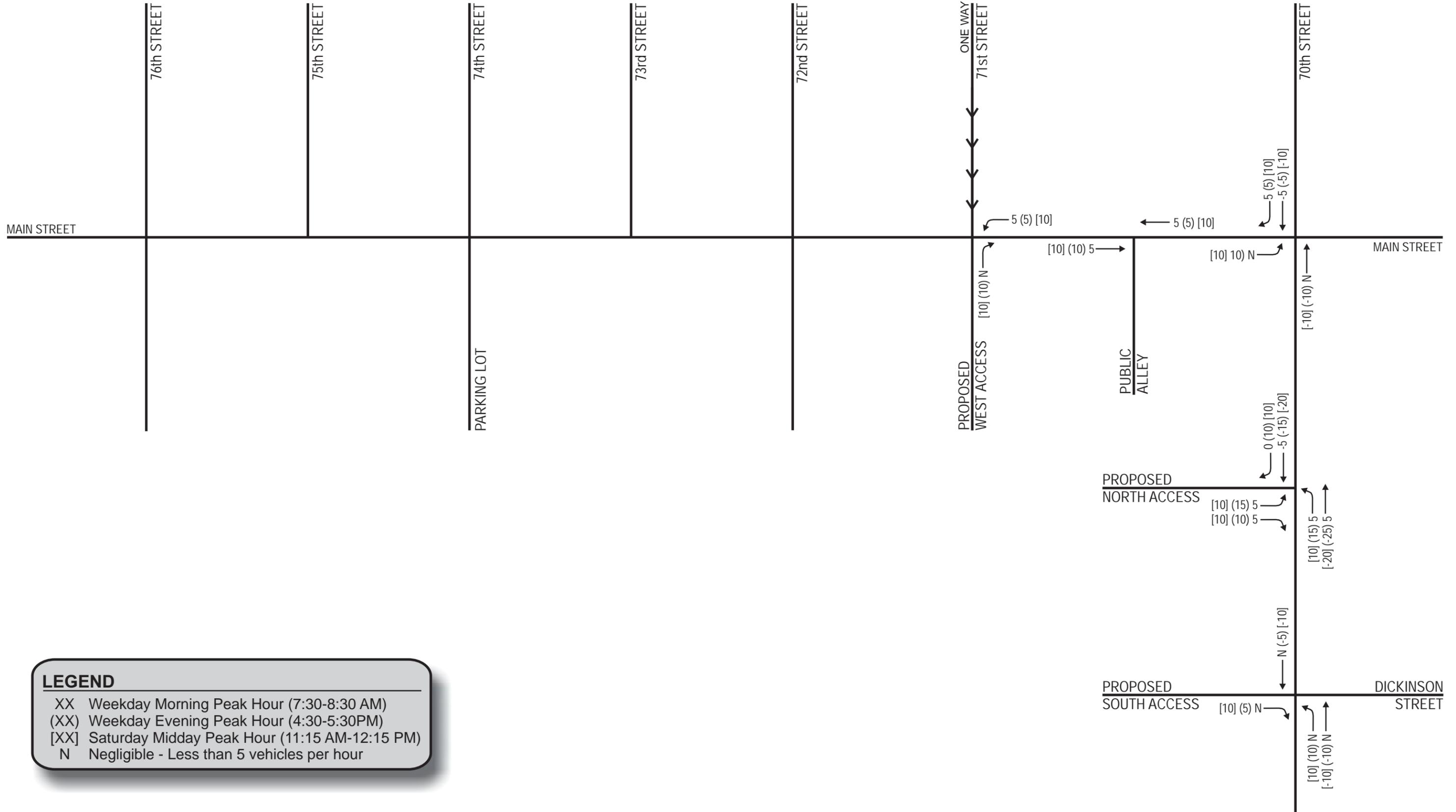
**Walmart Market Trip Generation Table**

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak			SAT Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
Walmart	850	40 x 1,000 SF	4,090 (102.24)	90 (61%)	55 (39%)	145 (3.59)	215 (51%)	205 (49%)	420 (10.50)	220 (51%)	210 (49%)	430 (10.81)
<b>Total Driveway Trips</b>			<b>4,090</b>	<b>90</b>	<b>55</b>	<b>145</b>	<b>215</b>	<b>205</b>	<b>420</b>	<b>220</b>	<b>210</b>	<b>430</b>
<i>Minus Pass-by Trips</i>			*	20%	820	10	10	20	40	40	80	80
<b>Total New Trips</b>			<b>3,270</b>	<b>80</b>	<b>45</b>	<b>125</b>	<b>175</b>	<b>165</b>	<b>340</b>	<b>180</b>	<b>170</b>	<b>350</b>

\* Pass-by trips taken from driveway trips. The ins/outs were made equal, as every in needs an equal out.

**TRIP DISTRIBUTION**

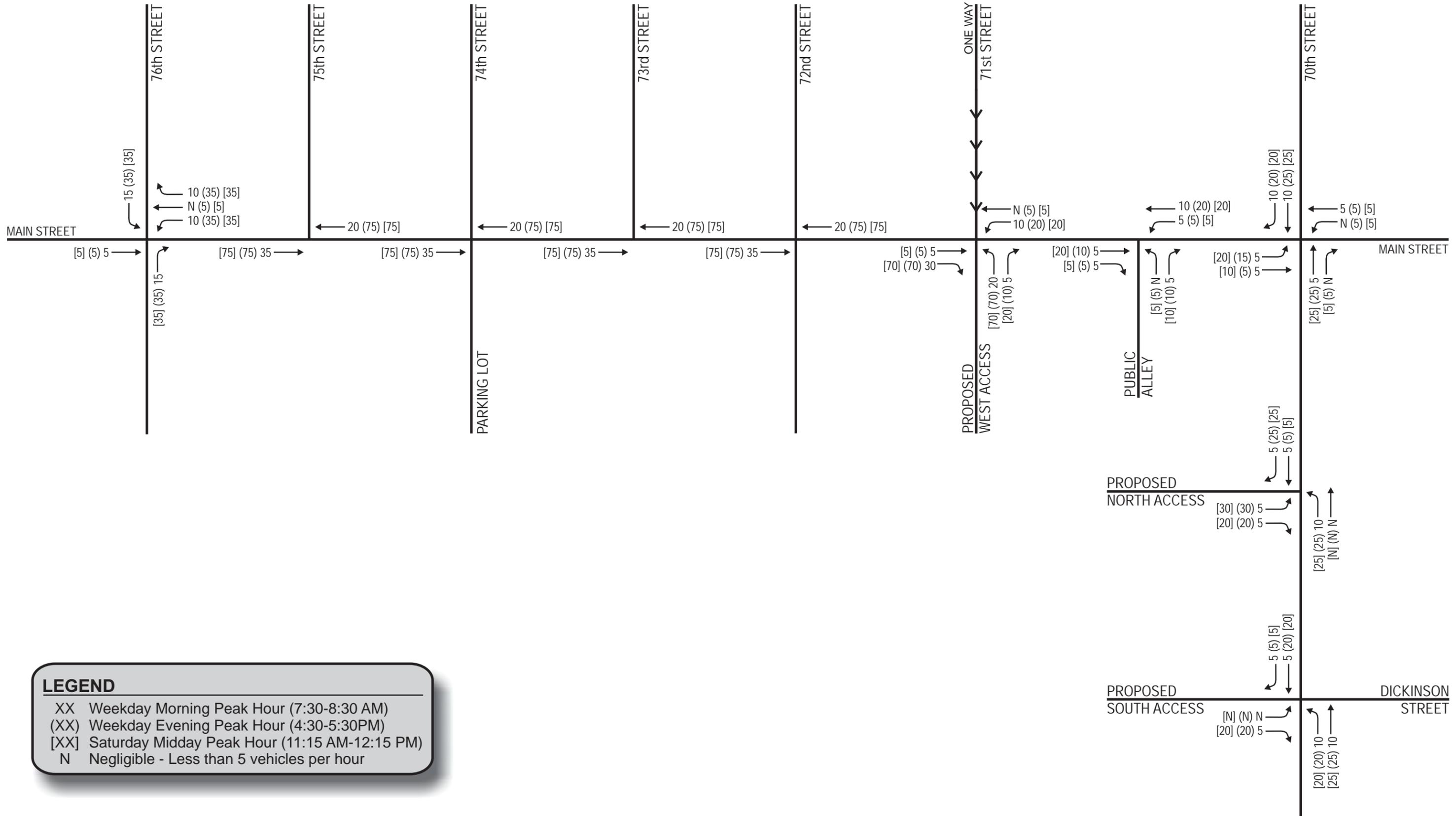
North on 76th Street	20%	650	15	10	35	35	35	35
South on 76th Street	20%	650	15	10	35	35	35	35
North on 70th Street	25%	820	20	10	45	40	45	45
South on 70th Street	25%	820	20	10	45	40	45	40
West on Main Street	3%	100	5	0	5	5	5	5
East on Main Street	7%	230	5	5	10	10	15	10
	<b>100%</b>	<b>3270</b>	<b>80</b>	<b>45</b>	<b>175</b>	<b>165</b>	<b>180</b>	<b>170</b>
	Total Correct?	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE



**LEGEND**

- XX Weekday Morning Peak Hour (7:30-8:30 AM)
- (XX) Weekday Evening Peak Hour (4:30-5:30 PM)
- [XX] Saturday Midday Peak Hour (11:15 AM-12:15 PM)
- N Negligible - Less than 5 vehicles per hour



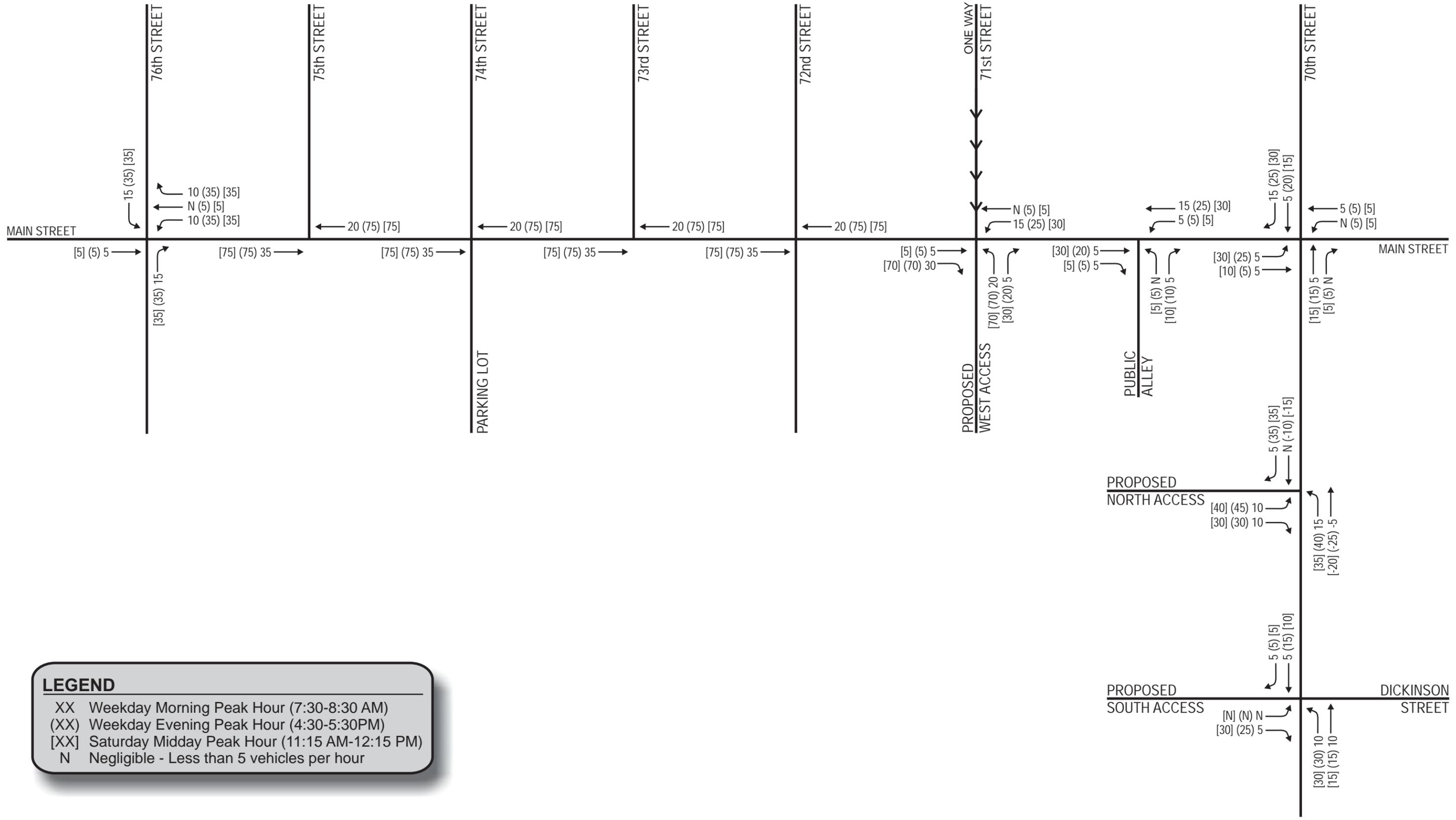


**LEGEND**

- XX Weekday Morning Peak Hour (7:30-8:30 AM)
- (XX) Weekday Evening Peak Hour (4:30-5:30PM)
- [XX] Saturday Midday Peak Hour (11:15 AM-12:15 PM)
- N Negligible - Less than 5 vehicles per hour



NOT TO SCALE

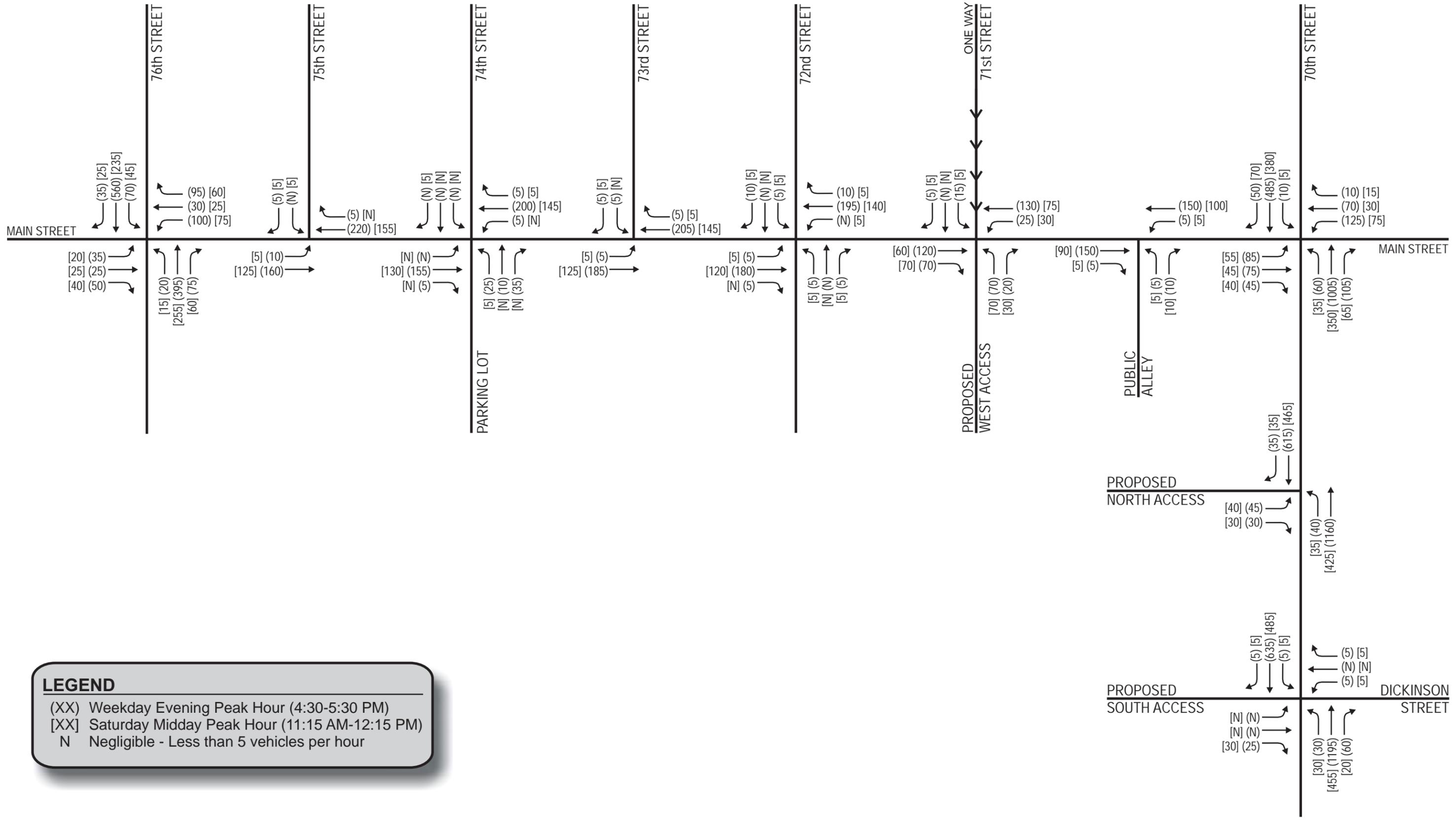


**LEGEND**

- XX Weekday Morning Peak Hour (7:30-8:30 AM)
- (XX) Weekday Evening Peak Hour (4:30-5:30PM)
- [XX] Saturday Midday Peak Hour (11:15 AM-12:15 PM)
- N Negligible - Less than 5 vehicles per hour



NOT TO SCALE



**LEGEND**

(XX) Weekday Evening Peak Hour (4:30-5:30 PM)  
 [XX] Saturday Midday Peak Hour (11:15 AM-12:15 PM)  
 N Negligible - Less than 5 vehicles per hour



## CHAPTER V – ANALYSIS OF TOTAL TRAFFIC CONDITIONS

### PART A – TOTAL TRAFFIC CAPACITY LEVEL OF SERVICE

#### A1. Year 2011 Total Traffic Operating Conditions – Without Improvements

[Exhibit 5-1](#) shows the Year 2011 total traffic (with Walmart Market) peak hour operating conditions at the study area intersections without improvements. The Year 2011 total traffic analysis was conducted using the existing lane configurations shown in [Exhibit 3-1](#), the Year 2011 total traffic volumes shown in [Exhibit 4-5](#), and the existing traffic signal timings obtained from the City of Milwaukee and included in [Appendix A](#).

As shown in [Exhibit 5-1](#), the traffic-signalized intersections of Main Street with 76<sup>th</sup> Street and 70<sup>th</sup> Street are expected to continue to operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street are expected to continue to operate acceptably at LOS B or better conditions. These operations make sense, as 1) Main Street currently services low volumes of traffic to/from the neighborhoods to the north and 2) the Walmart Market site adds a relatively low incremental increase in traffic to Main Street. Traffic exiting the north access along 70<sup>th</sup> Street is expected to operate acceptably at LOS D or better conditions, and traffic exiting the south access along 70<sup>th</sup> Street is expected to operate acceptably at LOS B or better conditions.

The westbound approach of Dickinson Street is expected to operate at LOS F conditions for 10 vehicles in the weekday evening peak hour. Since the approach services a low volume of traffic, operates well outside the weekday evening peak hour, has a volume-to-capacity (v/c) ratio of 0.15 (desirably less than 1.00), and alternative access exists via the Main Street intersection with 70<sup>th</sup> Street, this LOS F condition does not warrant correction. Note that the existing volume at the intersection is the same and operates at LOS E with a v/c ratio of 0.12.

### PART B – QUEUEING ANALYSIS

To estimate storage length requirements for turn bays at the study area intersections, a queuing analysis has been conducted. Note that the 50<sup>th</sup> percentile and 95<sup>th</sup> percentile probable queue lengths were checked against available turn bay lengths and intersection spacing to see if improvements are necessary. The following is a list of where the results of the queuing analysis can be found.

- Year 2011 Background Traffic – [Exhibit 5-4](#)
- Year 2011 Total Traffic – [Exhibit 5-5](#)

### PART C – INTERSECTION SIGHT DISTANCE

*Note that the intersection sight distance (ISD) measurements and photographs are based on approximate intersection placement and on in-field observation by Traffic Analysis & Design, Inc. The party responsible for designing the intersections is responsible for cross-checking, verifying and designing for all applicable sight distances.*

All new or improved intersections throughout the study area should be designed for ISD in accordance with the latest edition of the American Association of State Highway Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*. ISD has been checked at the following locations:

- Main Street & Proposed West Access
- 70<sup>th</sup> Street & Proposed North Access
- 70<sup>th</sup> Street & Proposed South Access opposite Dickinson Street

### **C1. Main Street & Proposed West Access ISD**

ISD for the Main Street intersection with the proposed Walmart Market west access, which is proposed to be constructed opposite 71<sup>st</sup> Street, was conducted using the following parameters:

- A design speed of 5 mph above the posted speed limit, or 30 mph.
- A passenger vehicle (P-vehicle) eye height of 3.5 feet and a single-unit trunk (SU-vehicle) eye height of 7.6 feet, located 14.6-feet south of the Main Street curb line.
- The height of the object to be seen on Main Street of 3.5-feet.

ISD from the proposed west access controls the necessary measurements, as the distances are greater than the distances needed for a vehicle on Main Street making a westbound left-turn onto the west access. All calculations are provided in [Appendix A](#). As shown in [Exhibit 5-4](#), ISD is expected to be met in both directions of Main Street at the proposed west access.

### **C2. 70<sup>th</sup> Street & Proposed North Access ISD**

ISD for the 70<sup>th</sup> Street intersection with the proposed Walmart Market north access, which is proposed to be constructed approximately halfway between Main Street and Dickinson Street, was conducted using the following parameters:

- A design speed of 5 mph above the posted speed limit, or 35 mph.
- A passenger vehicle (P-vehicle) eye height of 3.5 feet and a single-unit trunk (SU-vehicle) eye height of 7.6 feet, located 14.6-feet west of the 70<sup>th</sup> Street curb line. *The curb-to-vehicle distance was maximized since a building currently exists, but will be taken as part of the development, within the 14.6-foot distance.*
- The height of the object to be seen on 70<sup>th</sup> Street of 3.5-feet.

ISD from the proposed north access controls the necessary measurements, as the distances are greater than the distances needed for a vehicle on 70<sup>th</sup> Street making a northbound left-turn onto the north access. All calculations are provided in [Appendix A](#). As shown in [Exhibit 5-5](#), ISD is expected to be met in both directions of 70<sup>th</sup> Street at the proposed north access.

### **C3. 70<sup>th</sup> Street & Proposed South Access ISD**

ISD for the 70<sup>th</sup> Street intersection with the proposed Walmart Market south access, which is proposed to be constructed opposite Dickinson Street, was conducted using the following parameters:

- A design speed of 5 mph above the posted speed limit, or 35 mph.
- A passenger vehicle (P-vehicle) eye height of 3.5 feet and a semi-trunk (WB-vehicle) eye height of 7.6 feet, located 14.6-feet west of the 70<sup>th</sup> Street curb line.
- The height of the object to be seen on 70<sup>th</sup> Street of 3.5-feet.

ISD from the proposed south access controls the necessary measurements, as the distances are greater than the distances needed for a vehicle on 70<sup>th</sup> Street making a northbound left-turn onto the north access. All calculations are provided in [Appendix A](#).

As shown in [Exhibit 5-6](#), ISD is expected to be met for both P-vehicle and WB-vehicle motorists looking north at southbound oncoming traffic. ISD is expected to be met for the WB-vehicle

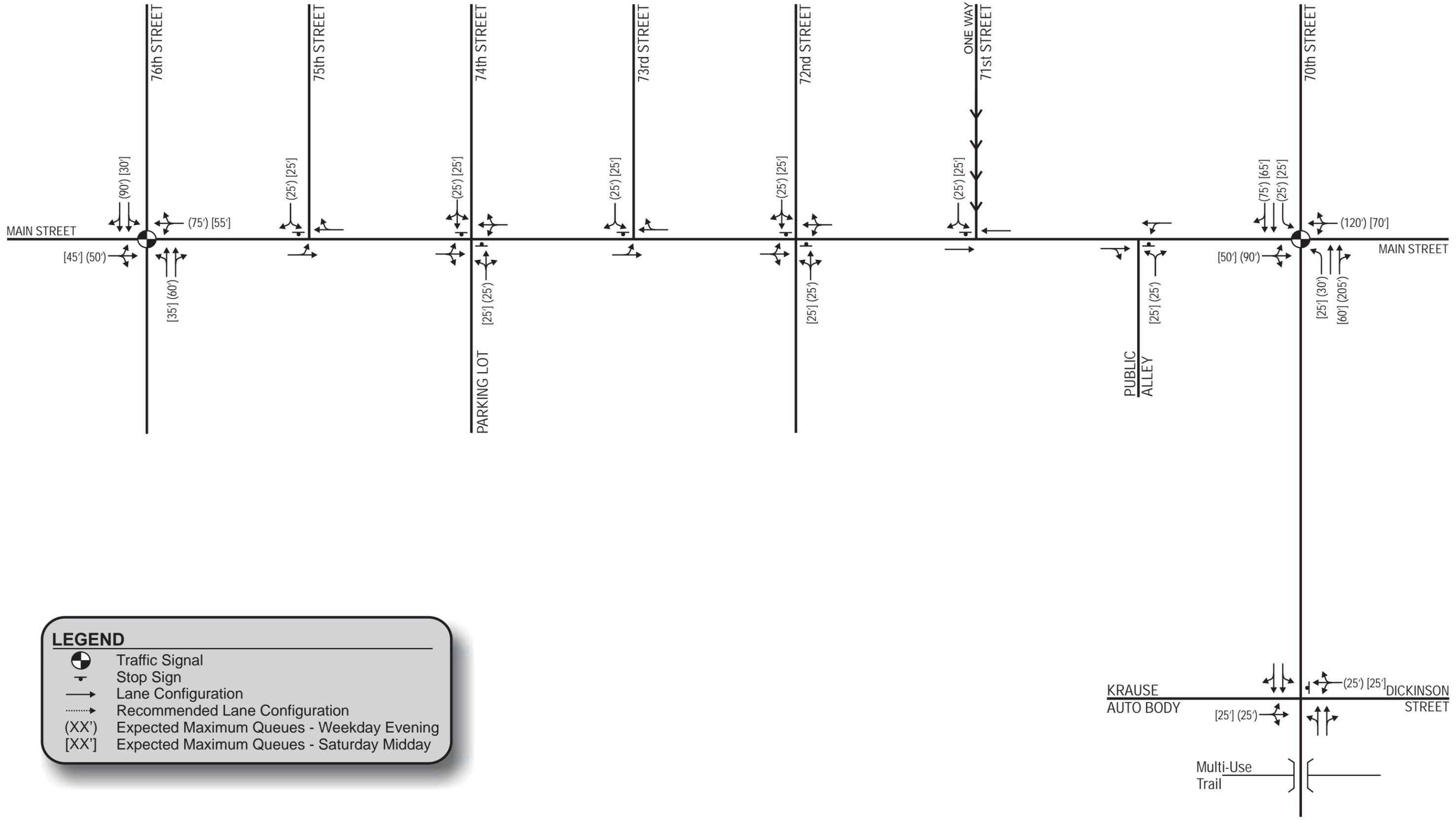
motorists, but not the P-vehicle motorists, looking south at northbound oncoming traffic. Note that, if a P-vehicle motorist is able to position themselves approximately 10-feet west of the curb line rather than the 14.6-feet used for design in the AASHTO GDHS (which most P-vehicles can do) the ISD would be met. Improvements to address the ISD deficiency are discussed in the Chapter I and Chapter IV recommendations.

**Year 2011 Total Traffic Operations  
With Recommended Geometrics and Traffic Control**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Main Street & 76th Street	Traffic Signal	PM	B	B	B	C	C	C	A	A	A	A	A	A
		SAT	C	C	C	C	C	C	A	A	A	A	A	A
Main Street & 75th Street	Two-Way Stop Sign	PM	A	*	-	-	*	*	-	-	-	A	-	A
		SAT	A	*	-	-	*	*	-	-	-	A	-	A
Main Street & 74th Street	Two-Way Stop Sign	PM	A	*	*	A	*	*	B	B	B	B	B	B
		SAT	A	*	*	A	*	*	B	B	B	A	A	A
Main Street & 73rd Street	Two-Way Stop Sign	PM	A	*	-	-	*	*	-	-	-	B	-	B
		SAT	A	*	-	-	*	*	-	-	-	A	-	A
Main Street & 72nd Street	Two-Way Stop Sign	PM	A	*	*	A	*	*	B	B	B	B	B	B
		SAT	A	*	*	A	*	*	B	B	B	B	B	B
Main Street & 71st Street/ Proposed West Access	Two-Way Stop Sign	PM	-	*	*	A	*	-	B	-	B	B	B	B
		SAT	-	*	*	A	*	-	B	-	B	B	B	B
Main Street & Public Alley	Two-Way Stop Sign	PM	-	*	*	A	*	-	A	-	A	-	-	-
		SAT	-	*	*	A	*	-	A	-	A	-	-	-
Main Street & 70th Street	Traffic Signal	PM	C	C	C	C	C	C	A	B	B	A	A	A
		SAT	B	B	B	B	B	B	A	A	A	A	A	A
70th Street & Proposed North Access	Two-Way Stop Sign	PM	D	-	D	-	-	-	A	*	-	-	*	*
		SAT	C	-	C	-	-	-	A	*	-	-	*	*
70th Street & Dickinson Street/ Proposed South Access	Two-Way Stop Sign	PM	B	B	B	F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	A	*	*	A	*	*
		SAT	B	B	B	C	C	C	A	*	*	A	*	*

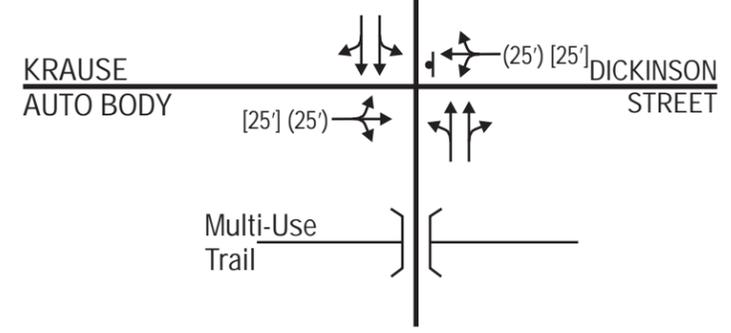
Notes: (-) indicates a movement that is not possible or is prohibited. (\*) indicates uncontrolled or free-flow movement.

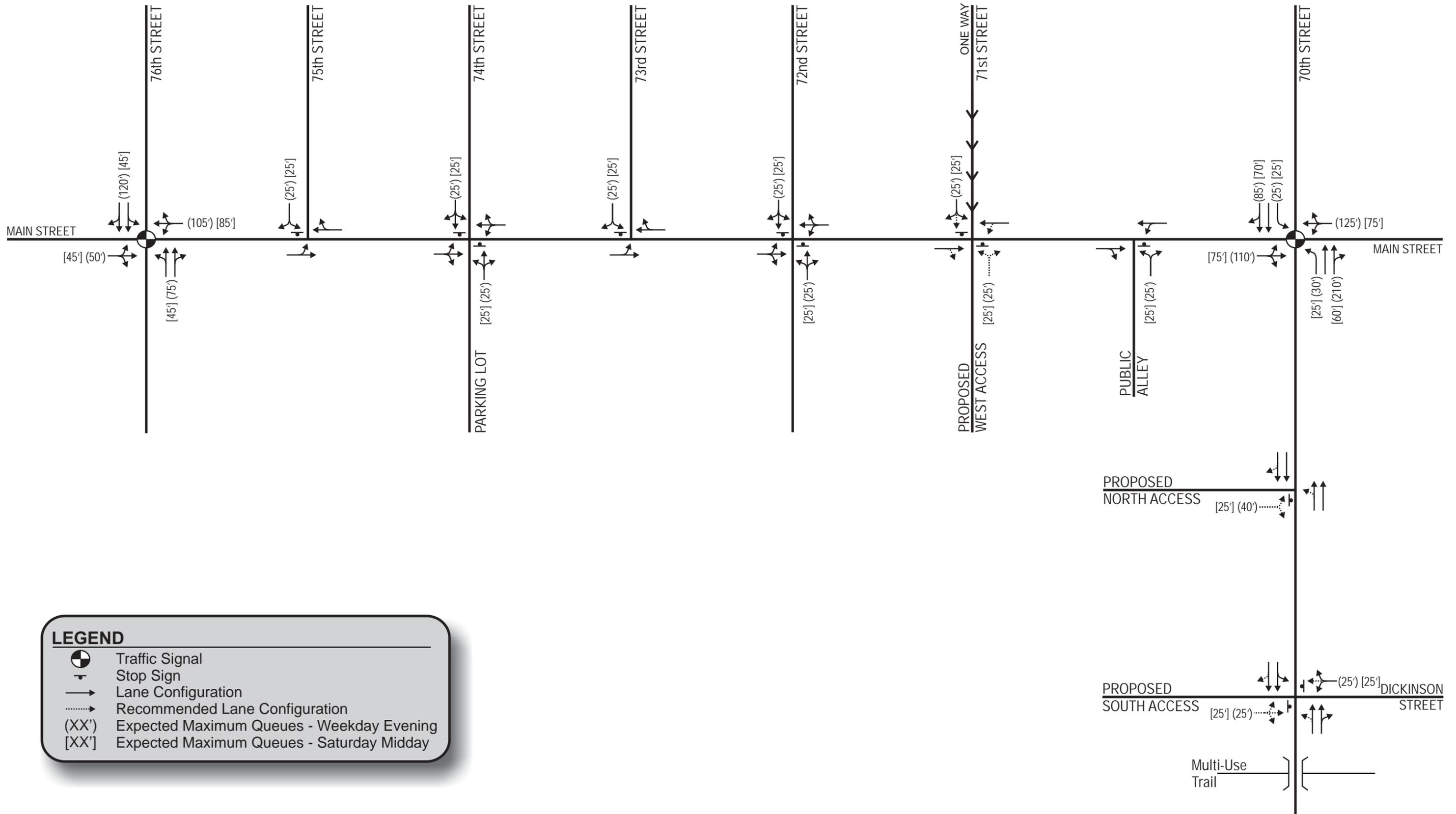
1. 22.0-sec of average delay beyond LOS D/E threshold, 10 vehicles. Operational improvements not necessary

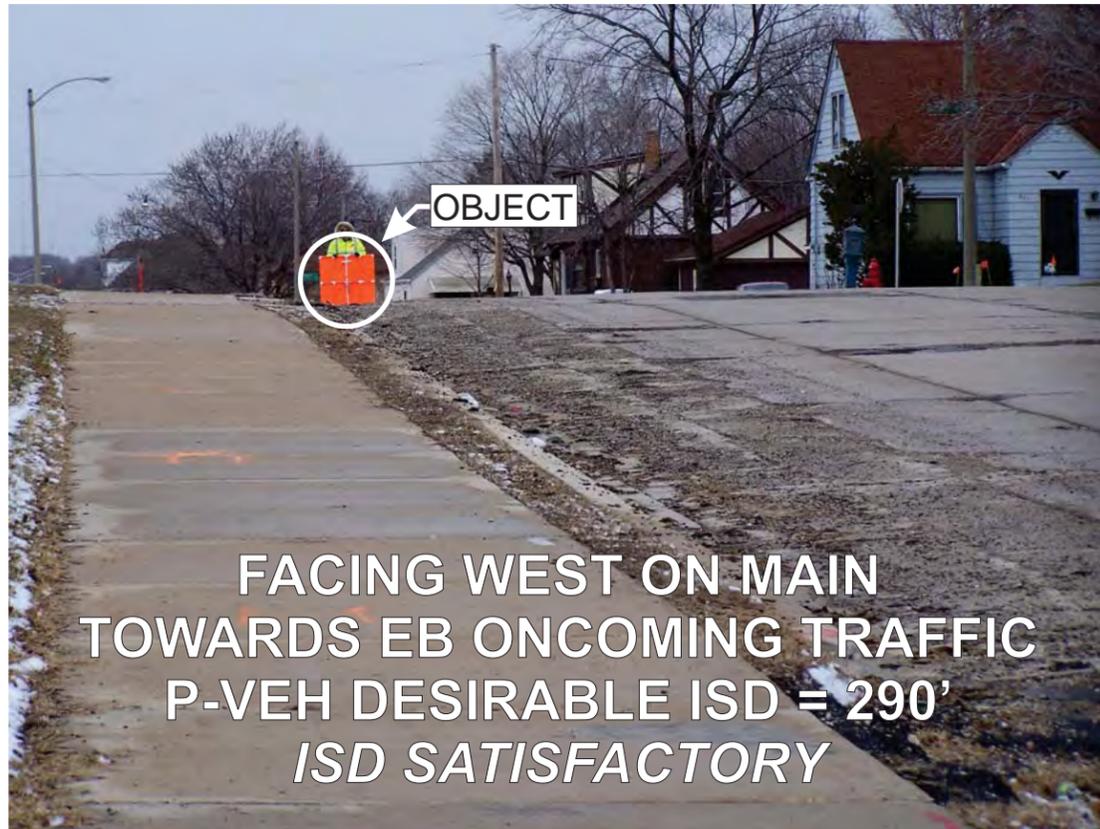


**LEGEND**

- Traffic Signal
- Stop Sign
- Lane Configuration
- Recommended Lane Configuration
- (XX') Expected Maximum Queues - Weekday Evening
- [XX'] Expected Maximum Queues - Saturday Midday



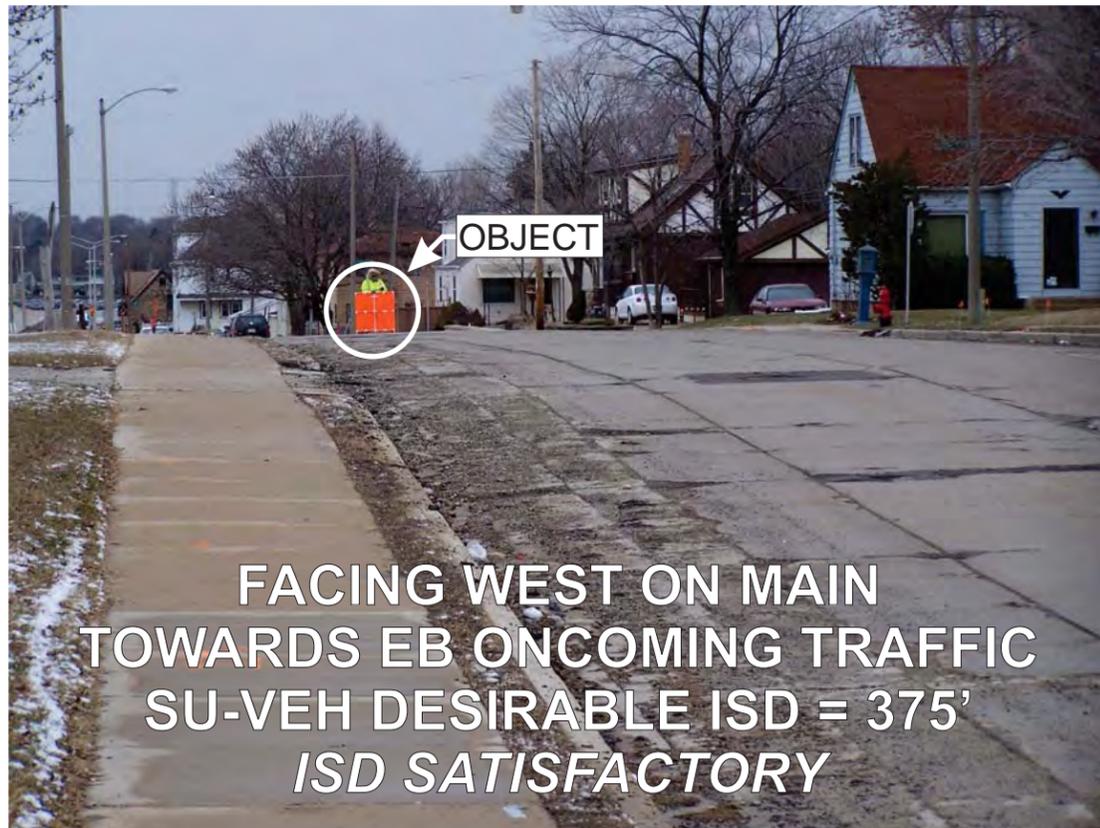




FACING WEST ON MAIN  
TOWARDS EB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 290'  
ISD SATISFACTORY



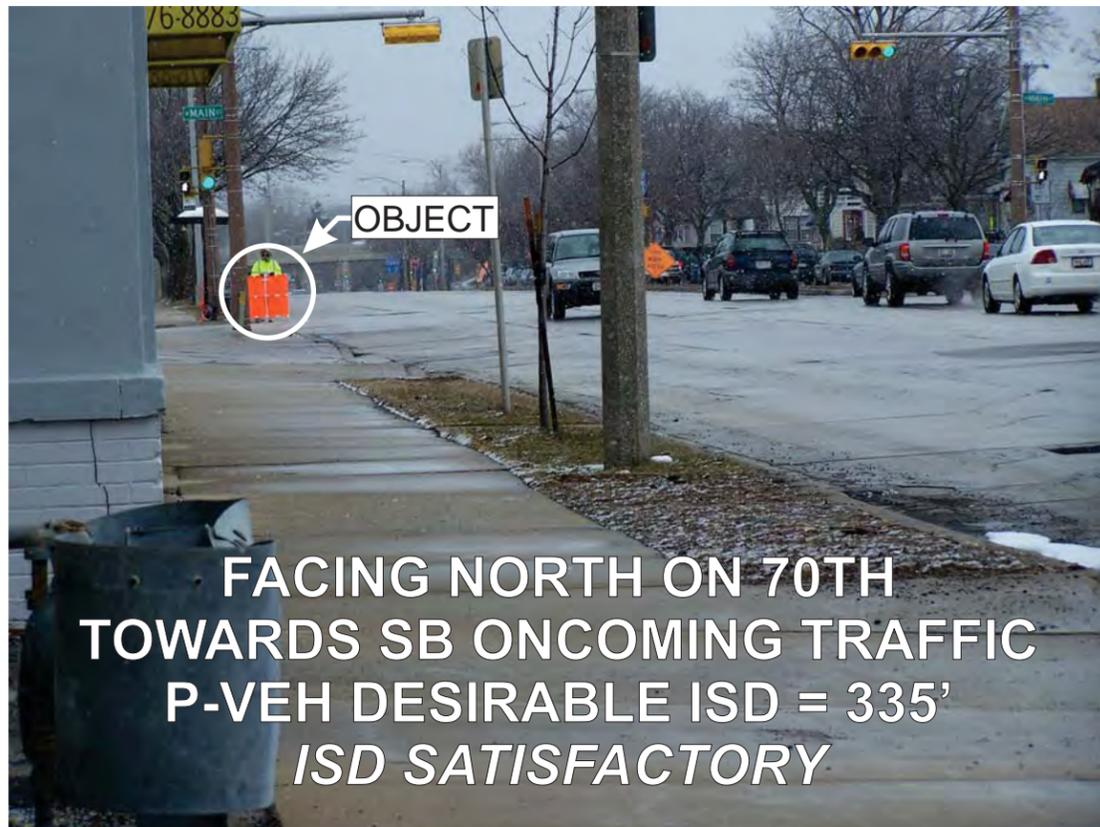
FACING EAST ON MAIN  
TOWARDS WB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 355'  
ISD SATISFACTORY



FACING WEST ON MAIN  
TOWARDS EB ONCOMING TRAFFIC  
SU-VEH DESIRABLE ISD = 375'  
ISD SATISFACTORY



FACING EAST ON MAIN  
TOWARDS WB ONCOMING TRAFFIC  
SU-VEH DESIRABLE ISD = 450'  
ISD SATISFACTORY



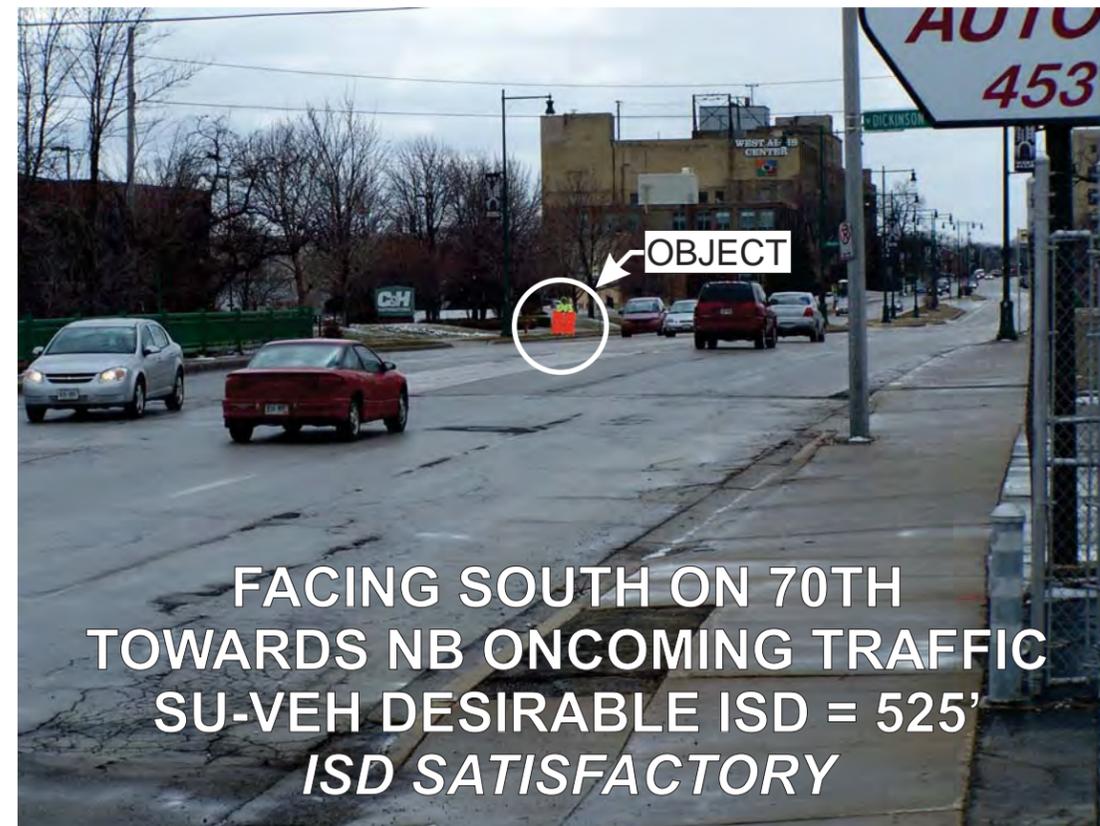
FACING NORTH ON 70TH  
TOWARDS SB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 335'  
ISD SATISFACTORY



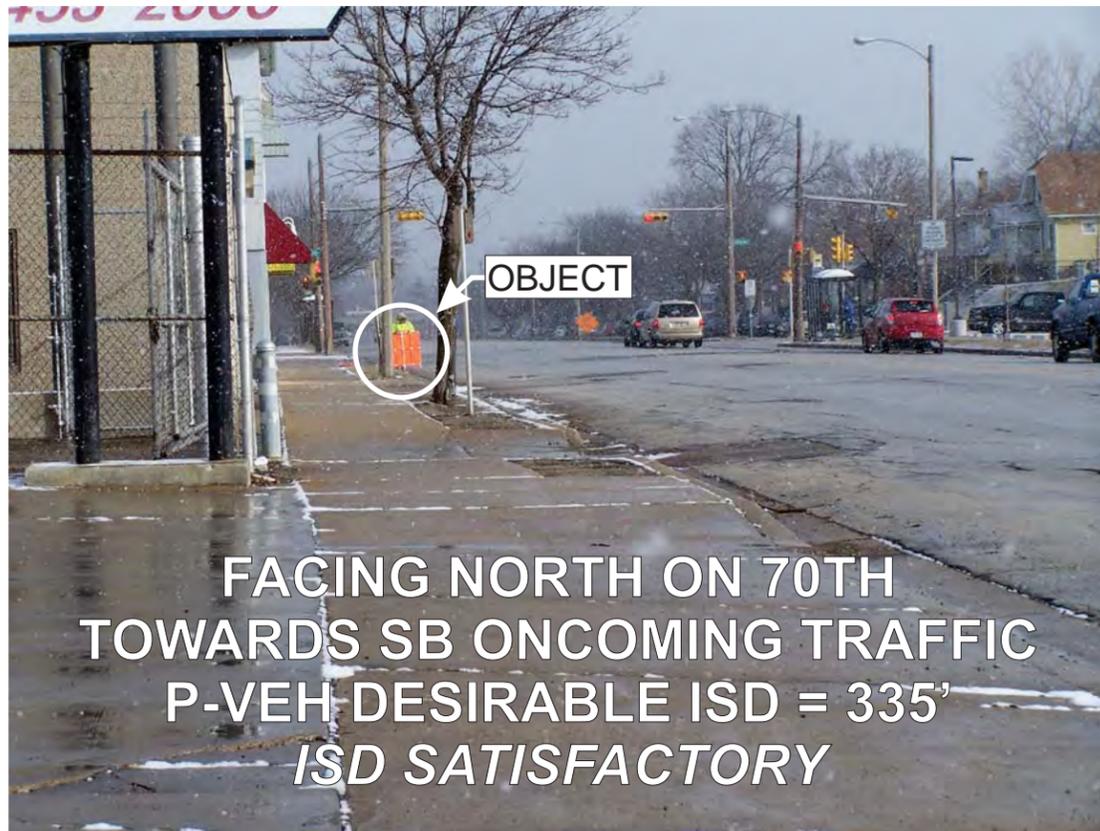
FACING SOUTH ON 70TH  
TOWARDS NB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 415'  
ISD SATISFACTORY



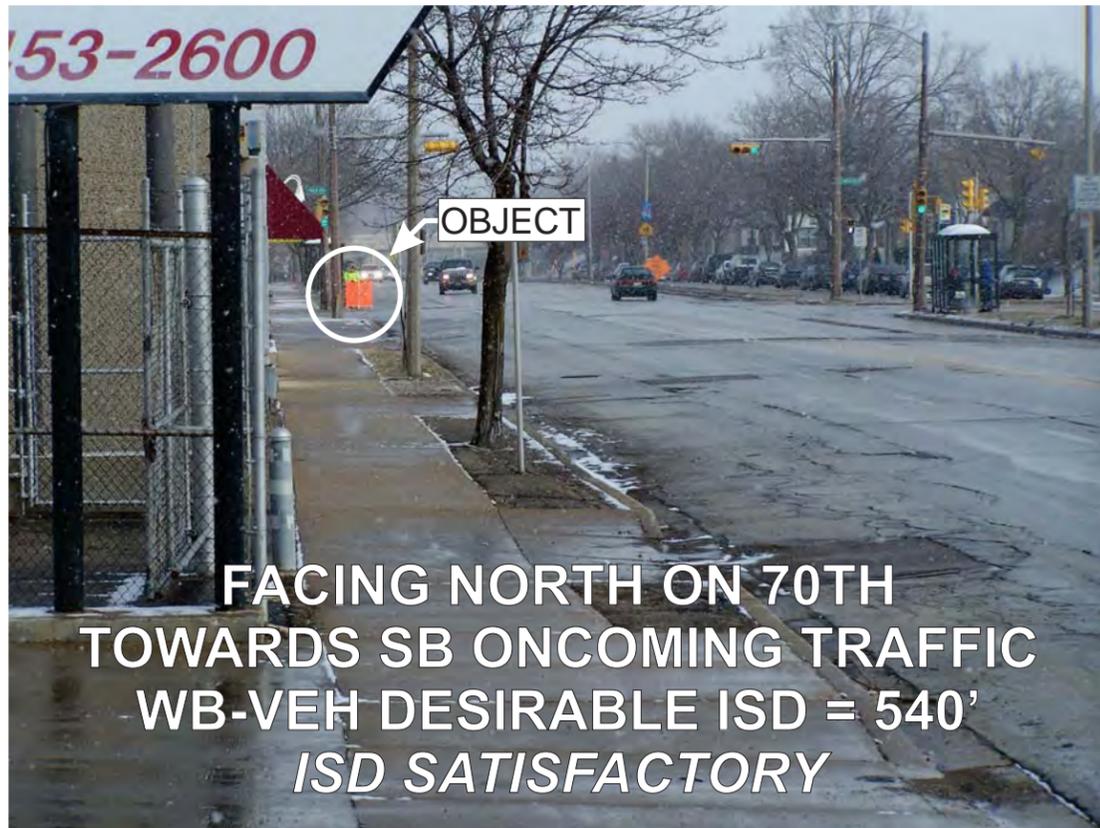
FACING NORTH ON 70TH  
TOWARDS SB ONCOMING TRAFFIC  
SU-VEH DESIRABLE ISD = 440'  
ISD SATISFACTORY



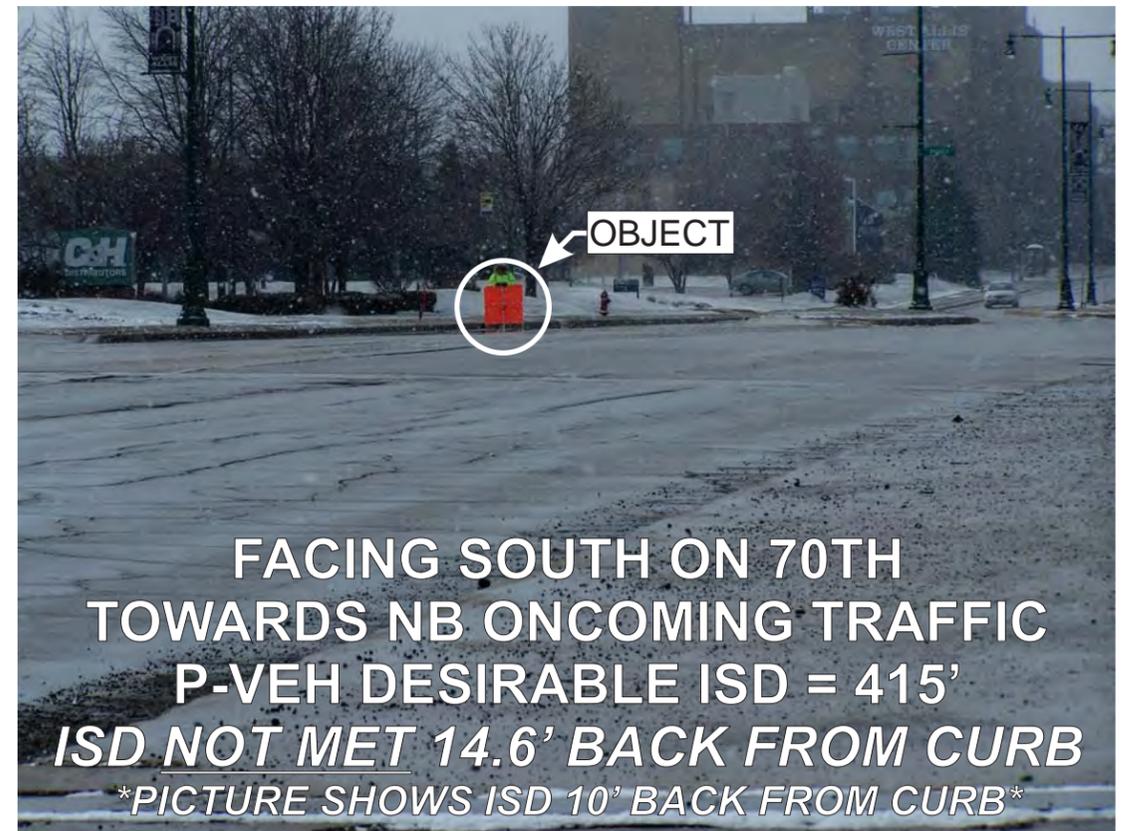
FACING SOUTH ON 70TH  
TOWARDS NB ONCOMING TRAFFIC  
SU-VEH DESIRABLE ISD = 525'  
ISD SATISFACTORY



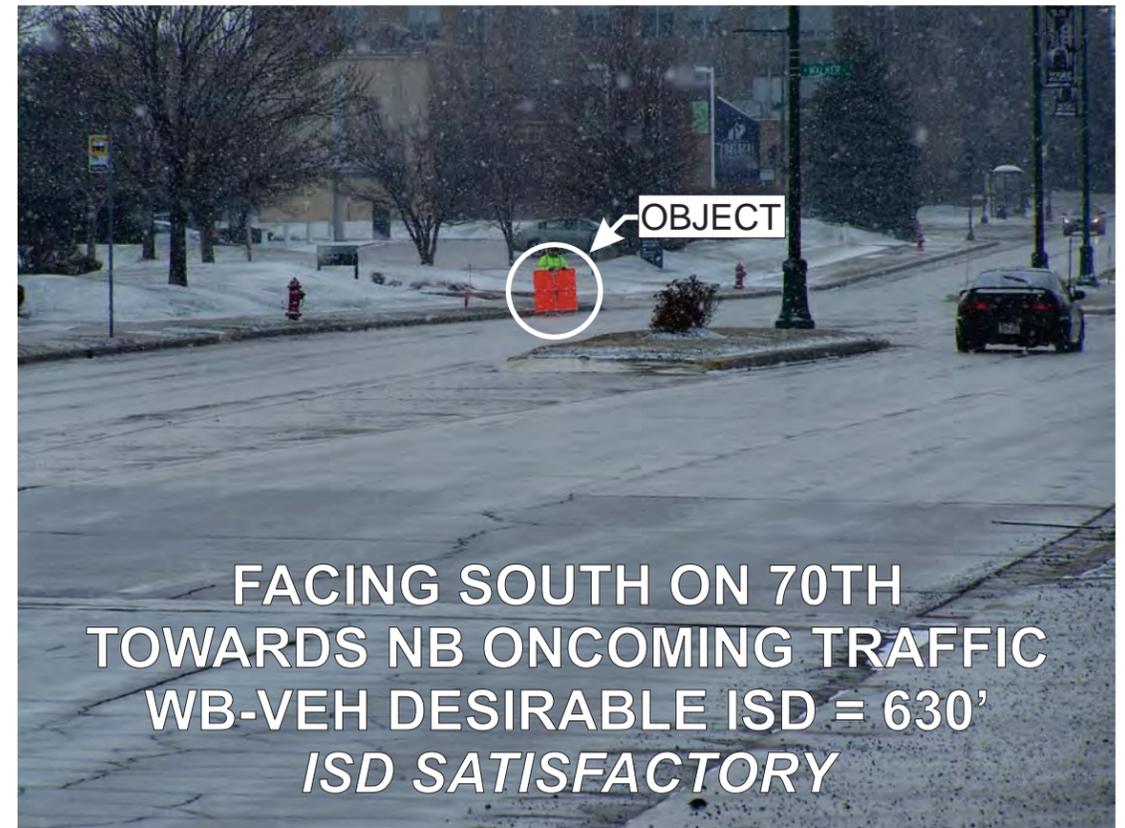
FACING NORTH ON 70TH  
TOWARDS SB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 335'  
ISD SATISFACTORY



FACING NORTH ON 70TH  
TOWARDS SB ONCOMING TRAFFIC  
WB-VEH DESIRABLE ISD = 540'  
ISD SATISFACTORY



FACING SOUTH ON 70TH  
TOWARDS NB ONCOMING TRAFFIC  
P-VEH DESIRABLE ISD = 415'  
ISD NOT MET 14.6' BACK FROM CURB  
*\*PICTURE SHOWS ISD 10' BACK FROM CURB\**



FACING SOUTH ON 70TH  
TOWARDS NB ONCOMING TRAFFIC  
WB-VEH DESIRABLE ISD = 630'  
ISD SATISFACTORY

## CHAPTER VI – RECOMMENDATIONS AND CONCLUSION

### PART A – RECOMMENDED IMPROVEMENTS

#### A1. Level of Service Definition

The study area intersections were analyzed based on the procedures set forth in the *2000 Highway Capacity Manual* (HCM). This manual is accepted in Wisconsin and the rest of the country as the industry standard in estimating operations at both signalized and unsignalized intersections.

Intersection operation is defined by “level of service” (LOS), a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. LOS D or better operations (fewer than 35-seconds of average vehicle delay at stop sign controlled intersections, fewer than 55-seconds of average vehicle delay at traffic signal controlled intersections) are defined as acceptable peak hour operating conditions.

#### A2. Year 2011 Background Traffic Recommended Improvements

The Year 2011 background traffic analysis assumes the Walmart Market does not occur. The analysis was conducted using existing intersection geometrics, traffic controls and signal timings. Based on the capacity analysis, no improvements are necessary to accommodate operations under background traffic volumes. Traffic signalized intersections operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street operate acceptably at LOS B or better conditions.

Note that the City of Milwaukee should consider replacing the bridge rail along the east side of 70<sup>th</sup> Street, south of Dickinson Street, with a more see-through solution to improve sight-distance for motorists currently turning from Dickinson Street onto 70<sup>th</sup> Street. This improvement, which is not related to the Walmart Market in any way, would address an existing sight distance concern for the neighborhood east of 70<sup>th</sup> Street.

#### A3. Year 2011 Total Traffic Recommended Improvements

Year 2011 total traffic volumes assume the full build-out of the Walmart Market. The following improvements, shown in [Exhibit 1-3 at the end of Chapter I](#), are recommended to accommodate the Year 2011 total traffic.

##### Main Street & 76<sup>th</sup> Street

- No improvements are anticipated to be necessary.

##### Main Street & 75<sup>th</sup> Street

- No improvements are anticipated to be necessary.

##### Main Street & 74<sup>th</sup> Street

- No improvements are anticipated to be necessary.

##### Main Street & 73<sup>rd</sup> Street

- No improvements are anticipated to be necessary.

##### Main Street & 72<sup>nd</sup> Street

- No improvements are anticipated to be necessary.

Main Street & 71<sup>st</sup> Street/Proposed West Access

- Construct the Walmart Market west access on the south side of Main Street opposite 71<sup>st</sup> Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market northbound approach. Note that “DO NOT ENTER” signs currently exist along the north side of Main Street to inform motorists exiting the site that 71<sup>st</sup> Street is one-way southbound only.

Main Street & Public Alley

- Install a stop sign to control the public alley northbound approach.

Main Street & 70<sup>th</sup> Street

- No improvements are anticipated to be necessary.

70<sup>th</sup> Street & Proposed North Access

- Construct the Walmart Market north access on the west side of 70<sup>th</sup> Street approximately half-way between Main Street and Dickinson Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market eastbound approach.

70<sup>th</sup> Street & Proposed South Access

- Construct the Walmart Market south access on the west side of 70<sup>th</sup> Street opposite Dickinson Street. No exclusive turn lanes are necessary.
- Install a stop sign to control the Walmart Market eastbound approach. Note that poor sight-distance exists at the access looking south for passenger vehicles, but not for delivery trucks, due to the height of the existing bridge abutment/railing on the west side of 70<sup>th</sup> Street. Install a MUTCD-compliant “RIGHT-TURN ONLY” sign with an additional sign stating “EXCEPT DELIVERY TRUCKS” to improve the safety of the intersection.

General Improvements

- Recall that the Jetz gas station/convenience store and Air Comfort Systems business are expected to remain when the Walmart Market access points to 70<sup>th</sup> Street are constructed. Both businesses, as well as the Roman Electric business on the east side of 70<sup>th</sup> Street, have off-site parking accommodations. Consideration may be given to removing parking on the west side of 70<sup>th</sup> Street to improve visibility for motorists exiting the Walmart Market, Jetz, and HVAC sites. Consideration may also be given to removing parking on the south side of Main Street along the Walmart Market property to improve visibility for motorists exiting the west access and the existing public alley.

The traffic-signalized intersections are expected to continue to operate acceptably at LOS C or better conditions. Stop-sign controlled intersections along Main Street are expected to continue to operate acceptably at LOS B or better conditions. These operations make sense, as 1) Main Street currently services low volumes of traffic to/from the neighborhoods to the north and 2) the Walmart Market site adds a relatively low incremental increase in traffic to Main Street. Traffic exiting the north access along 70<sup>th</sup> Street is expected to operate acceptably at LOS D or better conditions, and traffic exiting the south access along 70<sup>th</sup> Street is expected to operate acceptably at LOS B or better conditions.

## **PART B – NEIGHBORHOOD CONCERNS**

A public information meeting (PIM) was conducted for the Walmart Market site at Juneau High School on February 28<sup>th</sup>, 2011. Representatives of the property owner, representatives of Walmart Market, and representatives of the City of Milwaukee were present to take note of the concerns of the surrounding residents. This section of the report is provided to address traffic-related concerns raised at the meeting that relate to the Walmart Market.

### **B1. Truck Traffic on Main Street**

Residents at the February PIM stated they had concerns with Walmart delivery truck traffic along Main Street, as well as truck headlights directed northbound into homes. Note that the conceptual site plan at the time included a truck access along Main Street between 71<sup>st</sup> Street and 72<sup>nd</sup> Street, as well as loading docks along the west side of the building with trucks positioned facing north towards Main Street.

To address this concern, the latest Walmart Market site plan has been reconfigured in a manner that will only accommodate delivery trucks along 70<sup>th</sup> Street. More specifically, the loading docks have been placed along the south side of the proposed building with trucks positioned facing south, the truck access along Main Street between 71<sup>st</sup> Street and 72<sup>nd</sup> Street has been removed, and the internal site layout is such that delivery trucks will not be able to physically make turns within the site to reach Main Street. With the IH-94 interchange with 70<sup>th</sup> Street to the north, truck drivers will not use Main Street to reach their destinations since it is much faster and convenient to utilize the 70<sup>th</sup> Street interchange.

### **B2. Walmart Market Traffic on Residential Streets**

A concern was raised at the February PIM that Walmart Market would increase traffic on residential streets north of Main Street.

Motorists take the path of least perceived resistance to reach their destinations. As such, traffic to/from IH-94 will access the Walmart Market site most efficiently from the 70<sup>th</sup> Street interchange rather than from the 84<sup>th</sup> Street interchange/ramp collector system due to fewer stops and conflicts. Traffic to/from the north and south on 76<sup>th</sup> Street and 70<sup>th</sup> Street would access the site most efficiently from the 76<sup>th</sup> Street and 70<sup>th</sup> Street intersections with Main Street rather than the ramp collector system or neighborhoods for the same reasons. Therefore, it is reasonable to expect that the only Walmart Market traffic anticipated to utilize the residential streets north of Main Street would be that traffic generated by the residents themselves.

### **B3. Traffic Signal Wait Times**

A concern was raised at the February PIM that it takes multiple cycles to clear the traffic signals from Main Street to either 70<sup>th</sup> Street or 76<sup>th</sup> Street during rush hours, and that Walmart Market traffic would make wait times considerably longer.

Site observations and the traffic analysis performed at both intersections show that such an operation does not occur during rush hours. A relatively short surge in traffic due to an office release or the egress of Dawes heavy vehicles (both located along Main Street) may occur from time to time during the day and cause a motorist to miss a signal cycle. However, the analysis shows that these operations are not exacerbated by the Walmart Market site – even during its busiest hours of the day – and that outside of these short and few surges the signals operate acceptably at LOS C or better conditions.

### **B4. State Fair Park Special Event Traffic**

Residents at the February PIM stated they experience heavy traffic due to State Fair Park events – most notably during the 11 days of State Fair. Residents stated that traffic utilizing Main Street

is heavy during this time and makes it difficult for them to enter/exit the neighborhood. The stated concern of residents is that the Walmart Market site will further add to the congestion and make it more difficult to enter/exit the neighborhood during such an event.

It is important to note that the Wisconsin State Fair is a special 11-day event and that restricting development to accommodate traffic that occurs for only 3-percent of the year is generally undesirable. It is also important to note that the Walmart Market contribution of traffic to Main Street is minimal compared to the volume expected due to State Fair and that the remaining 97-percent of the year operations are well within acceptable operation levels/available roadway capacity. That being stated, Main Street is currently utilized as a two-lane undivided street with wide parking lanes, and the homes within the neighborhood have private garages/parking areas for personal vehicles. Consideration could be given to restricting parking along Main Street during the short 11-day event, and adjust traffic signal timings accordingly, to aid in moving traffic to/from State Fair Park and the neighborhoods. Such an improvement suggestion is not caused by the Walmart Market, but is suggested by Traffic Analysis & Design, Inc. for the City of Milwaukee's consideration in easing an existing State Fair traffic condition.

### **PART C – CONCLUSION**

All movements at the study area intersections are expected to operate safely and efficiently with the improvements identified in this TIA.

# **APPENDIX A**

## **TRAFFIC**

## **APPENDIX A**

# **Existing Traffic Counts**

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 70th Street and DickensonStreet  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>A.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		70th Street From North				DickensonStreet From East				70th Street From South				Driveway From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
7:30 AM		2	192	0	0	2	0	3	0	3	128	1	0	1	0	0	0	332
7:45 AM		0	293	1	0	0	0	4	0	8	122	0	0	0	0	0	0	428
8:00 AM		1	256	0	0	1	0	4	1	3	92	0	0	0	0	0	0	357
8:15 AM		0	199	0	0	2	0	0	0	3	89	0	1	0	0	0	0	293
<i>Peak Hour Volume</i>		<b>3</b>	<b>940</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>17</b>	<b>431</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1,410</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		<b>944</b>				<b>16</b>				<b>449</b>				<b>1</b>				<b>1,410</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	1.0%	0.0%		0.0%	0.0%	0.0%		0.0%	2.6%	0.0%		0.0%	0.0%	0.0%		1.4%
% Heavy Trucks		0.0%	0.3%	0.0%		0.0%	0.0%	0.0%		0.0%	0.4%	0.0%		0.0%	0.0%	0.0%		0.4%
% Trucks (Total)		<b>0.0%</b>	<b>1.3%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>3.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>1.8%</b>
<i>By Approach</i>		<b>1.3%</b>				<b>0.0%</b>				<b>2.9%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.38</b>	<b>0.80</b>	<b>0.25</b>		<b>0.63</b>	<b>0</b>	<b>0.69</b>		<b>0.53</b>	<b>0.84</b>	<b>0.25</b>		<b>0.25</b>	<b>0</b>	<b>0</b>		<b>0.82</b>
<i>By Approach</i>		<b>0.80</b>				<b>0.80</b>				<b>0.85</b>				<b>0.25</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>5</b>	<b>940</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>15</b>	<b>430</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1,405</b>
<i>By Approach</i>		<b>945</b>				<b>15</b>				<b>445</b>				<b>0</b>				

<b>M.D. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Friday, January 14, 2011		70th Street From North				DickensonStreet From East				70th Street From South				Driveway From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
12:15 PM		1	154	0	0	1	0	3	0	4	156	1	0	0	0	0	1	320
12:30 PM		0	182	1	0	0	0	2	1	8	151	1	0	0	0	0	1	345
12:45 PM		0	172	0	0	1	0	8	1	6	130	1	0	0	0	0	0	318
1:00 PM		0	159	0	0	1	0	2	2	5	145	2	0	0	0	0	0	314
<i>Peak Hour Volume</i>		<b>1</b>	<b>667</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>15</b>	<b>4</b>	<b>23</b>	<b>582</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1,297</b>
<i>U-Turn Hourly Volume</i>				0				0				1				0		1
<i>By Approach</i>		<b>669</b>				<b>18</b>				<b>610</b>				<b>0</b>				<b>1,297</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	2.4%	0.0%		0.0%	0.0%	0.0%		4.3%	2.7%	0.0%		0.0%	0.0%	0.0%		2.5%
% Heavy Trucks		0.0%	1.2%	0.0%		0.0%	0.0%	0.0%		0.0%	0.7%	0.0%		0.0%	0.0%	0.0%		0.9%
% Trucks (Total)		<b>0.0%</b>	<b>3.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>4.3%</b>	<b>3.4%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>3.5%</b>
<i>By Approach</i>		<b>3.6%</b>				<b>0.0%</b>				<b>3.4%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.25</b>	<b>0.92</b>	<b>0.25</b>		<b>0.75</b>	<b>0</b>	<b>0.47</b>		<b>0.72</b>	<b>0.93</b>	<b>0.63</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0.94</b>
<i>By Approach</i>		<b>0.91</b>				<b>0.50</b>				<b>0.95</b>				<b>0</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>0</b>	<b>665</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>15</b>	<b>4</b>	<b>25</b>	<b>580</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1,295</b>
<i>By Approach</i>		<b>665</b>				<b>20</b>				<b>610</b>				<b>0</b>				

<b>P.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		70th Street From North				DickensonStreet From East				70th Street From South				Driveway From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
4:30 PM		0	134	0	0	2	0	1	2	13	303	0	0	0	0	0	0	453
4:45 PM		0	151	4	0	0	0	2	0	10	211	0	0	0	0	0	0	378
5:00 PM		0	142	0	0	1	0	2	3	16	307	0	0	1	0	0	0	469
5:15 PM		0	145	0	0	1	1	0	0	15	264	0	0	0	0	0	0	426
<i>Peak Hour Volume</i>		<b>0</b>	<b>572</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>54</b>	<b>1,085</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,726</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		<b>576</b>				<b>10</b>				<b>1,139</b>				<b>1</b>				<b>1,726</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	0.3%	0.0%		0.0%	0.0%	0.0%		0.0%	0.6%	0.0%		0.0%	0.0%	0.0%		0.5%
% Heavy Trucks		0.0%	0.2%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.1%
% Trucks (Total)		<b>0.0%</b>	<b>0.5%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.6%</b>
<i>By Approach</i>		<b>0.5%</b>				<b>0.0%</b>				<b>0.6%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0</b>	<b>0.95</b>	<b>0.25</b>		<b>0.50</b>	<b>0.25</b>	<b>0.63</b>		<b>0.84</b>	<b>0.88</b>	<b>0</b>		<b>0.25</b>	<b>0</b>	<b>0</b>		<b>0.92</b>
<i>By Approach</i>		<b>0.93</b>				<b>0.83</b>				<b>0.88</b>				<b>0.25</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>0</b>	<b>570</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>55</b>	<b>1,085</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,725</b>
<i>By Approach</i>		<b>575</b>				<b>10</b>				<b>1,140</b>				<b>0</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 70th Street and DickensonStreet  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	70th Street From North				DickensonStreet From East				70th Street From South				Driveway From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	0	117	0	0	3	0	3	0	6	96	0	0	0	0	0	1	225
11:30 AM	0	101	2	0	3	0	0	0	5	96	0	0	0	0	1	0	208
11:45 AM	0	114	1	0	0	0	2	0	4	116	0	0	0	0	0	1	237
12:00 PM	0	102	0	0	0	0	1	1	5	98	0	0	0	0	0	1	206
<i>Peak Hour Volume</i>	<b>0</b>	<b>434</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>20</b>	<b>406</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>876</b>
<i>U-Turn Hourly Volume</i>		0				0				0				0			0
<i>By Approach</i>	<b>437</b>				<b>12</b>				<b>426</b>				<b>1</b>				<b>876</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	1.4%	0.0%		0.0%	0.0%	0.0%		0.0%	1.2%	0.0%		0.0%	0.0%	0.0%		1.3%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.5%	0.0%		0.0%	0.0%	0.0%		0.2%
% Trucks (Total)	<b>0.0%</b>	<b>1.4%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.7%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>1.5%</b>
<i>By Approach</i>	<b>1.4%</b>				<b>0.0%</b>				<b>1.6%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0</b>	<b>0.93</b>	<b>0.38</b>		<b>0.50</b>	<b>0</b>	<b>0.50</b>		<b>0.83</b>	<b>0.88</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0.25</b>		<b>0.92</b>
<i>By Approach</i>	<b>0.93</b>				<b>0.50</b>				<b>0.89</b>				<b>0.25</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>0</b>	<b>435</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>20</b>	<b>405</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>875</b>
<i>By Approach</i>	<b>440</b>				<b>10</b>				<b>425</b>				<b>0</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 70th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Traffic Signal  
**Project:** Milwaukee Main Street

<b>A.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		70th Street From North				Main Street From East				70th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
7:30 AM		8	167	3	1	10	12	23	0	13	89	5	0	11	16	9	1	366
7:45 AM		17	217	5	1	4	15	37	2	15	103	8	2	17	14	9	0	461
8:00 AM		18	242	3	0	2	11	20	0	14	75	4	1	14	7	13	2	423
8:15 AM		7	171	1	0	5	10	20	0	3	88	2	4	11	13	8	0	339
<i>Peak Hour Volume</i>		<b>50</b>	<b>797</b>	<b>12</b>	<b>2</b>	<b>21</b>	<b>48</b>	<b>100</b>	<b>2</b>	<b>45</b>	<b>355</b>	<b>19</b>	<b>7</b>	<b>53</b>	<b>50</b>	<b>39</b>	<b>3</b>	<b>1,589</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		<b>859</b>				<b>169</b>				<b>419</b>				<b>142</b>				<b>1,589</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		2.0%	1.9%	8.3%		9.5%	6.2%	2.0%		0.0%	4.5%	5.3%		0.0%	6.0%	2.6%		2.8%
% Heavy Trucks		0.0%	0.9%	0.0%		0.0%	0.0%	0.0%		0.0%	2.0%	10.5%		1.9%	0.0%	0.0%		1.1%
% Trucks (Total)		<b>2.0%</b>	<b>2.8%</b>	<b>8.3%</b>		<b>9.5%</b>	<b>6.2%</b>	<b>2.0%</b>		<b>0.0%</b>	<b>6.5%</b>	<b>15.8%</b>		<b>1.9%</b>	<b>6.0%</b>	<b>2.6%</b>		<b>3.9%</b>
<i>By Approach</i>		<b>2.8%</b>				<b>4.1%</b>				<b>6.2%</b>				<b>3.5%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.69</b>	<b>0.82</b>	<b>0.60</b>		<b>0.53</b>	<b>0.80</b>	<b>0.68</b>		<b>0.75</b>	<b>0.86</b>	<b>0.59</b>		<b>0.78</b>	<b>0.78</b>	<b>0.75</b>		<b>0.86</b>
<i>By Approach</i>		<b>0.82</b>				<b>0.75</b>				<b>0.83</b>				<b>0.89</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>50</b>	<b>795</b>	<b>10</b>	<b>2</b>	<b>20</b>	<b>50</b>	<b>100</b>	<b>2</b>	<b>45</b>	<b>355</b>	<b>20</b>	<b>7</b>	<b>55</b>	<b>50</b>	<b>40</b>	<b>3</b>	<b>1,590</b>
<i>By Approach</i>		<b>855</b>				<b>170</b>				<b>420</b>				<b>145</b>				

<b>M.D. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		70th Street From North				Main Street From East				70th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
12:15 PM		4	119	1	3	0	3	24	0	12	132	11	0	11	4	8	4	329
12:30 PM		14	153	0	0	1	12	12	0	15	121	3	3	13	8	8	0	360
12:45 PM		10	140	6	0	0	7	18	3	9	111	8	2	11	4	8	0	332
1:00 PM		8	132	6	0	4	12	26	1	9	131	4	1	7	6	10	1	355
<i>Peak Hour Volume</i>		<b>36</b>	<b>544</b>	<b>13</b>	<b>3</b>	<b>5</b>	<b>34</b>	<b>80</b>	<b>4</b>	<b>45</b>	<b>495</b>	<b>26</b>	<b>6</b>	<b>42</b>	<b>22</b>	<b>34</b>	<b>5</b>	<b>1,376</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		<b>593</b>				<b>119</b>				<b>566</b>				<b>98</b>				<b>1,376</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		2.8%	1.7%	0.0%		0.0%	0.0%	0.0%		0.0%	3.2%	0.0%		7.1%	0.0%	2.9%		2.2%
% Heavy Trucks		0.0%	1.2%	0.0%		0.0%	0.0%	0.0%		0.0%	1.0%	0.0%		2.4%	0.0%	0.0%		0.9%
% Trucks (Total)		<b>2.8%</b>	<b>2.9%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>4.2%</b>	<b>0.0%</b>		<b>9.5%</b>	<b>0.0%</b>	<b>2.9%</b>		<b>3.1%</b>
<i>By Approach</i>		<b>2.8%</b>				<b>0.0%</b>				<b>3.7%</b>				<b>5.1%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.64</b>	<b>0.89</b>	<b>0.54</b>		<b>0.31</b>	<b>0.71</b>	<b>0.77</b>		<b>0.75</b>	<b>0.94</b>	<b>0.59</b>		<b>0.81</b>	<b>0.69</b>	<b>0.85</b>		<b>0.96</b>
<i>By Approach</i>		<b>0.89</b>				<b>0.71</b>				<b>0.91</b>				<b>0.84</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>35</b>	<b>545</b>	<b>15</b>	<b>3</b>	<b>5</b>	<b>35</b>	<b>80</b>	<b>4</b>	<b>45</b>	<b>495</b>	<b>25</b>	<b>6</b>	<b>40</b>	<b>20</b>	<b>35</b>	<b>5</b>	<b>1,375</b>
<i>By Approach</i>		<b>595</b>				<b>120</b>				<b>565</b>				<b>95</b>				

<b>P.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		70th Street From North				Main Street From East				70th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
4:30 PM		6	107	2	0	3	24	23	0	29	246	13	0	9	16	15	0	493
4:45 PM		8	116	3	0	1	12	26	0	17	176	10	0	13	15	18	2	415
5:00 PM		4	101	3	0	2	10	26	2	23	270	11	1	9	22	11	0	492
5:15 PM		5	106	4	0	4	16	34	0	21	218	18	0	7	14	10	0	457
<i>Peak Hour Volume</i>		<b>23</b>	<b>430</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>62</b>	<b>109</b>	<b>2</b>	<b>90</b>	<b>910</b>	<b>52</b>	<b>1</b>	<b>38</b>	<b>67</b>	<b>54</b>	<b>2</b>	<b>1,857</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		<b>465</b>				<b>181</b>				<b>1,052</b>				<b>159</b>				<b>1,857</b>
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	0.7%	0.0%		10.0%	1.6%	0.0%		0.0%	0.4%	3.8%		0.0%	0.0%	0.0%		0.6%
% Heavy Trucks		4.3%	0.2%	0.0%		0.0%	0.0%	0.0%		0.0%	0.1%	0.0%		0.0%	0.0%	0.0%		0.2%
% Trucks (Total)		<b>4.3%</b>	<b>0.9%</b>	<b>0.0%</b>		<b>10.0%</b>	<b>1.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.5%</b>	<b>3.8%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.8%</b>
<i>By Approach</i>		<b>1.0%</b>				<b>1.1%</b>				<b>0.6%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.72</b>	<b>0.93</b>	<b>0.75</b>		<b>0.63</b>	<b>0.65</b>	<b>0.80</b>		<b>0.78</b>	<b>0.84</b>	<b>0.72</b>		<b>0.73</b>	<b>0.76</b>	<b>0.75</b>		<b>0.94</b>
<i>By Approach</i>		<b>0.92</b>				<b>0.84</b>				<b>0.87</b>				<b>0.86</b>				
<b>HOURLY VOLUME-ROUNDED</b>		<b>25</b>	<b>430</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>60</b>	<b>110</b>	<b>2</b>	<b>90</b>	<b>910</b>	<b>50</b>	<b>1</b>	<b>40</b>	<b>65</b>	<b>55</b>	<b>2</b>	<b>1,855</b>
<i>By Approach</i>		<b>465</b>				<b>180</b>				<b>1,050</b>				<b>160</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 70th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Traffic Signal  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	70th Street From North				Main Street From East				70th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	6	75	1	1	6	7	26	0	16	73	8	2	12	10	8	0	248
11:30 AM	7	92	3	0	2	9	12	1	9	79	4	4	3	7	6	2	233
11:45 AM	13	94	2	6	2	4	18	0	19	87	11	1	9	5	6	6	270
12:00 PM	8	75	1	0	5	5	7	1	10	73	5	1	10	6	7	1	212
<i>Peak Hour Volume</i>	<b>34</b>	<b>336</b>	<b>7</b>	<b>7</b>	<b>15</b>	<b>25</b>	<b>63</b>	<b>2</b>	<b>54</b>	<b>312</b>	<b>28</b>	<b>8</b>	<b>34</b>	<b>28</b>	<b>27</b>	<b>9</b>	<b>963</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>377</b>				<b>103</b>				<b>394</b>				<b>89</b>				<b>963</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	1.5%	0.0%		0.0%	0.0%	1.6%		1.9%	0.6%	3.6%		0.0%	0.0%	0.0%		1.0%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.4%	3.5%		0.0%	0.0%	0.0%		0.2%
% Trucks (Total)	<b>0.0%</b>	<b>1.5%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>1.6%</b>		<b>1.9%</b>	<b>1.0%</b>	<b>7.1%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>1.2%</b>
<i>By Approach</i>	<b>1.3%</b>				<b>1.0%</b>				<b>1.6%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.65</b>	<b>0.89</b>	<b>0.58</b>		<b>0.63</b>	<b>0.69</b>	<b>0.61</b>		<b>0.71</b>	<b>0.90</b>	<b>0.64</b>		<b>0.71</b>	<b>0.70</b>	<b>0.84</b>		<b>0.89</b>
<i>By Approach</i>	<b>0.86</b>				<b>0.66</b>				<b>0.84</b>				<b>0.74</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>35</b>	<b>335</b>	<b>5</b>	<b>7</b>	<b>15</b>	<b>25</b>	<b>65</b>	<b>2</b>	<b>55</b>	<b>310</b>	<b>30</b>	<b>8</b>	<b>35</b>	<b>30</b>	<b>25</b>	<b>9</b>	<b>965</b>
<i>By Approach</i>	<b>375</b>				<b>105</b>				<b>395</b>				<b>90</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 71st Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>A.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		71st Street From North				Main Street From East				Main Street From West								
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
7:30 AM		1	0	1	0	0	20	1	0	0	0	0	1	0	24	0	0	47
7:45 AM		2	0	2	0	0	18	0	0	0	0	0	1	0	26	0	0	48
8:00 AM		0	0	2	0	0	26	0	0	0	0	0	0	0	17	0	0	45
8:15 AM		2	0	1	0	0	14	0	0	0	0	0	1	0	17	0	0	34
<i>Peak Hour Volume</i>		<b>5</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>174</b>
<i>U-Turn Hourly Volume</i>				0				1				0				0		1
<i>By Approach</i>		11				79				0				84				
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	0.0%	0.0%		0.0%	5.1%	0.0%		0.0%	0.0%	0.0%		0.0%	7.1%	0.0%		5.8%
% Heavy Trucks		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Trucks (Total)		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>5.1%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>7.1%</b>	<b>0.0%</b>		<b>5.8%</b>
<i>By Approach</i>		0.0%				5.1%				0.0%				7.1%				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.63</b>	<b>0</b>	<b>0.75</b>		<b>0</b>	<b>0.75</b>	<b>0.25</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.81</b>	<b>0</b>		<b>0.91</b>
<i>By Approach</i>		0.69				0.76				0				0.81				
<b>HOURLY VOLUME-ROUNDED</b>		<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>175</b>
<i>By Approach</i>		10				80				0				85				

<b>M.D. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Wednesday, January 12, 2011		71st Street From North				Main Street From East				Main Street From West								
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
12:15 PM		0	0	3	0	0	14	0	0	0	0	0	0	0	13	0	0	30
12:30 PM		0	0	0	1	0	20	0	1	0	0	0	1	0	21	0	0	41
12:45 PM		0	0	3	0	0	13	0	0	0	0	0	0	0	16	0	2	32
1:00 PM		0	0	2	0	0	9	0	1	0	0	0	0	0	10	0	0	21
<i>Peak Hour Volume</i>		<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>2</b>	<b>124</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		8				56				0				60				
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	0.0%	0.0%		0.0%	1.8%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.8%
% Heavy Trucks		0.0%	0.0%	0.0%		0.0%	1.8%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.8%
% Trucks (Total)		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>3.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>1.6%</b>
<i>By Approach</i>		0.0%				3.6%				0.0%				0.0%				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0</b>	<b>0</b>	<b>0.67</b>		<b>0</b>	<b>0.70</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.71</b>	<b>0</b>		<b>0.76</b>
<i>By Approach</i>		0.67				0.70				0				0.71				
<b>HOURLY VOLUME-ROUNDED</b>		<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>2</b>	<b>125</b>
<i>By Approach</i>		10				55				0				60				

<b>P.M. PEAK</b>		↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011		71st Street From North				Main Street From East				Main Street From West								
<b>TRAFFIC VOLUMES</b>		Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																		
4:30 PM		2	0	5	0	0	21	0	0	0	0	0	1	0	18	0	0	46
4:45 PM		1	0	3	0	0	12	0	2	0	0	0	0	0	24	0	0	40
5:00 PM		2	0	2	0	0	26	0	1	0	0	0	0	0	32	1	0	63
5:15 PM		1	0	4	7	0	24	0	1	0	0	0	1	0	16	0	2	45
<i>Peak Hour Volume</i>		<b>6</b>	<b>0</b>	<b>14</b>	<b>7</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>90</b>	<b>1</b>	<b>2</b>	<b>194</b>
<i>U-Turn Hourly Volume</i>				0				0				0				0		0
<i>By Approach</i>		20				83				0				91				
<b>TRUCK PERCENTAGES</b>																		
% Single Unit Trucks		0.0%	0.0%	0.0%		0.0%	3.6%	0.0%		0.0%	0.0%	0.0%		0.0%	1.1%	0.0%		2.1%
% Heavy Trucks		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Trucks (Total)		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>3.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.1%</b>	<b>0.0%</b>		<b>2.1%</b>
<i>By Approach</i>		0.0%				3.6%				0.0%				1.1%				
<b>PEAK HOUR FACTORS</b>																		
Peak Hour Factor (PHF)		<b>0.75</b>	<b>0</b>	<b>0.70</b>		<b>0</b>	<b>0.80</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.70</b>	<b>0.25</b>		<b>0.77</b>
<i>By Approach</i>		0.71				0.80				0				0.69				
<b>HOURLY VOLUME-ROUNDED</b>		<b>5</b>	<b>0</b>	<b>15</b>	<b>7</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>90</b>	<b>0</b>	<b>2</b>	<b>195</b>
<i>By Approach</i>		20				85				0				90				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 71st Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	71st Street From North				Main Street From East				Main Street From West								
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	1	0	2	0	1	16	0	0	0	0	0	0	0	11	0	0	31
11:30 AM	1	0	0	1	0	18	0	1	0	0	0	0	0	12	0	0	31
11:45 AM	1	0	2	0	0	23	0	0	0	0	0	1	0	11	0	0	37
12:00 PM	0	0	2	0	0	9	0	0	0	0	0	0	0	11	0	0	22
<i>Peak Hour Volume</i>	<b>3</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>66</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>121</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>9</b>				<b>67</b>				<b>0</b>				<b>45</b>				
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	3.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		1.7%
% Trucks (Total)	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>3.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>1.7%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>3.0%</b>				<b>0.0%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.75</b>	<b>0</b>	<b>0.75</b>		<b>0.25</b>	<b>0.72</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.94</b>	<b>0</b>		<b>0.82</b>
<i>By Approach</i>	<b>0.75</b>				<b>0.73</b>				<b>0</b>				<b>0.94</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>120</b>
<i>By Approach</i>	<b>10</b>				<b>65</b>				<b>0</b>				<b>45</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 72nd Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

P.M. PEAK Wednesday, January 12, 2011	↓				←				↑				→				Total Vehicle Volumes
	72nd Street From North				Main Street From East				72nd Street From South				Main Street From West				
TRAFFIC VOLUMES	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
4:30 PM	4	0	0	0	4	20	0	0	0	0	2	2	1	19	0	0	
4:45 PM	1	0	0	0	1	11	0	0	1	0	0	0	2	21	1	0	
5:00 PM	0	0	1	0	3	25	0	0	0	0	0	0	1	32	2	0	
5:15 PM	3	0	1	0	0	24	1	0	2	0	4	0	0	14	1	0	
Peak Hour Volume	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>80</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>86</b>	<b>4</b>	<b>0</b>	
U-Turn Hourly Volume			0				0				0				0		
By Approach	<b>10</b>				<b>89</b>				<b>9</b>				<b>94</b>				<b>202</b>
TRUCK PERCENTAGES																	
% Single Unit Trucks	12.5%	0.0%	0.0%		0.0%	2.5%	0.0%		0.0%	0.0%	0.0%		0.0%	1.2%	0.0%		
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		
% Trucks (Total)	<b>12.5%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>2.5%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.2%</b>	<b>0.0%</b>		
By Approach	<b>10.0%</b>				<b>2.2%</b>				<b>0.0%</b>				<b>1.1%</b>				<b>2.0%</b>
PEAK HOUR FACTORS																	
Peak Hour Factor (PHF)	<b>0.50</b>	<b>0</b>	<b>0.50</b>		<b>0.50</b>	<b>0.80</b>	<b>0.25</b>		<b>0.38</b>	<b>0</b>	<b>0.38</b>		<b>0.50</b>	<b>0.67</b>	<b>0.50</b>		
By Approach	<b>0.63</b>				<b>0.79</b>				<b>0.38</b>				<b>0.67</b>				<b>0.79</b>
HOURLY VOLUME-ROUNDED	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>85</b>	<b>5</b>	<b>0</b>	
By Approach	<b>10</b>				<b>90</b>				<b>10</b>				<b>95</b>				<b>205</b>

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 72nd Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	72nd Street From North				Main Street From East				72nd Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	0	0	1	0	2	14	1	0	1	0	0	0	0	8	0	0	27
11:30 AM	1	0	2	1	0	17	2	0	1	0	2	0	0	10	2	0	37
11:45 AM	1	0	1	0	2	19	0	0	1	0	0	1	0	11	1	0	36
12:00 PM	1	0	0	0	0	10	0	0	1	0	1	0	1	11	0	0	25
<i>Peak Hour Volume</i>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>60</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>40</b>	<b>3</b>	<b>0</b>	<b>125</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	7				67				7				44				125
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	33.3%		0.0%	0.0%	33.3%		0.0%	0.0%	0.0%		1.6%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	33.4%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.8%
% Trucks (Total)	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>66.7%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>33.3%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>2.4%</b>
<i>By Approach</i>	0.0%				3.0%				14.3%				0.0%				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.75</b>	<b>0</b>	<b>0.50</b>		<b>0.50</b>	<b>0.79</b>	<b>0.38</b>		<b>1.00</b>	<b>0</b>	<b>0.38</b>		<b>0.25</b>	<b>0.91</b>	<b>0.38</b>		<b>0.84</b>
<i>By Approach</i>	0.58				0.80				0.58				0.92				
<b>HOURLY VOLUME-ROUNDED</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>60</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>40</b>	<b>5</b>	<b>0</b>	<b>135</b>
<i>By Approach</i>	<b>10</b>				<b>70</b>				<b>10</b>				<b>45</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 73rd Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>P.M. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Wednesday, January 12, 2011	73rd Street From North				Main Street From East				73rd Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
4:30 PM	1	0	1	1	3	24	0	0	0	0	0	3	0	19	1	0	49
4:45 PM	1	0	2	0	0	13	0	0	0	0	0	0	0	22	0	0	38
5:00 PM	0	0	0	0	2	23	0	0	0	0	0	0	0	33	1	0	59
5:15 PM	1	0	1	0	1	28	0	0	0	0	0	0	0	15	0	0	46
<i>Peak Hour Volume</i>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>88</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>89</b>	<b>2</b>	<b>0</b>	<b>192</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>7</b>				<b>94</b>				<b>0</b>				<b>91</b>				
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		33.3%	3.4%	0.0%		0.0%	0.0%	0.0%		0.0%	4.5%	0.0%		4.7%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
<i>% Trucks (Total)</i>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>33.3%</b>	<b>3.4%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>4.5%</b>	<b>0.0%</b>		<b>4.7%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>5.3%</b>				<b>0.0%</b>				<b>4.4%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.75</b>	<b>0</b>	<b>0.50</b>		<b>0.50</b>	<b>0.79</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.67</b>	<b>0.50</b>		<b>0.81</b>
<i>By Approach</i>	<b>0.58</b>				<b>0.81</b>				<b>0</b>				<b>0.67</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>195</b>
<i>By Approach</i>	<b>10</b>				<b>95</b>				<b>0</b>				<b>90</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 73rd Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	73rd Street From North				Main Street From East				73rd Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	0	0	0	0	2	12	0	0	0	0	0	0	0	9	1	0	24
11:30 AM	1	0	0	0	0	18	0	0	0	0	0	0	0	10	0	0	29
11:45 AM	2	0	0	0	4	18	0	0	0	0	0	0	0	8	0	0	32
12:00 PM	0	0	1	0	0	13	0	0	0	0	0	0	0	10	1	0	25
<i>Peak Hour Volume</i>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>2</b>	<b>0</b>	<b>110</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	4				67				0				39				110
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Trucks (Total)	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>
<i>By Approach</i>	0.0%				0.0%				0.0%				0.0%				0.0%
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.38</b>	<b>0</b>	<b>0.25</b>		<b>0.38</b>	<b>0.85</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.93</b>	<b>0.50</b>		<b>0.86</b>
<i>By Approach</i>	0.50				0.76				0				0.89				0.86
<b>HOURLY VOLUME-ROUNDED</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>105</b>
<i>By Approach</i>	5				65				0				35				105

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 74th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>P.M. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Tuesday, January 11, 2011	74th Street From North				Main Street From East				74th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
4:30 PM	0	0	0	0	1	17	1	0	5	4	5	0	2	18	0	0	53
4:45 PM	0	1	0	0	0	22	4	0	6	0	4	0	0	11	0	0	48
5:00 PM	1	0	0	0	2	16	1	0	11	1	8	0	1	17	0	0	58
5:15 PM	0	0	0	3	0	22	1	0	8	3	6	1	0	12	0	0	52
<i>Peak Hour Volume</i>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>77</b>	<b>7</b>	<b>0</b>	<b>30</b>	<b>8</b>	<b>23</b>	<b>1</b>	<b>3</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>211</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>2</b>				<b>87</b>				<b>61</b>				<b>61</b>				<b>211</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	5.2%	28.6%		0.0%	0.0%	0.0%		0.0%	5.2%	0.0%		4.3%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Trucks (Total)	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>5.2%</b>	<b>28.6%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>5.2%</b>	<b>0.0%</b>		<b>4.3%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>6.9%</b>				<b>0.0%</b>				<b>4.9%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.25</b>	<b>0.25</b>	<b>0</b>		<b>0.38</b>	<b>0.88</b>	<b>0.44</b>		<b>0.68</b>	<b>0.50</b>	<b>0.72</b>		<b>0.37</b>	<b>0.81</b>	<b>0</b>		<b>0.91</b>
<i>By Approach</i>	<b>0.50</b>				<b>0.84</b>				<b>0.76</b>				<b>0.76</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>75</b>	<b>5</b>	<b>0</b>	<b>30</b>	<b>10</b>	<b>25</b>	<b>1</b>	<b>5</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>215</b>
<i>By Approach</i>	<b>0</b>				<b>85</b>				<b>65</b>				<b>65</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 74th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	74th Street From North				Main Street From East				74th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	0	0	0	0	0	13	0	0	0	0	0	0	0	10	0	0	23
11:30 AM	1	0	0	0	4	15	1	0	0	0	0	0	0	11	1	0	33
11:45 AM	1	0	0	0	0	19	0	1	0	0	1	1	0	10	0	0	31
12:00 PM	0	0	1	0	3	13	0	0	0	0	1	0	1	11	0	0	30
<i>Peak Hour Volume</i>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>60</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>42</b>	<b>1</b>	<b>0</b>	<b>117</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>3</b>				<b>68</b>				<b>2</b>				<b>44</b>				<b>117</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	1.7%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.9%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
% Trucks (Total)	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.7%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.9%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>1.5%</b>				<b>0.0%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.50</b>	<b>0</b>	<b>0.25</b>		<b>0.44</b>	<b>0.79</b>	<b>0.25</b>		<b>0</b>	<b>0</b>	<b>0.50</b>		<b>0.25</b>	<b>0.95</b>	<b>0.25</b>		<b>0.89</b>
<i>By Approach</i>	<b>0.75</b>				<b>0.85</b>				<b>0.50</b>				<b>0.92</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>60</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>105</b>
<i>By Approach</i>	<b>0</b>				<b>65</b>				<b>0</b>				<b>40</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 75th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>P.M. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011	75th Street From North				Main Street From East				75th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
4:30 PM	3	0	0	0	1	42	0	0	0	0	0	0	0	14	2	0	62
4:45 PM	0	0	0	0	2	27	0	0	0	0	0	0	0	23	1	0	53
5:00 PM	0	0	1	1	2	34	0	0	0	0	0	0	0	26	3	1	66
5:15 PM	0	0	0	0	0	31	0	0	0	0	0	0	0	17	3	1	51
<i>Peak Hour Volume</i>	<b>3</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>134</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>9</b>	<b>2</b>	<b>232</b>
<i>U-Turn Hourly Volume</i>			0				0				0				2		2
<i>By Approach</i>	<b>4</b>				<b>139</b>				<b>0</b>				<b>89</b>				<b>232</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		20.0%	0.7%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.9%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
<i>% Trucks (Total)</i>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>20.0%</b>	<b>0.7%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.9%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>1.4%</b>				<b>0.0%</b>				<b>0.0%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.25</b>	<b>0</b>	<b>0.25</b>		<b>0.63</b>	<b>0.80</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.77</b>	<b>0.75</b>		<b>0.88</b>
<i>By Approach</i>	<b>0.33</b>				<b>0.81</b>				<b>0</b>				<b>0.77</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>135</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>10</b>	<b>2</b>	<b>235</b>
<i>By Approach</i>	<b>5</b>				<b>140</b>				<b>0</b>				<b>90</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 75th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Two-Way Stop  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 15, 2011	75th Street From North				Main Street From East				75th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	0	0	1	2	0	13	0	0	0	0	0	0	0	9	1	0	24
11:30 AM	0	0	1	0	0	16	0	0	0	0	0	0	0	11	0	0	28
11:45 AM	0	0	0	0	0	20	0	0	0	0	0	0	0	9	1	2	30
12:00 PM	2	0	0	0	0	15	0	0	0	0	0	0	0	12	0	0	29
<i>Peak Hour Volume</i>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>2</b>	<b>2</b>	<b>111</b>
<i>U-Turn Hourly Volume</i>			0				0				0				0		0
<i>By Approach</i>	<b>4</b>				<b>64</b>				<b>0</b>				<b>43</b>				
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.0%	0.0%		0.0%	1.6%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	50.0%		1.8%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
<i>% Trucks (Total)</i>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>50.0%</b>		<b>1.8%</b>
<i>By Approach</i>	<b>0.0%</b>				<b>1.6%</b>				<b>0.0%</b>				<b>2.3%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.25</b>	<b>0</b>	<b>0.50</b>		<b>0</b>	<b>0.80</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0.85</b>	<b>0.50</b>		<b>0.93</b>
<i>By Approach</i>	<b>0.50</b>				<b>0.80</b>				<b>0</b>				<b>0.90</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>2</b>	<b>105</b>
<i>By Approach</i>	<b>0</b>				<b>65</b>				<b>0</b>				<b>40</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 76th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Traffic Signal  
**Project:** Milwaukee Main Street

<b>P.M. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Thursday, January 13, 2011	76th Street From North				Main Street From East				76th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
4:30 PM	7	124	5	0	11	10	18	0	6	80	3	0	9	1	4	0	278
4:45 PM	9	123	9	2	14	5	17	3	9	97	11	1	9	9	6	0	318
5:00 PM	3	128	8	1	18	5	11	0	16	100	0	0	12	6	10	0	317
5:15 PM	9	141	7	1	13	7	13	1	7	87	6	0	13	3	11	0	317
<i>Peak Hour Volume</i>	<b>28</b>	<b>516</b>	<b>29</b>	<b>4</b>	<b>56</b>	<b>27</b>	<b>59</b>	<b>4</b>	<b>38</b>	<b>364</b>	<b>20</b>	<b>1</b>	<b>43</b>	<b>19</b>	<b>31</b>	<b>0</b>	<b>1,230</b>
<i>U-Turn Hourly Volume</i>			0				0				2				0		2
<i>By Approach</i>	<b>573</b>				<b>142</b>				<b>422</b>				<b>93</b>				<b>1,230</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	1.4%	0.0%		1.8%	0.0%	0.0%		0.0%	1.1%	0.0%		0.0%	0.0%	6.5%		1.1%
% Heavy Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%
<i>% Trucks (Total)</i>	<b>0.0%</b>	<b>1.4%</b>	<b>0.0%</b>		<b>1.8%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>1.1%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>6.5%</b>		<b>1.1%</b>
<i>By Approach</i>	<b>1.3%</b>				<b>0.7%</b>				<b>1.0%</b>				<b>2.2%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.78</b>	<b>0.91</b>	<b>0.81</b>		<b>0.78</b>	<b>0.68</b>	<b>0.82</b>		<b>0.59</b>	<b>0.91</b>	<b>0.45</b>		<b>0.83</b>	<b>0.53</b>	<b>0.70</b>		<b>0.97</b>
<i>By Approach</i>	<b>0.91</b>				<b>0.91</b>				<b>0.90</b>				<b>0.83</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>30</b>	<b>515</b>	<b>30</b>	<b>4</b>	<b>55</b>	<b>25</b>	<b>60</b>	<b>4</b>	<b>40</b>	<b>365</b>	<b>20</b>	<b>1</b>	<b>45</b>	<b>20</b>	<b>30</b>	<b>0</b>	<b>1,235</b>
<i>By Approach</i>	<b>575</b>				<b>140</b>				<b>425</b>				<b>95</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

## PEAK HOUR TURNING MOVEMENT COUNT SUMMARY

**Intersection:** 76th Street and Main Street  
**County:** Milwaukee  
**Traffic Control:** Traffic Signal  
**Project:** Milwaukee Main Street

<b>M.D. PEAK</b>	↓				←				↑				→				<b>Total Vehicle Volumes</b>
Saturday, January 08, 2011	76th Street From North				Main Street From East				76th Street From South				Main Street From West				
<b>TRAFFIC VOLUMES</b>	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	Right	Thru	Left	Ped/Bike	
Start Time																	
11:15 AM	6	47	1	0	3	5	9	0	7	64	4	0	10	2	6	0	164
11:30 AM	6	54	1	0	12	6	13	3	3	56	4	0	8	5	1	0	169
11:45 AM	7	47	3	0	6	5	8	0	5	57	6	0	7	5	5	1	161
12:00 PM	5	67	2	0	2	6	7	0	8	58	2	0	11	5	7	0	180
<i>Peak Hour Volume</i>	<b>24</b>	<b>215</b>	<b>7</b>	<b>0</b>	<b>23</b>	<b>22</b>	<b>37</b>	<b>3</b>	<b>23</b>	<b>235</b>	<b>16</b>	<b>0</b>	<b>36</b>	<b>17</b>	<b>19</b>	<b>1</b>	<b>674</b>
<i>U-Turn Hourly Volume</i>			1				0				0				0		1
<i>By Approach</i>	<b>246</b>				<b>82</b>				<b>274</b>				<b>72</b>				<b>674</b>
<b>TRUCK PERCENTAGES</b>																	
% Single Unit Trucks	0.0%	0.9%	0.0%		0.0%	0.0%	0.0%		0.0%	0.9%	0.0%		0.0%	0.0%	0.0%		0.6%
% Heavy Trucks	0.0%	0.0%	0.0%		8.7%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	5.3%		0.4%
<i>% Trucks (Total)</i>	<b>0.0%</b>	<b>0.9%</b>	<b>0.0%</b>		<b>8.7%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.9%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>5.3%</b>		<b>1.0%</b>
<i>By Approach</i>	<b>0.8%</b>				<b>2.4%</b>				<b>0.8%</b>				<b>1.4%</b>				
<b>PEAK HOUR FACTORS</b>																	
Peak Hour Factor (PHF)	<b>0.86</b>	<b>0.80</b>	<b>0.58</b>		<b>0.48</b>	<b>0.92</b>	<b>0.71</b>		<b>0.72</b>	<b>0.92</b>	<b>0.67</b>		<b>0.82</b>	<b>0.85</b>	<b>0.68</b>		<b>0.94</b>
<i>By Approach</i>	<b>0.83</b>				<b>0.66</b>				<b>0.91</b>				<b>0.78</b>				
<b>HOURLY VOLUME-ROUNDED</b>	<b>25</b>	<b>215</b>	<b>5</b>	<b>0</b>	<b>25</b>	<b>20</b>	<b>35</b>	<b>3</b>	<b>25</b>	<b>235</b>	<b>15</b>	<b>0</b>	<b>35</b>	<b>15</b>	<b>20</b>	<b>1</b>	<b>670</b>
<i>By Approach</i>	<b>245</b>				<b>80</b>				<b>275</b>				<b>70</b>				

DOT Growth Factor Group: None Used  
 Adjustment Factor Used: 1.000  
 Notes: U-turn volumes included in left-turn volumes.

Milwaukee  
Saturday Middy

File Name : Dickenson-70th SAT  
Site Code : 00000000  
Start Date : 1/15/2011  
Page No : 1

LO.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	70TH ST From North				DICKINSON ST From East				70TH ST From South				DICKINSON ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	

\*\*\* BREAK \*\*\*

11:00 AM	2	98	0	0	5	0	2	1	0	80	3	0	0	0	0	0	0	191
11:15 AM	0	117	0	0	3	0	3	0	0	96	6	0	0	0	0	0	1	226
11:30 AM	2	101	0	0	0	0	3	0	0	96	5	0	1	0	0	0	0	208
11:45 AM	1	114	0	0	2	0	0	0	0	116	4	0	0	0	0	0	1	238
Total	5	430	0	0	10	0	8	1	0	388	18	0	1	0	0	2	863	

12:00 PM	0	102	0	0	1	0	0	1	0	98	5	0	0	0	0	0	1	208
12:15 PM	2	79	0	0	3	0	1	1	0	107	5	0	0	0	0	0	0	198
12:30 PM	3	94	0	0	1	0	1	2	0	111	8	0	0	0	0	0	0	220
12:45 PM	1	104	0	0	2	0	0	0	0	105	4	0	0	0	0	0	0	216
Total	6	379	0	0	7	0	2	4	0	421	22	0	0	0	0	1	842	

\*\*\* BREAK \*\*\*

Grand Total	11	809	0	0	17	0	10	5	0	809	40	0	1	0	0	3	1705
Apprch %	1.3	98.7	0	0	53.1	0	31.2	15.6	0	95.3	4.7	0	25	0	0	75	
Total %	0.6	47.4	0	0	1	0	0.6	0.3	0	47.4	2.3	0	0.1	0	0	0.2	
Unshifted	11	797	0	0	17	0	10	5	0	798	40	0	1	0	0	3	1682
% Unshifted	100	98.5	0	0	100	0	100	100	0	98.6	100	0	100	0	0	100	98.7
Bank 1	0	10	0	0	0	0	0	0	0	9	0	0	0	0	0	0	19
% Bank 1	0	1.2	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	1.1
Bank 2	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
% Bank 2	0	0.2	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0.2



Milwaukee  
Weekday

File Name : Dickenson-70thSt 12hr  
Site Code : 00000000  
Start Date : 1/13/2011  
Page No : 1

AH.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	70TH ST From North				W DICKINSON ST From East				70TH ST From South				W DICKINSON ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
06:00 AM	1	59	0	0	0	0	3	1	0	54	2	0	0	0	0	0	120
06:15 AM	2	69	0	0	2	0	0	0	0	37	3	0	0	0	0	0	113
06:30 AM	2	102	0	0	0	0	0	0	1	70	0	0	0	0	0	0	175
06:45 AM	4	173	0	0	2	0	3	0	0	53	5	0	0	0	0	1	241
Total	9	403	0	0	4	0	6	1	1	214	10	0	0	0	0	1	649
07:00 AM	1	150	0	0	0	0	1	0	0	76	3	0	0	0	0	0	231
07:15 AM	0	160	2	0	2	0	1	0	1	94	6	0	0	0	0	0	266
07:30 AM	0	192	2	0	3	0	2	0	1	128	3	0	0	0	1	0	332
07:45 AM	1	293	0	0	4	0	0	0	0	122	8	0	0	0	0	0	428
Total	2	795	4	0	9	0	4	0	2	420	20	0	0	0	1	0	1257
08:00 AM	0	256	1	0	4	0	1	1	0	92	3	0	0	0	0	0	358
08:15 AM	0	199	0	0	0	0	2	0	0	89	3	1	0	0	0	2	296
08:30 AM	0	175	0	0	2	0	1	1	0	80	3	0	0	0	0	1	263
08:45 AM	0	195	0	0	2	0	0	0	0	102	3	0	0	0	0	0	302
Total	0	825	1	0	8	0	4	2	0	363	12	1	0	0	0	3	1219
09:00 AM	0	132	0	0	1	0	1	0	0	73	5	0	0	0	0	0	212
09:15 AM	0	118	0	0	1	0	0	1	1	68	1	0	1	0	1	1	193
09:30 AM	0	122	0	0	2	0	1	1	0	100	4	0	0	0	2	0	232
09:45 AM	3	126	0	0	1	0	4	2	0	82	4	0	1	1	1	0	225
Total	3	498	0	0	5	0	6	4	1	323	14	0	2	1	4	1	862
10:00 AM	0	107	0	0	3	0	0	2	0	89	4	0	0	0	0	1	206
10:15 AM	3	109	0	0	5	0	1	1	1	116	0	0	0	0	0	0	236
10:30 AM	0	119	0	0	0	0	1	0	2	102	1	0	0	0	0	1	226
10:45 AM	1	117	0	0	1	0	1	1	0	99	5	0	0	0	0	0	225
Total	4	452	0	0	9	0	3	4	3	406	10	0	0	0	0	2	893
11:00 AM	1	94	0	0	1	0	1	1	0	116	7	0	0	0	0	1	222
11:15 AM	3	127	0	0	2	0	1	0	0	120	1	0	0	0	0	0	254
11:30 AM	0	117	0	0	4	0	2	0	0	152	5	0	1	0	0	0	281
11:45 AM	0	144	1	0	4	0	3	0	1	165	7	0	0	0	0	0	325
Total	4	482	1	0	11	0	7	1	1	553	20	0	1	0	0	1	1082
12:00 PM	1	152	0	0	6	0	0	0	1	148	9	0	0	1	0	0	318
12:15 PM	0	154	1	0	3	0	1	0	1	156	4	0	0	0	0	1	321
12:30 PM	1	182	0	0	2	0	0	1	1	151	8	0	0	0	0	1	347
12:45 PM	0	172	0	0	8	0	1	1	1	130	6	0	0	0	0	0	319
Total	2	660	1	0	19	0	2	2	4	585	27	0	0	1	0	2	1305
01:00 PM	0	159	0	0	2	0	1	2	1	145	5	1	0	0	0	0	316
01:15 PM	1	128	0	1	2	0	1	1	1	145	1	0	0	0	1	3	285
01:30 PM	1	120	0	0	5	0	4	1	0	137	3	0	0	0	0	1	272
01:45 PM	0	130	0	0	4	0	0	0	0	130	4	1	1	0	0	0	270
Total	2	537	0	1	13	0	6	4	2	557	13	2	1	0	1	4	1143
02:00 PM	1	131	0	0	0	0	3	2	0	139	8	0	0	0	0	2	286
02:15 PM	3	141	0	0	1	0	2	1	0	138	1	0	0	0	0	0	287
02:30 PM	1	116	1	0	2	0	0	1	1	179	9	0	0	0	2	1	313
02:45 PM	1	133	0	0	3	0	2	0	0	156	1	0	0	0	0	0	296
Total	6	521	1	0	6	0	7	4	1	612	19	0	0	0	2	3	1182
03:00 PM	1	132	1	1	3	0	1	3	2	168	3	1	1	0	0	2	319
03:15 PM	3	158	0	0	4	0	1	2	1	160	7	1	0	0	2	1	340
03:30 PM	1	123	0	0	3	0	2	0	0	225	12	0	0	1	0	1	368
03:45 PM	2	158	0	0	3	0	2	1	2	208	3	0	0	0	0	0	379
Total	7	571	1	1	13	0	6	6	5	761	25	2	1	1	2	4	1406

Milwaukee  
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File Name : Dickenson-70thSt 12hr  
Site Code : 00000000  
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Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	70TH ST From North				W DICKINSON ST From East				70TH ST From South				W DICKINSON ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	
04:00 PM	4	133	1	0	3	0	1	1	0	268	13	0	0	0	0	1	2	427
04:15 PM	2	159	1	0	8	0	1	0	0	222	7	0	0	0	1	0	0	401
04:30 PM	0	134	0	0	1	0	2	2	0	303	13	0	0	0	0	0	0	455
04:45 PM	4	151	0	0	2	0	0	0	0	211	10	0	0	0	0	0	0	378
Total	10	577	2	0	14	0	4	3	0	1004	43	0	0	0	2	2		1661
05:00 PM	0	142	0	0	2	0	1	3	0	307	16	0	0	0	1	0	0	472
05:15 PM	0	145	0	0	0	1	1	0	0	264	15	0	0	0	0	0	0	426
05:30 PM	1	129	0	0	5	0	1	1	0	195	6	0	0	0	0	0	0	338
05:45 PM	0	121	0	0	1	0	0	1	0	161	10	0	0	0	0	0	0	294
Total	1	537	0	0	8	1	3	5	0	927	47	0	0	0	1	0	0	1530
Grand Total	50	6858	11	2	119	1	58	36	20	6725	260	5	5	3	13	23		14189
Apprch %	0.7	99.1	0.2	0	55.6	0.5	27.1	16.8	0.3	95.9	3.7	0.1	11.4	6.8	29.5	52.3		
Total %	0.4	48.3	0.1	0	0.8	0	0.4	0.3	0.1	47.4	1.8	0	0	0	0.1	0.2		
Unshifted	49	6676	11	1	117	1	56	32	18	6533	258	3	5	3	10	18		13791
% Unshifted	98	97.3	100	50	98.3	100	96.6	88.9	90	97.1	99.2	60	100	100	76.9	78.3		97.2
Bank 1	1	138	0	0	2	0	2	4	0	148	2	1	0	0	3	5		306
% Bank 1	2	2	0	0	1.7	0	3.4	11.1	0	2.2	0.8	20	0	0	23.1	21.7		2.2
Bank 2	0	44	0	1	0	0	0	0	2	44	0	1	0	0	0	0		92
% Bank 2	0	0.6	0	50	0	0	0	0	10	0.7	0	20	0	0	0	0		0.6

Milwaukee  
Weekday

File Name : Dickenson-70thSt 12hr  
Site Code : 00000000  
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Groups Printed- Bank 1 - Bank 2

Start Time	70TH ST From North				W DICKINSON ST From East				70TH ST From South				W DICKINSON ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
06:00 AM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
06:15 AM	0	2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	5
06:30 AM	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	8
06:45 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
Total	1	9	0	0	1	0	0	0	0	9	1	0	0	0	0	0	21
07:00 AM	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5
07:15 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
07:30 AM	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
07:45 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
Total	0	6	0	0	0	0	0	0	0	13	0	0	0	0	0	0	19
08:00 AM	0	6	0	0	0	0	0	0	0	3	0	0	0	0	0	0	9
08:15 AM	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
08:30 AM	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	1	11
08:45 AM	0	5	0	0	0	0	0	0	0	9	0	0	0	0	0	0	14
Total	0	21	0	0	0	0	0	0	0	17	0	0	0	0	0	1	39
09:00 AM	0	5	0	0	0	0	0	0	0	7	0	0	0	0	0	0	12
09:15 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
09:30 AM	0	2	0	0	0	0	0	1	0	6	0	0	0	0	0	0	9
09:45 AM	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	7
Total	0	14	0	0	0	0	0	1	0	17	0	0	0	0	0	0	32
10:00 AM	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0	1	11
10:15 AM	0	9	0	0	0	0	0	0	0	5	0	0	0	0	0	0	14
10:30 AM	0	9	0	0	0	0	0	0	1	6	0	0	0	0	0	0	16
10:45 AM	0	5	0	0	0	0	0	0	0	8	0	0	0	0	0	0	13
Total	0	27	0	0	0	0	0	0	1	25	0	0	0	0	0	1	54
11:00 AM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
11:15 AM	0	7	0	0	0	0	0	0	0	6	0	0	0	0	0	0	13
11:30 AM	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	8
11:45 AM	0	7	0	0	0	0	1	0	1	3	0	0	0	0	0	0	12
Total	0	20	0	0	0	0	1	0	1	16	0	0	0	0	0	0	38
12:00 PM	0	6	0	0	0	0	0	0	0	11	0	0	0	0	0	0	17
12:15 PM	0	9	0	0	0	0	0	0	0	5	0	0	0	0	0	1	15
12:30 PM	0	6	0	0	0	0	0	0	0	7	0	0	0	0	0	1	14
12:45 PM	0	4	0	0	0	0	0	0	0	4	1	0	0	0	0	0	9
Total	0	25	0	0	0	0	0	0	0	27	1	0	0	0	0	2	55
01:00 PM	0	5	0	0	0	0	0	0	0	4	0	1	0	0	0	0	10
01:15 PM	0	1	0	1	0	0	0	0	0	8	0	0	0	0	1	0	11
01:30 PM	0	2	0	0	1	0	1	0	0	1	0	0	0	0	0	1	6
01:45 PM	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	8
Total	0	12	0	1	1	0	1	0	0	17	0	1	0	0	1	1	35
02:00 PM	0	3	0	0	0	0	0	0	0	7	0	0	0	0	0	0	10
02:15 PM	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	7
02:30 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	1	0	6
02:45 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7
Total	0	9	0	0	0	0	0	0	0	20	0	0	0	0	1	0	30
03:00 PM	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	9
03:15 PM	0	3	0	0	0	0	0	1	0	2	0	1	0	0	0	0	7
03:30 PM	0	6	0	0	0	0	0	0	0	5	0	0	0	0	0	0	11
03:45 PM	0	4	0	0	0	0	0	1	0	7	0	0	0	0	0	0	12
Total	0	20	0	0	0	0	0	2	0	16	0	1	0	0	0	0	39

Milwaukee  
Weekday

File Name : Dickenson-70thSt 12hr  
Site Code : 00000000  
Start Date : 1/13/2011  
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Groups Printed- Bank 1 - Bank 2

Start Time	70TH ST From North				W DICKINSON ST From East				70TH ST From South				W DICKINSON ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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		
04:00 PM	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	9
04:15 PM	0	7	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	11
04:30 PM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
04:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Total	0	14	0	0	0	0	0	0	0	11	0	0	0	0	0	1	0	26
05:00 PM	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
Total	0	5	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	10
Grand Total	1	182	0	1	2	0	2	4	2	192	2	2	0	0	3	5		398
Apprch %	0.5	98.9	0	0.5	25	0	25	50	1	97	1	1	0	0	37.5	62.5		
Total %	0.3	45.7	0	0.3	0.5	0	0.5	1	0.5	48.2	0.5	0.5	0	0	0.8	1.3		
Bank 1	1	138	0	0	2	0	2	4	0	148	2	1	0	0	3	5		306
% Bank 1	100	75.8	0	0	100	0	100	100	0	77.1	100	50	0	0	100	100		76.9
Bank 2	0	44	0	1	0	0	0	0	2	44	0	1	0	0	0	0		92
% Bank 2	0	24.2	0	100	0	0	0	0	100	22.9	0	50	0	0	0	0		23.1

Milwaukee  
Weekday

File Name : Main-70th 12hr  
Site Code : 00000000  
Start Date : 1/13/2011  
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AS.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	70 TH ST From North				MAIN ST From East				70 TH ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
06:00 AM	1	62	6	0	2	5	1	0	1	43	5	0	6	1	3	0	136
06:15 AM	4	58	5	0	5	7	4	1	1	32	2	0	10	0	2	0	131
06:30 AM	3	91	5	0	4	7	8	0	2	55	5	1	9	2	7	0	199
06:45 AM	5	148	9	0	11	8	3	0	2	53	7	2	8	4	10	0	270
Total	13	359	25	0	22	27	16	1	6	183	19	3	33	7	22	0	736
07:00 AM	2	133	11	1	6	15	6	0	2	63	7	0	6	8	9	1	270
07:15 AM	2	126	6	0	18	6	0	0	2	77	9	0	8	15	8	0	277
07:30 AM	3	167	8	1	23	12	10	0	5	89	13	0	9	16	11	1	368
07:45 AM	5	217	17	1	37	15	4	2	8	103	15	2	9	14	17	0	466
Total	12	643	42	3	84	48	20	2	17	332	44	2	32	53	45	2	1381
08:00 AM	3	242	18	0	20	11	2	0	4	75	14	1	13	7	14	2	426
08:15 AM	1	171	7	0	20	10	5	0	2	88	3	4	8	13	11	0	343
08:30 AM	1	152	13	0	24	9	5	0	2	63	7	1	7	4	8	1	297
08:45 AM	2	160	13	0	12	3	2	0	8	82	4	2	7	6	6	2	309
Total	7	725	51	0	76	33	14	0	16	308	28	8	35	30	39	5	1375
09:00 AM	1	123	13	0	11	1	1	0	2	68	7	2	10	3	9	0	251
09:15 AM	2	102	6	0	17	4	2	0	3	56	6	0	14	4	5	1	222
09:30 AM	3	87	9	0	21	6	1	0	5	73	12	0	6	3	5	2	233
09:45 AM	1	108	11	1	10	3	5	0	3	83	6	2	7	6	13	0	259
Total	7	420	39	1	59	14	9	0	13	280	31	4	37	16	32	3	965
10:00 AM	5	85	8	0	8	7	4	1	6	77	10	1	7	7	5	0	231
10:15 AM	2	92	8	2	12	4	4	1	1	102	8	0	11	5	8	0	260
10:30 AM	1	102	5	0	11	4	0	1	8	90	8	1	7	5	9	0	252
10:45 AM	2	97	6	0	13	9	2	0	9	85	2	2	7	4	5	0	243
Total	10	376	27	2	44	24	10	3	24	354	28	4	32	21	27	0	986
11:00 AM	3	66	8	0	11	5	4	1	3	96	7	1	7	4	9	0	225
11:15 AM	1	111	11	0	16	4	5	0	5	95	12	0	7	6	9	0	282
11:30 AM	3	89	10	0	8	6	5	0	4	137	16	0	4	10	6	0	298
11:45 AM	2	116	5	0	18	5	3	0	8	131	16	1	6	9	7	0	327
Total	9	382	34	0	53	20	17	1	20	459	51	2	24	29	31	0	1132
12:00 PM	1	124	10	0	15	5	2	0	7	128	10	0	4	8	10	4	328
12:15 PM	1	119	4	3	24	3	0	0	11	132	12	0	8	4	11	4	336
12:30 PM	0	153	14	0	12	12	1	0	3	121	15	3	8	8	13	0	363
12:45 PM	6	140	10	0	18	7	0	3	8	111	9	2	8	4	11	0	337
Total	8	536	38	3	69	27	3	3	29	492	46	5	28	24	45	8	1364
01:00 PM	6	132	8	0	26	12	4	1	4	131	9	1	10	6	7	1	358
01:15 PM	1	105	10	0	10	7	2	0	11	114	10	0	10	8	9	0	297
01:30 PM	1	99	5	0	15	3	5	0	7	119	12	0	9	8	14	0	297
01:45 PM	1	102	4	0	16	6	3	0	7	102	13	0	4	6	8	0	272
Total	9	438	27	0	67	28	14	1	29	466	44	1	33	28	38	1	1224
02:00 PM	1	114	7	1	18	6	1	1	3	123	20	0	6	6	8	1	316
02:15 PM	1	116	7	1	16	9	2	0	7	111	6	0	7	10	5	2	300
02:30 PM	1	106	11	1	10	10	2	0	10	150	16	1	12	7	7	5	349
02:45 PM	4	112	13	0	15	14	0	1	3	126	12	0	13	12	10	0	335
Total	7	448	38	3	59	39	5	2	23	510	54	1	38	35	30	8	1300
03:00 PM	3	120	12	1	18	5	3	2	5	147	14	1	16	9	11	2	369
03:15 PM	2	109	3	1	24	5	1	0	4	133	15	1	11	7	10	3	329
03:30 PM	4	103	13	1	14	8	3	0	3	210	17	0	17	15	10	2	420
03:45 PM	2	121	5	2	23	6	3	1	12	183	17	0	13	15	9	0	412
Total	11	453	33	5	79	24	10	3	24	673	63	2	57	46	40	7	1530

Milwaukee  
Weekday

File Name : Main-70th 12hr  
Site Code : 00000000  
Start Date : 1/13/2011  
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AS.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	70 TH ST From North				MAIN ST From East				70 TH ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
04:00 PM	5	100	7	0	20	15	1	0	7	231	27	0	13	9	9	2	446
04:15 PM	2	100	16	1	28	23	4	0	8	177	25	3	14	9	14	2	426
04:30 PM	2	107	6	0	23	24	3	0	13	246	29	0	15	16	9	0	493
04:45 PM	3	116	8	0	26	12	1	0	10	176	17	0	18	15	13	2	417
Total	12	423	37	1	97	74	9	0	38	830	98	3	60	49	45	6	1782
05:00 PM	3	101	4	0	26	10	2	2	11	270	23	1	11	22	9	0	495
05:15 PM	4	106	5	0	34	16	4	0	18	218	21	0	10	14	7	0	457
05:30 PM	1	98	14	0	18	15	5	0	7	153	20	0	14	12	13	0	370
05:45 PM	1	95	4	0	19	11	1	1	9	118	22	1	10	9	3	0	304
Total	9	400	27	0	97	52	12	3	45	759	86	2	45	57	32	0	1626
Grand Total	114	5603	418	18	806	410	139	19	284	5646	592	37	454	395	426	40	15401
Apprch %	1.9	91.1	6.8	0.3	58.7	29.8	10.1	1.4	4.3	86.1	9	0.6	34.5	30	32.4	3	
Total %	0.7	36.4	2.7	0.1	5.2	2.7	0.9	0.1	1.8	36.7	3.8	0.2	2.9	2.6	2.8	0.3	
Unshifted	106	5423	396	16	796	393	134	18	270	5454	584	36	431	380	408	38	14883
% Unshifted	93	96.8	94.7	88.9	98.8	95.9	96.4	94.7	95.1	96.6	98.6	97.3	94.9	96.2	95.8	95	96.6
Bank 1	8	124	15	2	10	17	5	1	9	131	8	1	13	12	14	2	372
% Bank 1	7	2.2	3.6	11.1	1.2	4.1	3.6	5.3	3.2	2.3	1.4	2.7	2.9	3	3.3	5	2.4
Bank 2	0	56	7	0	0	0	0	0	5	61	0	0	10	3	4	0	146
% Bank 2	0	1	1.7	0	0	0	0	0	1.8	1.1	0	0	2.2	0.8	0.9	0	0.9

Milwaukee  
Weekday

File Name : Main-70th 12hr  
Site Code : 00000000  
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Groups Printed- Bank 1 - Bank 2

Start Time	70 TH ST From North				MAIN ST From East				70 TH ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
06:00 AM	0	4	1	0	0	0	0	0	0	2	0	0	0	0	0	0	7
06:15 AM	1	1	1	0	2	0	0	0	0	1	0	0	1	0	0	0	7
06:30 AM	0	3	0	0	0	2	1	0	0	6	0	0	2	0	1	0	15
06:45 AM	1	3	0	0	0	0	0	0	0	4	0	0	2	1	0	0	11
Total	2	11	2	0	2	2	1	0	0	13	0	0	5	1	1	0	40
07:00 AM	0	1	0	0	0	1	0	0	0	5	0	0	1	0	0	0	8
07:15 AM	1	2	0	0	0	0	0	0	0	3	1	0	1	1	0	0	9
07:30 AM	0	5	0	1	0	0	0	0	0	6	0	0	1	2	0	1	16
07:45 AM	1	3	0	0	1	1	0	0	2	4	0	0	0	1	1	0	14
Total	2	11	0	1	1	2	0	0	2	18	1	0	3	4	1	1	47
08:00 AM	0	10	1	0	1	0	1	0	1	5	0	0	0	0	0	0	19
08:15 AM	0	4	0	0	0	2	1	0	0	8	0	0	0	0	0	0	15
08:30 AM	0	6	1	0	0	0	1	0	0	4	1	0	1	0	3	1	18
08:45 AM	1	5	2	0	0	1	0	0	0	8	0	0	0	0	0	0	17
Total	1	25	4	0	1	3	3	0	1	25	1	0	1	0	3	1	69
09:00 AM	0	6	0	0	0	0	0	0	0	12	0	0	0	0	0	0	18
09:15 AM	0	4	0	0	2	0	0	0	0	4	0	0	3	1	1	0	15
09:30 AM	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0	0	8
09:45 AM	0	9	0	0	0	0	0	0	0	3	0	0	1	0	0	0	13
Total	0	20	0	0	2	0	0	0	0	26	0	0	4	1	1	0	54
10:00 AM	0	3	0	0	0	2	0	0	0	5	1	0	1	0	1	0	13
10:15 AM	0	7	1	0	0	0	0	0	0	4	0	0	0	0	0	0	12
10:30 AM	0	12	1	0	0	0	0	0	0	6	1	0	0	2	0	0	22
10:45 AM	0	6	0	0	0	1	0	0	2	4	0	1	1	0	1	0	16
Total	0	28	2	0	0	3	0	0	2	19	2	1	2	2	2	0	63
11:00 AM	0	1	2	0	0	0	0	0	0	4	0	0	1	0	0	0	8
11:15 AM	0	7	0	0	0	0	0	0	0	6	0	0	1	0	0	0	14
11:30 AM	0	3	1	0	0	0	0	0	0	5	0	0	0	0	0	0	9
11:45 AM	0	6	0	0	0	0	0	0	1	3	0	0	0	1	0	0	11
Total	0	17	3	0	0	0	0	0	1	18	0	0	2	1	0	0	42
12:00 PM	1	7	0	0	0	1	0	0	0	6	0	0	0	1	0	0	16
12:15 PM	0	3	0	0	0	0	0	0	0	8	0	0	0	0	2	0	13
12:30 PM	0	5	0	0	0	0	0	0	0	3	0	0	1	0	1	0	10
12:45 PM	0	4	0	0	0	0	0	0	0	7	0	0	0	0	0	0	11
Total	1	19	0	0	0	1	0	0	0	24	0	0	1	1	3	0	50
01:00 PM	0	4	1	0	0	0	0	0	0	3	0	0	0	0	1	0	9
01:15 PM	0	1	0	0	0	0	0	0	1	5	1	0	0	0	0	0	8
01:30 PM	0	2	0	0	0	0	0	0	1	4	0	0	0	0	0	0	7
01:45 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	1	0	0	5
Total	0	9	1	0	0	0	0	0	2	14	1	0	0	1	1	0	29
02:00 PM	0	7	0	1	0	0	0	0	0	7	1	0	0	0	0	0	16
02:15 PM	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	4
02:30 PM	1	3	1	0	0	1	0	0	0	1	1	0	0	1	0	0	9
02:45 PM	0	1	3	0	0	1	0	0	1	5	0	0	0	0	0	0	11
Total	1	11	4	1	1	2	0	0	1	15	2	0	1	1	0	0	40
03:00 PM	0	8	1	0	0	0	0	1	1	1	0	0	1	1	1	0	15
03:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
03:30 PM	1	5	2	0	1	0	0	0	0	3	0	0	0	0	0	0	12
03:45 PM	0	5	0	0	0	0	0	0	2	5	1	0	0	0	1	0	14
Total	1	18	3	0	1	0	0	1	3	10	1	0	1	1	3	0	43

Milwaukee  
Weekday

File Name : Main-70th 12hr  
Site Code : 00000000  
Start Date : 1/13/2011  
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Groups Printed- Bank 1 - Bank 2

Start Time	70 TH ST From North				MAIN ST From East				70 TH ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	
04:00 PM	0	4	0	0	0	1	0	0	0	1	0	0	1	1	1	0	0	9
04:15 PM	0	2	2	0	2	2	0	0	0	3	0	0	1	1	1	0	0	14
04:30 PM	0	1	1	0	0	0	1	0	0	3	0	0	0	0	0	0	0	6
04:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Total	0	8	3	0	2	3	1	0	0	8	0	0	2	2	2	0	0	31
05:00 PM	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	4
05:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Total	0	3	0	0	0	1	0	0	2	2	0	0	1	0	1	0	0	10
Grand Total	8	180	22	2	10	17	5	1	14	192	8	1	23	15	18	2		518
Apprch %	3.8	84.9	10.4	0.9	30.3	51.5	15.2	3	6.5	89.3	3.7	0.5	39.7	25.9	31	3.4		
Total %	1.5	34.7	4.2	0.4	1.9	3.3	1	0.2	2.7	37.1	1.5	0.2	4.4	2.9	3.5	0.4		
Bank 1	8	124	15	2	10	17	5	1	9	131	8	1	13	12	14	2		372
% Bank 1	100	68.9	68.2	100	100	100	100	100	64.3	68.2	100	100	56.5	80	77.8	100		71.8
Bank 2	0	56	7	0	0	0	0	0	5	61	0	0	10	3	4	0		146
% Bank 2	0	31.1	31.8	0	0	0	0	0	35.7	31.8	0	0	43.5	20	22.2	0		28.2





Milwaukee  
Weekday

File Name : Main-71st 12hr  
Site Code : 00000000  
Start Date : 1/12/2011  
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AS.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	71ST ST From North				MAIN ST From East				71ST ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:00 AM	1	0	2	0	0	8	0	0	0	0	0	0	0	5	0	0	16
06:15 AM	1	0	0	0	0	8	0	1	0	0	0	0	0	3	0	0	13
06:30 AM	2	0	0	0	0	9	0	0	0	0	0	2	0	7	0	0	20
06:45 AM	3	0	0	0	0	8	0	0	0	0	0	0	0	13	0	0	24
Total	7	0	2	0	0	33	0	1	0	0	0	2	0	28	0	0	73
07:00 AM	3	0	0	0	0	17	0	0	0	0	0	0	0	14	0	0	34
07:15 AM	6	0	1	0	0	9	0	0	0	0	0	0	0	21	0	0	37
07:30 AM	1	0	1	0	0	20	0	1	0	0	0	1	0	24	0	0	48
07:45 AM	2	0	2	0	0	18	0	0	0	0	0	1	0	26	0	0	49
Total	12	0	4	0	0	64	0	1	0	0	0	2	0	85	0	0	168
08:00 AM	2	0	0	0	0	26	0	0	0	0	0	0	0	17	0	0	45
08:15 AM	1	0	2	0	0	14	0	0	0	0	0	1	0	17	0	0	35
08:30 AM	2	0	1	0	0	24	0	0	0	0	0	0	0	20	0	0	47
08:45 AM	2	0	0	0	0	14	0	0	0	0	0	0	0	12	0	0	28
Total	7	0	3	0	0	78	0	0	0	0	0	1	0	66	0	0	155
09:00 AM	1	0	3	0	0	14	0	0	0	0	0	0	0	12	0	2	32
09:15 AM	0	0	0	0	0	13	0	0	0	0	0	1	0	11	0	0	25
09:30 AM	2	0	0	1	0	19	0	0	0	0	0	0	0	14	0	0	36
09:45 AM	3	0	0	0	0	18	0	0	0	0	0	0	0	12	0	0	33
Total	6	0	3	1	0	64	0	0	0	0	0	1	0	49	0	2	126
10:00 AM	2	0	2	0	0	25	0	0	0	0	0	0	0	12	0	0	41
10:15 AM	3	0	0	0	0	13	0	0	0	0	0	0	0	9	0	0	25
10:30 AM	2	0	1	2	0	11	0	0	0	0	0	0	0	11	0	0	27
10:45 AM	1	0	1	0	0	9	0	0	0	0	0	0	0	6	0	0	17
Total	8	0	4	2	0	58	0	0	0	0	0	0	0	38	0	0	110
11:00 AM	3	0	1	0	0	13	0	0	0	0	0	0	0	9	0	0	26
11:15 AM	1	0	2	0	0	20	0	0	0	0	0	0	0	9	0	0	32
11:30 AM	2	0	0	0	0	15	0	0	0	0	0	0	0	18	0	0	35
11:45 AM	0	0	0	0	0	11	0	0	0	0	0	2	1	14	0	0	28
Total	6	0	3	0	0	59	0	0	0	0	0	2	1	50	0	0	121
12:00 PM	0	0	1	0	0	16	0	0	0	0	0	0	0	12	0	0	29
12:15 PM	3	0	0	0	0	14	0	0	0	0	0	0	0	13	0	0	30
12:30 PM	0	0	0	1	0	20	0	1	0	0	0	1	0	21	0	0	44
12:45 PM	3	0	0	0	0	13	0	0	0	0	0	0	0	16	0	2	34
Total	6	0	1	1	0	63	0	1	0	0	0	1	0	62	0	2	137
01:00 PM	2	0	0	0	0	9	0	1	0	0	0	0	0	10	0	0	22
01:15 PM	1	0	1	1	0	16	0	1	0	0	0	1	0	10	0	0	31
01:30 PM	2	0	1	0	0	19	0	0	0	0	0	0	0	13	0	0	35
01:45 PM	3	0	0	0	0	20	0	0	0	0	0	0	0	20	0	0	43
Total	8	0	2	1	0	64	0	2	0	0	0	1	0	53	0	0	131
02:00 PM	1	0	4	0	0	21	0	0	0	1	0	0	0	22	0	0	49
02:15 PM	0	0	1	2	0	20	0	0	0	0	0	0	0	15	0	0	38
02:30 PM	2	0	3	0	0	20	0	0	0	0	0	0	0	18	0	0	43
02:45 PM	0	0	1	0	0	29	0	0	0	0	0	0	0	13	0	0	43
Total	3	0	9	2	0	90	0	0	0	1	0	0	0	68	0	0	173
03:00 PM	5	0	0	0	0	26	0	0	0	0	0	0	0	16	0	0	47
03:15 PM	2	0	0	0	0	24	0	1	0	0	0	3	0	22	0	0	52
03:30 PM	4	0	0	1	0	18	0	0	0	0	0	0	0	19	0	0	42
03:45 PM	2	0	2	0	0	21	0	0	0	0	0	0	0	18	0	0	43
Total	13	0	2	1	0	89	0	1	0	0	0	3	0	75	0	0	184

Milwaukee  
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File Name : Main-71st 12hr  
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Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	71ST ST From North				MAIN ST From East				71ST ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
04:00 PM	2	0	1	4	0	28	0	0	0	0	0	0	0	27	0	0	62
04:15 PM	2	0	2	1	0	39	0	2	0	0	0	0	0	15	0	1	62
04:30 PM	5	0	2	0	0	21	0	0	0	0	0	1	0	18	0	0	47
04:45 PM	3	0	1	0	0	12	0	2	0	0	0	0	0	24	0	0	42
Total	12	0	6	5	0	100	0	4	0	0	0	1	0	84	0	1	213
05:00 PM	2	0	2	0	0	26	0	1	0	0	0	0	1	32	0	0	64
05:15 PM	4	0	1	7	0	24	0	1	0	0	0	1	0	16	0	2	56
05:30 PM	1	0	1	1	0	25	0	0	0	0	0	1	0	15	0	0	44
05:45 PM	2	0	2	0	0	18	0	0	0	0	0	0	0	17	0	0	39
Total	9	0	6	8	0	93	0	2	0	0	0	2	1	80	0	2	203
Grand Total	97	0	45	21	0	855	0	12	0	1	0	16	2	738	0	7	1794
Apprch %	59.5	0	27.6	12.9	0	98.6	0	1.4	0	5.9	0	94.1	0.3	98.8	0	0.9	
Total %	5.4	0	2.5	1.2	0	47.7	0	0.7	0	0.1	0	0.9	0.1	41.1	0	0.4	
Unshifted	95	0	44	20	0	806	0	9	0	1	0	16	2	696	0	7	1696
% Unshifted	97.9	0	97.8	95.2	0	94.3	0	75	0	100	0	100	100	94.3	0	100	94.5
Bank 1	1	0	1	0	0	41	0	0	0	0	0	0	0	31	0	0	74
% Bank 1	1	0	2.2	0	0	4.8	0	0	0	0	0	0	0	4.2	0	0	4.1
Bank 2	1	0	0	1	0	8	0	3	0	0	0	0	0	11	0	0	24
% Bank 2	1	0	0	4.8	0	0.9	0	25	0	0	0	0	0	1.5	0	0	1.3

Milwaukee  
Weekday

File Name : Main-71st 12hr  
Site Code : 00000000  
Start Date : 1/12/2011  
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Groups Printed- Bank 1 - Bank 2

Start Time	71ST ST From North				MAIN ST From East				71ST ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
06:15 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	4
06:30 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
Total	0	0	0	0	0	9	0	1	0	0	0	0	0	5	0	0	15
07:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	4
07:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
Total	0	0	0	0	0	3	0	1	0	0	0	0	0	8	0	0	12
08:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
08:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0	0	10
09:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
09:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
09:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
09:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	1	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	9
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
10:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
10:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
Total	0	0	0	1	0	3	0	0	0	0	0	0	0	4	0	0	8
11:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
11:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	1	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	6
12:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
01:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
02:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
02:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	1	0	0	4	0	0	0	0	0	0	0	1	0	0	6
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	4
03:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	0	0	0	0	5	0	1	0	0	0	0	0	3	0	0	9
04:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5

Milwaukee  
Weekday

File Name : Main-71st 12hr  
Site Code : 00000000  
Start Date : 1/12/2011  
Page No : 2

AS.

Groups Printed- Bank 1 - Bank 2

Start Time	71ST ST From North				MAIN ST From East				71ST ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
04:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	6
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	7	0	0	0	0	0	0	0	6	0	0	13
05:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
Grand Total	2	0	1	1	0	49	0	3	0	0	0	0	0	42	0	0	98
Apprch %	50	0	25	25	0	94.2	0	5.8	0	0	0	0	0	100	0	0	
Total %	2	0	1	1	0	50	0	3.1	0	0	0	0	0	42.9	0	0	
Bank 1	1	0	1	0	0	41	0	0	0	0	0	0	0	31	0	0	74
% Bank 1	50	0	100	0	0	83.7	0	0	0	0	0	0	0	73.8	0	0	75.5
Bank 2	1	0	0	1	0	8	0	3	0	0	0	0	0	11	0	0	24
% Bank 2	50	0	0	100	0	16.3	0	100	0	0	0	0	0	26.2	0	0	24.5





Milwaukee  
Weekday

File Name : Main-72nd St PM  
Site Code : 00000000  
Start Date : 1/12/2011  
Page No : 1

AH.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	72ND STREET From North				MAIN STREET From East				72ND STREET From South				MAIN STREET From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
03:00 PM	1	0	0	0	1	21	2	0	1	0	5	0	1	11	1	0	44
03:15 PM	0	0	3	0	2	16	3	0	0	0	2	1	2	19	1	0	49
03:30 PM	0	0	0	1	1	17	0	0	3	0	4	0	2	16	2	0	46
03:45 PM	0	0	3	0	3	17	3	0	4	0	3	2	0	14	1	0	50
Total	1	0	6	1	7	71	8	0	8	0	14	3	5	60	5	0	189
04:00 PM	0	0	2	4	1	26	2	0	3	0	1	0	0	26	2	0	67
04:15 PM	0	0	1	0	0	41	0	0	0	0	0	1	0	14	1	0	58
04:30 PM	0	0	4	0	0	20	4	0	2	0	0	2	0	19	1	0	52
04:45 PM	0	0	1	0	0	11	1	0	0	0	1	0	1	21	2	0	38
Total	0	0	8	4	1	98	7	0	5	0	2	3	1	80	6	0	215
05:00 PM	1	0	0	0	0	25	3	0	0	0	0	0	2	32	1	0	64
05:15 PM	1	0	3	0	1	24	0	0	4	0	2	0	1	14	0	0	50
05:30 PM	0	0	0	2	0	26	1	0	0	0	0	0	0	18	0	0	47
05:45 PM	0	0	0	0	0	19	1	0	0	0	1	0	1	16	0	0	38
Total	2	0	3	2	1	94	5	0	4	0	3	0	4	80	1	0	199
Grand Total	3	0	17	7	9	263	20	0	17	0	19	6	10	220	12	0	603
Apprch %	11.1	0	63	25.9	3.1	90.1	6.8	0	40.5	0	45.2	14.3	4.1	90.9	5	0	
Total %	0.5	0	2.8	1.2	1.5	43.6	3.3	0	2.8	0	3.2	1	1.7	36.5	2	0	
Unshifted	3	0	16	7	7	258	20	0	17	0	19	6	10	214	11	0	588
% Unshifted	100	0	94.1	100	77.8	98.1	100	0	100	0	100	100	100	97.3	91.7	0	97.5
Bank 1	0	0	1	0	2	5	0	0	0	0	0	0	0	5	1	0	14
% Bank 1	0	0	5.9	0	22.2	1.9	0	0	0	0	0	0	0	2.3	8.3	0	2.3
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.2

Milwaukee  
Weekday

File Name : Main-72nd St PM  
Site Code : 00000000  
Start Date : 1/12/2011  
Page No : 1

AH.

Groups Printed- Bank 1 - Bank 2

Start Time	72ND STREET From North				MAIN STREET From East				72ND STREET From South				MAIN STREET From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
03:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1	0	5
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
04:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
04:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	3
Total	0	0	1	0	0	4	0	0	0	0	0	0	0	4	0	0	9
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	2	5	0	0	0	0	0	0	0	6	1	0	15
Apprch %	0	0	100	0	28.6	71.4	0	0	0	0	0	0	0	85.7	14.3	0	
Total %	0	0	6.7	0	13.3	33.3	0	0	0	0	0	0	0	40	6.7	0	
Bank 1	0	0	1	0	2	5	0	0	0	0	0	0	0	5	1	0	14
% Bank 1	0	0	100	0	100	100	0	0	0	0	0	0	0	83.3	100	0	93.3
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	16.7	0	0	6.7

Milwaukee  
Saturday Middy

File Name : Main-72nd SAT  
Site Code : 00000000  
Start Date : 1/15/2011  
Page No : 1

R&PA.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	72ND ST From North				MAIN ST From East				72ND ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	

\*\*\* BREAK \*\*\*

11:00 AM	1	0	0	0	0	9	0	0	0	0	0	0	0	14	1	0	0	25
11:15 AM	1	0	0	0	1	14	2	0	0	0	1	0	0	8	0	0	0	27
11:30 AM	2	0	1	1	2	17	0	0	2	0	1	0	2	10	0	0	0	38
11:45 AM	1	0	1	0	0	19	2	0	0	0	1	1	1	11	0	0	0	37
Total	5	0	2	1	3	59	4	0	2	0	3	1	3	43	1	0	0	127

12:00 PM	0	0	1	0	0	10	0	0	1	0	1	0	0	11	1	0	0	25
12:15 PM	1	0	0	0	0	17	0	0	0	0	0	0	1	7	0	0	0	26
12:30 PM	1	0	0	0	0	13	1	0	0	0	0	0	0	15	0	0	0	30
12:45 PM	0	1	2	1	0	14	1	0	0	0	0	0	2	10	0	0	0	31
Total	2	1	3	1	0	54	2	0	1	0	1	0	3	43	1	0	0	112

\*\*\* BREAK \*\*\*

Grand Total	7	1	5	2	3	113	6	0	3	0	4	1	6	86	2	0	0	239
Apprch %	46.7	6.7	33.3	13.3	2.5	92.6	4.9	0	37.5	0	50	12.5	6.4	91.5	2.1	0	0	
Total %	2.9	0.4	2.1	0.8	1.3	47.3	2.5	0	1.3	0	1.7	0.4	2.5	36	0.8	0	0	
Unshifted	7	0	5	2	1	112	6	0	2	0	4	1	5	86	2	0	0	233
% Unshifted	100	0	100	100	33.3	99.1	100	0	66.7	0	100	100	83.3	100	100	0	0	97.5
Bank 1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
% Bank 1	0	0	0	0	33.3	0	0	0	33.3	0	0	0	0	0	0	0	0	0.8
Bank 2	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	4
% Bank 2	0	100	0	0	33.3	0.9	0	0	0	0	0	0	16.7	0	0	0	0	1.7

Milwaukee  
Saturday MIDDAY

File Name : Main-72nd SAT  
Site Code : 00000000  
Start Date : 1/15/2011  
Page No : 1

R&PA.

Groups Printed- Bank 1 - Bank 2

Start Time	72ND ST From North				MAIN ST From East				72ND ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
11:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
*** BREAK ***																	
Total	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	3
*** BREAK ***																	
12:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Total	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3
*** BREAK ***																	
Grand Total	0	1	0	0	2	1	0	0	1	0	0	0	1	0	0	0	6
Apprch %	0	100	0	0	66.7	33.3	0	0	100	0	0	0	100	0	0	0	
Total %	0	16.7	0	0	33.3	16.7	0	0	16.7	0	0	0	16.7	0	0	0	
Bank 1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
% Bank 1	0	0	0	0	50	0	0	0	100	0	0	0	0	0	0	0	33.3
Bank 2	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	4
% Bank 2	0	100	0	0	50	100	0	0	0	0	0	0	100	0	0	0	66.7

Milwaukee  
Weekday

File Name : Main-73rd PM  
Site Code : 00000000  
Start Date : 1/12/2011  
Page No : 1

TA.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	73RD STREET From North				MAIN STREET From East				73RD STREET From South				MAIN STREET From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
03:00 PM	1	0	3	0	0	22	3	0	0	0	0	0	0	12	0	0	41
03:15 PM	0	0	0	0	0	20	0	0	0	0	0	1	0	21	0	0	42
03:30 PM	0	0	1	1	0	19	1	0	0	0	0	0	1	21	0	0	44
03:45 PM	0	0	1	4	0	23	1	0	0	0	0	0	0	15	0	0	44
Total	1	0	5	5	0	84	5	0	0	0	0	1	1	69	0	0	171
04:00 PM	0	0	4	3	0	28	0	0	0	0	0	0	1	27	0	0	63
04:15 PM	1	0	1	0	0	39	1	0	0	0	0	1	1	15	0	0	59
04:30 PM	1	0	1	1	0	24	3	0	0	0	0	3	1	19	0	0	53
04:45 PM	2	0	1	0	0	13	0	0	0	0	0	0	0	22	0	0	38
Total	4	0	7	4	0	104	4	0	0	0	0	4	3	83	0	0	213
05:00 PM	0	0	0	0	0	23	2	0	0	0	0	0	1	33	0	0	59
05:15 PM	1	0	1	0	0	28	1	0	0	0	0	0	0	15	0	0	46
05:30 PM	0	0	0	2	0	23	1	0	0	0	0	0	0	19	0	0	45
05:45 PM	0	0	1	0	0	19	0	0	0	0	0	0	0	15	0	0	35
Total	1	0	2	2	0	93	4	0	0	0	0	0	1	82	0	0	185
Grand Total	6	0	14	11	0	281	13	0	0	0	0	5	5	234	0	0	569
Apprch %	19.4	0	45.2	35.5	0	95.6	4.4	0	0	0	0	100	2.1	97.9	0	0	
Total %	1.1	0	2.5	1.9	0	49.4	2.3	0	0	0	0	0.9	0.9	41.1	0	0	
Unshifted	6	0	14	11	0	271	11	0	0	0	0	5	5	216	0	0	539
% Unshifted	100	0	100	100	0	96.4	84.6	0	0	0	0	100	100	92.3	0	0	94.7
Bank 1	0	0	0	0	0	10	2	0	0	0	0	0	0	16	0	0	28
% Bank 1	0	0	0	0	0	3.6	15.4	0	0	0	0	0	0	6.8	0	0	4.9
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0	0	0.4

Milwaukee  
Weekday

TA.

File Name : Main-73rd PM  
Site Code : 00000000  
Start Date : 1/12/2011  
Page No : 1

Groups Printed- Bank 1 - Bank 2

Start Time	73RD STREET From North				MAIN STREET From East				73RD STREET From South				MAIN STREET From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	6	0	0	8
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
04:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	3	0	0	7
04:30 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	6	2	0	0	0	0	0	0	9	0	0	17
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
*** BREAK ***																	
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
Grand Total	0	0	0	0	0	10	2	0	0	0	0	0	0	18	0	0	30
Apprch %	0	0	0	0	0	83.3	16.7	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	33.3	6.7	0	0	0	0	0	0	60	0	0	
Bank 1	0	0	0	0	0	10	2	0	0	0	0	0	0	16	0	0	28
% Bank 1	0	0	0	0	0	100	100	0	0	0	0	0	0	88.9	0	0	93.3
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	11.1	0	0	6.7









Milwaukee  
Saturday Miday

File Name : Main-74th SAT  
Site Code : 00000000  
Start Date : 1/15/2011  
Page No : 1

AH.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	74TH STREET From North				MAIN STREET From East				74TH STREET From South				MAIN STREET From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	

\*\*\* BREAK \*\*\*

11:00 AM	0	0	2	0	0	13	1	0	0	0	0	0	0	0	12	0	0	28
11:15 AM	0	0	0	0	0	13	0	0	0	0	0	0	0	10	0	0	23	
11:30 AM	0	0	1	0	1	15	4	0	0	0	0	0	1	11	0	0	33	
11:45 AM	0	0	1	0	0	19	0	1	1	0	0	1	0	10	0	0	33	
Total	0	0	4	0	1	60	5	1	1	0	0	1	1	43	0	0	117	
12:00 PM	1	0	0	0	0	13	3	0	1	0	0	0	0	11	1	0	30	
12:15 PM	1	0	1	0	0	11	1	0	0	0	0	0	1	6	0	0	21	
12:30 PM	0	0	0	0	0	15	1	0	0	0	0	0	0	14	0	0	30	
12:45 PM	1	0	3	0	1	12	1	0	0	0	1	0	1	8	0	0	28	
Total	3	0	4	0	1	51	6	0	1	0	1	0	2	39	1	0	109	

\*\*\* BREAK \*\*\*

Grand Total	3	0	8	0	2	111	11	1	2	0	1	1	3	82	1	0	226
Apprch %	27.3	0	72.7	0	1.6	88.8	8.8	0.8	50	0	25	25	3.5	95.3	1.2	0	
Total %	1.3	0	3.5	0	0.9	49.1	4.9	0.4	0.9	0	0.4	0.4	1.3	36.3	0.4	0	
Unshifted	3	0	8	0	2	109	11	1	2	0	1	1	2	82	1	0	223
% Unshifted	100	0	100	0	100	98.2	100	100	100	0	100	100	66.7	100	100	0	98.7
Bank 1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0.4
Bank 2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
% Bank 2	0	0	0	0	0	0.9	0	0	0	0	0	0	33.3	0	0	0	0.9

Milwaukee  
Saturday Miday

File Name : Main-74th SAT  
Site Code : 00000000  
Start Date : 1/15/2011  
Page No : 1

AH.

Groups Printed- Bank 1 - Bank 2

Start Time	74TH STREET From North				MAIN STREET From East				74TH STREET From South				MAIN STREET From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
11:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
12:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
*** BREAK ***																	
Grand Total	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	
Total %	0	0	0	0	0	66.7	0	0	0	0	0	0	33.3	0	0	0	
Bank 1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	33.3
Bank 2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
% Bank 2	0	0	0	0	0	50	0	0	0	0	0	0	100	0	0	0	66.7

Milwaukee  
Weekday PM

File Name : Main-75th PM  
Site Code : 00000000  
Start Date : 1/13/2011  
Page No : 1

AH.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	75TH ST From North				MAIN ST From East				75TH ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
03:00 PM	0	0	0	0	0	24	2	0	0	0	0	0	1	12	0	0	39
03:15 PM	1	0	0	1	0	19	0	0	0	0	0	0	1	21	0	0	43
03:30 PM	0	0	2	0	0	15	0	0	0	0	0	0	1	17	0	0	35
03:45 PM	0	0	0	0	0	33	0	0	0	0	0	0	1	15	0	0	49
Total	1	0	2	1	0	91	2	0	0	0	0	0	4	65	0	0	166
04:00 PM	0	0	2	0	0	37	0	1	0	0	0	0	1	19	0	1	61
04:15 PM	0	0	0	0	0	41	0	0	0	0	0	0	0	17	0	0	58
04:30 PM	0	0	3	0	0	42	1	0	0	0	0	0	1	14	0	1	62
04:45 PM	0	0	0	0	0	27	2	0	0	0	0	0	0	23	0	1	53
Total	0	0	5	0	0	147	3	1	0	0	0	0	2	73	0	3	234
05:00 PM	1	0	0	1	0	34	2	0	0	0	0	0	3	26	0	1	68
05:15 PM	0	0	0	0	0	31	0	0	0	0	0	0	3	17	0	1	52
05:30 PM	0	0	0	0	0	25	2	0	0	0	0	0	1	17	0	1	46
05:45 PM	0	0	0	0	0	24	0	1	0	0	0	0	1	8	0	1	35
Total	1	0	0	1	0	114	4	1	0	0	0	0	8	68	0	4	201
Grand Total	2	0	7	2	0	352	9	2	0	0	0	0	14	206	0	7	601
Apprch %	18.2	0	63.6	18.2	0	97	2.5	0.6	0	0	0	0	6.2	90.7	0	3.1	
Total %	0.3	0	1.2	0.3	0	58.6	1.5	0.3	0	0	0	0	2.3	34.3	0	1.2	
Unshifted	2	0	7	2	0	348	8	2	0	0	0	0	14	198	0	3	584
% Unshifted	100	0	100	100	0	98.9	88.9	100	0	0	0	0	100	96.1	0	42.9	97.2
Bank 1	0	0	0	0	0	3	1	0	0	0	0	0	0	8	0	0	12
% Bank 1	0	0	0	0	0	0.9	11.1	0	0	0	0	0	0	3.9	0	0	2
Bank 2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	5
% Bank 2	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	57.1	0.8

Milwaukee  
Weekday PM

File Name : Main-75th PM  
Site Code : 00000000  
Start Date : 1/13/2011  
Page No : 1

AH.

Groups Printed- Bank 1 - Bank 2

Start Time	75TH ST From North				MAIN ST From East				75TH ST From South				MAIN ST From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	
*** BREAK ***																	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
*** BREAK ***																	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	4
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	6	0	3	11
05:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	3
Grand Total	0	0	0	0	0	4	1	0	0	0	0	0	0	8	0	4	17
Apprch %	0	0	0	0	0	80	20	0	0	0	0	0	0	66.7	0	33.3	
Total %	0	0	0	0	0	23.5	5.9	0	0	0	0	0	0	47.1	0	23.5	
Bank 1	0	0	0	0	0	3	1	0	0	0	0	0	0	8	0	0	12
% Bank 1	0	0	0	0	0	75	100	0	0	0	0	0	0	100	0	0	70.6
Bank 2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	5
% Bank 2	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	100	29.4





Milwaukee  
Weekday PM

File Name : Main-76th PM  
Site Code : 00000000  
Start Date : 1/13/2011  
Page No : 1

LO.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	76TH ST From North				MAIN ST From East				76TH ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	
*** BREAK ***																		
03:00 PM	7	77	6	0	11	4	9	1	2	88	8	0	4	2	3	1		223
03:15 PM	9	139	1	1	6	6	5	0	2	88	9	0	2	3	3	0		274
03:30 PM	7	94	3	0	6	1	12	1	2	84	8	1	3	1	2	1		226
03:45 PM	7	82	2	0	9	4	15	1	2	76	6	0	2	1	7	0		214
Total	30	392	12	1	32	15	41	3	8	336	31	1	11	7	15	2		937
04:00 PM	10	91	2	0	20	2	15	1	2	89	11	1	1	5	8	1		259
04:15 PM	7	114	4	0	15	4	20	0	2	90	9	1	3	2	2	0		273
04:30 PM	5	124	7	0	18	10	11	0	3	80	6	0	4	1	9	0		278
04:45 PM	9	123	9	2	17	5	14	3	11	97	9	1	6	9	9	0		324
Total	31	452	22	2	70	21	60	4	18	356	35	3	14	17	28	1		1134
05:00 PM	8	128	3	1	11	5	18	0	0	100	16	0	10	6	12	0		318
05:15 PM	7	141	9	1	13	7	13	1	4	87	7	2	11	3	13	0		319
05:30 PM	7	121	5	0	13	9	10	0	1	93	6	1	2	6	9	0		283
05:45 PM	4	88	8	2	12	9	3	2	3	91	3	1	6	3	8	0		243
Total	26	478	25	4	49	30	44	3	8	371	32	4	29	18	42	0		1163
Grand Total	87	1322	59	7	151	66	145	10	34	1063	98	8	54	42	85	3		3234
Apprch %	5.9	89.6	4	0.5	40.6	17.7	39	2.7	2.8	88.4	8.1	0.7	29.3	22.8	46.2	1.6		
Total %	2.7	40.9	1.8	0.2	4.7	2	4.5	0.3	1.1	32.9	3	0.2	1.7	1.3	2.6	0.1		
Unshifted	75	1302	58	7	150	65	141	10	34	1046	97	3	52	40	84	2		3166
% Unshifted	86.2	98.5	98.3	100	99.3	98.5	97.2	100	100	98.4	99	37.5	96.3	95.2	98.8	66.7		97.9
Bank 1	10	20	1	0	1	1	4	0	0	17	1	0	2	2	1	1		61
% Bank 1	11.5	1.5	1.7	0	0.7	1.5	2.8	0	0	1.6	1	0	3.7	4.8	1.2	33.3		1.9
Bank 2	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0		7
% Bank 2	2.3	0	0	0	0	0	0	0	0	0	0	62.5	0	0	0	0		0.2

Milwaukee  
Weekday PM

File Name : Main-76th PM  
Site Code : 00000000  
Start Date : 1/13/2011  
Page No : 1

LO.

Groups Printed- Bank 1 - Bank 2

Start Time	76TH ST From North				MAIN ST From East				76TH ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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		
*** BREAK ***																		
03:00 PM	2	1	1	0	1	1	1	0	0	2	0	0	0	0	0	0	1	10
03:15 PM	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
03:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
03:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
Total	5	2	1	0	1	1	1	0	0	5	1	0	0	0	0	1	1	19
04:00 PM	3	7	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	14
04:15 PM	4	0	0	0	0	0	1	0	0	4	0	1	0	1	0	0	0	11
04:30 PM	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	4
04:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	4
Total	7	11	0	0	0	0	2	0	0	9	0	1	2	1	0	0	0	33
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	2	0	0	0	0	1	0	0	2	0	2	0	0	0	0	0	7
05:30 PM	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
05:45 PM	0	2	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	5
Total	0	7	0	0	0	0	1	0	0	3	0	4	0	1	0	0	0	16
Grand Total	12	20	1	0	1	1	4	0	0	17	1	5	2	2	1	1		68
Apprch %	36.4	60.6	3	0	16.7	16.7	66.7	0	0	73.9	4.3	21.7	33.3	33.3	16.7	16.7		
Total %	17.6	29.4	1.5	0	1.5	1.5	5.9	0	0	25	1.5	7.4	2.9	2.9	1.5	1.5		
Bank 1	10	20	1	0	1	1	4	0	0	17	1	0	2	2	1	1		61
% Bank 1	83.3	100	100	0	100	100	100	0	0	100	100	0	100	100	100	100		89.7
Bank 2	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0		7
% Bank 2	16.7	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0		10.3

Milwaukee  
Saturday

File Name : Main - 76th SAT  
Site Code : 00000000  
Start Date : 1/8/2011  
Page No : 1

AH.

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	76TH ST From North				MAIN ST From East				76TH ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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	1.0	

\*\*\* BREAK \*\*\*

11:00 AM	3	56	5	0	7	4	6	1	4	55	4	1	4	2	6	0		158
11:15 AM	1	47	6	0	9	5	3	0	4	64	7	0	6	2	10	0		164
11:30 AM	0	54	6	1	13	6	12	3	4	56	3	0	1	5	8	0		172
11:45 AM	3	47	7	0	8	5	6	0	6	57	5	0	5	5	7	1		162
Total	7	204	24	1	37	20	27	4	18	232	19	1	16	14	31	1		656

12:00 PM	2	67	5	0	7	6	2	0	2	58	8	0	7	5	11	0		180
12:15 PM	5	53	10	1	12	5	9	0	5	68	6	0	8	7	6	2		197
12:30 PM	3	56	12	0	5	3	4	1	5	74	7	0	9	2	6	0		187
12:45 PM	8	42	8	0	4	5	4	1	4	77	9	0	8	3	10	0		183
Total	18	218	35	1	28	19	19	2	16	277	30	0	32	17	33	2		747

\*\*\* BREAK \*\*\*

Grand Total	25	422	59	2	65	39	46	6	34	509	49	1	48	31	64	3		1403
Apprch %	4.9	83.1	11.6	0.4	41.7	25	29.5	3.8	5.7	85.8	8.3	0.2	32.9	21.2	43.8	2.1		
Total %	1.8	30.1	4.2	0.1	4.6	2.8	3.3	0.4	2.4	36.3	3.5	0.1	3.4	2.2	4.6	0.2		
Unshifted	25	419	59	1	65	39	44	3	34	506	49	0	47	31	64	3		1389
% Unshifted	100	99.3	100	50	100	100	95.7	50	100	99.4	100	0	97.9	100	100	100		99
Bank 1	0	3	0	0	0	0	0	3	0	3	0	0	0	0	0	0		9
% Bank 1	0	0.7	0	0	0	0	0	50	0	0.6	0	0	0	0	0	0		0.6
Bank 2	0	0	0	1	0	0	2	0	0	0	0	1	1	0	0	0		5
% Bank 2	0	0	0	50	0	0	4.3	0	0	0	0	100	2.1	0	0	0		0.4

Milwaukee  
Saturday

File Name : Main - 76th SAT  
Site Code : 00000000  
Start Date : 1/8/2011  
Page No : 1

AH.

Groups Printed- Bank 1 - Bank 2

Start Time	76TH ST From North				MAIN ST From East				76TH ST From South				MAIN ST From West				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
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		
*** BREAK ***																		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	1	0	0	2	2	0	1	0	0	0	0	0	0	0	6
11:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Total	0	2	0	1	0	0	2	2	0	1	0	1	1	0	0	0	0	10
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
*** BREAK ***																		
12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Total	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	4
*** BREAK ***																		
Grand Total	0	3	0	1	0	0	2	3	0	3	0	1	1	0	0	0	0	14
Apprch %	0	75	0	25	0	0	40	60	0	75	0	25	100	0	0	0	0	
Total %	0	21.4	0	7.1	0	0	14.3	21.4	0	21.4	0	7.1	7.1	0	0	0	0	
Bank 1	0	3	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	9
% Bank 1	0	100	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0	64.3
Bank 2	0	0	0	1	0	0	2	0	0	0	0	1	1	0	0	0	0	5
% Bank 2	0	0	0	100	0	0	100	0	0	0	0	100	100	0	0	0	0	35.7

## **APPENDIX A**

# **Existing Traffic Signal Timings**

ELECTRICAL: <b>2 #4 LTP SERVICE FED FROM WEP CO WP #62-2465 @ 44' E. OF C.C. IN ALLEY ENTRANCE N. OF MAIN ST.</b>										FUNCTION		KEY	VAL	CYCLE 1				CYCLE 2				CYCLE 3				CYCLE 4			
										D+4+KEY				OFFSET 1	24	OFFSET 1	39	OFFSET 1		OFFSET 1									
FLASHING PROGRAM : <b>2300-0600 HRS.; N/S-YELLOW, E/W-RED</b>										ACT. 1 LOCK		0		OFFSET 2															
										ACT. 2 LOCK		1		OFFSET 3		OFFSET 3													
FLASH OUTPUT ASSIGN.										ACT. 1 DELAY		2		OFFSET 4															
										ACT. 2 DELAY		3		MAX. DWELL	36	MAX. DWELL	36	MAX. DWELL		MAX. DWELL									
AUXILLARY EQUIPMENT: <b>FLASH BOOSTER RELAY FOR FLASH (2300-0600 HRS.)</b>										PRE-EMPT 1 LOCK		5		CYCLE LENGTH															
										PRE-EMPT 2 LOCK		6		SEC	60	SEC	60	SEC	0	SEC	0								
PROGRAM: <b>CYCLE 2: 1500-1800 HRS. EX. S/S/H</b>										PRE-EMPT 3 LOCK		7		SP1	21														
										PRE-EMPT 1 DELAY		8		SP2	10	SP2	10												
TIME IN SERVICE: <b>1/17/07 @ 0750</b>										PRE-EMPT 2 DELAY		9		SP3	4														
										PRE-EMPT 3 DELAY		A		SP4	1.5	SP4	1.5												
SIGNAL #: <b>3044</b>										B+3+KEY																			
										LONG POWER DOWN		0	4																
LOCATION: <b>W. MAIN ST. &amp; S. 70TH ST.</b>										SHORT POWER DOWN		1	4																
										SPECIAL ACT. FUNCTIONS																			
DESIGNED BY: <b>JCB</b>										ACT. SIGNAL PLAN		2																	
										DRAWN BY: <b>JCB</b>																			
CHECKED BY: <b>KAL</b>										ACT. CYCLE		3																	
										APPROVED BY:																			
DATE: <b>1/5/07</b>										ACT. SPLIT		4																	
										SUPERSEDED BY: <b>B-00-562-T</b>																			
FL. CL.: <b>LOCAL</b>										ACT. OFFSET		5																	
										SUPERSEDED BY:																			
DRG. NO.: <b>B-07-503-T</b>										RESET INTERVAL		6																	
SYSTEM DATA:										# OF CYCLES		7																	
MASTER: <b>KEARNEY AND 68TH</b>										NO T.B.C. FALL BACK		8																	
PRO. CL.: <b>KEARNEY AND 68TH</b>										CRD. FROM ACT. MSTR.		9																	
FL. CL.: <b>LOCAL</b>										C+C+KEY																			
DWELL METHOD A										Dwell Method A		A	0																
COORD. MODE										Coord. Mode		E	1																
COORD. MASTER										Coord. Master		F																	



**TIME OF DAY / DAY OF WEEK SETTINGS  
170 CONTROLLER - W9FT PROGRAM**

	DAY							HR	MN	FN									HR	MN
	1	2	3	4	5	6	7					1	2	3	4	5	6	7		
1	A80							A81	A82	A83	17	ACO							AC1	AC2
	X	X	X	X	X	X	X	06	00	12										
2	A84							A85	A86	A87	18	AC4							AC5	AC6
	X	X	X	X	X	X	X	06	00	111										
3	A88							A89	A8A	A8B	19	AC8							AC9	ACA
		X	X	X	X	X		15	00	211										
4	A8C							A8D	A8E	A8F	20	ACC							ACD	ACE
		X	X	X	X	X		18	00	111										
5	A90							A91	A92	A93	21	ADO							AD1	AD2
	X	X	X	X	X	X	X	23	00	11										
6	A94							A95	A96	A97	22	AD4							AD5	AD6
7	A98							A99	A9A	A9B	23	AD8							AD9	ADA
8	A9C							A9D	A9E	A9F	24	ADC							ADD	ADE
9	AAO							AA1	AA2	AA3	25	AEO							AE1	AE2
10	AA4							AA5	AA6	AA7	26	AE4							AE5	AE6
11	AA8							AA9	AAA	AAB	27	AE8							AE9	AEA
12	AAC							AAD	AAE	AAF	28	AEC							AED	AEE
13	ABO							AB1	AB2	AB3	29	AFO							AF1	AF2
14	AB4							AB5	AB6	AB7	30	AF4							AF5	AF6
15	AB8							AB9	ABA	ABB	31	AF8							AF9	AFA
16	ABC							ABD	ABE	ABF	32	AFC							AFD	AFE

**TIME OF DAY / DAY OF WEEK FUNCTION CODES**

FUNCTION	ON	OFF	FUNCTION	ON	OFF
SIGNAL PLAN	1 - 4		OUTPUT A	21	2
FLASH	11	12	OUTPUT B	23	2
FREE	16	17	OUTPUT C	25	2
FUNCTION				ON	OFF
COORDINATION PLAN = CYCLE / SPLIT / OFFSET (EX. 111)				111 - 444	

<b>LOCATION:</b> W. MAIN ST. & S. 70TH ST.		<b>CHECKED BY:</b> KAL		<b>SUPERSEDES:</b> B-00-562-T	
<b>DESIGNED BY:</b> JCB		<b>DRAWN BY:</b> JCB		<b>SUPERSEDED BY:</b>	
<b>DATE:</b> 1/5/07		<b>APPROVED BY:</b>		<b>DRG. NO.:</b> B-07-503-T	

FN
AC3
AC7
ACB
ACF
AD3
AD7
ADB
ADF
AE3
AE7
AEB
AEF
AF3
AF7
AFB
AFF

-F
2
4
6
-F


**LOCATION:**

**W. MAIN ST.  
&  
S. 70TH ST.**

SHADED COMBINATIONS  
ARE NOT PERMITTED  
DIODES FOR CONFLICTING  
INDICATIONS

**CABINET SWITCH LOCATIONS**

1	2	3	4	5	6
---	---	---	---	---	---

**CONFLICT MONITOR CONNECTIONS**

1Y	2Y	9G	3Y	4Y	9Y
1G	2G	13G	3G	4G	14G

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DIRECTION	NB 70TH	SB 70TH	EB MAIN	WB MAIN	SPARE	SPARE			SPARE				E/W X-WALKS	N/S X-WALKS		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
	4	5	6	7	8	9	10	11	12	13	14	15	16			
	5	6	7	8	9	10	11	12	13	14	15	16				
	6	7	8	9	10	11	12	13	14	15	16					
	7	8	9	10	11	12	13	14	15	16						
	8	9	10	11	12	13	14	15	16							
	9	10	11	12	13	14	15	16								
	10	11	12	13	14	15	16									
	11	12	13	14	15	16										
	12	13	14	15	16											
	13	14	15	16												
	14	15	16													
	15	16														
	16															

MONITOR IN SERVICE: 9/7/00 @ 0937  
DRG. NO: B-07-503-T

SERVICE:  
**3 #4/1 #8 LTP FED FROM CONT.  
 CAB. KEARNEY AND 76TH MAIN  
 C.B. @ 70TH & O'CONNOR CAB.**

# 170 CONTROLLER W4IKS PROGRAM

FLASH PROGRAM:  
**2100-0630 HRS.; N/S-YELLOW,  
 E/W-RED (EX. STATE FAIR -  
 0100-0630 HRS.)**

## INTERSECTION PROGRAMMING DATA

*PAGE 0 (NORMAL) - DO NOT PAGE COPY*

PHASE - TIMING DATA (PHASE + KEY)										PHASE FUNCTIONS (0 + KEY)										
FUNCTION	KEY	1	2	3	4	5	6	7	8	FUNCTION	KEY	1	2	3	4	5	6	7	8	
MAX I	0		41		20		41		20	VEHICLE RECALL	0	X					X			
MAX II / HFDW	1									PED. RECALL	1	X					X			
WALK	2		7				7		7	RED LOCK	2									
FDW	3		7				7		13	YELLOW LOCK	3									
MAX INITIAL	4									PERMIT	4	X		X		X		X		
MIN GREEN	5		14		10		14		10	PED PHASES	5	X				X		X		
TIME BEFORE REDUCTION	6									LEAD PHASES	6	X	X		X		X		X	
TIME TO REDUCE	7									DUAL ENTRY	7	X		X		X		X		
OBSERVE GAP	8									SEQ TIMING	8									
PASSAGE	9				3				3	START UP GREEN	9	X					X			
MINIMUM GAP	A									OVERLAP A	A									
ADDED / ACTUATION	B									OVERLAP B	B									
YELLOW	C		4		3.5		4		3.5	OVERLAP C	C									
RED CLEARANCE	D		1.5		2.5		1.5		2.5	OVERLAP D	D									
RED REVERT	E									EXCLUSIVE	E									
WALK II	F									SIM GAP	F									
PHASE ASSIGNMENT DESCRIPTION		PHASE 5				SPARE				OVERLAP B										
PHASE 1: SPARE		PHASE 6				NB 76TH E. X-WALK				OVERLAP C										
PHASE 2: SB 76TH W. X-WALK		PHASE 7				SPARE				OVERLAP D										
PHASE 3: SPARE		PHASE 8				EB MAIN S. X-WALK				OVERLAP E										
PHASE 4: WB MAIN <i>ACT.</i>		OVERLAP A								OVERLAP F										
TIME IN:	3/6/07 @ 1250		PROGRAM:							SYSTEM DATA										
TIMER:	W4IKS.37		PAGE 0: ALL TIMES EX. STATE FAIR (60 SEC./CYCLE)							MASTER: KEARNEY AND 68TH										
SIGNAL NO:	3026		PAGE 1, CRD. PL. 2: AT ALL TIMES EX. FLASH DURING STATE FAIR. (90 SEC./CYCLE)							PRO. CL.: LOCAL										
LOCATION:	W. MAIN ST.  &  S. 76TH ST.		CRD. PL. 7: 0630-0900 HRS. EX. S/S/H AND DURING STATE FAIR							FL. CL.: LOCAL										
												PROGRAM INST:								
												AUXILLARY EQUIPMENT: POLICE HANDCORD INPUT CARD FOR SPECIAL EVENTS								

CHECKED BY: <b>KAL</b>		APPROVED BY:		SUPERSEDED BY:		SUPERSEDES: <b>B-05-812-T</b>		
DESIGNED BY: <b>JCB</b>	DRAWN BY: <b>JCB</b>		DATE: <b>2/22/07</b>		DRAWING NO: <b>B-07-539-T</b>			

SERVICE:  
**3 #4/1 #8 LTP FED FROM CONT.  
 CAB. KEARNEY AND 76TH MAIN C.E  
 @ 70TH & O'CONNOR CAB.**

# 170 CONTROLLER W4IKS PROGRAM

FLASH PROGRAM:  
**0100-0630 HRS.; N/S-YELLOW,  
 E/W-RED**

## INTERSECTION PROGRAMMING DATA

**PAGE 1 (STATE FAIR) - DO NOT PAGE COPY**

PHASE - TIMING DATA (PHASE + KEY)										PHASE FUNCTIONS (0 + KEY)									
FUNCTION	>L<	1	2	3	4	5	6	7	8	FUNCTION	>L<	1	2	3	4	5	6	7	8
MAX I	0		69		30		69		30	VEHICLE RECALL	0		X				X		
MAX II / HFDW	1									PED. RECALL	1		X				X		
WALK	2		7				7		7	RED LOCK	2								
FDW	3		7				7		13	YELLOW LOCK	3								
MAX INITIAL	4									PERMIT	4		X		X		X		X
MIN GREEN	5		14		12		14		12	PED PHASES	5		X				X		X
TIME BEFORE REDUCTION	6									LEAD PHASES	6	X		X		X		X	
TIME TO REDUCE	7									DUAL ENTRY	7		X		X		X		X
OBSERVE GAP	8										SEQ TIMING	8							
PASSAGE	9				3				3	START UP GREEN	9		X				X		
MINIMUM GAP	A									OVERLAP A	A								
ADDED / ACTUATION	B									OVERLAP B	B								
YELLOW	C		4		3.5		4		3.5	OVERLAP C	C								
RED CLEARANCE	D		1.5		2.5		1.5		2.5	OVERLAP D	D								
RED REVERT	E									EXCLUSIVE	E								
WALK II	F									SIM GAP	F								
PHASE ASSIGNMENT DESCRIPTION		PHASE 5				SPARE				OVERLAP B									
PHASE 1: SPARE		PHASE 6				NB 76TH E. X-WALK				OVERLAP C									
PHASE 2: SB 76TH W. X-WALK		PHASE 7				SPARE				OVERLAP D									
PHASE 3: SPARE		PHASE 8				EB MAIN S. X-WALK				OVERLAP E		ACT.							
PHASE 4: WB MAIN		OVERLAP A								OVERLAP F									
TIME IN: 3/6/07 @ 1250		PROGRAM:								SYSTEM DATA									
TIMER: W4IKS.37		PAGE 0: ALL TIMES EX. STATE FAIR (60 SEC./CYCLE)								MASTER: KEARNEY AND 68TH									
SIGNAL NO: 3026		PAGE 1, CRD. PL. 2: AT ALL TIMES EX. FLASH DURING STATE FAIR. (90 SEC./CYCLE)								PRO. CL.: LOCAL									
LOCATION:  W. MAIN ST.  &  S. 76TH ST.		CRD. PL. 7: 0630-0900 HRS. EX. S/S/H AND DURING STATE FAIR								FL. CL.: LOCAL									
										PROGRAM INST:									
										AUXILLARY EQUIPMENT: POLICE HANDCORD INPUT CARD FOR SPECIAL EVENTS									

CHECKED BY: <b>KAL</b>	APPROVED BY:	SUPERSEDED BY:	SUPERSEDES: <b>B-05-812-T</b>
DESIGNED BY: <b>JCB</b>	DRAWN BY: <b>JCB</b>	DATE: <b>2/22/07</b>	DRAWING NO: <b>B-07-539-T</b>

**170 CONTROLLER - 4IKS  
PROGRAM COORDINATION DATA**

FUNCTION		COORDINATION PLAN								
		1	2	3	4	5	6	7	8	9
CYCLE LENGTH	0	60	90					60		
FORCE OFF PH 1	1									
FORCE OFF PH 2	2	0	0					0		
FORCE OFF PH 3	3									
FORCE OFF PH 4	4	34	44					34		
FORCE OFF PH 5	5									
FORCE OFF PH 6	6	0	0					0		
FORCE OFF PH 7	7									
FORCE OFF PH 8	8	34	44					34		
OFFSET (SECONDS)	9	49	88					43		
PERMISSIVE LENGTH	A	0	0					0		
MAXIMUM DWELL	B	15	15					15		

FUNCTION	Y X	PHASE								FUNCTION	Y X	PHASE								
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7		
<b>COORD PLAN 1</b>										<b>COORD PLAN 6</b>										
LEAD PHASES	C	X		X		X		X		LEAD PHASES	C									
COORD PHASES	D		X				X			COORD PHASES	D									
PERM 2 PHASES	E									PERM 2 PHASES	E									
MIN RECALL	F		X				X			MIN RECALL	F									
<b>COORD PLAN 2</b>										<b>COORD PLAN 7</b>										
LEAD PHASES	C	X		X		X		X		LEAD PHASES	C	X		X		X		X		X
COORD PHASES	D		X				X			COORD PHASES	D		X					X		X
PERM 2 PHASES	E									PERM 2 PHASES	E									
MIN RECALL	F		X				X			MIN RECALL	F		X					X		X
<b>COORD PLAN 3</b>										<b>COORD PLAN 8</b>										
LEAD PHASES	C									LEAD PHASES	C									
COORD PHASES	D									COORD PHASES	D									
PERM 2 PHASES	E									PERM 2 PHASES	E									
MIN RECALL	F									MIN RECALL	F									
<b>COORD PLAN 4</b>										<b>COORD PLAN 9</b>										
LEAD PHASES	C									LEAD PHASES	C									
COORD PHASES	D									COORD PHASES	D									
PERM 2 PHASES	E									PERM 2 PHASES	E									
MIN RECALL	F									MIN RECALL	F									
<b>COORD PLAN 5</b>										<b>LOCATION:</b>										
LEAD PHASES	C									<b>W. MAIN ST. &amp; S. 76TH ST.</b>										
COORD PHASES	D									<b>DATE: 2/22/07</b>										
PERM 2 PHASES	E									<b>SUPERSEDES: B-05-812-T</b>										
MIN RECALL	F									<b>SUPERSEDED:</b>										
DESIGNED BY:	DRAWN BY:		CHECKED BY:			APPROVED:		<b>DRAWING: B-07-539-T</b>												
<b>JCB</b>	<b>JCB</b>		<b>KAL</b>																	



**170 CONTROLLER - W4IKS PROGRAM  
MISCELLANEOUS FUNCTIONS**

FUNCTION	KEY	PHASE NUMBER								FUNCTION	KEY	VAL	FUNCTION	KEY	VAL
		1	2	3	4	5	6	7	8						
<b>B + O + KEY</b>										<b>B + O + KEY</b>			<b>9 + KEY</b>		
SAMPLE DET	C									MODE (0-4)	4	2	SHORT POWER DOWN	0	4
ADV. WARN PH	E									MASTER (0=OFF)	5	0	LONG POWER DOWN	1	4
MRI PHASES	F				X				X	<b>C + F + KEY</b>			EV A DEL TYPE	2	
<b>B + A + KEY</b>										PAGE ID	0		EV B DEL TYPE	3	
FLASH YELLOW	C		X						X	OL A RED	4		EV C DEL TYPE	4	
FLASH CIRCUIT	D									OL B RED	5		EV D DEL TYPE	5	
TOD/DOW MAX	E									OL C RED	6		RR DEL TYPE	6	
OL B SWICH P	F									OL D RED	7		PED INHIBIT	7	
<b>B + B + KEY</b>										<b>D + KEY 1 + KEY 2</b>			A OL	GREEN	8
OL FL YELLOW	C									FLOATING PED	2E			YELLOW	9
OL FL CIRC	D									ID NUMBER	2F	26	B OL	GREEN	A
TOD/DOW PED	E									COORD PED RECALL	3E	0	OL	YELLOW	B
OL B SWITCH P	F									REST IN WALK	3F	1	C OL	GREEN	C
<b>B + C + KEY</b>										ADV WARN E O G	4E		D OL	YELLOW	D
COORD MAX	C									ADV WARN S O G	4F		OL	GREEN	E
TOD RED REST	D									RR RED CLEAR	5E		OL	YELLOW	F
OL A SWITCH P	E									RR RED COLOR	5F		<b>E + F + KEY</b>		
OL D SWITCH P	F									EV MIN AFT C	7E		RR MAX II	0	
<b>C + F + KEY</b>										EV INDICATORS	7F		PED PERM PLAN 1	1	
OVERLAP E	9									<b>B + A + KEY</b>			PED PERM PLAN 2	2	
OVERLAP F	8									PERM 2 P1	9		PED PERM PLAN 3	3	
RED REST	A									PERM 2 P2	A		PED PERM PLAN 4	4	
MAX RECALL	B									PERM 2 P3	B		PED PERM PLAN 5	5	
FLASH GREEN	C									<b>B + C + KEY</b>			PED PERM PLAN 6	6	
FLASH WALK	D									PERM 2 P7	9		PED PERM PLAN 7	7	
ADV WALK	E									PERM 2 P8	A		PED PERM PLAN 8	8	
RESTR PHASE	F									PERM 2 P9	B		PED PERM PLAN 9	9	
<b>C + KEY</b>										<b>B + B + KEY</b>			<b>A + 3 + KEY</b>		
START UP YEL	9									PERM 2 P4	9		SAMPLING DETECTION	9	
EV A	A									PERM 2 P5	A		LEFT TURN TYPE	A	
EV B	B									PERM 2 P6	B		<b>C + KEY</b>		
EV C	C									<b>E + KEY</b>			TRIGGERS ON IN FLASH	8	2
EV D	D									EV A	DELAY	0		DESIGNED BY:	JCB
HANDICAP PED	E									EV A	MIN	1		DRAWN BY:	JCB
<b>E + KEY</b>										EV B	DELAY	2		CHECKED BY:	KAL
RR CLEAR PH	B									EV B	MIN	3		DATE:	2/22/07
RR PERMIT	C									EV C	DELAY	4		SUPERSEDES:	
RR OL PERMIT	D									EV C	MIN	5		<b>B-05-812-T</b>	
<b>LOCATION:</b>  <b>W. MAIN ST. &amp; S. 76TH ST.</b>										EV D	DELAY	6		SUPERSEDED BY:	
										EV D	MIN	7			
										OL RED REVERT		8		DRAWING NO:	
										RR	MIN	9		<b>B-07-539-T</b>	
		DELAY	A												

**170 CONTROLLER - W4IKS PROGRAM  
TIME BASED COORDINATION PARAMETERS  
NORMAL OPERATION (PAGE 0)**

	DAY							HR	MN	FN									HR	MN
	1	2	3	4	5	6	7					1	2	3	4	5	6	7		
1	80							81	82	83	17	CO							C1	C2
	X	X	X	X	X	X	X	00	00	100										
2	84							85	86	87	18	C4							C5	C6
	X	X	X	X	X	X	X	06	30	32										
3	88							89	8A	8B	19	C8							C9	CA
		X	X	X	X	X		06	30	7										
4	8C							8D	8E	8F	20	CC							CD	CE
		X	X	X	X	X		09	00	1										
5	90							91	92	93	21	DO							D1	D2
	X	X	X	X	X	X	X	21	00	33										
6	94							95	96	97	22	D4							D5	D6
7	98							99	9A	9B	23	D8							D9	DA
8	9C							9D	9E	9F	24	DC							DD	DE
9	AO							A1	A2	A3	25	EO							E1	E2
10	A4							A5	A6	A7	26	E4							E5	E6
11	A8							A9	AAE	AB	27	E8							E9	EA
12	AC							AD	AE	AF	28	EC							ED	EE
13	BO							B1	B2	B3	29	FO							F1	F2
14	B4							B5	B6	B7	30	F4							F5	F6
15	B8							B9	BA	BB	31	F8							F9	FA
16	BC							BD	BE	BF	32	FC							FD	FE

**TIME OF DAY / DAY OF WEEK FUNCTION CODES**

FUNCTION	ON	OFF	FUNCTION	ON	OFF
COORDINATION PLAN	1-15		OUTPUT B	72	8
RED REST	25	24	OUTPUT C	73	8
MAX RECALL	27	26	OUTPUT D	74	8
PED RECALL	29	28	TIME TRANSFER (PAGE 1)	101	
FLASH	33	32	TIME TRANSFER (PAGE 2)	102	
WALK II	55	54	TIME TRANSFER (PAGE 0)	100	
OUTPUT A	71	81	MAX II	129	12

<b>LOCATION:</b> W. MAIN ST. & S. 76TH ST.		<b>CHECKED BY:</b> KAL		<b>SUPERSEDES:</b> B-05-812-T	
<b>DESIGNED BY:</b> JCB		<b>DRAWN BY:</b> JCB		<b>DATE:</b> 2/22/07	
<b>APPROVED BY:</b>		<b>DRG. NO.:</b> B-07-539-T		<b>SUPERSEDED BY:</b>	

FN
C3
C7
CB
CF
D3
D7
DB
DF
E3
E7
EB
EF
F3
F7
FB
FF

<b>F</b>
<b>2</b>
<b>3</b>
<b>4</b>
<b>28</b>


**170 CONTROLLER - W4IKS PROGRAM  
TIME BASED COORDINATION PARAMETERS  
STATE FAIR PROGRAM (PAGE 1)**

	DAY							HR	MN	FN									HR	MN	FN
	1	2	3	4	5	6	7					1	2	3	4	5	6	7			
1	80							81	82	83	17	CO							C1	C2	C3
	X	X	X	X	X	X	X	00	00	101											
2	84							85	86	87	18	C4							C5	C6	C7
	X	X	X	X	X	X	X	01	00	33											
3	88							89	8A	8B	19	C8							C9	CA	CB
	X	X	X	X	X	X	X	06	30	32											
4	8C							8D	8E	8F	20	CC							CD	CE	CF
	X	X	X	X	X	X	X	06	30	2											
5	90							91	92	93	21	DO							D1	D2	D3
6	94							95	96	97	22	D4							D5	D6	D7
7	98							99	9A	9B	23	D8							D9	DA	DB
8	9C							9D	9E	9F	24	DC							DD	DE	DF
9	AO							A1	A2	A3	25	EO							E1	E2	E3
10	A4							A5	A6	A7	26	E4							E5	E6	E7
11	A8							A9	AAE	AB	27	E8							E9	EA	EB
12	AC							AD	AE	AF	28	EC							ED	EE	EF
13	BO							B1	B2	B3	29	FO							F1	F2	F3
14	B4							B5	B6	B7	30	F4							F5	F6	F7
15	B8							B9	BA	BB	31	F8							F9	FA	FB
16	BC							BD	BE	BF	32	FC							FD	FE	FF

**TIME OF DAY / DAY OF WEEK FUNCTION CODES**

FUNCTION	ON	OFF	FUNCTION	ON	OFF
COORDINATION PLAN	1-15		OUTPUT B	72	82
RED REST	25	24	OUTPUT C	73	83
MAX RECALL	27	26	OUTPUT D	74	84
PED RECALL	29	28	TIME TRANSFER (PAGE 1)	101	
FLASH	33	32	TIME TRANSFER (PAGE 2)	102	
WALK II	55	54	TIME TRANSFER (PAGE 0)	100	
OUTPUT A	71	81	MAX II	129	128

<b>LOCATION:</b> W. MAIN ST. & S. 76TH ST.		<b>CHECKED BY:</b> KAL		<b>SUPERSEDES:</b> B-05-812-T	
<b>DESIGNED BY:</b> JCB		<b>DRAWN BY:</b> JCB		<b>SUPERSEDED BY:</b>	
<b>DATE:</b> 2/22/07		<b>APPROVED BY:</b>		<b>DRG. NO.:</b> B-07-539-T	

PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DIRECTION		NB 76TH	SB 76TH	EB DRIVEWAY	WB MAIN	SPARE	SPARE			SPARE				E/W X-WALKS	S. X-WALK		
<b>LOCATION</b> <b>W. MAIN ST.</b> <b>&amp;</b> <b>S. 76TH ST.</b>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5	6	7	8	9	10	11	12	13	14	15	16					
	6	7	8	9	10	11	12	13	14	15	16						
	7	8	9	10	11	12	13	14	15	16							
	8	9	10	11	12	13	14	15	16								
	9	10	11	12	13	14	15	16									
	10	11	12	13	14	15	16										
	11	12	13	14	15	16											
	12	13	14	15	16												
	13	14	15	16													
	14	15	16														
	15	16															
	16																

SHADED COMBINATIONS  
 ARE NOT PERMITTED DIODES  
 FOR CONFLICTING INDICATIONS

1	2	3	4	5	6
---	---	---	---	---	---

1Y	2Y	9G	3Y	4Y	9Y
1G	2G	13G	3G	4G	14G


MONITOR IN SERVICE: 11/14/05 @ 1430  
 DRG. NO: B-07-539-T

# **APPENDIX B**

## **YEAR 2011 BACKGROUND TRAFFIC PEAK HOUR ANALYSIS OUTPUTS**

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	35	20	50	65	25	60	20	395	40	35	560	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.936			0.946			0.987			0.992		
Flt Protected	0.984			0.979			0.998			0.997		
Satd. Flow (prot)	0	1716	0	0	1742	0	0	3403	0	0	3417	0
Flt Permitted	0.861			0.845			0.919			0.913		
Satd. Flow (perm)	0	1501	0	0	1504	0	0	3134	0	0	3129	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	52			60			23			13		
Link Speed (mph)	20			25			30			30		
Link Distance (ft)	338			338			579			529		
Travel Time (s)	11.5			9.2			13.2			12.0		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	36	21	52	67	26	62	21	407	41	36	577	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	0	0	155	0	0	469	0	0	649	0
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	4		8		8		6		2		2	
Permitted Phases	4		8		8		6		2		2	
Detector Phase	4		8		8		6		6		2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	16.0	16.0	16.0	16.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	20.0	20.0	20.0	20.0	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max							
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
v/c Ratio	0.34			0.47			0.22			0.30		
Control Delay	15.2			18.5			5.0			5.5		
Queue Delay	0.0			0.0			0.0			0.0		
Total Delay	15.2			18.5			5.0			5.5		
90th %ile Green (s)	14.5	14.5	14.5	14.5	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
90th %ile Term Code	Hold	Hold	Gap	Gap	Coord							
70th %ile Green (s)	11.5	11.5	11.5	11.5	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
70th %ile Term Code	Hold	Hold	Gap	Gap	Coord							

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Synchro 7

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50th %ile Green (s)	10.0	10.0	10.0	10.0	10.0	10.0	38.5	38.5	38.5	38.5	38.5	38.5
50th %ile Term Code	Min	Min	Min	Min	Coord							
30th %ile Green (s)	10.0	10.0	10.0	10.0	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5
30th %ile Term Code	Min	Min	Min	Min	Coord							
10th %ile Green (s)	0.0	0.0	0.0	0.0	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
10th %ile Term Code	Skip	Skip	Skip	Skip	Coord							
Queue Length 50th (ft)	18		31		29		45		87		449	
Queue Length 95th (ft)	51		72		60		87		449		449	
Internal Link Dist (ft)	258		258		499		449		449		449	
Turn Bay Length (ft)												
Base Capacity (vph)	535		541		2180		2173		2173		2173	
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	0.20		0.29		0.22		0.30		0.30		0.30	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 49 (82%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 100: Main Street & 76th Street



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Synchro 7

HCM Signalized Intersection Capacity Analysis

100: Main Street & 76th Street

3/24/2011

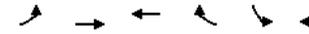


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔			↔↔	
Volume (vph)	35	20	50	65	25	60	20	395	40	35	560	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	6.0			6.0			5.5			5.5		
Lane Util. Factor	1.00			1.00			0.95			0.95		
Frt	0.94			0.95			0.99			0.99		
Flt Protected	0.98			0.98			1.00			1.00		
Satd. Flow (prot)	1714			1742			3402			3417		
Flt Permitted	0.86			0.85			0.92			0.91		
Satd. Flow (perm)	1500			1504			3134			3128		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	21	52	67	26	62	21	407	41	36	577	36
RTOR Reduction (vph)	0	44	0	0	51	0	0	8	0	0	4	0
Lane Group Flow (vph)	0	65	0	0	104	0	0	461	0	0	645	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	4		8		6		2					
Permitted Phases	4		8		6		2					
Actuated Green, G (s)	9.2		9.2		39.3		39.3					
Effective Green, g (s)	9.2		9.2		39.3		39.3					
Actuated g/C Ratio	0.15		0.15		0.65		0.65					
Clearance Time (s)	6.0		6.0		5.5		5.5					
Vehicle Extension (s)	3.0		3.0		3.0		3.0					
Lane Grp Cap (vph)	230		231		2053		2049					
v/s Ratio Prot												
v/s Ratio Perm	0.04		c0.07		0.15		c0.21					
v/c Ratio	0.28		0.45		0.22		0.31					
Uniform Delay, d1	22.5		23.1		4.2		4.5					
Progression Factor	1.00		1.00		1.00		1.00					
Incremental Delay, d2	0.7		1.4		0.3		0.4					
Delay (s)	23.2		24.5		4.4		4.9					
Level of Service	C		C		A		A					
Approach Delay (s)	23.2		24.5		4.4		4.9					
Approach LOS	C		C		A		A					
<b>Intersection Summary</b>												
HCM Average Control Delay	8.4			HCM Level of Service			A					
HCM Volume to Capacity ratio	0.34											
Actuated Cycle Length (s)	60.0			Sum of lost time (s)			11.5					
Intersection Capacity Utilization	57.1%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

Volume

110: Main Street & 75th Street

3/24/2011

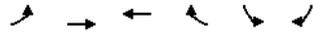


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Volume (vph)	10	85	145	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995			0.884
Flt Protected			0.995			0.993
Satd. Flow (prot)	0	1872	1872	0	1651	0
Flt Permitted			0.995			0.993
Satd. Flow (perm)	0	1872	1872	0	1651	0
Link Speed (mph)			25			25
Link Distance (ft)			338			300
Travel Time (s)			9.2			8.2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	11	97	165	6	1	6
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	108	171	0	7	0
Sign Control	Free		Free	Stop		
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					

### HCM Unsignalized Intersection Capacity Analysis

110: Main Street & 75th Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	10	85	145	5	1	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	97	165	6	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		338				
pX, platoon unblocked						
vC, conflicting volume	170				287	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170				287	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1413				700	879

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	108	170	7
Volume Left	11	0	1
Volume Right	0	6	6
cSH	1413	1700	843
Volume to Capacity	0.01	0.10	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	0.9	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	0.9	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

120: Main Street & 74th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	1	80	5	5	125	5	25	10	35	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.995			0.932			0.955	
Flt Protected		0.999			0.998			0.983			0.984	
Satd. Flow (prot)	0	1795	0	0	1763	0	0	1723	0	0	1768	0
Flt Permitted		0.999			0.998			0.983			0.984	
Satd. Flow (perm)	0	1795	0	0	1763	0	0	1723	0	0	1768	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		319			323			156			301	
Travel Time (s)		8.7			8.8			4.3			8.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	88	5	5	137	5	27	11	38	1	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	147	0	0	76	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

120: Main Street & 74th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	80	5	5	125	5	25	10	35	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	88	5	5	137	5	27	11	38	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		657			1293							
pX, platoon unblocked												
vC, conflicting volume	143			93			246	247	91	288	247	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			93			246	247	91	288	247	140
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	98	96	100	100	100
cM capacity (veh/h)	1422			1470			706	654	970	630	654	911

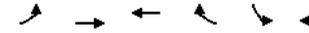
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	95	148	77	3
Volume Left	1	5	27	1
Volume Right	5	5	38	1
cSH	1422	1470	807	712
Volume to Capacity	0.00	0.00	0.10	0.00
Queue Length 95th (ft)	0	0	8	0
Control Delay (s)	0.1	0.3	9.9	10.1
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.3	9.9	10.1
Approach LOS			A	B

Intersection Summary			
Average Delay		2.6	
Intersection Capacity Utilization	22.1%		ICU Level of Service A
Analysis Period (min)	15		

Volume

130: Main Street & 73rd Street

3/24/2011



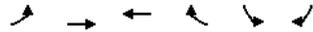
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Volume (vph)	5	110	130	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.932	
Flt Protected		0.998			0.976	
Satd. Flow (prot)	0	1823	1800	0	1711	0
Flt Permitted		0.998			0.976	
Satd. Flow (perm)	0	1823	1800	0	1711	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		323	318		300	
Travel Time (s)		8.8	8.7		8.2	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	4%	4%	5%	5%	1%	1%
Adj. Flow (vph)	6	136	160	6	6	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	142	166	0	12	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

130: Main Street & 73rd Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	5	110	130	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	6	136	160	6	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		980	970			
pX, platoon unblocked						
vC, conflicting volume	167				312	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167				312	164
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1399				680	884

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	142	167	12
Volume Left	6	0	6
Volume Right	0	6	6
cSH	1399	1700	769
Volume to Capacity	0.00	0.10	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.4	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

140: Main Street & 72nd Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	5	105	5	1	120	10	5	1	5	5	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.989			0.938			0.912	
Flt Protected		0.998						0.977			0.985	
Satd. Flow (prot)	0	1866	0	0	1842	0	0	1724	0	0	1552	0
Flt Permitted		0.998						0.977			0.985	
Satd. Flow (perm)	0	1866	0	0	1842	0	0	1724	0	0	1552	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		318			327			300			301	
Travel Time (s)		8.7			8.9			8.2			8.2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	10%	10%	10%
Adj. Flow (vph)	6	133	6	1	152	13	6	1	6	6	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	145	0	0	166	0	0	13	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

140: Main Street & 72nd Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	5	105	5	1	120	10	5	1	5	5	1	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	133	6	1	152	13	6	1	6	6	1	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1298			652							
pX, platoon unblocked												
vC, conflicting volume	165			139			323	316	136	316	313	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	165			139			323	316	136	316	313	158
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			100			99	100	99	99	100	99
cM capacity (veh/h)	1420			1444			619	598	915	613	586	867

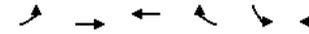
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	146	166	14	20
Volume Left	6	1	6	6
Volume Right	6	13	6	13
cSH	1420	1444	723	748
Volume to Capacity	0.00	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	1	2
Control Delay (s)	0.4	0.1	10.1	9.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.4	0.1	10.1	9.9
Approach LOS			B	A

Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

Volume

150: Main Street & 71st Street

3/24/2011



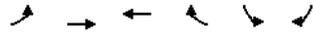
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Volume (vph)	0	115	125	0	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.968	
Flt Protected					0.963	
Satd. Flow (prot)	0	1881	1827	0	1754	0
Flt Permitted					0.963	
Satd. Flow (perm)	0	1881	1827	0	1754	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		327	155		300	
Travel Time (s)		8.9	4.2		8.2	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	4%	4%	1%	1%
Adj. Flow (vph)	0	149	162	0	19	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	149	162	0	25	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

150: Main Street & 71st Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (veh/h)	0	115	125	0	15	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	0	149	162	0	19	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			325			
pX, platoon unblocked						
vC, conflicting volume	162				312	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162				312	162
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1423				683	885

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	149	162	26
Volume Left	0	0	19
Volume Right	0	0	6
cSH	1700	1700	724
Volume to Capacity	0.09	0.10	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

160: Main Street & Alley

3/24/2011



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Volume (vph)	130	1	1	125	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1879	0	0	1827	1711	0
Flt Permitted					0.976	
Satd. Flow (perm)	1879	0	0	1827	1711	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	155			170	141	
Travel Time (s)	4.2			4.6	3.8	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	4%	4%	1%	1%
Adj. Flow (vph)	169	1	1	162	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	0	0	163	2	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

160: Main Street & Alley

3/24/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	130	1	1	125	1	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	169	1	1	162	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				170		
pX, platoon unblocked						
vC, conflicting volume			170		334	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			170		334	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1395		662	877

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	170	164	3
Volume Left	0	1	1
Volume Right	1	0	1
cSH	1700	1395	755
Volume to Capacity	0.10	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.8
Approach LOS		A	

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		17.4%	ICU Level of Service A
Analysis Period (min)		15	

Volume

200: Main Street & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	60	70	45	120	65	10	60	990	100	10	465	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Storage Length (ft)	0	0	0	0	0	0	95	0	100	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	1	0	1	0
Taper Length (ft)	50		50	50		50	50		50	50		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.965			0.993			0.986			0.992	
Flt Protected		0.983			0.970		0.950			0.950		
Satd. Flow (prot)	0	1784	0	0	1812	0	1668	3407	0	1668	3427	0
Flt Permitted		0.845			0.733		0.459			0.171		
Satd. Flow (perm)	0	1534	0	0	1369	0	806	3407	0	300	3427	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			5			26			14	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		170			300			253			883	
Travel Time (s)		4.6			8.2			5.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	64	74	48	128	69	11	64	1053	106	11	495	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	208	0	64	1159	0	11	522	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		36.5	36.5		36.5	36.5	
Total Split (s)	23.5	23.5	0.0	23.5	23.5	0.0	36.5	36.5	0.0	36.5	36.5	0.0
Total Split (%)	39.2%	39.2%	0.0%	39.2%	39.2%	0.0%	60.8%	60.8%	0.0%	60.8%	60.8%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		21.0	21.0		21.0	21.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.39			0.50		0.15	0.65		0.07	0.29	
Control Delay		16.6			22.0		8.8	12.5		8.8	8.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		16.6			22.0		8.8	12.5		8.8	8.6	
90th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	

Volume  
200: Main Street & 70th Street

3/24/2011

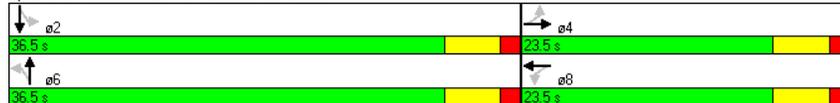


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
70th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
50th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
30th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
10th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		43			60		11	143		2	50	
Queue Length 95th (ft)		89			117		29	203		9	76	
Internal Link Dist (ft)		90			220			173			803	
Turn Bay Length (ft)							95			100		
Base Capacity (vph)		481			414		416	1773		155	1777	
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		0.39			0.50		0.15	0.65		0.07	0.29	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 39 (65%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 200: Main Street & 70th Street



HCM Signalized Intersection Capacity Analysis  
200: Main Street & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	60	70	45	120	65	10	60	990	100	10	465	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	11	11	10	11	11
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1812		1668	3408		1668	3428	
Flt Permitted		0.84			0.73		0.46	1.00		0.17	1.00	
Satd. Flow (perm)		1534			1369		805	3408		300	3428	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	64	74	48	128	69	11	64	1053	106	11	495	27
RTOR Reduction (vph)	0	21	0	0	4	0	13	0	0	7	0	0
Lane Group Flow (vph)	0	165	0	0	205	0	64	1146	0	11	515	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4				8			6			2	
Actuated Green, G (s)		18.0			18.0			31.0		31.0	31.0	
Effective Green, g (s)		18.0			18.0			31.0		31.0	31.0	
Actuated g/C Ratio		0.30			0.30			0.52		0.52	0.52	
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)		460			411			416		1761	155	1771
v/s Ratio Prot								c0.34				0.15
v/s Ratio Perm		0.11			c0.15			0.08			0.04	
v/c Ratio		0.36			0.50			0.15		0.65	0.07	0.29
Uniform Delay, d1		16.5			17.3			7.6		10.6	7.3	8.2
Progression Factor		1.00			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		2.2			4.3			0.8		1.9	0.9	0.4
Delay (s)		18.6			21.5			8.4		12.4	8.2	8.7
Level of Service		B			C			A		B	A	A
Approach Delay (s)		18.6			21.5			12.2			8.7	
Approach LOS		B			C			B			A	

Intersection Summary

HCM Average Control Delay: 12.8, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.59  
 Actuated Cycle Length (s): 60.0, Sum of lost time (s): 11.0  
 Intersection Capacity Utilization: 76.4%, ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Volume

220: Proposed South Access & 70th Street

3/24/2011

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	1	1	1	5	1	5	1	1180	60	5	620	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.955			0.939			0.993				
Flt Protected		0.984			0.978							
Satd. Flow (prot)	0	1768	0	0	1728	0	0	3431	0	0	3455	0
Flt Permitted		0.984			0.978							
Satd. Flow (perm)	0	1768	0	0	1728	0	0	3431	0	0	3455	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		165			300			512			240	
Travel Time (s)		4.5			8.2			11.6			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	1	1	5	1	5	1	1283	65	5	674	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	11	0	0	1349	0	0	680	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

220: Proposed South Access & 70th Street

3/24/2011

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	1	1	5	1	5	1	1180	60	5	620	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	5	1	5	1	1283	65	5	674	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												493
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1335	2035	338	1667	2003	674	675				1348	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1285	2006	257	1627	1973	674	605				1348	
IC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	98	100	92	98	99	100				99	
cM capacity (veh/h)	115	57	723	65	60	399	947				512	

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	12	642	707	342	338
Volume Left	1	5	1	0	5	0
Volume Right	1	5	0	65	0	1
cSH	109	103	947	1700	512	1700
Volume to Capacity	0.03	0.12	0.00	0.42	0.01	0.20
Queue Length 95th (ft)	2	9	0	0	1	0
Control Delay (s)	39.2	44.4	0.0	0.0	0.3	0.0
Lane LOS	E	E	A		A	
Approach Delay (s)	39.2	44.4	0.0		0.2	
Approach LOS	E	E				

Intersection Summary

Average Delay 0.4  
Intersection Capacity Utilization 45.2% ICU Level of Service A  
Analysis Period (min) 15

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	20	20	40	40	20	25	15	255	25	10	235	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.932			0.960			0.987			0.986		
Flt Protected	0.988			0.977			0.997			0.998		
Satd. Flow (prot)	0	1732	0	0	1747	0	0	3400	0	0	3400	0
Flt Permitted	0.887			0.807			0.936			0.942		
Satd. Flow (perm)	0	1555	0	0	1443	0	0	3192	0	0	3209	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	43			27			22			25		
Link Speed (mph)	20			25			30			30		
Link Distance (ft)	338			338			579			529		
Travel Time (s)	11.5			9.2			13.2			12.0		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	21	21	43	43	21	27	16	271	27	11	250	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	91	0	0	314	0	0	288	0
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	4		8		8		6		2		2	
Permitted Phases	4		8		8		6		2		2	
Detector Phase	4		4		8		8		6		6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0		10.0		14.0		14.0		14.0	
Minimum Split (s)	16.0	16.0	16.0		16.0		19.5		19.5		19.5	
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	20.0	20.0	20.0		20.0		28.5		28.5		28.5	
Yellow Time (s)	3.5	3.5	3.5		3.5		4.0		4.0		4.0	
All-Red Time (s)	2.5	2.5	2.5		2.5		1.5		1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0		3.0		3.0	
Recall Mode	None	None	None		None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	13.0		13.0		7.0		7.0		7.0		7.0	
Pedestrian Calls (#/hr)	0		0		0		0		0		0	
v/c Ratio	0.28		0.34		0.14		0.13		0.13		0.13	
Control Delay	15.2		20.1		4.1		4.0		4.0		4.0	
Queue Delay	0.0		0.0		0.0		0.0		0.0		0.0	
Total Delay	15.2		20.1		4.1		4.0		4.0		4.0	
90th %ile Green (s)	11.7	11.7	11.7		11.7		36.8		36.8		36.8	
90th %ile Term Code	Hold	Hold	Gap		Gap		Coord		Coord		Coord	
70th %ile Green (s)	10.0	10.0	10.0		10.0		38.5		38.5		38.5	
70th %ile Term Code	Min	Min	Min		Min		Coord		Coord		Coord	

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Synchro 7

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50th %ile Green (s)	10.0	10.0		10.0	10.0		38.5	38.5		38.5	38.5	
50th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0		38.5	38.5		38.5	38.5	
30th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		54.5	54.5		54.5	54.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)			13		20		18		16			
Queue Length 95th (ft)			45		55		34		31			
Internal Link Dist (ft)			258		258		499		449			
Turn Bay Length (ft)												
Base Capacity (vph)	547		499		2265		2278					
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	0.16		0.18		0.14		0.13		0.13		0.13	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 49 (82%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 100: Main Street & 76th Street



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Synchro 7

HCM Signalized Intersection Capacity Analysis

100: Main Street & 76th Street

3/24/2011



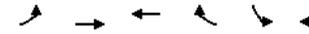
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	20	20	40	40	20	25	15	255	25	10	235	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	6.0			6.0			5.5		5.5			
Lane Util. Factor	1.00			1.00			0.95		0.95			
Frt	0.93			0.96			0.99		0.99			
Flt Protected	0.99			0.98			1.00		1.00			
Satd. Flow (prot)	1731			1747			3402		3400			
Flt Permitted	0.89			0.81			0.94		0.94			
Satd. Flow (perm)	1555			1443			3194		3210			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	21	43	43	21	27	16	271	27	11	250	27
RTOR Reduction (vph)	0	37	0	0	23	0	0	7	0	0	8	0
Lane Group Flow (vph)	0	48	0	0	68	0	0	307	0	0	280	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	4		8		8		6		2			
Permitted Phases	4		8		6		2					
Actuated Green, G (s)	8.3		8.3		8.3		40.2		40.2			
Effective Green, g (s)	8.3		8.3		40.2		40.2		40.2			
Actuated g/C Ratio	0.14		0.14		0.67		0.67		0.67			
Clearance Time (s)	6.0		6.0		5.5		5.5		5.5			
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)	215		200		2140		2151					
v/s Ratio Prot												
v/s Ratio Perm	0.03		c0.05		c0.10		0.09					
v/c Ratio	0.22		0.34		0.14		0.13					
Uniform Delay, d1	23.0		23.4		3.6		3.6					
Progression Factor	1.00		1.00		1.00		1.00					
Incremental Delay, d2	0.5		1.0		0.1		0.1					
Delay (s)	23.5		24.4		3.8		3.7					
Level of Service	C		C		A		A					
Approach Delay (s)	23.5		24.4		3.8		3.7					
Approach LOS	C		C		A		A					

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Volume

110: Main Street & 75th Street

3/24/2011



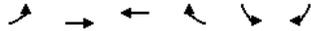
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Volume (vph)	5	50	80	1	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998		0.932		
Flt Protected		0.996		0.976		
Satd. Flow (prot)	0	1855	1859	0	1711	0
Flt Permitted		0.996		0.976		
Satd. Flow (perm)	0	1855	1859	0	1711	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		338	319		300	
Travel Time (s)		9.2	8.7		8.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	5	54	86	1	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	87	0	10	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

110: Main Street & 75th Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Volume (veh/h)	5	50	80	1	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	5	54	86	1	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		338				
pX, platoon unblocked						
vC, conflicting volume	87				151	87
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				151	87
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1509				840	975

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	87	11
Volume Left	5	0	5
Volume Right	0	1	5
cSH	1509	1700	902
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.7	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

Volume

120: Main Street & 74th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	1	55	1	1	70	5	5	1	1	1	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.991			0.983			0.899	
Flt Protected		0.999			0.999			0.964			0.994	
Satd. Flow (prot)	0	1876	0	0	1844	0	0	1783	0	0	1681	0
Flt Permitted		0.999			0.999			0.964			0.994	
Satd. Flow (perm)	0	1876	0	0	1844	0	0	1783	0	0	1681	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		319			323			156			301	
Travel Time (s)		8.7			8.8			4.3			8.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	62	1	1	79	6	6	1	1	1	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	86	0	0	8	0	0	8	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

120: Main Street & 74th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Volume (veh/h)	1	55	1	1	70	5	5	1	1	1	1	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	62	1	1	79	6	6	1	1	1	1	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)	657			1293								
pX, platoon unblocked												
vC, conflicting volume	84			63			154			151		
vC1, stage 1 conf vol							62			150		
vC2, stage 2 conf vol												
vCu, unblocked vol	84			63			154			151		
tC, single (s)	4.1			4.1			7.1			6.5		
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5			4.0		
p0 queue free %	100			100			99			100		
cM capacity (veh/h)	1519			1540			808			741		

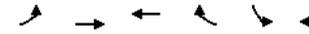
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	85	8	8
Volume Left	1	1	6	1
Volume Right	1	6	1	6
cSH	1519	1540	820	913
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.1	0.1	9.4	9.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.1	9.4	9.0
Approach LOS			A	A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	14.5%	ICU Level of Service	
Analysis Period (min)	15		

Volume

130: Main Street & 73rd Street

3/24/2011



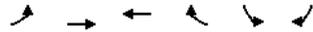
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		+	+		+	
Volume (vph)	5	50	70	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991			0.884
Flt Protected			0.995			0.993
Satd. Flow (prot)	0	1872	1864	0	1651	0
Flt Permitted			0.995			0.993
Satd. Flow (perm)	0	1872	1864	0	1651	0
Link Speed (mph)			25			25
Link Distance (ft)			323			318
Travel Time (s)			8.8			8.7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	6	58	81	6	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	64	87	0	7	0
Sign Control	Free		Free	Stop		

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

130: Main Street & 73rd Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Volume (veh/h)	5	50	70	5	1	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	58	81	6	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		980	970			
pX, platoon unblocked						
vC, conflicting volume	87				154	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				154	84
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1515				837	978

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	64	87	7
Volume Left	6	0	1
Volume Right	0	6	6
cSH	1515	1700	951
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.7	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

140: Main Street & 72nd Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	5	45	1	5	65	5	5	1	5	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.991			0.938			0.938	
Flt Protected		0.995			0.997			0.977			0.977	
Satd. Flow (prot)	0	1868	0	0	1823	0	0	1527	0	0	1724	0
Flt Permitted		0.995			0.997			0.977			0.977	
Satd. Flow (perm)	0	1868	0	0	1823	0	0	1527	0	0	1724	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		318			327			300			301	
Travel Time (s)		8.7			8.9			8.2			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	14%	14%	14%	1%	1%	1%
Adj. Flow (vph)	6	54	1	6	77	6	6	1	6	6	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	89	0	0	13	0	0	13	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

140: Main Street & 72nd Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	5	45	1	5	65	5	5	1	5	5	1	5
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	6	54	1	6	77	6	6	1	6	6	1	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)	1298			652								
pX, platoon unblocked												
vC, conflicting volume	83			55			165			161		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			55			165			161		
tC, single (s)	4.1			4.1			7.2			6.6		
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6			4.1		
p0 queue free %	100			100			99			100		
cM capacity (veh/h)	1520			1544			763			704		

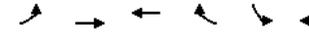
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	61	89	13	13
Volume Left	6	6	6	6
Volume Right	1	6	6	6
cSH	1520	1544	841	861
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.8	0.5	9.3	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	0.8	0.5	9.3	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	14.8%	ICU Level of Service	
Analysis Period (min)	15		

Volume

150: Main Street & 71st Street

3/24/2011



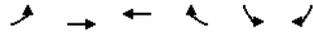
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (vph)	0	55	70	0	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.932
Flt Protected						0.976
Satd. Flow (prot)	0	1881	1845	0	1711	0
Flt Permitted						0.976
Satd. Flow (perm)	0	1881	1845	0	1711	0
Link Speed (mph)	25		25	25		
Link Distance (ft)	327		155	300		
Travel Time (s)	8.9		4.2	8.2		
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	3%	3%	1%	1%
Adj. Flow (vph)	0	67	85	0	6	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	67	85	0	12	0
Sign Control	Free		Free	Stop		

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

150: Main Street & 71st Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (veh/h)	0	55	70	0	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	67	85	0	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			325			
pX, platoon unblocked						
vC, conflicting volume	85				152	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85				152	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1517				842	976

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	67	85	12
Volume Left	0	0	6
Volume Right	0	0	6
cSH	1700	1700	904
Volume to Capacity	0.04	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

160: Main Street & Alley

3/24/2011



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Volume (vph)	60	1	1	70	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	1877	0	0	1843	1711	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1877	0	0	1843	1711	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	155			170	141	
Travel Time (s)	4.2			4.6	3.8	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	3%	3%	1%	1%
Adj. Flow (vph)	73	1	1	85	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	0	0	86	2	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

160: Main Street & Alley

3/24/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	60	1	1	70	1	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	73	1	1	85	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				170		
pX, platoon unblocked						
vC, conflicting volume			74		162	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			74		162	74
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1519		831	991

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	74	87	2
Volume Left	0	1	1
Volume Right	1	0	1
cSH	1700	1519	904
Volume to Capacity	0.04	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.0
Approach LOS		A	

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		14.5%	ICU Level of Service A
Analysis Period (min)		15	

Volume

200: Main Street & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	25	35	40	70	25	15	35	335	60	5	365	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Storage Length (ft)	0	0	0	0	0	0	95	0	100	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	1	0	1	0
Taper Length (ft)	50		50	50		50	50		50	50		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.946			0.981			0.977			0.985	
Flt Protected		0.988			0.969		0.950			0.950		
Satd. Flow (prot)	0	1758	0	0	1788	0	1652	3343	0	1668	3403	0
Flt Permitted		0.911			0.755		0.490			0.495		
Satd. Flow (perm)	0	1621	0	0	1393	0	852	3343	0	869	3403	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			14		50				29	
Link Speed (mph)		25			25		30				30	
Link Distance (ft)		170			300		253				883	
Travel Time (s)		4.6			8.2		5.8				20.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	28	39	45	79	28	17	39	376	67	6	410	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	0	0	124	0	39	443	0	6	455	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8		6			2		
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		36.5	36.5		36.5	36.5	
Total Split (s)	23.5	23.5	0.0	23.5	23.5	0.0	36.5	36.5	0.0	36.5	36.5	0.0
Total Split (%)	39.2%	39.2%	0.0%	39.2%	39.2%	0.0%	60.8%	60.8%	0.0%	60.8%	60.8%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		21.0	21.0		21.0	21.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.22			0.29		0.09	0.25		0.01	0.26	
Control Delay		11.5			16.5		8.1	7.5		7.2	8.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.5			16.5		8.1	7.5		7.2	8.0	
90th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	

Volume  
200: Main Street & 70th Street

3/24/2011

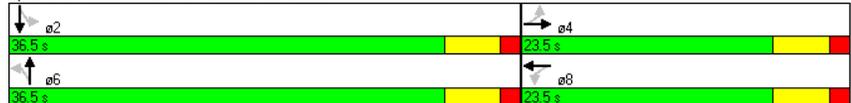


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
70th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
50th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
30th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
10th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		17			30		7	37		1	41	
Queue Length 95th (ft)		48			67		19	59		6	63	
Internal Link Dist (ft)		90			220			173			803	
Turn Bay Length (ft)							95			100		
Base Capacity (vph)		518			428		440	1751		449	1772	
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		0.22			0.29		0.09	0.25		0.01	0.26	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 200: Main Street & 70th Street



HCM Signalized Intersection Capacity Analysis  
200: Main Street & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	25	35	40	70	25	15	35	335	60	5	365	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	11	11	10	11	11
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1757			1789		1652	3344		1668	3404	
Flt Permitted		0.91			0.75		0.49	1.00		0.50	1.00	
Satd. Flow (perm)		1620			1394		851	3344		870	3404	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	28	39	45	79	28	17	39	376	67	6	410	45
RTOR Reduction (vph)	0	32	0	0	10	0	0	24	0	0	14	0
Lane Group Flow (vph)	0	81	0	0	114	0	39	419	0	6	441	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4				8			6			2	
Actuated Green, G (s)		18.0			18.0			31.0		31.0	31.0	
Effective Green, g (s)		18.0			18.0			31.0		31.0	31.0	
Actuated g/C Ratio		0.30			0.30			0.52		0.52	0.52	
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)		486			418			440		1728	450	1759
v/s Ratio Prot								0.13				c0.13
v/s Ratio Perm		0.05			c0.08			0.05			0.01	
v/c Ratio		0.17			0.27			0.09		0.24	0.01	0.25
Uniform Delay, d1		15.5			16.0			7.3		8.0	7.1	8.1
Progression Factor		0.99			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7			1.6			0.4		0.3	0.1	0.3
Delay (s)		16.1			17.6			7.7		8.3	7.1	8.4
Level of Service		B			B			A		A	A	A
Approach Delay (s)		16.1			17.6			8.3		8.3	8.4	8.4
Approach LOS		B			B			A		A	A	A

Intersection Summary

HCM Average Control Delay: 10.1, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.26  
 Actuated Cycle Length (s): 60.0, Sum of lost time (s): 11.0  
 Intersection Capacity Utilization: 53.3%, ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Volume

220: Proposed South Access & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	1	1	1	5	1	5	1	440	20	5	475	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.955			0.939			0.993				
Frt Protected		0.984			0.978							
Satd. Flow (prot)	0	1768	0	0	1728	0	0	3397	0	0	3455	0
Frt Permitted		0.984			0.978							
Satd. Flow (perm)	0	1768	0	0	1728	0	0	3397	0	0	3455	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		165			300			512			240	
Travel Time (s)		4.5			8.2			11.6			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	1	1	1	5	1	5	1	478	22	5	516	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	11	0	0	501	0	0	522	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

220: Proposed South Access & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	1	1	1	5	1	5	1	440	20	5	475	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	5	1	5	1	478	22	5	516	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												493
pX, platoon unblocked												
vC, conflicting volume	775	1030	259	762	1020	250	517			500		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	775	1030	259	762	1020	250	517			500		
IC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	99	100			99		
cM capacity (veh/h)	285	232	743	293	236	753	1045			1067		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	12	240	261	264	259
Volume Left	1	5	1	0	5	0
Volume Right	1	5	0	22	0	1
cSH	328	394	1045	1700	1067	1700
Volume to Capacity	0.01	0.03	0.00	0.15	0.01	0.15
Queue Length 95th (ft)	1	2	0	0	0	0
Control Delay (s)	16.1	14.4	0.0	0.0	0.2	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	16.1	14.4	0.0		0.1	
Approach LOS	C	B				

Intersection Summary

Average Delay: 0.3  
Intersection Capacity Utilization: 26.7%  
ICU Level of Service: A  
Analysis Period (min): 15

# **APPENDIX C**

## **YEAR 2011 TOTAL TRAFFIC PEAK HOUR ANALYSIS OUTPUTS**

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	35	25	50	100	30	95	20	395	75	70	560	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.938			0.943			0.977			0.992		
Flt Protected	0.984			0.978			0.998			0.995		
Satd. Flow (prot)	0	1719	0	0	1735	0	0	3369	0	0	3410	0
Flt Permitted	0.842			0.815			0.918			0.850		
Satd. Flow (perm)	0	1471	0	0	1446	0	0	3099	0	0	2913	0
Right Turn on Red	Yes			Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	52			66			47			13		
Link Speed (mph)	20			25			30			30		
Link Distance (ft)	338			338			579			529		
Travel Time (s)	11.5			9.2			13.2			12.0		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	36	26	52	103	31	98	21	407	77	72	577	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	232	0	0	505	0	0	685	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		6		6		2	
Permitted Phases	4		8		8		6		6		2	
Detector Phase	4		4		8		8		6		6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0		10.0	14.0		14.0	14.0		14.0	14.0
Minimum Split (s)	16.0	16.0	16.0		16.0	19.5		19.5	19.5		19.5	19.5
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	20.0	20.0	20.0		20.0	28.5		28.5	28.5		28.5	28.5
Yellow Time (s)	3.5	3.5	3.5		3.5	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.5	1.5		1.5	1.5		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	None		None	C-Max		C-Max	C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	13.0		13.0		13.0	7.0		7.0	7.0		7.0	7.0
Pedestrian Calls (#/hr)	0		0		0	0		0	0		0	0
v/c Ratio	0.31		0.62		0.28	0.28		0.40	0.40		0.40	0.40
Control Delay	13.0		21.9		6.7	6.7		8.2	8.2		8.2	8.2
Queue Delay	0.0		0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	13.0		21.9		6.7	6.7		8.2	8.2		8.2	8.2
90th %ile Green (s)	18.9	18.9	18.9		18.9	29.6		29.6	29.6		29.6	29.6
90th %ile Term Code	Hold	Hold	Gap		Gap	Coord		Coord	Coord		Coord	Coord
70th %ile Green (s)	15.2	15.2	15.2		15.2	33.3		33.3	33.3		33.3	33.3
70th %ile Term Code	Hold	Hold	Gap		Gap	Coord		Coord	Coord		Coord	Coord

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Synchro 7

Volume  
100: Main Street & 76th Street

3/24/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50th %ile Green (s)	12.6	12.6		12.6	12.6		35.9	35.9		35.9	35.9	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0		38.5	38.5		38.5	38.5	
30th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0		38.5	38.5		38.5	38.5	
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)	19		54		35		57		117		117	
Queue Length 95th (ft)	48		102		75		117		449		449	
Internal Link Dist (ft)	258		258		499		449		449		449	
Turn Bay Length (ft)												
Base Capacity (vph)	525		526		1835		1713		1713		1713	
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	0.22		0.44		0.28		0.40		0.40		0.40	

Intersection Summary

Area Type: Other

Cycle Length: 60

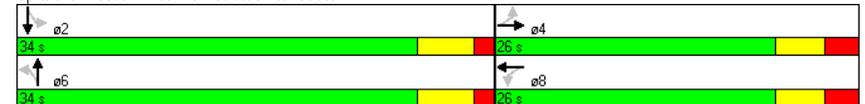
Actuated Cycle Length: 60

Offset: 49 (82%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 100: Main Street & 76th Street



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Synchro 7

HCM Signalized Intersection Capacity Analysis

100: Main Street & 76th Street

3/24/2011



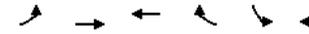
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↔			↕↔	
Volume (vph)	35	25	50	100	30	95	20	395	75	70	560	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			5.5			5.5	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Flt		0.94			0.94			0.98			0.99	
Flt Protected		0.98			0.98			1.00			0.99	
Satd. Flow (prot)		1721			1735			3369			3410	
Flt Permitted		0.84			0.81			0.92			0.85	
Satd. Flow (perm)		1472			1445			3100			2914	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	26	52	103	31	98	21	407	77	72	577	36
RTOR Reduction (vph)	0	40	0	0	51	0	0	19	0	0	5	0
Lane Group Flow (vph)	0	74	0	0	181	0	0	486	0	0	680	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm											
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		13.3			13.3			35.2			35.2	
Effective Green, g (s)		13.3			13.3			35.2			35.2	
Actuated g/C Ratio		0.22			0.22			0.59			0.59	
Clearance Time (s)		6.0			6.0			5.5			5.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		326			320			1819			1710	
v/s Ratio Prot												
v/s Ratio Perm		0.05			0.13			0.16			0.23	
v/c Ratio		0.23			0.56			0.27			0.40	
Uniform Delay, d1		19.1			20.8			6.1			6.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			2.3			0.4			0.7	
Delay (s)		19.5			23.1			6.4			7.4	
Level of Service		B			C			A			A	
Approach Delay (s)		19.5			23.1			6.4			7.4	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Volume

110: Main Street & 75th Street

3/24/2011



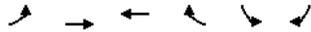
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Volume (vph)	10	160	220	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt			0.997		0.884	
Flt Protected		0.997			0.993	
Satd. Flow (prot)	0	1876	1876	0	1651	0
Flt Permitted		0.997			0.993	
Satd. Flow (perm)	0	1876	1876	0	1651	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		338	319		300	
Travel Time (s)		9.2	8.7		8.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	11	182	250	6	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	193	256	0	7	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

110: Main Street & 75th Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Volume (veh/h)	10	160	220	5	1	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	182	250	6	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		338				
pX, platoon unblocked						
vC, conflicting volume	256			457	253	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	256			457	253	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	99			100	99	
cM capacity (veh/h)	1315			558	788	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	193	256	7
Volume Left	11	0	1
Volume Right	0	6	6
cSH	1315	1700	738
Volume to Capacity	0.01	0.15	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	0.5	0.0	9.9
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

120: Main Street & 74th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	1	155	5	5	200	5	25	10	35	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.932			0.955	
Flt Protected					0.999			0.983			0.984	
Satd. Flow (prot)	0	1802	0	0	1769	0	0	1723	0	0	1768	0
Flt Permitted					0.999			0.983			0.984	
Satd. Flow (perm)	0	1802	0	0	1769	0	0	1723	0	0	1768	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		319			323			156			301	
Travel Time (s)		8.7			8.8			4.3			8.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	170	5	5	220	5	27	11	38	1	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	0	230	0	0	76	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

120: Main Street & 74th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	155	5	5	200	5	25	10	35	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	170	5	5	220	5	27	11	38	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		657			1293							
pX, platoon unblocked												
vC, conflicting volume	225			176			410	412	173	453	412	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	225			176			410	412	173	453	412	223
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			95	98	96	100	100	100
cM capacity (veh/h)	1326			1371			550	529	873	486	529	820

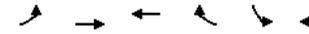
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	177	231	77	3
Volume Left	1	5	27	1
Volume Right	5	5	38	1
cSH	1326	1371	670	581
Volume to Capacity	0.00	0.00	0.11	0.01
Queue Length 95th (ft)	0	0	10	0
Control Delay (s)	0.1	0.2	11.1	11.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.2	11.1	11.2
Approach LOS			B	B

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization	26.4%		ICU Level of Service
Analysis Period (min)	15		A

### Volume

130: Main Street & 73rd Street

3/24/2011



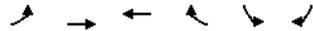
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Volume (vph)	5	185	205	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1825	1804	0	1711	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1825	1804	0	1711	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		323	318		300	
Travel Time (s)		8.8	8.7		8.2	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	4%	4%	5%	5%	1%	1%
Adj. Flow (vph)	6	228	253	6	6	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	234	259	0	12	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

130: Main Street & 73rd Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	5	185	205	5	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	6	228	253	6	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		980	970			
pX, platoon unblocked						
vC, conflicting volume	259				497	256
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	259				497	256
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1294				532	785

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	235	259	12
Volume Left	6	0	6
Volume Right	0	6	6
cSH	1294	1700	634
Volume to Capacity	0.00	0.15	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.2	0.0	10.8
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

140: Main Street & 72nd Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	5	180	5	1	195	10	5	1	5	5	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.993			0.938			0.912	
Flt Protected		0.999						0.977			0.985	
Satd. Flow (prot)	0	1874	0	0	1850	0	0	1724	0	0	1552	0
Flt Permitted		0.999						0.977			0.985	
Satd. Flow (perm)	0	1874	0	0	1850	0	0	1724	0	0	1552	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		318			327			300			301	
Travel Time (s)		8.7			8.9			8.2			8.2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	10%	10%	10%
Adj. Flow (vph)	6	228	6	1	247	13	6	1	6	6	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	240	0	0	261	0	0	13	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

140: Main Street & 72nd Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	5	180	5	1	195	10	5	1	5	5	1	10
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	228	6	1	247	13	6	1	6	6	1	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)	1298			652								
pX, platoon unblocked												
vC, conflicting volume	259			234			513			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			234			513			506		
tC, single (s)	4.1			4.1			7.1			6.5		
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5			4.0		
p0 queue free %	100			100			99			100		
cM capacity (veh/h)	1311			1333			463			468		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	241	261	14	20
Volume Left	6	1	6	6
Volume Right	6	13	6	13
cSH	1311	1333	576	611
Volume to Capacity	0.00	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	2	3
Control Delay (s)	0.2	0.0	11.4	11.1
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.0	11.4	11.1
Approach LOS			B	B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.3%	ICU Level of Service	
Analysis Period (min)	15		
A			

Volume

150: Main Street & 71st Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	120	70	25	130	0	70	0	20	15	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.950						0.970			0.969		
Flt Protected				0.992			0.963			0.965		
Satd. Flow (prot)	0	1787	0	0	1812	0	0	1757	0	0	1759	0
Flt Permitted				0.992			0.963			0.965		
Satd. Flow (perm)	0	1787	0	0	1812	0	0	1757	0	0	1759	0
Link Speed (mph)	25			25			25			25		
Link Distance (ft)	327			155			100			300		
Travel Time (s)	8.9			4.2			2.7			8.2		
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	156	91	32	169	0	91	0	26	19	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	247	0	0	201	0	0	117	0	0	26	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

150: Main Street & 71st Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	0	120	70	25	130	0	70	0	20	15	1	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	0	156	91	32	169	0	91	0	26	19	1	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					325							
pX, platoon unblocked												
vC, conflicting volume	169			247			442	435	201	461	481	169
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	169			247			442	435	201	461	481	169
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			98			82	100	97	96	100	99
cM capacity (veh/h)	1415			1308			512	503	842	487	474	878

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	247	201	117	27
Volume Left	0	32	91	19
Volume Right	91	0	26	6
cSH	1700	1308	561	544
Volume to Capacity	0.15	0.02	0.21	0.05
Queue Length 95th (ft)	0	2	19	4
Control Delay (s)	0.0	1.4	13.1	12.0
Lane LOS		A	B	B
Approach Delay (s)	0.0	1.4	13.1	12.0
Approach LOS			B	B

Intersection Summary			
Average Delay		3.6	
Intersection Capacity Utilization	34.8%		ICU Level of Service
Analysis Period (min)	15		A

### Volume

160: Main Street & Alley

3/24/2011



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (vph)	150	5	5	150	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.908	
Flt Protected				0.999	0.984	
Satd. Flow (prot)	1874	0	0	1825	1681	0
Flt Permitted				0.999	0.984	
Satd. Flow (perm)	1874	0	0	1825	1681	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	155			170	141	
Travel Time (s)	4.2			4.6	3.8	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	4%	4%	1%	1%
Adj. Flow (vph)	195	6	6	195	6	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	0	0	201	19	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

160: Main Street & Alley

3/24/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	150	5	5	150	5	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	195	6	6	195	6	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				170		
pX, platoon unblocked						
vC, conflicting volume			201		406	198
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			201		406	198
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	98
cM capacity (veh/h)			1359		600	846

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	201	201	19
Volume Left	0	6	6
Volume Right	6	0	13
cSH	1700	1359	744
Volume to Capacity	0.12	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.3	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	10.0
Approach LOS		A	

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		21.9%	ICU Level of Service A
Analysis Period (min)		15	

Volume

200: Main Street & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Volume (vph)	85	75	45	125	70	10	60	1005	105	10	485	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Storage Length (ft)	0	0	0	0	0	0	95	0	100	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	1	0	0	0
Taper Length (ft)	50		50	50		50	50		50	50		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.970			0.993			0.986				0.986
Flt Protected		0.980			0.970		0.950			0.950		
Satd. Flow (prot)	0	1788	0	0	1812	0	1668	3407	0	1668	3407	0
Flt Permitted		0.797			0.708		0.434			0.164		
Satd. Flow (perm)	0	1454	0	0	1323	0	762	3407	0	288	3407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			5			27				27
Link Speed (mph)		25			25			30				30
Link Distance (ft)		170			300			253				883
Travel Time (s)		4.6			8.2			5.8				20.1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	90	80	48	133	74	11	64	1069	112	11	516	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	218	0	64	1181	0	11	569	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6				2
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		36.5	36.5		36.5	36.5	
Total Split (s)	23.5	23.5	0.0	23.5	23.5	0.0	36.5	36.5	0.0	36.5	36.5	0.0
Total Split (%)	39.2%	39.2%	0.0%	39.2%	39.2%	0.0%	60.8%	60.8%	0.0%	60.8%	60.8%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		21.0	21.0		21.0	21.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.48			0.55		0.16	0.67		0.07	0.32	
Control Delay		19.5			23.3		9.0	12.7		8.9	8.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.5			23.3		9.0	12.7		8.9	8.6	
90th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	

Volume  
200: Main Street & 70th Street

3/24/2011

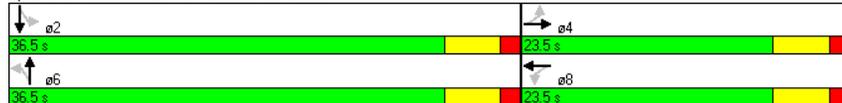


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
70th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
50th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
30th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
10th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		56			63		11	147		2	54	
Queue Length 95th (ft)		111			124		30	208		9	82	
Internal Link Dist (ft)		90			220			173			803	
Turn Bay Length (ft)							95			100		
Base Capacity (vph)		453			400		394	1773		149	1773	
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		0.48			0.55		0.16	0.67		0.07	0.32	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 39 (65%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 200: Main Street & 70th Street



HCM Signalized Intersection Capacity Analysis  
200: Main Street & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	85	75	45	125	70	10	60	1005	105	10	485	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	11	11	10	11	11
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788			1813		1668	3406		1668	3407	
Flt Permitted		0.80			0.71		0.43	1.00		0.16	1.00	
Satd. Flow (perm)		1455			1323		762	3406		287	3407	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	90	80	48	133	74	11	64	1069	112	11	516	53
RTOR Reduction (vph)	0	17	0	0	4	0	0	13	0	0	13	0
Lane Group Flow (vph)	0	201	0	0	215	0	64	1168	0	11	556	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4				8			6			2	
Actuated Green, G (s)		18.0			18.0			31.0	31.0		31.0	31.0
Effective Green, g (s)		18.0			18.0			31.0	31.0		31.0	31.0
Actuated g/C Ratio		0.30			0.30			0.52	0.52		0.52	0.52
Clearance Time (s)		5.5			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)		437			397			394	1760		148	1760
v/s Ratio Prot								c0.34				0.16
v/s Ratio Perm		0.14			c0.16			0.08			0.04	
v/c Ratio		0.46			0.54			0.16	0.66		0.07	0.32
Uniform Delay, d1		17.1			17.5			7.7	10.7		7.3	8.4
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		3.5			5.2			0.9	2.0		1.0	0.5
Delay (s)		20.5			22.7			8.5	12.7		8.3	8.8
Level of Service		C			C			A	B		A	A
Approach Delay (s)		20.5			22.7			12.4			8.8	
Approach LOS		C			C			B			A	

Intersection Summary

HCM Average Control Delay: 13.3  
 HCM Volume to Capacity ratio: 0.62  
 Actuated Cycle Length (s): 60.0  
 Intersection Capacity Utilization: 76.2%  
 Analysis Period (min): 15  
 HCM Level of Service: B  
 Sum of lost time (s): 11.0  
 ICU Level of Service: D  
 Critical Lane Group: c

Volume

210: Proposed North Access & 70th Street

3/24/2011

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	45	30	40	1160	615	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.946			0.992		
Frt Protected	0.971			0.998		
Satd. Flow (prot)	1728	0	0	3448	3427	0
Frt Permitted	0.971			0.998		
Satd. Flow (perm)	1728	0	0	3448	3427	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	165			240	253	
Travel Time (s)	4.5			5.5	5.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	48	32	43	1234	654	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	1277	691	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

210: Proposed North Access & 70th Street

3/24/2011

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	45	30	40	1160	615	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	48	32	43	1234	654	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					253	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	1375	346	691			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1250	141	513			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	96	96			
cM capacity (veh/h)	148	821	980			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	80	454	823	436	255
Volume Left	48	43	0	0	0
Volume Right	32	0	0	0	37
cSH	220	980	1700	1700	1700
Volume to Capacity	0.36	0.04	0.48	0.26	0.15
Queue Length 95th (ft)	39	3	0	0	0
Control Delay (s)	30.4	1.3	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	30.4	0.5		0.0	
Approach LOS	D				

Intersection Summary

Average Delay 1.5  
Intersection Capacity Utilization 65.7% ICU Level of Service C  
Analysis Period (min) 15

Volume

220: Proposed South Access & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Volume (vph)	1	1	25	5	1	5	30	1195	60	5	635	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.874			0.939			0.993			0.999	
Flt Protected		0.998			0.978			0.999				
Satd. Flow (prot)	0	1641	0	0	1728	0	0	3427	0	0	3452	0
Flt Permitted		0.998			0.978			0.999				
Satd. Flow (perm)	0	1641	0	0	1728	0	0	3427	0	0	3452	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		165			300			512			240	
Travel Time (s)		4.5			8.2			11.6			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	1	27	5	1	5	33	1299	65	5	690	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	11	0	0	1397	0	0	700	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

220: Proposed South Access & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Volume (veh/h)	1	1	25	5	1	5	30	1195	60	5	635	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	27	5	1	5	33	1299	65	5	690	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												493
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1424	2133	348	1780	2103	682	696				1364	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1399	2119	304	1760	2089	682	658				1364	
IC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	98	96	89	98	99	96				99	
cM capacity (veh/h)	93	47	683	49	49	395	917				505	

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	29	12	682	715	351	351
Volume Left	1	5	33	0	5	0
Volume Right	27	5	0	65	0	5
cSH	394	81	917	1700	505	1700
Volume to Capacity	0.07	0.15	0.04	0.42	0.01	0.21
Queue Length 95th (ft)	6	12	3	0	1	0
Control Delay (s)	14.9	57.0	0.9	0.0	0.4	0.0
Lane LOS	B	F	A		A	
Approach Delay (s)	14.9	57.0	0.5		0.2	
Approach LOS	B	F				

Intersection Summary

Average Delay: 0.9  
Intersection Capacity Utilization: 66.6%  
ICU Level of Service: C  
Analysis Period (min): 15

Volume  
100: Main Street & 76th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	20	25	40	75	25	60	15	255	60	45	235	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.936		0.949		0.973		0.988		0.988		0.988	
Flt Protected	0.989		0.977		0.998		0.993		0.993		0.993	
Satd. Flow (prot)	0	1741	0	0	1727	0	0	3355	0	0	3390	0
Flt Permitted	0.894		0.806		0.937		0.869		0.869		0.869	
Satd. Flow (perm)	0	1574	0	0	1425	0	0	3150	0	0	2966	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	43		54		60		21		21		21	
Link Speed (mph)	20		25		30		30		30		30	
Link Distance (ft)	338		338		579		529		529		529	
Travel Time (s)	11.5		9.2		13.2		12.0		12.0		12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	21	27	43	80	27	64	16	271	64	48	250	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	91	0	0	171	0	0	351	0	0	325	0
Turn Type	Perm											
Protected Phases	4		8		6		2		2		2	
Permitted Phases	4		8		6		2		2		2	
Detector Phase	4		8		8		6		6		2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	16.0	16.0	16.0	16.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	20.0	20.0	20.0	20.0	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max							
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
v/c Ratio	0.27		0.53		0.16		0.16		0.16		0.16	
Control Delay	13.9		20.8		4.5		5.1		5.1		5.1	
Queue Delay	0.0		0.0		0.0		0.0		0.0		0.0	
Total Delay	13.9		20.8		4.5		5.1		5.1		5.1	
90th %ile Green (s)	15.8	15.8	15.8	15.8	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7
90th %ile Term Code	Hold	Hold	Gap	Gap	Coord							
70th %ile Green (s)	12.6	12.6	12.6	12.6	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
70th %ile Term Code	Hold	Hold	Gap	Gap	Coord							

Volume  
100: Main Street & 76th Street

3/24/2011

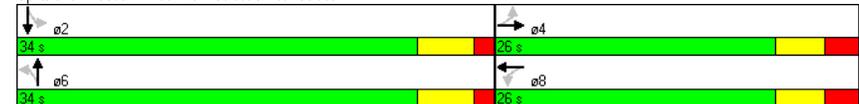


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50th %ile Green (s)	10.3	10.3	10.3	10.3	10.3	10.3	38.2	38.2	38.2	38.2	38.2	38.2
50th %ile Term Code	Hold	Hold	Gap	Gap	Coord							
30th %ile Green (s)	10.0	10.0	10.0	10.0	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5
30th %ile Term Code	Min	Min	Min	Min	Coord							
10th %ile Green (s)	0.0	0.0	0.0	0.0	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
10th %ile Term Code	Skip	Skip	Skip	Skip	Coord							
Queue Length 50th (ft)	15		39		18		19		19		19	
Queue Length 95th (ft)	44		82		43		44		44		44	
Internal Link Dist (ft)	258		258		499		449		449		449	
Turn Bay Length (ft)												
Base Capacity (vph)	553		511		2175		2036		2036		2036	
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	0.16		0.33		0.16		0.16		0.16		0.16	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 49 (82%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 100: Main Street & 76th Street



HCM Signalized Intersection Capacity Analysis

100: Main Street & 76th Street

3/24/2011



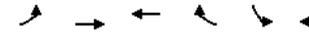
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔			↔↔	
Volume (vph)	20	25	40	75	25	60	15	255	60	45	235	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			5.5			5.5	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Flt		0.94			0.95			0.97			0.99	
Flt Protected		0.99			0.98			1.00			0.99	
Satd. Flow (prot)		1741			1728			3353			3387	
Flt Permitted		0.89			0.81			0.94			0.87	
Satd. Flow (perm)		1574			1425			3148			2965	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	27	43	80	27	64	16	271	64	48	250	27
RTOR Reduction (vph)	0	36	0	0	45	0	0	21	0	0	7	0
Lane Group Flow (vph)	0	55	0	0	126	0	0	330	0	0	318	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm											
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		9.7			9.7			38.8			38.8	
Effective Green, g (s)		9.7			9.7			38.8			38.8	
Actuated g/C Ratio		0.16			0.16			0.65			0.65	
Clearance Time (s)		6.0			6.0			5.5			5.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		254			230			2036			1917	
v/s Ratio Prot												
v/s Ratio Perm		0.03			0.09			0.10			0.11	
v/c Ratio		0.22			0.55			0.16			0.17	
Uniform Delay, d1		21.8			23.1			4.2			4.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			2.6			0.2			0.2	
Delay (s)		22.3			25.8			4.4			4.4	
Level of Service		C			C			A			A	
Approach Delay (s)		22.3			25.8			4.4			4.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Volume

110: Main Street & 75th Street

3/24/2011



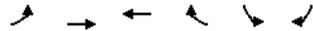
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Volume (vph)	5	125	155	1	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt			0.999		0.932	
Flt Protected		0.998			0.976	
Satd. Flow (prot)	0	1859	1861	0	1711	0
Flt Permitted		0.998			0.976	
Satd. Flow (perm)	0	1859	1861	0	1711	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		338	319		300	
Travel Time (s)		9.2	8.7		8.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	5	134	167	1	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	168	0	10	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

110: Main Street & 75th Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	5	125	155	1	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	5	134	167	1	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		338				
pX, platoon unblocked						
vC, conflicting volume	168				312	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168				312	167
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1410				680	880

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	140	168	11
Volume Left	5	0	5
Volume Right	0	1	5
cSH	1410	1700	767
Volume to Capacity	0.00	0.10	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.3	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

120: Main Street & 74th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	1	130	1	1	145	5	5	1	1	1	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.995			0.983			0.899	
Flt Protected								0.964			0.994	
Satd. Flow (prot)	0	1879	0	0	1853	0	0	1783	0	0	1681	0
Flt Permitted								0.964			0.994	
Satd. Flow (perm)	0	1879	0	0	1853	0	0	1783	0	0	1681	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		319			323			156			301	
Travel Time (s)		8.7			8.8			4.3			8.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	146	1	1	163	6	6	1	1	1	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	0	170	0	0	8	0	0	8	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

120: Main Street & 74th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	130	1	1	145	5	5	1	1	1	1	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	146	1	1	163	6	6	1	1	1	1	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		657			1293							
pX, platoon unblocked												
vC, conflicting volume	169			147			323	320	147	319	317	166
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	169			147			323	320	147	319	317	166
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			100			99	100	100	100	100	99
cM capacity (veh/h)	1415			1435			626	598	903	634	600	881

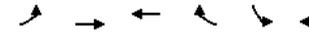
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	170	8	8
Volume Left	1	1	6	1
Volume Right	1	6	1	6
cSH	1415	1435	650	785
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.1	0.1	10.6	9.6
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	0.1	10.6	9.6
Approach LOS			B	A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Volume

130: Main Street & 73rd Street

3/24/2011



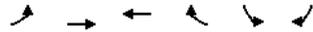
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Volume (vph)	5	125	145	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.884	
Flt Protected		0.998			0.993	
Satd. Flow (prot)	0	1877	1872	0	1651	0
Flt Permitted		0.998			0.993	
Satd. Flow (perm)	0	1877	1872	0	1651	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		323	318		300	
Travel Time (s)		8.8	8.7		8.2	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	6	145	169	6	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	151	175	0	7	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

130: Main Street & 73rd Street

3/24/2011



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	5	125	145	5	1	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	145	169	6	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		980	970			
pX, platoon unblocked						
vC, conflicting volume	174				328	172
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174				328	172
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1408				665	875

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	151	174	7
Volume Left	6	0	1
Volume Right	0	6	6
cSH	1408	1700	831
Volume to Capacity	0.00	0.10	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.3	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

### Volume

140: Main Street & 72nd Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	5	120	1	5	140	5	5	1	5	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.995			0.938			0.938	
Flt Protected		0.998			0.998			0.977			0.977	
Satd. Flow (prot)	0	1876	0	0	1832	0	0	1527	0	0	1724	0
Flt Permitted		0.998			0.998			0.977			0.977	
Satd. Flow (perm)	0	1876	0	0	1832	0	0	1527	0	0	1724	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		318			327			300			301	
Travel Time (s)		8.7			8.9			8.2			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	14%	14%	14%	1%	1%	1%
Adj. Flow (vph)	6	143	1	6	167	6	6	1	6	6	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	150	0	0	179	0	0	13	0	0	13	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

140: Main Street & 72nd Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations		↔			↔			↔			↔					
Volume (veh/h)	5	120	1	5	140	5	5	1	5	5	1	5				
Sign Control	Free			Free			Stop			Stop						
Grade	0%			0%			0%			0%						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84				
Hourly flow rate (vph)	6	143	1	6	167	6	6	1	6	6	1	6				
Pedestrians																
Lane Width (ft)																
Walking Speed (ft/s)																
Percent Blockage																
Right turn flare (veh)																
Median type	None			None												
Median storage (veh)																
Upstream signal (ft)	1298			652												
pX, platoon unblocked																
vC, conflicting volume	173		144		343		340		143		343		338		170	
vC1, stage 1 conf vol																
vC2, stage 2 conf vol																
vCu, unblocked vol	173		144		343		340		143		343		338		170	
tC, single (s)	4.1		4.1		7.2		6.6		6.3		7.1		6.5		6.2	
tC, 2 stage (s)																
tF (s)	2.2		2.2		3.6		4.1		3.4		3.5		4.0		3.3	
p0 queue free %	100		100		99		100		99		99		100		99	
cM capacity (veh/h)	1410		1432		580		558		873		604		580		877	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	150	179	13	13
Volume Left	6	6	6	6
Volume Right	1	6	6	6
cSH	1410	1432	682	700
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.3	0.3	10.4	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	0.3	10.4	10.2
Approach LOS			B	B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	19.6%	ICU Level of Service	
Analysis Period (min)	15		

Volume

150: Main Street & 71st Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	60	70	30	75	0	70	0	30	5	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.927			0.986			0.959			0.938		
Flt Protected				0.986			0.966			0.977		
Satd. Flow (prot)	0	1744	0	0	1819	0	0	1743	0	0	1724	0
Flt Permitted				0.986			0.966			0.977		
Satd. Flow (perm)	0	1744	0	0	1819	0	0	1743	0	0	1724	0
Link Speed (mph)	25			25			25			25		
Link Distance (ft)	327			155			100			300		
Travel Time (s)	8.9			4.2			2.7			8.2		
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	73	85	37	91	0	85	0	37	6	1	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	158	0	0	128	0	0	122	0	0	13	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

### HCM Unsignalized Intersection Capacity Analysis

150: Main Street & 71st Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	0	60	70	30	75	0	70	0	30	5	1	5
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	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	73	85	37	91	0	85	0	37	6	1	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					325							
pX, platoon unblocked												
vC, conflicting volume	91			159			287	280	116	317	323	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	91			159			287	280	116	317	323	91
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			97			87	100	96	99	100	99
cM capacity (veh/h)	1510			1415			649	613	939	601	581	969

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	159	128	122	13
Volume Left	0	37	85	6
Volume Right	85	0	37	6
cSH	1700	1415	715	723
Volume to Capacity	0.09	0.03	0.17	0.02
Queue Length 95th (ft)	0	2	15	1
Control Delay (s)	0.0	2.3	11.1	10.1
Lane LOS		A	B	B
Approach Delay (s)	0.0	2.3	11.1	10.1
Approach LOS			B	B

Intersection Summary			
Average Delay		4.2	
Intersection Capacity Utilization	31.9%		ICU Level of Service
Analysis Period (min)	15		A

### Volume

160: Main Street & Alley

3/24/2011



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (vph)	90	5	5	100	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.910	
Flt Protected				0.998	0.984	
Satd. Flow (prot)	1868	0	0	1841	1684	0
Flt Permitted				0.998	0.984	
Satd. Flow (perm)	1868	0	0	1841	1684	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	155			170	141	
Travel Time (s)	4.2			4.6	3.8	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	3%	3%	1%	1%
Adj. Flow (vph)	110	6	6	122	6	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	0	128	18	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

HCM Unsignalized Intersection Capacity Analysis

160: Main Street & Alley

3/24/2011



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	90	5	5	100	5	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	110	6	6	122	6	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				170		
pX, platoon unblocked						
vC, conflicting volume			116		247	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			116		247	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1467		741	943

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	116	128	18
Volume Left	0	6	6
Volume Right	6	0	12
cSH	1700	1467	864
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.4	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.3
Approach LOS		A	

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	19.3%		ICU Level of Service A
Analysis Period (min)	15		

Volume

200: Main Street & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	↔
Volume (vph)	55	45	40	75	30	15	35	350	65	5	380	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Storage Length (ft)	0	0	0	0	0	0	95	0	100	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	1	0	0	0
Taper Length (ft)	50		50	50		50	50		50	50		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt	0.962				0.983			0.977				0.977
Flt Protected	0.981				0.970		0.950			0.950		
Satd. Flow (prot)	0	1775	0	0	1794	0	1652	3343	0	1668	3376	0
Flt Permitted	0.833				0.766		0.466			0.484		
Satd. Flow (perm)	0	1507	0	0	1416	0	810	3343	0	850	3376	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			12			53				52
Link Speed (mph)		25			25			30				30
Link Distance (ft)		170			300			253				883
Travel Time (s)		4.6			8.2			5.8				20.1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	62	51	45	84	34	17	39	393	73	6	427	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	158	0	0	135	0	39	466	0	6	506	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		36.5	36.5		36.5	36.5	
Total Split (s)	23.5	23.5	0.0	23.5	23.5	0.0	36.5	36.5	0.0	36.5	36.5	0.0
Total Split (%)	39.2%	39.2%	0.0%	39.2%	39.2%	0.0%	60.8%	60.8%	0.0%	60.8%	60.8%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		21.0	21.0		21.0	21.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.33			0.31		0.09	0.27		0.01	0.29	
Control Delay		15.1			17.2		8.1	7.5		7.2	7.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		15.1			17.2		8.1	7.5		7.2	7.8	
90th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	

Volume  
200: Main Street & 70th Street

3/24/2011

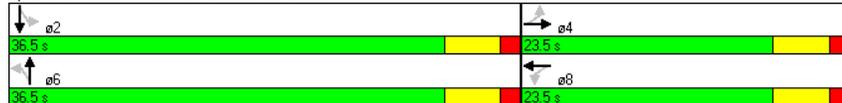


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
70th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
50th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
30th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
10th %ile Green (s)	18.0	18.0		18.0	18.0		31.0	31.0		31.0	31.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		34			34		6	38		1	44	
Queue Length 95th (ft)		75			72		18	58		6	68	
Internal Link Dist (ft)		90			220			173			803	
Turn Bay Length (ft)							95			100		
Base Capacity (vph)		476			433		419	1753		439	1769	
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			0.31		0.09	0.27		0.01	0.29	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 200: Main Street & 70th Street



HCM Signalized Intersection Capacity Analysis  
200: Main Street & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	55	45	40	75	30	15	35	350	65	5	380	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	11	11	10	11	11
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.98		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1793		1652	3341		1668	3374	
Flt Permitted		0.83			0.77		0.47	1.00		0.48	1.00	
Satd. Flow (perm)		1507			1417		810	3341		850	3374	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	62	51	45	84	34	17	39	393	73	6	427	79
RTOR Reduction (vph)	0	24	0	0	8	0	0	26	0	0	25	0
Lane Group Flow (vph)	0	134	0	0	127	0	39	440	0	6	481	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4				8			6			2	
Actuated Green, G (s)		18.0			18.0			31.0			31.0	
Effective Green, g (s)		18.0			18.0			31.0			31.0	
Actuated g/C Ratio		0.30			0.30			0.52			0.52	
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)		452			425			419			439	
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.09			0.09			0.05			0.01	
v/c Ratio		0.30			0.30			0.09			0.01	
Uniform Delay, d1		16.1			16.1			7.4			8.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.7			1.8			0.4			0.1	
Delay (s)		17.8			17.9			7.8			8.4	
Level of Service		B			B			A			A	
Approach Delay (s)		17.8			17.9			8.3			8.5	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay: 10.5, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.28  
 Actuated Cycle Length (s): 60.0, Sum of lost time (s): 11.0  
 Intersection Capacity Utilization: 53.3%, ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Volume

210: Proposed North Access & 70th Street

3/24/2011

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	40	30	35	425	465	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.942			0.990		
Frt Protected	0.972			0.996		
Satd. Flow (prot)	1722	0	0	3408	3421	0
Frt Permitted	0.972			0.996		
Satd. Flow (perm)	1722	0	0	3408	3421	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	165			240	253	
Travel Time (s)	4.5			5.5	5.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	45	34	39	478	522	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	517	561	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

210: Proposed North Access & 70th Street

3/24/2011

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	30	35	425	465	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	45	34	39	478	522	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					253	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	860	281	562			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751	144	439			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	96	96			
cM capacity (veh/h)	319	839	1064			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	79	199	318	348	213
Volume Left	45	39	0	0	0
Volume Right	34	0	0	0	39
cSH	435	1064	1700	1700	1700
Volume to Capacity	0.18	0.04	0.19	0.20	0.13
Queue Length 95th (ft)	16	3	0	0	0
Control Delay (s)	15.1	2.0	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.1	0.8		0.0	
Approach LOS	C				

Intersection Summary

Average Delay 1.4  
Intersection Capacity Utilization 40.8% ICU Level of Service A  
Analysis Period (min) 15

Volume

220: Proposed South Access & 70th Street

3/24/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Volume (vph)	1	1	30	5	1	5	30	455	20	5	485	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.873				0.939			0.994			0.999	
Frt Protected		0.999				0.978			0.997			
Satd. Flow (prot)	0	1641	0	0	1728	0	0	3391	0	0	3452	0
Frt Permitted		0.999				0.978			0.997			
Satd. Flow (perm)	0	1641	0	0	1728	0	0	3391	0	0	3452	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		165			300			512			240	
Travel Time (s)		4.5			8.2			11.6			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	1	1	33	5	1	5	33	495	22	5	527	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	11	0	0	550	0	0	537	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

HCM Unsignalized Intersection Capacity Analysis

220: Proposed South Access & 70th Street

3/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Volume (veh/h)	1	1	30	5	1	5	30	455	20	5	485	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	33	5	1	5	33	495	22	5	527	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											493	
pX, platoon unblocked												
vC, conflicting volume	859	1122	266	878	1114	258	533			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	859	1122	266	878	1114	258	533			516		
IC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	96	98	99	99	97			99		
cM capacity (veh/h)	242	198	735	226	201	744	1031			1053		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	35	12	280	269	269	269
Volume Left	1	5	33	0	5	0
Volume Right	33	5	0	22	0	5
cSH	640	325	1031	1700	1053	1700
Volume to Capacity	0.05	0.04	0.03	0.16	0.01	0.16
Queue Length 95th (ft)	4	3	2	0	0	0
Control Delay (s)	10.9	16.5	1.3	0.0	0.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	10.9	16.5	0.7		0.1	
Approach LOS	B	C				

Intersection Summary

Average Delay: 0.9  
Intersection Capacity Utilization: 41.1% ICU Level of Service: A  
Analysis Period (min): 15